STATE OF INDIANA COUNTY OF MARION	)) SS:)	BEFORE THE INDIANA OFFICE OF ENVIRONMENTAL ADJUDICATION

IN THE MATTER OF: OBJECTION TO ISSUANCE OF CONFINED FEEDING OPERATION CONSTRUCTION APPROVAL FARM ID #6912 / ANIMAL WASTE #AW 6584 PUMPS HOGS LLC BRINGHURST, CARROLL COUNTY, INDIANA	)	
Steve and Lisa Bough, et al. Petitioners, Pumps Hogs LLC, Permittee/Respondent, Indiana Dept. of Environmental Management, Respondent.	)	CAUSE NO. 16-S-J-4913

PUMPS HOGS LLC'S MOTION FOR PARTIAL SUMMARY JUDGMENT

Pursuant to Indiana Trial Rule 56, Pumps Hogs LLC ("Pumps Hogs") respectfully moves this Court for summary judgment in its favor and against Petitioners Lisa Bough, Steve Bough, Catherine Ann Cripe, and Mark Cripe (collectively, "Petitioners") on Petitioners' claims that (1) Pumps Hogs' Confined Feeding Operation ("CFO") Application runs afoul of notarization requirements and that (2) certain federal rules required express nutrient management and recordkeeping requirements not included in the CFO Approval. Pumps Hogs is contemporaneously filing a Memorandum and a Designation of Evidence in support of this Motion for Partial Summary Judgment, which are incorporated herein by reference. This Motion, the supporting Memorandum, and the Designation of Evidence establish that there is no genuine issue of material fact, and that Pumps Hogs is entitled to judgment as a matter of law on these two claims.[1]

[1] Pumps Hogs reserves the right to separately seek summary judgment or any other relief on any remaining claim(s).

WHEREFORE, Pumps Hogs LLC respectfully requests that this Court grant summary judgment in its favor and against Petitioners on the claims presented herein, and for all other relief just and proper in the premises.

Respectfully submitted,

HATCHETT & HAUCK LLP

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CERTIFICATE OF SERVICE

I certify that on January 5, 2017, service of a true and complete copy of the foregoing was made upon each party or attorney of record herein by hand delivery:

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STATE OF INDIANA)		BEFORE THE INDIANA OFFICE OF
)	SS:	ENVIRONMENTAL ADJUDICATION
COUNTY OF MARION)		

IN THE MATTER OF:	)
	)
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Steve and Lisa Bough, et al. Petitioners, Pumps Hogs LLC, Permittee/Respondent, Indiana Dept. of Environmental Management, Respondent.	) CAUSE NO. 16-S-J-4913

PUMPS HOGS LLC'S MEMORANDUM IN SUPPORT OF MOTION FOR PARTIAL SUMMARY JUDGMENT

Pumps Hogs LLC ("Pumps Hogs") submits this Memorandum in Support of its Motion for Partial Summary Judgment against Petitioners Lisa Bough, Steve Bough, Catherine Ann Cripe, and Mark Cripe (collectively, "Petitioners"). Pumps Hogs designates all citations to the record included in this Memorandum and the documents found in Pumps Hogs' Designation of Evidence, which is filed under separate cover.

I. BACKGROUND

On May 6, 2016, Pumps Hogs submitted an application for the construction and operation of a wean-to-finish pig facility in Carroll County ("Application"). IDEM approved the Application on June 29, 2016 ("Approval"). Petitioners filed their Petition for Administrative Review of the Approval on July 14, 2016 ("Petition"). Among the bases included in the Petition were Petitioners' claims that (1) the Application runs afoul of notarization requirements and that (2) certain federal rules required express nutrient management and recordkeeping requirements not included in the Approval. Petitioners requested the Court to overturn the Approval. As these

claims do not involve disputed material facts and are capable of resolution in favor of Pumps Hogs as a matter of law, Pumps Hogs seeks summary judgment in its favor on these two claims.[1]

II. STATEMENT OF MATERIAL FACTS NOT IN DISPUTE

1. The form entitled "Notification Affidavit" was signed by James Templin on May 5, 2016 and Notarized by Tamara S. Templin and is part of the Application. Notification Affidavit (TAB 3). (The Notification Affidavit is included in the Application (TAB 1 at 189), but is also separately included in TAB 3 for convenience.) See also Affid. of James Templin (TAB 5).

2. James Templin is the only signatory to the Notification Affidavit, which was notarized by Tamara S. Templin. Notification Affidavit (TAB 3).

3. Ms. Templin's name does not appear on the Notification Affidavit except in a notary capacity. Notification Affidavit (TAB 3).

4. James Templin has affirmed under oath that he signed the Notification Affidavit. Affid. of James Templin (TAB 5).

5. The Jon L and Tamara S Templin Land Application Agreement is one of two such agreements in the Application, and only includes 18.562 available acres. Application at 173-76 (TAB 1); Jon L and Tamara S Templin Land Application Agreement at 2 (TAB 4). (The Jon L and Tamara S Templin Land Application Agreement is included in the Application (TAB 1 at 175-76), but is also separately included in TAB 4 for convenience.) As calculated by the IDEM-required formula, only 416.6 available acres are needed for land application. Application at 9-10. Pumps Hogs has arranged for at least 441.053 available acres. Application at 10. Without

[1] Pumps Hogs reserves the right to separately seek summary judgment or any other relief on any remaining claim(s).

the available acreage from the Jon L and Tamara S Templin Land Application Agreement, at least 422.49 acres would still be available for land application.

6. Tamara S. Templin did not notarize the Application, or any part thereof, other than the Notification Affidavit and two land application agreements. Application (TAB 1).

7. Each Petitioner filed public comments concerning the Application. Public Comment Acknowledgment Letters (TAB 6).

8. Each of the 22 of the notice recipients identified in the Application were notified of the Application. Application at 182-86, 190-97 (TAB 1).

9. Pumps Hogs' facility authorized by the Approval is a totally enclosed facility in which all manure will be captured and held by the properly designed and approved storage facility until such time as the manure is removed, and it will not have a discharge. Application at 6 (TAB 1) ("The proposed confined feeding operation includes [two] production buildings with below-building concrete manure storages"); Approval at 6 (TAB 2) (each building will utilize a "self-contained concrete manure storage pit"); Approval at 19 (TAB 2) ("Pumps Hogs LLC is prohibited from discharging manure or waste water").

III. APPLICABLE LEGAL STANDARD

"The purpose of summary judgment is to terminate litigation about which there can be no factual dispute and which can be determined as a matter of law." *Bushong v. Williamson,* 790 N.E.2d 467, 474 (Ind. 2003). "The burden is on the moving party to prove that there are no issues of material fact and that [it] is entitled to judgment as a matter of law." *Stephenson v. Ledbetter*, 596 N.E.2d 1369, 1371 (Ind. 1992). However, "once the movant has sustained this burden, the [opposing party] must respond by setting forth specific facts showing a genuine issue for trial; [it] may not simply rest on the allegations in [its] pleadings." *Id.* (citing Ind. Trial Rule 56(C)). "Where, as here, the relevant facts are not in dispute and the interpretation of a statute is

at issue, such statutory interpretation presents a pure question of law for which summary judgment disposition is appropriate." *Clem v. Watts*, 27 N.E.3d 789, 791 (Ind. Ct. App. 2015).

"The OEA may enter judgment for a party if it finds that 'the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits and testimony, if any, show that a genuine issue as to any material fact does not exist and that the moving party is entitled to judgment as a matter of law.'" *Wolf Creek Calf Company, LLC*, 2009 OEA 70, 74 (Jun. 30, 2009) (citing Ind. Code §4-21.5-3-23; *Wade v. Norfolk and Western Railway Co.*, 694 N.E.2d 298, 301 (Ind. Ct. App. 1998); and Ind. Trial Rule 56(C)). "Neither IDEM nor the OEA may require an applicant to include information or to perform actions in excess of that required by law." *Union-Go Dairy, LLC*, 2016 OEA 1, 8 (Apr. 19, 2016). "The Petitioners, as the persons requesting that IDEM revoke its approval of the [IDEM Approval], have the burden of persuasion and the burden of going forward with the evidence supporting their request." *Id.* (citing Ind. Code. § 4-21.5-3-14(c)).

Here, there are no disputed material facts and the applicable laws and regulations entitle Pumps Hogs to summary judgment on the issues presented.

IV. ARGUMENT

The Petitioners have asserted that (1) the Application runs afoul of notarization requirements and that (2) certain federal rules required express nutrient management and recordkeeping requirements not included in the Approval. As demonstrated below, there were no notification deficiencies relevant to the Application, and the federal rules cited by Petitioners concern National Pollution Discharge Elimination System ("NPDES") permits, and not Confined Feeding Operation ("CFO") approvals. These arguments are insufficient as a matter of law to invalidate the Approval.

A. No Portion Of the Application Can Be Invalidated On the Basis Of the Alleged Violation Of Notary Public Requirements Raised By Petitioners.

The Petitioners have claimed that two documents included in the Application—the Notification Affidavit and one of the land application agreements—were improperly notarized. Pet. at 5-6. This argument fails because the notarization of the Notification Affidavit does not run afoul of Indiana Law, and there is no doubt that the form was signed and the notification activities actually occurred. Further, Petitioners obviously received the notice described in Notification Affidavit, so any perceived technical error in the notarization of the form is inconsequential as to its impact on Petitioners. The land application agreement challenged by Petitioners was not required to be notarized, so it cannot be invalidated even if the notarization was faulty. Finally, this land application agreement concerns a parcel of land that is not necessary for IDEM's Approval. The notarization issues raised by Petitioners are not valid bases for overturning the Approval.

In reviewing the issues raised by Petitioners, the limited role and relevance of a notarization must be considered. "A notary's function is simply to certify the validity of the signature; the notary does not attest to the validity of the statements made in the document itself." *Thompson v. Stull (In re Thompson Revocable Trust)*, 856 N.E.2d 1252, 1256 (Ind. Ct. App. 2006) (citing *Butler v. Encyclopaedia Britannica, Inc.*, 41 F.3d 285 (1994)). Even a faulty notarization does not invalidate the underlying document. While the statutory provision cited by Petitioners may prohibit a notary from notarizing certain documents, there is no legal authority to suggest that this act does anything to invalidate the notarized document. To the contrary, an improperly notarized document may only be set aside with a finding that the signature was invalid. *Robbins v. Baxter (In re Baxter)*, 799 N.E.2d 1057, 1062 (Ind. 2003) (reversing a trial court's invalidation of improperly notarized adoption consent instruments, finding that "the

validity of a consent may be satisfied by evidence that the signatures are authentic and genuine in all respects and manifest a present intention to give the child up for adoption."). Petitioners have made no challenge to the signatures of the documents in question, or the validity of the underlying documents. Petitioners must carry this burden to set aside the Approval.

1. The Application Notification Form was properly notarized.

As a part of a CFO application, an applicant is required to provide notice to certain persons and include a form created by IDEM in the application. Notification Affidavit (TAB 3). IDEM's form includes an affidavit that is to be notarized. *Id.* This affidavit form was properly filled out and signed by James Templin and notarized by Tamara S. Templin. Petitioners contend that as Ms. Templin is a "deeded owner[] and property tax payer[] on the property referenced" in the Application. Pet. at 5-6. Petitioners further contend that this violates Ind. Code §33-42-2-2(a)(2), which provides that a notary may not "acknowledge any instrument in which the notary's name appears as a *party* to the *transaction*." (Emphases added.)

Petitioners' conflation of the Application and the Notification Affidavit obscures that fact that Ms. Templin did not notarize the entire Application. Application (TAB 1). She notarized the one page Notification Affidavit, which is but one part of the larger Application. *Id.*; Notification Affidavit (TAB 3). The fact that she may be a "deeded owner[] and property tax payer[] on the property referenced" in the Application is of no moment, as she did not notarize the Application. The only question is whether the Notification Affidavit was improperly notarized.

Ind. Code §33-42-2-2(a)(2) has no applicability to the Notification Affidavit. There is no conflict of interest restriction on the acts of a notary, with the exception that a notary may not

affirm his or her own signature. Ind. Code §33-42-2-2(a)(2).[2] The only signatory to the Application Notification Form is James Templin, owner, operator and authorized representative of Pumps Hogs. Notification Affidavit (TAB 3). Ms. Templin's name does not appear on the document except in a notary capacity. *Id.* Ms. Templin is not a "party" to the Notification Affidavit, and thus Ind. Code §33-42-2-2(a)(2) does not apply. Also, the Notification Affidavit is not a "transaction." It is clear from the Notification Affidavit that it does not involve the exchange of money or other consideration, particularly involving Ms. Templin. The sole purpose of her notarization was to confirm the validity of the signature by James Templin. As Ms. Templin is not a "party" and Notification Affidavit is not a "transaction," Ind. Code §33-42-2-2(a)(2) does not provide a basis to set aside the Notification Affidavit or the Approval.

2. The notices described in the Notification Affidavit were properly provided.

The Petitioners make no claim that the required notices for the Application were not provided. Obviously the Petitioners themselves received these notices, as they filed public comments concerning the Application (Public Comment Acknowledgment Letters (TAB 6)) and instigated the present appeal in response to the Approval. Further, all 22 of the notice recipients were issued the notice called for by the Application. Application at 182-86, 190-97 (TAB 1). Even if the notarization of the Notification Affidavit could be challenged, all notice requirements for the Application were satisfied. *See Driver v. State*, 725 N.E.2d 465, 469 (Ind. Ct. App. 2000)

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[2] This is confirmed by guidance on the Indiana Secretary of State website, which provides:

> Q. May I notarize my own signature and the signatures of my spouse, children, parents or other relatives?
> A. A notary public may not notarize his or her own signature, but may notarize the signatures of his or her spouse, children, parents or other relatives.

Indiana Secretary of State, *Notary Frequently Asked Questions*, *available at* http://www.in.gov/sos/business/2481.htm (last visited Jan. 5, 2016).

(an "error in the notarization is a minor defect in form" and is not a basis for upsetting the underlying document.) The Approval cannot be overturned on this basis.

3. James Templin has affirmed that he signed the Notification Affidavit.

Even if Petitioners can successfully claim that the Notification Affidavit was not properly notarized, a document that has an improper notarization cannot be voided without an evaluation of its validity. *See Baxter, supra* at 5-6. Without admitting that the Notification Affidavit was not properly notarized, James Templin has reaffirmed that he did sign that form. Affid. of James Templin (TAB 5). As in *Baxter*, James Templin's affirmation "satisfie[s] by evidence that the signatures are authentic and genuine in all respects," and thus the validity of the Notification Affidavit cannot be controverted. Petitioners' attempt to set aside the Approval on this basis cannot stand.

4. The Jon L and Tamara S Templin Land Application Agreement was not required to be notarized and is not necessary for the Approval.

The Petitioners also challenge one of the land application agreements, pointing out that Ms. Templin notarized a document concerning property for which she is part owner. Pet. at 6. The land application agreements are included in the Application to show that Pumps Hogs has sufficient acreage to land-apply manure it generates. However, there is no requirement that land application agreements be notarized, so this is not a basis for invalidating it. *Outlaw v. Danks*, 832 N.E.2d 1108, 1111 (Ind. Ct. App. 2005) (upholding a will that was not properly notarized because "there is no requirement that a will be notarized in order to be valid").

Additionally, the acreage in the land application agreement in question was not needed for IDEM to issue the Approval of the Application. The Application includes two land application agreements. The Jon L and Tamara S Templin Land Application Agreement concerns a small parcel that is but part of the overall area planned for land application, and only

includes 18.562 available acres. Jon L and Tamara S Templin Land Application Agreement at 2 (TAB 4). As calculated by the IDEM-required formula, only 416.6 available acres are needed for land application. Application at 9-10 (TAB 1). Pumps Hogs has arranged for at least 441.053 available acres. Application at 10 (TAB 1). Removing the acreage from the disputed Jon L and Tamara S Templin Land Application Agreement would still leave at least 422.49 acres available for land application. So, even if the Jon L and Tamara S Templin Land Application Agreement were invalid—and it is not—that acreage is not necessary for Pumps Hogs to comply with applicable requirements. The Land Application Agreement was valid and the Approval cannot be set aside on this basis.

B. There Is No Requirement For the Approval To Include Express Nutrient Management or Recordkeeping Requirements.

Petitioners contend that federal rules require certain language to appear in the Approval. This argument fails because the rule cited by Petitioners only applies to NPDES permits, which regulate to point source discharges. The Approval is not an NPDES permit, and thus the federal law does not compel any particular language to appear in the Approval. Additionally, Petitioners' argument that the Approval should contain particular language—even if correct—would not result in any change in the requirements imposed upon Pumps Hogs, and is not a valid basis for setting aside or altering the Approval.

1. There is no applicable requirement that the Approval contain express permit terms concerning nutrient management and recordkeeping.

Petitioners contend that the Approval was required to contain express language concerning concentrated animal feeding operation ("CAFO") nutrient management and recordkeeping. Pet. at 6-7. This argument is based on 40 CFR 122.42(e), which states that "any permit issued to a CAFO must include" terms governing nutrient management and recordkeeping. However, this regulation only applies to NPDES permits, which the Approval is

not. The introduction to 40 CFR 122.42 makes it clear that the conditions contained in that section only "apply to all NPDES permits within the categories specified" in the rule. While a CAFO is a point source under 40 CFR 122.23, it is not subject to NPDES permitting requirements unless it has a discharge. 40 CFR 122.23(d). See also 40 CFR 122.1(b)(1) ("The NPDES program requires permits for the *discharge* of pollutants from any point source into waters of the United States.") (emphasis added and internal quotations omitted). These rules have no applicability outside of NPDES Permits.

The Approval is not an NPDES permit, which is appropriate as Pumps Hogs is not required to have an NPDES permit. Pumps Hogs' facility as authorized by the Approval is a totally enclosed facility in which all manure will be captured and held by the properly designed and approved storage structures, until such time as the manure is removed. Application at 6 (TAB 1); Approval at 6 (TAB 2). It will not have any discharge, and thus the NPDES permit rules do not apply. *Id.*; Approval at 19 (TAB 2) ("Pumps Hogs LLC is prohibited from discharging manure or waste water"). The facility is a CFO regulated by applicable portions of 327 IAC 19, but is not subject to NPDES requirements, including 327 IAC 15-16. 327 IAC 15-16-1(b). Thus, the regulations cited by Petitioners to contend that the Approval must contain specific nutrient management and recordkeeping requirements have no applicability to Pumps Hogs or the Approval.

2. The Approval's omission of specific nutrient management and record-keeping requirements does not reduce Pumps Hogs' legal requirements.

To be clear, the claim advanced by Petitioners would not impose any additional duty on Pumps Hogs. Their argument only contends—wrongly—that specific magic words regarding nutrient management and recordkeeping must appear in any approval of a CFO that meets the federal CAFO definition. In corresponding fashion, Pumps Hogs does not seek to avoid any

(1) - NMP only required for NPDES
↳ NPDES only required for discharge
↳ Pumps won't discharge
↳ if it does, it would violate Title 13 & its Approval
- No NMP requirement in Approval b/c, not required

(2) - to extent NMP would be required, IDEM IBRs it into Approval
- rather than renegotiating its rules

(4) Concur & supplement Reg's "B".
Note: Save "all NMP elements present anyway" for reply brief

requirements in contravening Petitioners' argument. It only contends that no law requires such language to be specifically included in the Approval. Petitioners observe that 327 IAC 19-11-1(a) states that CFOs defined as CAFOs under federal regulations must meet the "requirements" of 40 CFR 122.23(e) and 40 CFR 122.42(e)(1)-(2), which outline nutrient management and recordkeeping requirements. While there is no requirement in Indiana law that IDEM place such terms in the Approval, the lack of this language does not alter the requirements applicable to Pumps Hogs in any way. Petitioners' contention is a mere technicality as to what language should be in a CFO approval, and will have no bearing on the standards imposed on Pumps Hogs. As previously shown, no regulation requires recitation of these standards in the Approval. The Approval cannot be overturned on the basis that it does not include specific nutrient management and recordkeeping requirements.

V. CONCLUSION

Pumps Hogs has demonstrated that Petitioners' claims that parts of the Application were improperly notarized fail as a matter of law. Further, James Templin's affirmation of his signature on the Notification Affidavit and the fact that the Jon L and Tamara S Templin Land Application Agreement was not necessary for the Application shows that even if Petitioners' claims were correct, the Application cannot be invalidated. Pumps Hogs has also shown that there is no legal requirement that the Approval contain specific language from federal NPDES rules, as the Approval is not an NPDES permit and this language would not alter any requirements imposed on Pumps Hogs. For these reasons, Pumps Hogs is entitled to summary judgment on these claims.

Pumps Hogs respectfully asks this Court for an Order:

1. granting Pumps Hogs' Motion for Partial Summary Judgment;

Concurrence
deadline ??

2. finding that as a matter of law, the Approval cannot be invalidated on the basis of improper notarizations;

3. finding that as a matter of law, the Approval cannot be invalidated on the basis that it did not contain express federal nutrient management or recordkeeping requirements; and

4. providing all other relief to Pumps Hogs that is just and proper.

Respectfully submitted,

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I certify that on January 5, 2017, service of a true and complete copy of the foregoing was made upon each party or attorney of record herein by hand delivery:

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STATE OF INDIANA	)	BEFORE THE INDIANA OFFICE OF
	) SS:	ENVIRONMENTAL ADJUDICATION
COUNTY OF MARION	)	

IN THE MATTER OF:	)	
	)	
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Steve and Lisa Bough, et al. Petitioners, Pumps Hogs LLC, Permittee/Respondent, Indiana Dept. of Environmental Management, Respondent.	)	CAUSE NO. 16-S-J-4913

PUMPS HOGS LLC'S DESIGNATION OF EVIDENCE IN SUPPORT OF MOTION FOR PARTIAL SUMMARY JUDGMENT

Pumps Hogs LLC ("Pumps Hogs") submits this Designation of Evidence in Support of its Motion for Summary Judgment:

TAB 1 Pump's Hogs 2016 Confined Feeding Operation Approval Application (May 6, 2016) (referred to herein as the "Application") (IDEM Virtual File Cabinet ("VFC") Document # 80289116)

TAB 2 IDEM's Approval with Construction letter issued to Pumps Hogs LLC (Jun. 29, 2016) (referred to herein as the "Approval") (IDEM VFC Document # 80317057)

TAB 3 Notification Affidavit (May 5, 2016). (The Notification Affidavit is included in the Application (TAB 1 at 189), but is also separately included in TAB 3 for convenience.)

TAB 4 Jon L and Tamara S Templin Land Application Agreement (May 5, 2016). (The Jon L and Tamara S Templin Land Application Agreement is included in the Application (TAB 1 at 175-76), but is also separately included in TAB 4 for convenience.)

TAB 5 First Affidavit of James Templin (TAB 5) (Jan. 4, 2017) (referred to herein as "Affid. of James Templin")

TAB 6 IDEM Letters acknowledging receipt of Comment Letters concerning the Application (June 7, 2016) (excerpts) (referred to herein as the "Public Comment Acknowledgment Letters") (IDEM VFC Document # 80307911)

TAB 7 Certification of Records by Yolanda Madison, IDEM records custodian (Dec. 27, 2016) (covering documents found at TABs 1-4 and 6).

Respectfully submitted,

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STATE OF INDIANA)		BEFORE THE INDIANA OFFICE OF
)	SS:	ENVIRONMENTAL ADJUDICATION
COUNTY OF MARION)		

IN THE MATTER OF:	)	
	)	
OBJECTION TO ISSUANCE OF CONFINED FEEDING	)	
OPERATION CONSTRUCTION APPROVAL FARM ID	)	
#6912 / ANIMAL WASTE #AW 6584	)	
PUMPS HOGS LLC	)	
BRINGHURST, CARROLL COUNTY, INDIANA	)	
Steve and Lisa Bough, et al.	)	CAUSE NO. 16-S-J-4913
Petitioners,	)	
Pumps Hogs LLC,	)	
Permittee/Respondent,	)	
Indiana Dept. of Environmental Management,	)	
Respondent.	)	

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TAB 1

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

5/6/2016

#6912

Operating App
Carroll Co.

ORIGINAL SUBMISSION

Submitted to:
Indiana Department of Environmental Management
Office of Land Quality
Confined Feeding Program
100 N Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204-2251

Prepared for:
PUMPS HOGS LLC
5200 S 500 W
Bringhurst, Indiana 46913

CFO Site Location:
CR 500 S and US 421 (south side of CR 500 S; east of US 421)
Bringhurst, Indiana 46913
Carroll County
USGS Quad: Pyrmont
Section 3, T23N, R2W

ORIGINAL

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Indiana Department of Environmental Management
2016 Confined Feeding Operation Approval Application

Table of Contents

Indiana Department of Environmental Management
2016 Confined Feeding Operation Approval Application – 327 IAC 19
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

Introduction:
Attached for your review are a CFO / CAFO Application Packet, State Form 55051 (R2/6-15) and supporting documentation requesting a Confined Feeding Operation Approval and construction authorization be granted to Pumps Hogs LLC for a proposed confined feeding operation. The proposed confined feeding operation consists of two (2) wean-to-finish pig building with below-building concrete manure storage.

The confined feeding operation is owned by Pumps Hogs LLC. The confined feeding operation is operated by Pumps Hogs LLC. The confined feeding operation is located in Carroll County, Indiana in the Pyrmont USGS Quadrangle, Section 3, Township 23 North, Range 2 West.

Operating Capacity:
This confined feeding operation will be operated as a wean-to-finish pig production site. The proposed confined feeding operation includes the construction of two (2) 81'-4" x 413'-0" wean-to-finish pig production buildings with below-building concrete manure storages. The requested maximum operating capacity for this confined feeding site is 13,200-head housed in two (2) buildings. The requested confined feeding operation approval and operating capacity is for 8,800 wean-to-finish pigs and 4,400 nursery pigs housed in two buildings. The anticipated animal flow and operating capacity is two 4,400 wean-to-finish pig groups per year housed for approximately twenty-five (25) weeks per group and one 4,400 nursery pig group per year housed for approximately six (6) weeks.

Each building will house two groups of pigs per year. During each approximately twenty-five (25) week production cycle one of the two buildings may house up to 8,800 weaned pigs (nursery pigs; < 55 lb) for approximately six weeks. The second building will house up to 4,400 wean-to-finish pigs at the same time. After approximately six (6) weeks, 4,400 grower pigs (> 55 lb) are moved from the building to the other building on site or to another building off-site. The remaining 4,400 grow-to-finish pigs remain in the building for approximately another nineteen (19) weeks. This cycle is repeated two times per year.

When this animal flow is used the number and type of animals housed at this confined feeding operation is 4,400 nursery pigs (weighing less than 55 pounds) housed approximately six (6) weeks per year and 4,400 wean-to-finish pigs (weighing greater than 10 pounds) housed approximately fifty (50) to fifty-two (52) weeks per year.

The maximum operating capacity is 13,200-head housed in two (2) buildings. Based on the animal categories defined in 40 CFR 122.23(b)(2) and 40 CFR 122.23(b)(4) this confined feeding operation is defined as a large concentrated animal feeding operation (CAFO) and will have an operating capacity of 8,800 pigs weighing fifty-five (55) pounds or more and 4,400 pigs weighing fifty-five (55) pounds or less housed in two (2) buildings.

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The proposed production building and operating capacity is summarized below.

Table 1: Building Dimensions and Operating Capacities

ID	Structure Type	Building Dimensions	Animal Capacity
1P.	Wean-to-finish	81'-4" x 413'-0" O.D.	4,400-wean-to-finish pigs (2 groups; ~50-52 weeks/year) 4,400-nursery pigs (one-time per year; ~6 weeks/year) (Building 1P & 2P will not house a nursery pig group at the same time)
2P.	Wean-to-finish	81'-4" x 413'-0" O.D.	4,400-wean-to-finish pigs (2 groups; 50-52 weeks/year) 4,400-nursery pigs (one-time per year; 6 weeks) (Building 1P & 2P will not house a nursery pig group at the same time)
	Total Site		**13,200 head** **(maximum capacity)**

Manure and Process Wastewater:

In accordance with Natural Resource Conservation Service Conservation Practice Standard "Waste Storage Facility" Code 313 (Standard 313) the potential components of manure and process wastewater include, where appropriate:

1) manure, bedding, wastewater, and other wastes accumulated during the storage period;
2) normal precipitation, less evaporation, on the surface area of the facility during the storage period;
3) normal runoff from the facility's drainage area during the storage period;
4) 25-year, 24-hour runoff from the facility's drainage area; and
5) residual solids after liquids have been removed.

Manure and process wastewater generated and stored in the below-building concrete manure storages includes manure, wastewater, and other wastes accumulated during the storage period and residual solids after liquids have been removed.

For manure management planning, this confined feeding operation will be operated as a wean-to-finish pig site. The Indiana Department of Environmental Management (IDEM) Guidance Manual for Indiana's Confined Feeding Program -- December 29, 2014 (Guidance Manual) Table 1, (page 38): "Manure Production Values for Calculating Storage Requirement Volumes" provides manure production values for nursery pigs (weighing less than 55 lb) and grow/finish pigs (weighing 55 lbs or more). To determine the manure generation for a wean-to-finish pig it is assumed that each wean-to-finish pig is a nursery pig (weighing less than 55 lb) for approximately six (6) weeks and a grow/finish pig (weighing 55 lbs or more) for approximately nineteen (19) weeks. A wean-to-finish pig is housed for approximately twenty-five (25) weeks. Two wean-to-finish pig groups per year will be housed in the production building. It is expected that the production building will be empty for approximately two (2) weeks per year for cleaning between groups.

The IDEM Guidance Manual Table 1 "Manure Production Values for Calculating Storage Requirement Volumes" states that the daily manure production, as excreted, for a nursery pig is 0.038 ft^3 per day and for a grow/finish pig is 0.166 ft^3 per day. Table 1 (page 38) of the Guidance Manual includes a footnote stating that the manure production values are "*Prior to any changes due to dilution water addition, drying, volatilization or other physical, chemical or biological processes.*" Water spillage and wash water used to clean and sanitize the buildings between animal groups is in addition to the manure and urine production. It is estimated that the volume of water spillage is equal to approximately 10% of the manure production. Wash water used to clean the buildings between groups is approximately 5 gallons per wean-to-finish pig per cleaning.

To determine the manure and process wastewater production for the wean-to-finish pig production site it is assumed that each building houses one 4,400-head nursery pig group for up to six weeks each year and two 4,400-head wean-to-finish pig groups for up to twenty-five (25) weeks per group each year. It is expected that each building will be empty for approximately two weeks per year for cleaning between groups.

The predicted annual manure and process wastewater (water spillage and wash water) production for each production building is approximately 242,771 ft^3/year. The predicted annual manure and process wastewater production for the entire production site is approximately 485,542 ft^3/year. The predicted manure and process wastewater production is determined as follows.

Wean-to-finish building, 4,400-head

Nursery pigs – 4,400 head

Manure production:

4,400-head x 0.038 ft^3/day/head x 6 weeks/group x 7 days/week x 1.0 group = 7,023 ft^3

Wean-to-finish pigs – 4,400 head

Wean-to-finish pigs < 55 lbs

4,400-head x 0.038 ft^3/day/head x 6 weeks/group x 7 days/week x 2.0 groups = 14,045 ft^3

Wean-to-finish pigs > 55 lbs

4,400-head x 0.166 ft^3/day/head x 19 weeks/group x 7 days/week x 2.0 groups = 194,287 ft^3

Manure production per building: 215,355 ft^3

Water spillage:

215,355 ft^3 x 0.10 = 21,536 ft^3

Wash water:

4,400 head/group x 5 gallons/head/wash x 2.0 groups/year ÷ 7.4805 gallons/ft^3 = 5,882 ft^3

Total manure and process wastewater (annual/bldg): = 242,773 ft^3

Total site manure and process wastewater (annual) 242,771.0 x 2 bldgs = **485,546 ft^3**

Manure Storage Capacity:

Manure storage capacity is provided in below-building concrete, manure storages. Standard 313 defines the design storage volume equal to the following, where appropriate:

1) manure, bedding, wastewater, and other wastes accumulated during the storage period;
2) normal precipitation, less evaporation, on the surface area of the facility during the storage period;
3) normal runoff from the facility's drainage area during the storage period;
4) 25-year, 24-hour runoff from the facility's drainage area;
5) residual solids after liquids have been removed;
    a. a minimum of six (6) inches of residual solids storage is required, or
    b. an additional five (5) percent of the manure, bedding, wastewater, and other wastes; normal precipitation, less evaporation, on the surface area of the storage; normal runoff from the facility's drainage area; and 25-year, 24-hour runoff from the facility's drainage area,
    c. whichever is greater;
        i. an evaluation confirms that six (6) inches of storage volume is greater than 5% of the generated manure and wastewater
        ii. a six (6) inch storage volume is used.
6) facilities not exposed to rainfall an additional six inches of freeboard.

The total capacity of the two (2) below-building concrete manure storages is 524,338 ft^3 and the available capacity is 460,154 ft^3. The manure storage capacity including residual and freeboard volumes for the proposed structure is summarized below.

Table 2: Building Manure Storage Capacities
All storage capacities assume a 6" freeboard and 6"residual solids storage.

	Building & Storage Dimensions	Total Storage Capacity (ft^3)	Residual Storage Capacity (ft^3)	Freeboard Capacity (ft^3)	Available Storage Volume (ft^3)	Approximate Storage Length (days)
1P.	81'-4" x 413'-0" (building dimension) 80'-0"x199'-9"x8'-0" 80'-0"x211'-3"x8'-0" (storage dimensions)	262,169	16,467	15,625	230,077	345
2P.	81'-4" x 413'-0" (building dimension) 80'-2"x199'-9"x8'-0" 80'-2"x211'-3"x8'-0" (storage dimensions)	262,169	16,467	15,625	230,077	345
	Total Site	**524,338**			**460,154**	**345**

Based on the manure production values in the Indiana Department of Environmental Management Guidance Manual for Indiana's Confined Feeding Program – December 29, 2014 (Guidance Manual) Table 1, (page 38): "Manure Production Values for Calculating Storage Requirement Volumes", expected water spillage volume, expected wash water volume, required residual solids accumulation volume, and six (6) inch freeboard, the expected storage capacity length provided by the proposed under-building concrete manure storages is approximately 345 days. The total farm available manure and process wastewater storage capacity is approximately 345 days. The available storage capacity exceeds the minimum 180 day storage required under 327 IAC 19-12-4(c).

Land Application Acres:

Required land application acres (minimum):

IDEM Guidance Determination: For manure management planning, this confined feeding operation will be operated as a wean-to-finish pig site with an additional nursery pig group one time per year per building. The Indiana Department of Environmental Management (IDEM) Guidance Manual for Indiana's Confined Feeding Program – December 29, 2014 (Guidance manual) "Manure Application Land Base Estimates" Table (page 52) provides manure application land base estimate values for nursery pigs (weighing less than 55 lb) and grow/finish pigs (weighing 55 lbs or more). To determine the land application acre base requirement for a wean-to-finish pig it is assumed that each wean-to-finish pig is a nursery pig (weighing less than 55 lb) for approximately six (6) weeks and a grow/finish pig (weighing 55 lbs or more) for approximately nineteen (19) weeks. A wean-to-finish pig is housed for approximately twenty-five (25) weeks. Two wean-to-finish pig groups per building per year will be housed in the production building. One nursery pig group per building per year will be housed for approximately six (6) weeks in the production building. It is expected that the production buildings will house pigs for approximately fifty (50) weeks per year and be empty for approximately two (2) weeks per year for cleaning between groups.

The IDEM Guidance Manual "Manure Application Land Base Estimates" Table (page 52) states that one (1) acre per 80 nursery pigs and one (1) acre per 17 grower/finishing pigs per year is required to provide sufficient land application acres to land apply the manure and process wastewater. The required manure application land requirement is determined as follows.

To determine the maximum number of acres required by the Indiana Department of Environmental Management Guidance Manual it is assumed that each building houses one group of 4,400 nursery pigs for approximately six (6) weeks per year (one – 6 week period) and two groups of 4,400 wean-to-finish pigs for approximately fifty (50) weeks per year [nursery pigs (weighing less than 55 pounds) for approximately twelve weeks per year (two – 6 week periods) and grow-to-finish pigs (weighing 55 pounds or more) for approximately thirty-eight (38) weeks per year (two – 19 week periods)].

Wean-to-finish building
Nursery pigs < 55 lbs
4,400-head x 6 weeks/group x 1 groups/yr ÷ 52 weeks/yr ÷ 80 pigs/acre = 6.4 acres

Wean-to-finish pigs < 55 lbs (Nursery pigs)
4,400-head x 6 weeks/group x 2 groups/yr ÷ 52 weeks/yr ÷ 80 pigs/acre = 12.7 acres

Wean-to-finish pigs > 55 lbs (Grow/finish pigs)
4,400-head x 19 weeks/group x 2 groups/yr ÷ 52 weeks/yr ÷ 17 pigs/acre = 189.2 acres

Total land application acres required per building: (6.4 + 12.7 + 189.2) acres = **208.3 acres**

Total land application acres required: 208.3 x 2 bldgs. = **416.6 acres**

Available land application acres:
Liquid manure and process wastewater land application methods utilized are typically injection or single-pass incorporation. When necessary, manure and process wastewater land application methods utilized may include surface application with incorporation and surface application. In the case, where surface application of manure and process wastewater is conducted, it is not expected that the annual volume of manure and process wastewater would be land applied using surface application methods. The available land application acres are determined after setbacks are calculated. The required setbacks for incorporation or single-pass incorporation were calculated based on a setback of:

- 0 feet from property lines and public roads;
- 5 feet from drainage inlets;
- 50 feet from wells; and
- 25 feet from surface water.

When surface application is conducted on land application fields with less than 6% slope the required setbacks used to calculate available acres are:

- 50 feet from property lines and public roads;
- 100 feet from drainage inlets;
- 100 feet from wells; and
- 100 feet from surface water.

If surface application is conducted on land application fields with greater than 6% slope the required setbacks used to calculate available acres are:

- 50 feet from property lines and public roads;
- 200 feet from drainage inlets;
- 200 feet from wells; and
- 200 feet from surface water.

The total number of acres included in the areas designated for land application is 485.846 acres. The available land application acres after setbacks are calculated when using injection or single-pass incorporation includes approximately 485.846 acres. The available land application acres after setbacks are calculated when using surface application methods include approximately 441.053 acres.

Available land application acres are indicated on the USDA-NRCS soil survey maps and USGS topographic maps (plot maps) included as part of the CFO / CAFO Application Packet. Available acres presented on the plot maps are determined based on the setbacks required for liquid injection or single-pass incorporation (liquid or solid). Land Application Agreements are included for all land application sites not owned by Pumps Hogs LLC. The total number of acres (without setbacks calculated) and available acres (with setbacks calculated) presented on the Land Application Agreements is determined based on the setbacks for liquid injection or single-pass incorporation.

The available land application acres when using incorporation or single-pass incorporation 485.846 acres) and surface application (441.053 acres) exceeds the minimum number of acres required by 327 IAC 19-14-2 (416.6 acres).

Proposed Construction:

Design/Construction Plans:
Detailed plans for the proposed under-building concrete manure storage are included. These plans represent the physical dimensions and construction details for the below-building concrete manure storage. The requirements of 327 IAC 19-12-4(d) state that "*All liquid manure storage facilities must be constructed according to the Indiana NRCS Conservation Practice Standard Code 313: Waste Storage Facility, September 2005.*" The requirements of the Indiana NRCS Conservation Practice Standard Code 313; Waste Storage Facility were considered in the design and planned construction of the concrete manure storage structure.

Specifically, the foundation of the concrete liquid manure storage is designed based on the presumptive soil bearing capacity (NRCS Standard 313: Table 3) to support anticipated loads without excessive movement or settlement. The concrete liquid manure storage is designed and will be constructed in accordance with standard engineering and industry practices, (i.e. American Concrete Institute, Portland Cement Association, Midwest Plan Service) to achieve water tight construction consistent with the construction practice and application. Waterstops at all concrete joints where water tightness is required will be used. The concrete manure storage is designed and will be constructed to withstand anticipated loads, including the lateral earth pressures outlined in the NRCS Conservation Practice Standard Code 313: Waste Storage Facility Table 4. Floor slabs will be constructed with a minimum thickness of 5 inches and the required area of reinforcing steel is determined based on the subgrade drag theory.

The requirements of 327 IAC 19-12-4(e) state:
"*In addition to subsection (d), all concrete manure storage facilities must be constructed according to either of the following design standards:*
(1) MWPS-36: Reinforced Concrete Manure Storages, Second Edition, 2005.*
(2) TR-9: Circular Concrete Manure Tanks, March 1998.*

The requirements of MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005 were considered in the design and planned construction of the concrete liquid manure storage structure. Specifically, the manure storage construction is based on the design and construction procedures presented in this design standard, including design and construction data (Table 2-1), load table (Tables 2-2, 2-4), design tables (Tables 3-1, 3-2, 3-3, 3-10, 3-11, 3-14, 3-15), design equations (Appendix C), and top of wall beam support (Appendix D). Site-specific designs are included for components of the construction plans that are based on NRCS Standard 313 and MWPS-36 but are not specifically presented in the design tables of MWPS-36. An "Alternative Design or Compliance Approach" request is included as part of the Confined Feeding Operation Approval application requesting approval of concrete manure storage design specifications that are not presented in MWPS-36: "Rectangular Concrete Manure Storages, Second Edition, 2005", demonstrating compliance with the performance standards, and compliance with the criteria for the Commissioner's determination.

The requirements of 327 IAC 19-12-4(e) state "*All concrete structures must be constructed according to the Indiana NRCS Construction Specifications, Concrete Construction, October 2005.*" The concrete design summary and concrete construction specifications detail the design assumptions and construction standards used in the design. A site specific concrete construction specification adapted from the Natural Resource Conservation Service Construction Specification: Concrete Construction: October 2005 is included describing the concrete construction specifications to be used during construction.

Soils Investigation:
The requirements of 327 IAC 19-7-1(c)(6) state "*The number of test holes must be sufficient to adequately characterize the seasonal water table and soil.*" The requirements of NRCS Conservation Standard 313 states that "*A geological exploration shall be conducted for all manure storage facilities. The exploration shall be intensive enough to adequately characterize the site. A minimum of two holes shall be explored.*" Standard 313 also states that "*Soil sampling shall follow guidance in the National Engineering Manual (NEM) IN531-2.*"

A review of IN531-2 identifies that a soil investigation is to be conducted to document the engineering properties of the soil, to be conducted by a qualified soil scientist, to include excavations that are at least

two feet below the planned bottom of the concrete manure storage, to include a log of the soil profile from the ground surface to the bottom of the excavation using the Unified Soil Classification System (USCS), to identify the depths where the soil classification changes, to identify the depth of the water table observed in the excavation, to identify the depth of the seasonal water table, and to identify the parent soil material. Indiana Supplement IN531-2 indicates that a minimum of two (2) soil borings for sites up to a ½ acre and one (1) additional soil boring for each additional ½ acre should be conducted.

The footprint of the concrete manure storages is approximately 68,172 ft^2 (1.57 acres). At least four (4) soil borings should be completed in accordance with Indiana Supplement IN531-2.

An on-site soil investigation was completed by Lewis Flohr on April 29, 2016. Four soil borings within the area of the proposed buildings were completed to determine the soil characteristics and presence or absence of a seasonal water table. The on-site soil investigation report identifies the soil profile from the ground surface to the bottom of the excavation using the USDA texture classification method. An equivalent unified soil classification system (USCS) designation is provided. The soil classifications identified in the soil investigation report for borings within the area of the proposed buildings are as follows:

An on-site soil investigation was completed by Lewis Flohr on April 29, 2016. Four soil borings within the area of the proposed buildings were completed to determine the soil characteristics and presence or absence of a seasonal water table. The on-site soil investigation report identifies the soil profile from the ground surface to the bottom of the excavation using the USDA texture classification method. An equivalent unified soil classification system (USCS) designation is provided. The soil classifications identified in the soil investigation report for the four borings include silt loam (SIL, ML), silty clay loam (SICL, ML-CL), clay loam (CL, CL), and loam (Loam, CL). The on-site soil investigation demonstrated that a seasonal water table exists within the footprint of the proposed concrete manure storage structures.

Referring to the on-site soil investigation the soil profile log indicates the following.

North Building, 1P
Boring #1 (north building):

Depth	Texture
0"-8"	silt loam (SiL, ML)
8"-12"	silt loam (SiL, ML)
12"-24"	silty clay loam (SiCL, ML-CL)
24"-38"	silty clay loam (SiCL, ML-CL)
38"-51"	silty clay loam (SiCL, ML-CL)
51"-64"	clay loam (CL, CL)
64"-70"	loam (Loam, ML)
70"-96"	loam (Loam, ML)

Seasonal water table – 12" below surface

Boring #2 (north building):

Depth	Texture
0"-8"	silt loam (SiL, ML)
8"-12"	silt loam (SiL, ML)
12"-20"	silty clay loam (SiCL, ML-CL)
20"-38"	silty clay loam (SiCL, ML-CL)
38"-49"	silty clay loam (SiCL, ML-CL)
49"-68"	silty clay loam (SiCL, ML-CL)
68"-82"	clay loam (CL, CL)
82"-96"	loam (Loam, ML)

Seasonal water table – 8" below surface

South Building, 2P

Boring #1 (south building):

Depth	Texture
0"-9"	silt loam (SiL, ML)
9"-17"	silty clay loam (SiCL, ML-CL)
17"-26"	clay loam (CL, CL)
26"-38"	clay loam (CL, CL)
38"-45"	loam (Loam, ML)
45"-96"	loam (Loam, ML)

Seasonal water table – 17" below surface

Boring #2 (south building):

Depth	Texture
0"-8"	silt loam (SiL, ML)
8"-13"	silt loam (SiL, ML)
13"-24"	silty clay loam (SiCL, ML-CL)
24"-38"	silty clay loam (SiCL, ML-CL)
38"-54"	silty clay loam (SiCL, ML-CL)
54"-72"	clay loam (CL, CL)
72"-96"	loam (Loam, ML)

Seasonal water table – 8" below surface

The information provided by the on-site soil investigation indicates that the soil properties are uniform and that a seasonal water table exists within the footprint of the proposed below-building concrete manure storages.

According to the USDA-NRCS Web Soil Survey of Carroll County, one (1) predominant soil type exists in the area of the footprint of the proposed buildings. The predominant soil type is Fincastle-Starks silt loam, 0 to 2 percent slopes (FaA). Soil textures within the Fincastle-Starks silt loam soil type (FaA) include silt loam, silty clay loam, clay loam, and loam. The seasonal water table for the Fincastle-Starks silt loam soil type (FaA) is approximately 6 to 24 inches.

Referring to the USDA-NRCS Web Soil Survey for Carroll County the soil profile log indicates the following.

Fincastle-Starks silt loam, 0 to 2 percent slopes (FaA)

Depth	Texture
0"-10"	silt loam
10"-13"	silt loam
13"-27"	silty clay loam
27"-50"	clay loam
50"-59"	loam
59"-79"	loam

Seasonal water table – 6"-24" below surface

The information provided by the USDA-NRCS Web Soil Survey indicates that the soil properties are uniform and that a seasonal water table exists within the footprint of the proposed below-building concrete manure storages.

The depth of the foundation and floor of the below-building concrete manure storages will be located approximately 48" – 60" below the existing ground surface. The below-ground concrete manure storage design includes a perimeter tile drainage system with a tile riser observation point and a collection sump to manage any potential seasonal water table at or below the concrete below-building manure storage tanks. Tile riser observation sumps are located at the southeast corner of building 1P and at the northeast corner of building 2P to collect and direct groundwater away from the building foundation. Groundwater from the proposed building tile riser observation sump will be pumped to a surface rock distributor located at least 50 feet east and to the middle of the proposed buildings. The rock distributor outlet is at least 50 feet from the property boundary in the direction of water flow. Water from the rock distributor

will be directed to a grassed infiltration area and is planned to join the natural drainage pattern around the buildings.

Site Features and Details:

Site Features:

Karst and mines:
Based on a review of information available from the Indiana Department of Environmental Management, Indiana Department of Natural Resources (DNR) and the Indiana Geological Survey (IGS), the proposed building site is not located in a karst area, area prone to sinkholes or in close proximity to mines. A review of the Indiana Department of Environmental Management "Karst Areas of Indiana where Confined Feeding Operations are restricted" map confirms that Carroll County is not shown on this map and that karst areas are not located near the confined feeding operation site. An aerial map (IGS IndianaMAP) of the area surrounding the proposed confined feeding operation is included in the plot maps section documenting this determination. No karst areas, areas prone to sinkholes, or mines are identified on the map. A proximity to mines determination and karst terrain determination are included as part of the plot maps section.

Surface water features:
A review of information available from the Indiana Geological Survey (IGS IndianaMAP) indicates that the proposed buildings and concrete manure storages may be located within 300 feet of surface water features (streams, rivers, canals, ditches, artificial paths, coastlines, connectors, and pipelines). The surface water features are shown as blue lines indicating streams. An on-site inspection of the building location and the area within at least 300 feet of the building location confirms the features shown on the IGS IndianaMap are surface drainage patterns and not streams.

A review of the information available from the Indiana Geological Survey (IGS IndianaMAP) indicates that a potential stream is located approximately 272 feet south of the proposed concrete manure storage structures and approximately 225 feet from the proposed mortality compost building. The potential stream depicted on the IGS IndianaMAP is natural field and surface drainage. The distance of the natural field and surface drainage from the proposed concrete manure storage structures is depicted on the IGS IndianaMAP. An aerial map (IGS IndianaMAP) of the area surrounding the proposed confined feeding operation is included in the plot maps section documenting this determination. A surface water determination demonstrating that the potential streams depicted on the IGS IndianaMAP are natural field and surface drainage is included as part of this section (Site Features and Details).

Surface water features 327 IAC 19-7-3(a)(1) & 327 IAC 19-12-3(a)(2)(A):
A review of the Indiana Geological Survey (IGS) Indiana Maps indicates that surface water features (streams, rivers, canals, ditches, artificial paths, coastlines, connectors, and pipelines) depicted on the IGS IndianaMAP are natural field and surface drainage. The features are indicated as blue lines on the Indiana Map when the Hydrology Water Bodies Streams LocalRes layer is turned on. An on-site inspection confirms that the stream surface water feature depicted south of the confined feeding operation site and proposed manure storages on the map does not exist.

A review of the "Layer Information" for the Hydrology Water Bodies Streams LocalRes layer indicates that the layer represents "streams, rivers, canals, ditches, artificial paths, coastlines, connectors, and pipelines in watersheds in and around Indiana." The "Layer Information" also points out that "The National Hydrography Dataset (NHD) is a feature-based database that interconnects and uniquely identifies the stream segments or reaches that make up the nation's surface water drainage system." This layer depicts blue lines approximately 272 feet south from the proposed building and concrete manure storage location. An on-site inspection of the proposed location of the concrete manure storage confirms that the area is tillable crop land and a portion of the production area.

The site investigation confirms that the blue lines identified on the IGS IndianaMAP are not streams but are field drainage patterns and that a surface water feature does not exist. Based on the site investigation and aerial maps there are no clear surface water channels or stream banks depicted within the area surrounding the building to the northwest.

327 IAC 19-7-3(a)(1) requires that surface waters of the state be shown on the farmstead plan. 327 IAC 19-12-3(a)(2)(A) requires that waste management systems must be located to maintain a minimum setback distance of 300 feet from surface water. The definition of "Surface water" in 327 IAC 19-2-45 states "Surface water" means waters present on the surface of the earth, including: (1) streams; (2) lakes; (3) ponds; (4) rivers; (5) swamps; (6) marshes; or (7) wetlands.

A review of 327 IAC 19-2. Definitions and IC 13-11-2 Definitions (referred to in 327 IAC 19-2-1) does not reveal a definition for "stream". Since there is no definition for "stream" in the rule or statute, Merriam-Webster is consulted for a definition. According to Merriam-Webster the definition for "stream" is "a body of running water (as a river or brook) flowing on the earth; also: any body of flowing fluid (as water or gas). [*Merriam-Webster.com.* Merriam-Webster, n.d. Web. 17 Apr. 2015. ,http://www.merriam-webster.com/dictionary/stream>.]

The site investigation of the building site and area surrounding the building site confirms that there is no evidence of waters present on the surface of the earth or a body of running water flowing on the earth (stream) to the south within 500 feet of proposed manure storage structures. A study of the features depicted on the aerial photographs available from the IGS IndianaMAP of the building site indicates that there is no evidence of waters on the surface of the earth or a body of running water flowing on the earth (stream) within 500 feet south of the proposed manure storage structure.

It is confirmed that the surface water (stream) depicted on the IGS IndianaMap south of the proposed concrete manure storages does not exist. It is concluded based on this investigation and evidence that no streams or surface bodies of water exist within 500 feet of the proposed manure storage structure to the south in compliance with the setback requirements of 327 IAC 19-12-3(a)(2)(A).

Wetland surface water features:
A review of information available from the Indiana Geological Survey (IGS IndianaMAP) and the National Wetlands Inventory (NWI) indicates that the proposed buildings and concrete manure storages are not located within 300 feet of a wetland surface water feature. An aerial map (IGS Indiana Maps) and National Wetlands Inventory (NWI) map of the area surrounding the proposed confined feeding operation are included in the plot maps section documenting this determination.

Floodplain:
Information available from the Indiana Geological Survey (IGS), Indiana Department of Natural Resources Indiana Floodplain Information Portal, and FEMA Flood Insurance Rate Map (FIRM) confirms that the proposed confined feeding operation is not located within a flood plain or 100-year floodway. An aerial map (IGS Indiana Maps) and FEMA Flood Insurance Rate Map (FIRM) of the area surrounding the proposed confined feeding operation are included in the plot maps section documenting this determination.

Water wells:
Information available from the Indiana Department of Natural Resources (IDNR) was reviewed to determine the location of any recorded off-site and on-site wells. The IDNR information indicates that two off-site wells may be located within approximately 375 feet (map distance) of the proposed below-building concrete manure storages. The location of one of these wells (Well ID#124428) is denoted by a blue circle on the IDNR Record of Water Well map indicating that the location is actual or known. The location of the off-site well is approximately 372 feet from the north concrete manure storage structure confirming it is not located within 300 feet of the proposed concrete manure storage. The location of one of the wells (Well ID#'s 52731) is denoted by a green triangle on the IDNR Record of Water Well map indicating that the location is estimated. A review of the Record of Water Well Reports for this well indicates that the well is not located within 300 feet of the proposed below-building concrete manure storage. At least one on-site well is planned at least 100 feet from the proposed below-building concrete manure storages. An Indiana Department of Natural Resources Record of Water Well map is included in the plot map section documenting this determination. A water well determination is included as part of the plot maps section.

Plot maps (327 IAC 19-7-1(c)(2)):
In accordance with 327 IAC 19-7-2, United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) soil survey maps and United States Geological Survey (USGS) topographical maps are included to confirm the location of the proposed confined feeding operation (CFO). The USGS topographical maps depict the area within at least one thousand (1,000') feet of the manure storage facilities. No public water supply wells or public water supply surface intake structures are located within 1,000 feet of the manure storage facilities. The plot maps show the location of the waste management systems, boundaries of the CFO property, boundaries of the production areas, boundaries and owners of the manure application areas, and available manure application acres.

Off-site residential and public building setback.
The farmstead plan (Plan Sheets 2A) to the best knowledge of Pumps Hogs LLC includes all residences, public buildings and other features of concern within at least 500 feet of the waste management system and within the area depicted on the farmstead plan. The requirements of 327 IAC 19-12-3(a)(4) state waste management systems must be located to maintain the minimum setback distance of four hundred (400) feet from existing off-site residential and public buildings. The closest off-site residential building is approximately 1,000 feet from the proposed concrete manure storage structures. There are no public buildings within 400 feet of the concrete manure storage.

Adjacent or contiguous animal feeding operation (327 IAC 19-7-1(c)(11).
The requirements listed in 327 IAC 19-7-1(c)(11) state that a complete application must include "*a statement affirming that AFOs adjacent to or contiguous with the CFO are not under common ownership or control of the applicant.*" It is confirmed that there are no animal feeding operations (AFOs) that exist adjacent to or contiguous with the proposed confined feeding operation (CFO) owned by Pumps Hogs LLC. The answer to Item I.F. of the General Information Section of the CFO / CAFO Application Packet indicates that there are no AFOs adjacent to or contiguous with the CFO that are under common ownership or control of Pumps Hogs LLC. However, because there are no animal feeding operations adjacent to or contiguous with the existing confined feeding operation Pumps Hogs LLC is not able to submit an affirmation statement that is consistent with the requirements of 327 IAC 19-7-1(c)(11).

In place of a statement affirming that AFOs adjacent to or contiguous with the CFO are not under common ownership or control of the applicant, Pumps Hogs LLC affirms that there are no animal feeding operations (AFOs) located adjacent to or contiguous with the proposed confined feeding operation (CFO).

Farmstead Plan (327 IAC19-7-1(c)(3):
Farmstead plans are included to confirm the confined feeding operation location and site details. Farmstead plan sheet 1A is a site location map depicting the location of the confined feeding operation. Farmstead plan sheet 2A to the best knowledge of Pumps Hogs LLC includes all features identified in 327 IAC 19-7-3(a) within 500 feet of the below building concrete manure storages and within the area depicted on the farmstead plan, where applicable. Specifically, the farmstead plans include: 1) surface waters of the state; 2) public and private roads; 3) water well locations; 4) production area surface drainage patterns; 5) property boundary lines; 6) outfalls of known subsurface drainage structures including perimeter drain outfalls; 7) drainage inlets including water and sediment control basins; 8) mortality management sites; and 9) residences. No karst features exist within 500 feet of the below-building concrete manure storages.

In accordance with 327 IAC 19-7-3(b)-(g), the farmstead plans show the diversion of uncontaminated surface water, include the number and type of animals, are legible and drawn to scale, show distances between the waste management system and features of concern within at least 500 feet (as applicable), include a reference to true north, indicates the presence or absence of a one hundred (100) year flood plain, and are submitted on eight and a half (8-½) inch by eleven (11) inch or eleven (11) inch by seventeen (17) inch paper.

Mortality Management (327 IAC 19-7-6):
Mortalities are managed at an on-site mortality compost facility. Mortalities are removed from the buildings and delivered to the mortality compost facility to ensure that there will not be a discharge of mortalities or liquids that have come in contact with mortalities to waters of the state and that mortalities will not be

disposed of in the manure storage structures. Alternate mortality management methods may be used when necessary in accordance with the methods described in 345 IAC 7-7-3.

Applicant and Business Entity:
Pumps Hogs LLC has applied for a confined feeding operation approval from the Indiana Department of Environmental Management. Pumps Hogs LLC is a registered business entity with the Indiana Secretary of State. Pumps Hogs LLC meet the definition of a person as defined in IC13-11-2-158 Version a and IC 13-11-2-158 Version b. The applicant is Pumps Hogs LLC and it is requested that the confined feeding operation approval and construction authorization be issued to Pumps Hogs LLC.

Owner / Operator:
Item I.B. Applicant (Person or entity the CFO Approval is issued to) of the General Information Section of the CFO / CAFO Application Packet states:

> "The Applicant is the Owner/Operator that applies for or has received a CFO Approval under 327 IAC 19, including renewals and amendments. An Applicant may be an individual, a partnership, a copartnership, a firm, a company, or any other entity listed under IC 13-11-2-158(b). There may be more than one entity that constitutes an Owner/Operator. Each entity that meets the definition of Owner/Operator for the CFO must submit the requested information below."

Pumps Hogs LLC owns the waste management systems at the CFO (confined feeding operation). Pumps Hogs LLC operates the confined feeding operation. Pumps Hogs LLC is in direct or responsible charge or control of the confined feeding operation.

There is one Owner/Operator for the confined feeding operation. Pumps Hogs LLC is the Owner/Operator. In accordance with the instructions of the General Information Section of the CFO / CAFO Application Packet the requested information has been provided in the CFO / CAFO Application Packet and no additional information is required.

Deeded Land Owner (At the time of Application Submittal):
Item I.C. Property Owner (At the Time of Application Submittal) of the General Information Section of the CFO / CAFO Application Packet requests that the property owner at the time of application be identified.

Jon Templin is the current deeded property owner of the land parcel where the proposed confined feeding operation is to be located. A review of the information available from the Carroll County Recorder Office (Beacon Carroll County, IN; https://beaconbeta.schneidercorp.com/Application.aspx?AppID=377&LayerID=5553&PageTypeID=4&PageID=2980&KeyValue=08-12-03-000-002.000-005) confirms the deeded property owner at the time of application to be Jon Templin.

Pumps Hogs LLC will own the manure storage facilities, manure transfer systems, and confinement building (waste management system). Pumps Hogs LLC plans to purchase a land parcel with the property boundaries depicted on the farmstead plan and plot maps where the proposed confined feeding operation is to be located from Jon Templin. The land purchase will be completed once a Confined Feeding Operation Approval and construction authorization is received from the Indiana Department of Environmental Management and all Carroll County approvals are obtained.

For confirmation, Jon Templin does not own the the waste management systems at the confined feeding operation and are not in direct or responsible charge or control of the confined feeding operation or land application activity. Jon Templin does not have an ownership interest in the livestock and has not applied for, intend to apply for, or receive a confined feeding operation approval for this confined feeding operation. Therefore, in accordance with 327 IAC 19-2-32 Jon Templin is not an "Owner/operator".

Disclosure statement responsible parties:
Per IC 13-11-158(b), Pumps Hogs LLC is defined as a person. Pumps Hogs LLC has applied for a confined feeding operation approval from the Indiana Department of Environmental Management under IC 13-18-10-2 and is defined as the applicant per IC 13-11-2-8. In accordance with IC 13-11-2-191(a)(1),

the responsible parties for this confined feeding operation are Pumps Hogs LLC and James Templin. There are no other responsible parties for this confined feeding operation.

Property Boundary:

327 IAC 19-7-2 requires that the "boundaries of the property of the CFO" be shown on the plot maps (USDA-NRCS soil survey map and USGS topographical map). 327 IAC 19-7-3 requires that the "Property boundary line" within five hundred (500) feet of the waste management systems must be shown on the farmstead plan. 327 IAC 19-12-3 establishes minimum setback distances for the waste management systems and "Property lines".

In accordance with 327 IAC 19-7-2 the "boundaries of the property of the CFO" are depicted on the plot maps. The CFO property boundary is shown as a green outline on the plot maps.

In accordance with 327 IAC 19-7-3 the "Property boundary line" of all land parcels included in the Confined Feeding Operation is depicted on the farmstead plan. The property boundary line that represents the perimeter and boundary of the property of the CFO is depicted as a dashed line and labeled "CFO Property Boundary" on the farmstead plan. The confined feeding operation is located on one land parcel according to information obtained from the Carroll County Recorder Office. No other property boundary lines are required to be depicted on the farmstead plan.

Notification Requirements:

Item I.A. Notification Requirements of the Notification Requirements Section of the CFO / CAFO Application Packet states:

> "Answer all four questions below. If an action is listed to the right of your answer, complete the section(s) listed. If none of your answers require an action, then no notice is required and the form is complete. If further action is required, read Section I.B. and Section I.C. below regarding proper notice requirements, materials, and certification."

The answers to the four questions in Item I.A. Notification Requirements indicate that:

> Section II.A. County Executive / County Commissioner List,
> Section II.B. One-Half (1/2) Mile List,
> Section II.C. Adjoining Land Owner List,
> Section III. Potentially Affected Parties List

be completed. A list of the county executive/county commissioners and each owner and occupant of land within one-half (1/2) mile or less of the footprint of the production structures and manure storage structures is provided in Section II.A and II.B of the Notification Requirements Section. The current deeded land owner of the land parcel where the proposed confined feeding operation is located is Jon Templin. Since the purchase of the land parcel associated with the confined feeding operation has not been completed, a list of each person who owns land that adjoins the contiguous land owned by Jon Templin that is not within one-half (1/2) mile or less of the proposed confined feeding operation is provided in Section II.C of the Notification Requirements Section.

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

Submitted to:

Indiana Department of Environmental Management
Confined Feeding Permits Section
Office of Land Quality
100 N Senate Avenue
MC 65-45 IGCN 1101
Indianapolis, Indiana 46204

Prepared for:

Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

CFO Site Location:
State Road 1 and CR 200 S (east side of State Road 1)
Bringhurst, Indiana 46913
Carroll County
USGS Quad: Pyrmont
Section 3, T23N, R2W

CFO / CAFO APPLICATION PACKET

State Form 55051 (R2/ 6-15)

Prepared by:
LIVESTOCK ENGINEERING SOLUTIONS, INC.

Michael A. Veenhuizen, Ph. D.
2967 S. Honey Creek Road · Greenwood, IN 46143 · (317) 535-1829

CFO / CAFO APPLICATION PACKET

State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: *Use this application packet to submit the following types of Confined Feeding Operation (CFO) and Concentrated Animal Feeding Operation (CAFO) applications to the Indiana Department of Environmental Management (IDEM):*

1. *CFO Approval – New Approval, Construction Approval (Expansion), Amendments, and Renewals*
2. *NPDES CAFO Individual Permit – Construction and Permit Coverage*
3. *NPDES CAFO Individual Permit – Permit Modification*
4. *NPDES CAFO Individual Permit – Permit Renewal*

The application packet contains the following checklist, worksheet, and forms:

1. *Application Type and Requirements Worksheet*
2. *General Information*
3. *Notification Format for Agency Correspondence*
4. *Fee Transmittal*
5. *CFO and CAFO New Construction Permit Application Checklist*
6. *NPDES Application*
7. *Animal Capacity*
8. *Farmstead Plan*
9. *Construction*
10. *Manure Management Plan (MMP)*
11. *Plot Maps*
12. *Disclosure Statement*
13. *Notification Requirements*
14. *Marketing and Distribution of Manure*
15. *Certification of Required Acreage for Land Application*

The checklist, worksheet, and forms are required and supersede all previous versions. IDEM will not accept substitutes, altered or previously supplied forms.

Start with the "Application Type and Requirements Worksheet." The worksheet will assist you in identifying the application type and necessary application forms for a complete application. You do not have to submit any forms that are not required for the type of application you are submitting. The worksheet and the "CFO and CAFO New Construction Permit Application Checklist" are designed to help you submit a complete application. An incomplete application will delay approval of your project.

The application fee will not be refunded if a construction application is deemed significantly incomplete and is returned to the applicant.

You must submit three (3) complete copies of all construction applications, one (1) of which may be electronic in a PDF file format.

This application packet is based on the requirements in IC 13-18-10, 327 IAC 19, and 327 IAC 15-16. You can view the Indiana Code (IC) and Indiana Administrative Code (IAC) references in this application at iga.IN.gov. IC references are under the "Laws" link. IAC references are under the "Publications" link.

NOTE: *If you need to register a bio-digester on the CFO property, you must also submit a "BIOMASS ANAEROBIC DIGESTER/GASIFICATION FACILITY REGISTRATION APPLICATION" (State Form 55309) that is not included in this packet.*

If you need assistance in identifying your specific application type, materials which must be submitted, or have questions regarding the permitting process, please contact IDEM at the phone number above.

Application Type		Application Checklist and Sections from this Form which Must Be Completed for Application Type															
		Required Number of Copies	General Information	Correspondence Notification	Fee Transmittal	CFO CAFO Construction Checklist	NPDES Application	Animal Capacity	Farmstead Plan	Construction	MMP	Plot Maps	Disclosure	Notice	Marketing and Distribution	Acreage Certification
CFO Approval – Construction and/or Operation (Including Renewals)																
A.	Completely New Operation (Currently Undeveloped Site)	3	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Optional – See M&D Section of Form	No
B.	Existing Operation without Existing CFO Approval	3	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes		No
C.	Existing Operation with Expired CFO Approval	3	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes		No
D.	Expansion of Operation with Current CFO Approval	3	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes
E.	Amendment of Existing CFO Approval – Permit Condition	3	Yes	Yes	No	No	No	Yes	Yes	No	Yes	Yes	No	Yes*		No
F.	Amendment of Existing CFO Approval – Change in the type or number of animals that increases manure production	3	Yes	Yes	No	No	No	Yes	Yes	No	Yes	Yes	No	Yes*		No
G.	CFO Approval Renewal/Manure Management Plan	1	Yes	Yes	No	No	No	Yes	Yes	No	Yes	Yes	No	No		No
NPDES CAFO Individual Permit – Construction and Permit Coverage																
H.	Completely New Operation (Currently Undeveloped Site)	3	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No**	Yes	Yes	Yes	No	No
I.	Existing Operation without Current CFO Approval or NPDES Permit															
J.	Existing Operation with Current CFO Approval														Opt	
K.	Current NPDES CAFO Individual Permit Holder Proposing Construction															
NPDES CAFO Individual Permit – Permit Modification																
L.	Construction or Expansion of Storage or Animals – No Permit Extension	3	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No**	Yes	Yes	Yes	Opt	No
M.	No Construction or Expansion of Storage or Animals – No Permit Extension					No				No	No		No			
NPDES CAFO Individual Permit – Renewal																
N.	Renewal of Coverage for Operation with Current NPDES CAFO Individual Permit	1	Yes	Yes	Yes	No	Yes	Yes	No	No	No	Yes	No	Yes	Opt	No

Yes = Required Form for Application Type
No = Not Applicable Form for Application Type (Not Required and Not Appropriate for Application Type)
Opt = Optional Form for Application Type (See Specific Form Listed for Details)
** Applicants using the form to request amendments do not have to notify county officials and affected parties that they submitted an application. For amendment applications, complete these pages so IDEM can notify county officials and affected parties of the decision.*
*** Submittal of a nutrient management plan per 327 IAC 15-16-9 by a CAFO that meets the requirements of 327 IAC 15-16-9 satisfies the requirements of IC 13-18-10-2.3 regarding submission of a manure management plan.*

CFO / CAFO APPLICATION PACKET
General Information

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS:

1. *Complete all general application information solicited below.*
2. *Provide the required signature(s) as directed.*
3. *Select the application type.*

This form is required and supersedes all previous versions. IDEM will not accept substitutes, altered or previously supplied forms.

I. GENERAL APPLICATION INFORMATION

A. OPERATION INFORMATION

Operation Name:	Pumps Hogs LLC	Farm ID Number:	
Operation Address:	W 500 S (CR 500 S and US Highway 421)		
Operation City:	Bringhurst	Operation ZIP Code:	46913
Operation Telephone:	574-228-1619		
Operation County:	Carroll		
Nearest Crossroads to Operation:	CR 500 S and US Highway 421		

B. APPLICANT *(Person or entity the CFO Approval is issued to)*

The Applicant is the Owner/Operator that applies for or has received a CFO Approval under 327 IAC 19, including renewals and amendments. An Applicant may be an individual, a partnership, a copartnership, a firm, a company or any other entity listed under IC 13-11-2-158(b). There may be more than one entity that constitutes an Owner/Operator. Each entity that meets the definition of Owner/Operator for the CFO must submit the requested information below.

Name:*	Pumps Hogs LLC		
Mailing Address:	5200 S 500 W		
City:	Bringhurst		
State:	IN	ZIP Code:	46913
Telephone *(Home)*:			
Telephone *(Business)*:	574-228-1619		
Telephone *(Cell)*:			
Facsimile:		E-mail Address:	

***A limited liability company (LLC) or corporation (Inc. or Corp.) must be registered with the Indiana Secretary of State.**

C. PROPERTY OWNER *(At the Time of Application Submittal)*

☐ Same as Applicant Listed Above

Name:	Jon Templin		
Mailing Address:	5507 W 550 S		
City:	Bringhurst		
State:	IN	ZIP Code:	46913
Telephone *(Home)*:			
Telephone *(Business)*:	765-652-2823		
Telephone *(Cell)*:			
Facsimile:		E-mail Address:	

D. OPERATION MANAGER, OPERATOR, AND/OR LESSEE
(If Different than Applicant or manager and/or authorized agent for Entity)

☐ Same as Applicant Listed Above OR Person listed below is: ☐ Manager ☒ Operator ☐ Lessee

Name:	James Templin		
Mailing Address:	5200 S 500 W		
City:	Bringhurst		
State:	IN	ZIP Code:	46913
Telephone *(Home)*:			
Telephone *(Business)*:	574-228-1619		
Telephone *(Cell)*:			
Facsimile:		E-mail Address:	

RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

E. CURRENT OPERATION PERMIT INFORMATION

Current Permit/Approval Type *(check one)*:

☐ CFO Approval

☐ NPDES CAFO Individual Permit

☒ None - New Facility

☐ None - Expired Approval or Expired Permit

_____ Farm ID (Log ID) Number (Current or expired)

_____ Current/Last Approval (Animal Waste) Number

F. ADJACENT OR CONTIGUOUS ANIMAL FEEDING OPERATIONS (AFOs)

Are there any AFOs adjacent to or contiguous with the CFO that are under common ownership or control of the applicant? ☐ Yes ☒ No

If yes, provide a statement identifying the AFOs and describing the common ownership. The response to this item will determine whether the AFOs will have to be incorporated into the CFO approval. Attach additional sheets as necessary.

II. SIGNATURES

I have reviewed all components and information contained within the accompanying forms and application materials. To the best of my knowledge and belief, such information is true, complete, and accurate. I am aware of the penalties for submitting false information under IC 13-30-10.1 and IC 35-44-2-1.

The agency decision based on the accompanying forms and application materials will be issued in the name of the person or entity listed as the applicant(s).

THIS SECTION MUST BE SIGNED.

I warrant that I have the authority to sign this Application on my own behalf, and on behalf of any entity for which I am signing in a representative capacity.

James Templin, Pumps Hogs LLC

Title and Name of Operation Owner or Authorized Agent* – ***Type or Print***

X James Templin — Signature of Applicant or Authorized Agent

X 5-5-16 — Date Signed *(month, day, year)*

X Jon Templin — Signature of Property Owner If Different than Operation Owner **

X 5-5-16 — Date Signed *(month, day, year)*

* A signature by an Authorized Agent will require Power of Attorney (POA) if not a member of the entity.

** A signed letter from the property owner acknowledging the submittal of an application on their property may substitute for signature.

III. APPLICATION TYPE

Using the Application Type and Requirements Worksheet, in the list below, select the application type which you are submitting. Please note that an Amendment of Existing CFO Approval and CFO Approval Renewal are the only situations where more than one box may be selected.

CFO Approval – Construction and/or Operation (Including Renewals)		
☒	A.	Completely New Operation (Currently Undeveloped Site)
☐	B.	Existing Operation Without Existing CFO Approval
☐	C.	Existing Operation with Expired CFO Approval
☐	D.	Expansion of Operation with Current CFO Approval
☐	E.	Amendment of Existing CFO Approval – Permit Condition
☐	F.	Amendment of Existing CFO Approval – Change in the type or number of animals that increases manure production
☐	G.	CFO Approval Renewal/Manure Management Plan
NPDES CAFO Individual Permit – Construction and Permit Coverage		
☐	H.	Completely New Operation (Currently Undeveloped Site)
☐	I.	Existing Operation without Current CFO Approval or NPDES Permit
☐	J.	Existing Operation with Current CFO Approval
☐	K.	Current NPDES CAFO Individual Permit Holder Proposing Construction
NPDES CAFO Individual Permit - Permit Modification		
☐	L.	Construction or Expansion of Storage or Animals – No Permit Extension
☐	M.	No Construction or Expansion of Storage or Animals – No Permit Extension
NPDES CAFO Individual Permit - Renewal		
☐	N.	Renewal Coverage for Operation with Current NPDES CAFO Individual Permit

CFO / CAFO APPLICATION PACKET
Notification Format for Agency Correspondence

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: The Indiana Department of Environmental Management (IDEM) normally notifies applicants of final decisions by mail. In 2012, Indiana Law changed to allow IDEM to use electronic mail instead of US Postal Service mail. This form allows you to specify whether you want to receive correspondence and notices related to your CFO or CAFO application by mail, by e-mail or both. It also allows you to specify if you want correspondence directed to a consultant by e-mail. Please complete the information below to indicate your preference.

I. GENERAL INFORMATION

Operation Name: Pumps Hogs LLC Farm ID Number: _____

Applicant Name *(printed)*: Pumps Hogs LLC (James Templin, contact)

Applicant Consent for Notification Only for This Permit Application *(initials and date)*: _____

Applicant Consent for Notification on All Future Applications/Correspondence *(initials and date)*: x JT 5-5-16

II. NOTIFICATION FORMAT

Applicant should understand that, as a result of consenting to electronic notification, e-mail address(es) listed below will be part of the agency's public record.

Please indicate your preference for the method of receiving these notifications by initialing and dating the appropriate lines below and then return the completed form to our office with your application.

Initials	Date *(month, day, year)*	
x JT	x 5-5-16	Please continue sending via US Postal Service mail.
		AND/OR
		Please send correspondence to the e-mail address as indicated below.
		I understand that my e-mail address will be part of the public record.
		E-mail address:
x JT	x 5-5-16	Please send copies of correspondence for this application to the following consultant e-mail address(es):
		I understand that this e-mail address will be part of the public record.
		Consultant e-mail address(es): Livestock Eng.Solutions, Inc.; jcase@livestockeng.com; mveenhuizen@livestockeng.com
x JT	x 5-5-16	I authorize the consultant(s) listed above to submit Construction Notifications on my behalf.

CFO / CAFO APPLICATION PACKET
Fee Transmittal

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: *This form must be used to transmit fees for all NPDES CAFO and CFO applications as required in IC 13-18-10-2(a)(5), IC 13-18-20-12, IC 13-18-20-11.5, 327 IAC 15-16-5(a)(2) and (3), 327 IAC 15-16-5(b)(1)(B), and 327 IAC 19-7-1(c)(9). This form is required and supersedes all previous versions. IDEM will not accept substitutes, altered or previously supplied forms. The application fee for each application type is listed in the table below. Locate the type of application to be submitted and the appropriate application fee amount. Make a check or money order for the appropriate application fee amount listed below payable to the Indiana Department of Environmental Management. For payment by Master Card or Visa please contact the office by telephone at 317-234-3099 Monday through Friday between the hours of 9:00am to 3:00pm.* ***Return only the Fee Transmittal Form and fee to:***

Indiana Department of Environmental Management
PO Box 3295
Indianapolis, IN 46206-3295

NOTE: ***A copy of the check or credit card receipt and a copy of this completed Fee Transmittal Form must be attached to all other submitted application materials. Submit these copies and all application information to:***

Indiana Department of Environmental Management
Confined Feeding Permits Section
Office of Land Quality
100 North Senate Avenue
IGCN 1101
Indianapolis, Indiana 46204

RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

I. APPLICANT INFORMATION

Name:	Pumps Hogs LLC	Farm ID Number:	
Mailing Address:	5200 S 500 W		
City:	Bringhurst		
State:	IN	ZIP Code:	46913
Telephone:	574-228-1619		
Operation County:	Carroll		

II. APPLICATION TYPE AND FEE AMOUNT

		Application Type	Fee Amount
CFO Approval – Construction and/or Operation (Including Renewals)			
☒	A.	Completely New Operation (Currently Undeveloped Site)	$100.00
☐	B.	Existing Operation without Existing CFO Approval	
☐	C.	Existing Operation with Expired CFO Approval	
☐	D.	Expansion of Operation with Current CFO Approval	
☐	E.	Amendment of Existing CFO Approval – Permit Condition	$0.00
☐	F.	Amendment of Existing CFO Approval – Change in the type or number of animals that increases manure production	
☐	G.	CFO Approval Renewal/Manure Management Plan	

II. APPLICATION TYPE AND FEE AMOUNT *(continued)*

Application Type			
NPDES CAFO Individual Permit – Construction and Coverage			
☐	H.	Completely New Operation (Currently Undeveloped Site)	$400.00
☐	I.	Existing Operation without Current CFO Approval or NPDES CAFO Permit	
☐	J.	Existing Operation with Current CFO Approval	
☐	K.	Current NPDES CAFO Individual Permit Holder Proposing Construction	
NPDES CAFO Individual Permit – Permit Modification			
☐	L.	Construction or Expansion of Storage or Animals – No Permit Extension	$400.00
☐	M.	No Construction or Expansion of Storage or Animals – No Permit Extension	$50.00
NPDES CAFO Individual Permit – Renewal			
☐	N.	Renewal of Coverage for Operation for Operation with Current NPDES CAFO Individual Permit	$300.00

CFO / CAFO APPLICATION PACKET
CFO / CAFO New Construction Permit Application Checklist

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: *1. The application **must** contain the following information.*
2. Indicate whether each item is provided. Mark the item "N/A" if the item is not applicable to your application.
Applications deemed significantly incomplete will be returned to the applicant.

REQUIRED INFORMATION	PROVIDED? (Y, N or N/A)
General	
I. Three (3) signed copies of the application packet provided by Indiana Department of Environmental Management (IDEM). One (1) of the copies may be electronic.	Y
II. Application Fee *(A copy of the check and the Fee Transmittal Form must be attached.)*	
A. CFO $100 B. NPDES Individual without construction $300 C. NPDES Individual with construction $400	Y
III. Disclosure Statement	Y
IV. Notification Requirement	Y
A. County Executive / County Commissioner List	Y
B. One-Half Mile List	Y
C. Adjoining Land Owner List	Y
D. Potentially Affected Parties List	Y
1. Copy of the mailing to the adjoining land owners and potentially affected parties	Y
E. Copy of Notification Affidavit	Y
Plot Maps *(must be legible)*	
I. USDA NRCS Soil Survey Map	Y
A. Location of the waste management system	Y
B. Property boundaries of the confined feeding operation	Y
C. Boundaries of all manure application areas	Y
D. Boundaries of livestock and poultry production areas	Y
E. Available acreage for manure application after calculation setbacks	Y
II. USGS Topographical Map	Y
A. Location of public water supply wells within 1,000 feet of the manure storage structure	Y
B. Location of public water supply surface intake structures within 1,000 feet of the manure storage structure	Y
C. Location of the waste management system	Y
D. Property boundaries of the confined feeding operation	Y
E. Boundaries of all manure application areas	Y
F. Boundaries of livestock and poultry production areas	Y
G. Available acreage for manure application after calculation setbacks	Y
Farmstead Plan *(Must be drawn to approximate scale or show specific distances between waste management system and features listed below that are within 500 feet. Plan must be submitted on paper no less than 8 ½ x 11 inches in size. Plan must also contain reference to true north.)*	
I. Location of existing and proposed waste management systems	Y
II. Location of any of the following within 500 feet of a waste management system (on-site or off-site)	
A. Residences	Y
B. Surface waters of the state	Y
C. Public and private roads	Y

REQUIRED INFORMATION Page 2	PROVIDED? (Y, N or N/A)
D. Water well locations	Y
E. Characteristics of karst terrain as identified in 327 IAC 19-2-24	Y
F. Drainage patterns	Y
G. Property boundary line	Y
H. All outlets of known tile drains or any other type of subsurface or surface drainage outlet	Y
I. Drainage inlets, including water and sediment control basins showing their outlets, and ponds with outlets	Y
J. Mortality management sites	Y
III. Show the diversion of uncontaminated surface water	Y
IV. Show the type and number of animals per structure	Y
V. Indicate any part of the CFO that is within 100 year flood plain	Y
Unapproved Waste Management System Drawings	
I. Detailed views	Y
II. Necessary cross sections to define all dimensions	Y
III. Construction materials	Y
IV. Elevations of the entire waste management system *(applicable only if relying on gravity flow)*	Y
Soil and Water Table Information	
I. Test Holes	Y
A. Must be conducted by certified soil scientist, professional geologist or professional engineer registered in Indiana	Y
B. Number of test holes must be sufficient to adequately characterize the seasonal water table and soil.	Y
1. Concrete storage structures	Y
a. Test hole must be two (2) feet below base of structure	Y
2. Earthen storage structures	NA
a. Test hole must be five (5) feet below base of structure for non-karst area	NA
b. Test hole must be to shallower of either bedrock or ten (10) feet below base of structure in karst area	NA
Manure Management Plan	
I. Procedures for soil testing	Y
A. Soil test must provide sufficient information about soil fertility to allow for nutrient recommendations (may not represent more than twenty (20) acres per sample)	Y
B. Frequency of soil test must be specified in the plan and at a minimum be conducted once every four (4) years	Y
II. Procedures for manure testing	Y
A. Manure test must provide sufficient information about manure content to allow for nutrient recommendations	Y
B. Frequency of manure test must be specified in the plan and at a minimum be conducted once every year	Y
C. One (1) manure test must be conducted for each type of manure generated	Y
III. Legible maps of manure application areas	Y
IV. Land use agreements signed by the property owners on whose property the manure will be applied	Y
V. If Applicable	
A. Alternate method proposed by applicant for managing of the manure	NA
B. Other practices to be used that assure the CFO meet the performance standards of 327 IAC 19-3-1	NA
C. Land application acreage requirements waiver, as described in 327 IAC 19-14-2(d)	NA
Nutrient Management Plan *(required for NPDES CAFO Individual permit applicants)*	
I. Any NPDES CAFO Individual Permit applicant must submit a nutrient management plan (NMP) with their application materials. The NMP should contain best management practices necessary to meet the requirements listed below, and any applicable effluent limitations and standards, including those specified in 40 CFR part 412. The NMP must, to the extent applicable:	
A. Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation and maintenance of the storage facilities	NA

REQUIRED INFORMATION Page 3	PROVIDED? (Y, N or N/A)
B. Ensure proper management of mortalities so that they are not disposed of in a liquid manure, storm water, or process wastewater storage or treatment system that is not specifically designed to treat animal mortalities	NA
C. Ensure that clean water is diverted, as appropriate, from the production area	NA
D. Prevent direct contact of confined animals with waters of the United States	NA
E. Ensure that chemicals and other contaminants handled on-site are not disposed of in any manure, litter, process wastewater, or storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants	NA
F. Identify appropriate site specific conservation practices to be implemented, including buffers or equivalent practices, to control runoff of pollutants to waters of the United States	NA
G. Identify protocols for appropriate testing of manure, litter, process wastewater, and soil	NA
H. Establish protocols to land apply manure, litter or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter or process wastewater	NA
I. Identify specific records that will be maintained to document the implementation and management of the minimum elements above	NA
Alternate Design or Compliance Approach; Innovative Technology *(if applicable)*	
I. Documentation that indicates that the performance standards in 327 IAC 19-3-1 will be met should include:	
A. Design specification that indicate adequate structural integrity	Y
B. Protective measures that reduce the potential for spills	NA
C. Existence of barriers or surface gradient that directs liquid way form features specified for protection	NA
D. Operational practices that provide additional protection	NA
E. Threats of adverse impacts to water quality or other specified sensitive areas	NA
F. Other criteria related to protection of the environment or human health	NA
Additional Attachments *(if applicable)*	
I. Copies of any written waivers related to reduction of setback distances	NA
II. Copies of all land use agreements as described in 327 IAC 19-14-2(b)	Y

CFO / CAFO APPLICATION PACKET
Animal Capacity

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: *Complete the table below by listing the total approved capacity of animals confined by the provided animal type listed. For applications which include a construction or expansion proposal, the total number of animals listed should reflect the total proposed maximum for any forty-five (45) day period within a twelve (12) month period as described on the Facility Detail Sheet submitted with the application. For renewal applications, the total number of animals listed should reflect the total approved animal capacity.*

ANIMAL INFORMATION

Animal Type		Total Approved Animal Capacity
Swine *Weighing More Than Fifty-five (55) Pounds*	Finishers	8,800
	Sows	
	Boars	
Swine *Weighing Less Than Fifty-five (55) Pounds*	Nursery Pigs	4,400
Cattle or Cow/Calf Pairs	Beef Cattle	
	Beef Calves	
	Dairy Heifers	
	Dairy Calves	
Mature Dairy Cattle	Dairy Cattle	
Veal Calves	Veal Calves	
Chickens Other than Laying Hens *Other Than a Liquid Manure Handling System*	Pullets	
Laying Hens and Broilers *Liquid Manure Handling System*	Broilers *Dry*	
	Broilers *Liquid*	
Laying Hens *Other Than a Liquid Manure Handling System*	Layers *Liquid*	
	Layers *Dry*	
Turkeys	Toms	
	Hens	
	Poults (0 to 5 Weeks old)	
Ducks *Other Than a Liquid Manure Handling System*	Ducks *Dry*	
Ducks *Liquid Manure Handling System*	Ducks *Liquid*	
Sheep and Lambs		
Horses		
Other *Specify:*		
Total		13,200

CFO / CAFO APPLICATION PACKET
Farmstead Plan

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
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Indianapolis, Indiana 46204
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INSTRUCTIONS: *Refer to the "Application Types and Requirements Worksheet" to determine if a Farmstead Plan is required for the type of application you are submitting. Prepare a Farmstead Plan that meets the requirements noted in the Section I Farmstead Plan Checklist. Attach the Farmstead Plan to this form. Complete the Facility Detail Information in Section IV using the Section II checklist and the examples in Section III. Check the boxes next to each item in Sections I and II as you verify that the Farmstead Plan and Facility Detail Information sheets are complete.*

I. FARMSTEAD PLAN CHECKLIST

☒	A.	The farmstead plan must be on a sheet no less than $8^{1}/_{2}$ inches by 11 inches in size.
☒	B.	The farmstead plan must show all existing and proposed waste management systems, and all of the following features within 500 feet of the waste management systems (label each feature): 1. Residences 2. Surface waters of the state 3. Public and private roads 4. Water well locations 5. Characteristics of karst terrain as identified in 327 IAC 19-2-24 6. Drainage patterns 7. Property boundary line 8. All outlets of known tile drains or any other type of subsurface or surface drainage outlet 9. Drainage inlets, including water and sediment control basins showing their outlets, and ponds with outlets 10. Mortality management sites
☒	C.	The farmstead plan must be legible and either: 1. Drawn to approximate scale; or 2. Show specific distances between the waste management systems and the features listed immediately above in section B that are within 500 feet of the existing or proposed waste management system.

II. FACILITY DETAIL INFORMATION CHECKLIST

Using the instructions below, complete the Section IV. Facility Detail Information sheet for all confinement and waste structures present or proposed at the site. If the rows of the provided Section IV. Facility Detail Information sheet are not properly sized for your needs, you may create your own table with the same column headers and required information listed below.

☒	A.	Label the Farmstead Plan – The waste management systems (confinement and waste structures) must be uniquely identified on the farmstead plan. Existing structures should be labeled with an "E". Proposed structure should be labeled with a "P". After labeling each building with a "P" or "E", number the structures. Your structures should be labeled as "E1", "E2", "E3", etc; or "P1", "P2", "P3", etc; or a combination of the two. Other unique labeling systems will be accepted.
☒	B.	Animal Type – Animal type(s) listed on Animal Information Attachment.
☒	C.	Number of Animals – The MAXIMUM APPROVED CAPACITY of the unit at any one time.
☒	D.	Solid or Liquid – Denote if the manure in the unit is handled as a solid or liquid.
☒	E.	Date Constructed – List the approximate date of construction for existing waste storage structures.
☒	F.	Water Uses (gallons/unit of time) – If the inside of the building is washed, indicate how much water is used and how often the bulding is cleaned. Also include any excess non-contact cooling water or drinking water directed to the waste management system.
☒	G.	Brief Description – Provide a brief description of the facility and waste management system. Indicate if the unit shares manure storage with another unit (i.e. common lagoon system, slurry store, etc.). **Previously approved structues must have the approval number and date approved listed.**

III. FACILITY DETAIL SHEET EXAMPLES

Example 1

Existing Previously Approved Swine Facility Proposing an Expansion

You are seeking approval for a proposed 1,000 head finishing building with a flush gutter system to a proposed lagoon. The lagoon will service the new building as well as two existing buildings that were approved on 12/17/1994, AW #1234. One of the existing buildings contains 1,500 nursery pigs, the other 300 gestating sows. The new finishing building will be washed out between groups of hogs with about 5,000 gallons of water per cleaning. You labeled the 1,000 head finisher "P1" and the lagoon "P2" on the farmstead map.

FACILITY DETAIL INFORMATION						
Label on Farmstead Map	Animal Type	Number of Animals	Solid or Liquid	Date Constructed *(for existing buildings)*	Water Uses *(gallons/unit of time)*	Brief Description:
P1	Finishing Hogs	1,000	Liquid	N/A	5,000 gallons/ 3 times a year	A finishing building with flush gutter system to lagoon that will service two (2) other buildings on site.
E1	Nursery Pigs	1,500	Liquid	3/95	N/A	Shallow pits, previously approved on 12/17/1994, AW# 1234. Pit will be connected to new lagoon.
E2	Gestating Sows	300	Liquid	3/95	N/A	Six (6) foot concrete pit, previously approved on 12/17/1994, AW# 1234. Pit will be connected to new lagoon.
P2	N/A	N/A	Liquid	N/A	N/A	A clay lined lagoon will service the proposed building as well as the two (2) buildings previously approved on 12/17/1994, AW#1234

Example 2

Existing Turkey Facility with No Prior Approval Proposing an Expansion

You currently own/operate a 20,000 bird broiler barn that does not require an approval, and wish to expand your operation by adding another 20,000 bird broiler barn and a manure compost building. Your total capacity will rise from 20,000 to 40,000 birds. You now must seek approval for both the existing barn and the proposed barn.

FACILITY DETAIL INFORMATION						
Label on Farmstead Map	Animal Type	Number of Animals	Solid or Liquid	Date Constructed *(for existing buildings)*	Water Uses *(gallons/unit of time)*	Brief Description:
E1	Broiler	20,000	Solid	~ 1995	N/A	A broiler barn with earthen floors
P1	Broiler	20,000	Solid	N/A	N/A	A broiler barn with earthen floors
P2	N/A	N/A	Solid	N/A	N/A	Concrete floored, additional manure storage

IV. FACILITY DETAIL INFORMATION

Label on Farmstead Plan	Animal Type	Number of Approved Animals	Solid or Liquid	Date Constructed *(for existing buildings)*	Water Uses *(gallons/unit of time)*	Brief Description
See attached						

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

FARMSTEAD PLAN ATTACHMENTS

Prepared for:

Pumps Hogs LLC

5200 S 500 W

Bringhurst, Indiana 46913

FARMSTEAD PLANS
AND
SUPPORTING INFORMATION

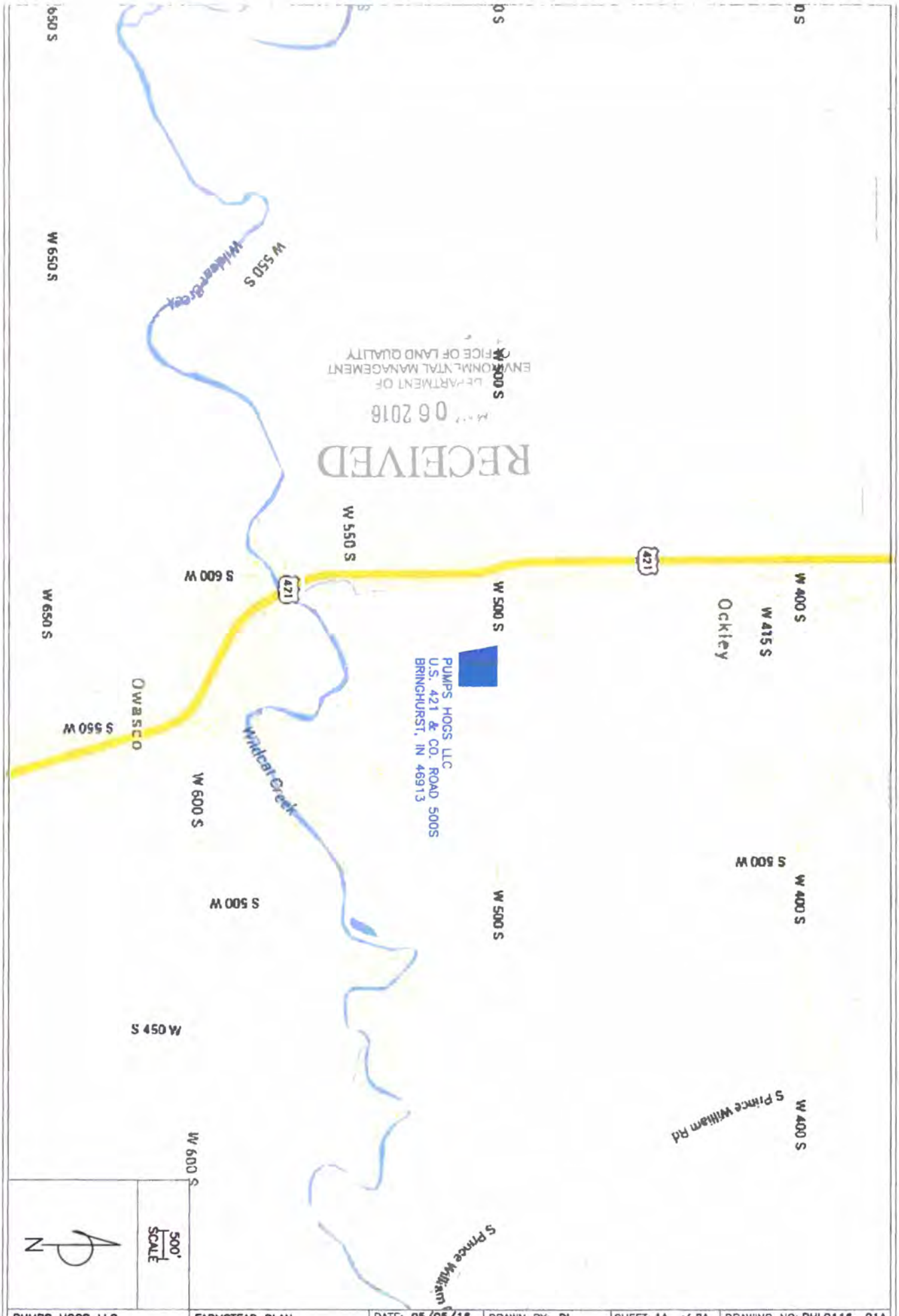
FARMSTEAD PLAN
Site Location (Plan Sheet 1A)
CFO Site Details (Plan Sheet 2A)

FACILITY DETAIL INFORMATION TABLE

Prepared by:

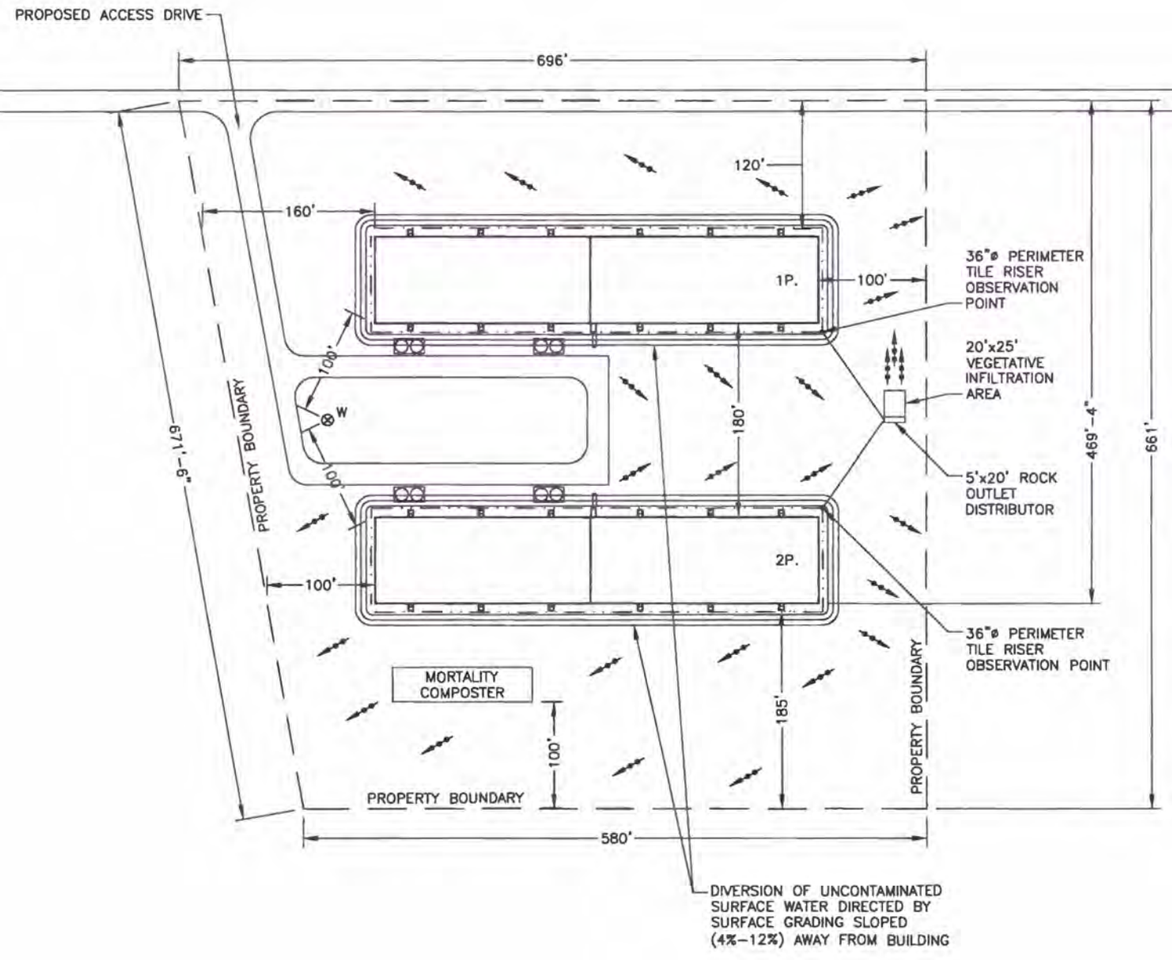
LIVESTOCK ENGINEERING SOLUTIONS, INC.

Michael A. Veenhuizen, Ph. D.
2967 S. Honey Creek Road · Greenwood, IN 46143 · (317) 535-1829



PUMPS HOGS LLC U.S. 421 & CO. ROAD 500S BRINGHURST, IN 46913 2016 CFO APPROVAL	FARMSTEAD PLAN SITE LOCATION	DATE: 05/05/16	DRAWN BY: DL	SHEET: 1A of 2A	DRAWING NO: PHL0116-01A

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143



NOTE:
(1) TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO PUBLIC WATER SUPPLY WELLS OR PUBLIC WATER SUPPLY SURFACE INTAKE STRUCTURES WITHIN 1,000 FEET OF THE PROPOSED WASTE MANAGEMENT SYSTEM (327 IAC 19–12–3(a)(1)).
(2) TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO SURFACE WATERS OF THE STATE, DRAINAGE INLETS, SINKHOLES, OR OFF–SITE WATER WELLS WITHIN 300 FEET OF THE PROPOSED WASTE MANAGEMENT SYSTEM.
(3) TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO ON–SITE WATER WELLS, PROPERTY LINES, OR PUBLIC ROADS WITHIN 100 FEET OF THE PROPOSED WASTE MANAGEMENT SYSTEM (327 IAC 19–12–3(a)(1)–(3)).
(4) TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO EXISTING OFF–SITE RESIDENTIAL OR PUBLIC BUILDINGS WITHIN 400 FEET OF THE PROPOSED WASTE MANAGEMENT SYSTEM (327 IAC 19–12–3(a)(4).
(5) TO THE BEST KNOWLEDGE OF THE APPLICANT, THE LOCATION OF THE FOLLOWING FEATURES OF CONCERN WITHIN 500 FEET OF THE PROPOSED WASTE MANAGEMENT SYSTEM ARE DEPICTED:
SURFACE WATERS OF THE STATE, PUBLIC AND PRIVATE ROADS, WATER WELL LOCATIONS, CHARACTERISTICS OF KARST TERRAIN, PRODUCTION SURFACE DRAINAGE PATTERNS, PROPERTY BOUNDARY LINES, OUTFALLS OF KNOWN SUBSURFACE DRAINAGE STRUCTURES, DRAINAGE INLETS, MORTALITY MANAGEMENT SITES, RESIDENCES, DIVERSION OF UNCONTAMINATED SURFACE WATER, AND 100–YEAR FLOOD PLAINS (327 IAC 19–7–3).
(6) EXISTING WELL LOCATIONS HAVE BEEN IDENTIFIED BASED ON THE INDIANA DNR WATER WELL RECORD DATABASE. TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO OTHER EXISTING WATER WELLS WITHIN 500' OF THE PROPOSED WASTE MANAGEMENT SYSTEM.
(7) TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO OTHER SUBSURFACE DRAINAGE TILE LOCATED WITHIN 500' OF THE PROPOSED WASTE MANAGEMENT SYSTEM. IF SUBSURFACE DRAINAGE TILE ARE LOCATED DURING CONSTRUCTION, THEY WILL BE REMOVED AND/OR REROUTED AROUND THE WASTE MANAGEMENT SYSTEM.
(8) BASED ON INFORMATION PROVIDED BY THE DEPARTMENT OF NATURAL RESOURCES, DIVISION OF RECLAMATION, MINES ARE PREDOMINATELY LOCATED IN SOUTHWEST INDIANA. CARROLL COUNTY IS LOCATED OUTSIDE OF THIS REGION. THE PROPOSED BUILDING LOCATION COMPLIES WITH 327 IAC 19–12–2(a)(4) PROHIBITING LOCATION OVER MINES.

PROPOSED STRUCTURES:

1P. WEAN–TO–FINISH BUILDING
81'–4" x 413'–0"
CAPACITY
4,400 WEAN–TO–FINISH PIGS (50–52 WKS/YR)
4,400 NURSERY PIGS (6 WEEKS/YR)
2P. WEAN–TO–FINISH BUILDING
81'–4" x 413'–0"
CAPACITY
4,400 WEAN–TO–FINISH PIGS (50–52 WKS/YR)
4,400 NURSERY PIGS (6 WEEKS/YR)

MORTALITY MANAGEMENT

MORTALITIES WILL BE HANDLED VIA ON–SITE MORTALITY COMPOSTER.

⊗W WELL
DRAINAGE PATTERN
PERIMETER TILE
PROPERTY BOUNDARY

100'
SCALE

N

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

FARMSTEAD PLAN
BUILDING SITE DETAILS

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 2A of 2A | DRAWING NO: PHL0116– 02A

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

IV. FACILITY DETAIL INFORMATION

Label on Farmstead Plan	Animal Type	Number of Animals	Solid or Liquid	Date Constructed *(for existing buildings)*	Water Uses *(gallons/unit of time)*	Brief Description
1P	Wean-to-finish pigs	8,800 head (max capacity) (4,400 nursery pigs [6 weeks/year]; 4,400 wean-to-finish pigs [50-52 weeks/year]) NOTE: For manure generation and land application determination, the equivalent animal capacity is: 4,400 nursery pigs housed for 6 weeks/year; 4,400 nursery pigs, housed for 12 weeks/year AND 4,400 grow/finish pigs, housed for approximately 38 weeks/year	Liquid	Proposed	22,000 gallons 2 times per year **Total Usage:** 44,000 gallons per year	Proposed Two room wean-to-finish building Total building dimensions: 81'-4" x 413'-0" O.D. Self-contained manure storage. Not shared with another confined feeding structure. Two compartment below-building concrete manure storage: 1) 80'-0" x 199'-9" x 8'-0" deep 2) 80'-0" x 211'-3" x 8'-0" deep Total capacity: 262,169 cu ft Available capacity: 230,077 cu ft (6" freeboard and 6" residual storage) Storage capacity: 345 days **NOTE:** Building 1P is part of a two building confined feeding operation with a maximum operating capacity of 13,200-head housed in two (2) buildings. Each building will house two groups of pigs per year (25-week production cycle). The expected animal population per building is 8,800 nursery pigs for 6 weeks per year, 4,400 nursery pigs for 6 weeks per year, and 4,400 grow-to-finish pigs for 38 weeks per year (50-52 weeks). During each approximately twenty-five (25) week production cycle one of the two buildings may house up to 8,800 weaned pigs (nursery pigs; < 55 lb) for approximately six weeks. The second building will house up to 4,400 wean-to-finish pigs at the same time. This cycle is repeated two times per year.

IV. FACILITY DETAIL INFORMATION

Label on Farmstead Plan	Animal Type	Number of Animals	Solid or Liquid	Date Constructed *(for existing buildings)*	Water Uses *(gallons/unit of time)*	Brief Description
2P	Wean-to-finish pigs	8,800 head (max capacity) (4,400 nursery pigs [6 weeks/year]; 4,400 wean-to-finish pigs [50-52 weeks/year]) NOTE: For manure generation and land application determination, the equivalent animal capacity is: 4,400 nursery pigs housed for 6 weeks/year; 4,400 nursery pigs, housed for 12 weeks/year AND 4,400 grow/finish pigs, housed for approximately 38 weeks/year	Liquid	Proposed	22,000 gallons 2 times per year **Total Usage:** 44,000 gallons per year	Proposed Two room wean-to-finish building Total building dimensions: 81'-4" x 413'-0" O.D. Self-contained manure storage. Not shared with another confined feeding structure. Two compartment below-building concrete manure storage: 1) 80'-0" x 199'-9" x 8'-0" deep 2) 80'-0" x 211'-3" x 8'-0" deep Total capacity: 262,169 cu ft Available capacity: 230,077 cu ft (6" freeboard and 6" residual storage) Storage capacity: 345 days **NOTE:** Building 1P is part of a two building confined feeding operation with a maximum operating capacity of 13,200-head housed in two (2) buildings. Each building will house two groups of pigs per year (25-week production cycle). The expected animal population per building is 8,800 nursery pigs for 6 weeks per year, 4,400 nursery pigs for 6 weeks per year, and 4,400 grow-to-finish pigs for 38 weeks per year (50-52 weeks). During each approximately twenty-five (25) week production cycle one of the two buildings may house up to 8,800 weaned pigs (nursery pigs; < 55 lb) for approximately six weeks. The second building will house up to 4,400 wean-to-finish pigs at the same time. This cycle is repeated two times per year.

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

Prepared for:

Pumps Hogs LLC

5200 S 500 W

Bringhurst, Indiana 46913

AFFIRMATION STATEMENT

327 IAC 19-7-1(c)(11)

(c) A complete application package must include all of the following information:

(11) A statement affirming that AFOs adjacent to or contiguous with the CFO are not under common ownership or control of the applicant.

It is confirmed that there are no animal feeding operations (AFOs) that exist adjacent to or contiguous with the proposed confined feeding operation (CFO) owned and operated by Pumps Hogs LLC. Because there are no animal feeding operations adjacent to or contiguous with the proposed confined feeding operation, Pumps Hogs LLC is not able to submit an affirmation statement that is consistent with the requirements of 327 IAC 19-7-1(c)(11).

In place of a statement affirming that AFOs adjacent to or contiguous with the CFO are not under common ownership or control of the applicant, Pumps Hogs LLC affirms that there are no animal feeding operations (AFOs) located adjacent to or contiguous with the existing confined feeding operation (CFO).

Prepared by:

LIVESTOCK ENGINEERING SOLUTIONS, INC.

Michael A. Veenhuizen, Ph. D.

2967 S. Honey Creek Road · Greenwood, IN 46143 · (317) 535-1829

CFO / CAFO APPLICATION PACKET
Construction

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Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: *Refer to the "Application Types and Requirements Worksheet" to determine if Construction information is required for the type of application you are submitting. Complete Section I. Prepare construction drawings and the other construction information listed in this form using the checklists in Sections II. through XV. Use the check boxes to indicate whether each item is addressed or if it is not applicable to your application. The checklists cover the construction details required in the Confined Feeding Operations rule, 327 IAC 19. The instructions give you the rule citation for each section. It is helpful to refer to the rule, when completing this form. You can view the Indiana Code (IC) and Indiana Administrative Code (IAC) references in this form at iga.IN.gov. IC references are under the "Laws" link. IAC references are under the "Publications" link. This form is required and supersedes all previous versions. IDEM will not accept substitutes, altered, or previously supplied forms.*

I. OPERATION LOCATION INFORMATION

A. Complete the operation location information below using the United States Geological Survey (USGS) topographic map the operation is shown upon.

Pyrmont	S3	T23N	R2W
USGS Quadrangle	Section	Township	Range

B. In space below provide detailed directions from the nearest town to the site of the operation:

From intersection of SR 26 and US 421 in Rossville travel north approx. 4.75 miles to Carroll County Road 500 S; turn east (right) on CR 500 S; travel 0.25 miles; the site is on the south (right) side of CR 500 S.

II. WASTE MANAGEMENT SYSTEM DRAWINGS CHECKLIST

Review the waste management system drawing requirements in 327 IAC 19-7-4 and answer the questions below.

		Yes	No	N/A
	Is a design drawing included for all structures proposed (new/expanded production structure or manure storage structure) or existing (previously unapproved or expired) above what is listed in a current CFO approval or NPDES CAFO permit?	☒	☐	☐
B.	Do the waste management system drawings show detailed views and cross sections to define all dimensions and construction materials?	☒	☐	☐
C.	Do all systems relying on **gravity flow** provide the required elevations of the entire waste management system that relies on gravity?	☒	☐	☐

III. SOIL BORINGS CHECKLIST

Review the soil and water table information requirements in 327 IAC 19-7-1(c)(6) and answer the questions below.

		Yes	No	N/A
A.	Is the soil and water table information for the test holes for proposed manure storage structures provided from a soil scientist certified under the Federation of Certified Board of Agriculture, Biology, Earth and Environmental Sciences, a professional geologist certified in Indiana under IC 25-17.6, or a professional engineer registered in Indiana?	☒	☐	☐
B.	Are the number of test holes sufficient to adequately characterize the seasonal water table and soil? • For earthen solid manure storage structures, at least two (2) test holes for a structure up to one (1) acre in size, then an additional hole for each additional half acre. • For liquid manure storage structures, at least two (2) holes for a structure up to one-half acre, then an additional hole for each additional half acre. • For concrete solid manure storage structures, at least two (2) holes regardless of size.	☒	☐	☐
C.	Are all test holes for concrete manure storage structures at least two (2) feet below the base of the structure?	☒	☐	☐
D.	Are all test holes for earthen manure storage structures in non-karst areas at least five (5) feet below the base of the structure?	☐	☐	☒
E.	Is at least one test hole for earthen manure storage structures in karst areas to either bedrock or ten (10) feet below base of structure, whichever is shallower?	☐	☐	☒

IV. NEW WASTE MANAGEMENT SYSTEMS SITE RESTRICTIONS CHECKLIST

Review the site restrictions specifically listed in 327 IAC 19-12-2 and answer the questions below.

		Yes	No	N/A
A.	Is the new waste management system proposed in karst terrain?	☐	☒	☐
B.	Is the new waste management system proposed over mines? (underground and reclaimed surface mines)	☐	☒	☐
C.	If the response to either A. and/or B. above is "Yes", does the application contain the information requested in 327 IAC 19-12-2(b)?	☐	☐	☒
D.	Is the new waste management system proposed in a one hundred (100) year flood plain?	☐	☒	☐

E. If the response to D. above is "Yes", 327 IAC 19-12-2(a)(3) requires:

1. The access to the waste management system to be at least two (2) feet above the one hundred (100) year flood elevation; and
2. The management system is structurally sound without lowering the flood waters or seasonal water table to below the bottom of the waste management system.

Please provide the information below:

_____ Feet Above Mean Sea Level	_____ Feet Above Mean Sea Level
Elevation of 100 year flood plain	Elevation of access to waste management system

F.	Is any portion of the waste management system located below the seasonal high water table?	☒	☐	☐
G.	If the response to F. above is "Yes", does the application show the drainage system, provide details how the water table is lowered and maintained below the base of the waste management system (including proper drainage location, elevation of the entire waste management system, sizing, pumps and emergency power sources if necessary), and show the access point for sampling?	☒	☐	☐

V. WASTE MANAGEMENT SYSTEM SETBACKS CHECKLIST

A. Does the waste management system comply with the following setbacks detailed in 327 IAC 19-12-3(a), (b), and (e)?

	Identifiable Feature at Time of Application	Setback Distance *(feet)*		Yes	No *(see B.)*	N/A
		All Waste Management Systems	Solid Manure Storage Structures per 327 IAC 19-12-3(b)			
1.	Public water supply well (existing or planned)	1,000	1,000	☒	☐	☐
2.	Public water supply intake surface intake structure	1,000	1,000	☒	☐	☐
3.	Existing off-site residential and public buildings	400	400	☒	☐	☐
4.	Surface waters of the state	300	100	☒	☐	☐
5.	Drainage inlets (including water and sediment control basins)	300	100	☒	☐	☐
6.	Sinkholes (as measured from the surficial opening or the lowest point of the feature)	300	100	☒	☐	☐
7.	Off-site water wells	300	100	☒	☐	☐
8.	On-site water wells	100	100	☒	☐	☐
9.	Property lines	100	100	☒	☐	☐
10.	Public Roads	100	100	☒	☐	☐

B.	327 IAC 19-12-3(c) and (d) allow for reduced setbacks than listed in A. Does the application request or demonstrate a reduced setback?	☐	☒	☐

VI. DESIGN REQUIREMENTS FOR ALL NEW WASTE MANAGEMENT SYSTEMS CHECKLIST

	Yes	No	N/A
A. Is the waste management system designed not to discharge to surface waters of the state? (327 IAC 19-12-4(b))	☒	☐	☐
1. If no, does it have an NPDES CAFO permit under 40 CFR 122.23?	☐	☐	☒

VII. STORAGE CAPACITY REQUIREMENTS FOR ALL NEW MANURE STORAGE FACILITIES CHECKLIST

A. Is the manure storage facility designed with at least a 180 day storage capacity (327 IAC 19-12-4(c)) for the following:	Yes	No	N/A
1. Manure, bedding and other accumulated wastes.	☒	☐	☐
2. Normal precipitation, less evaporation, on the surface area of an open storage	☐	☐	☒
3. Normal runoff draining into the storage, if applicable.	☐	☐	☒
4. Runoff from a twenty-five (25) year, twenty-four (24) hour precipitation event draining into the storage, if applicable.	☐	☐	☒
5. A minimum six (6) inches of storage for residual solids.	☒	☐	☐
6. Two (2) feet of freeboard for open storages.	☐	☐	☒
7. Six (6) inches of freeboard for covered storages.	☒	☐	☐
8. Additional storage as necessary.	☒	☐	☐

VIII. DESIGN REQUIREMENTS FOR ALL NEW LIQUID MANURE STORAGE FACILITIES CHECKLIST

The liquid manure storage facility designed according to the Indiana NRCS Conservation Practice Standard Code 313, Waste Storage Facility, September 2005? (327 IAC 19-12-4(d))	Yes	No	N/A
	☒	☐	☐

If no, provide an explanation.

Note: If submitting an alternative compliance approach request for approval, see Section XXI for the requirements.

327 IAC 19-12-4(d) requires the liquid manure storage facility be certified upon completion of construction by an Indiana professional engineer on an IDEM certification form to be submitted with the construction affidavit within thirty (30) days of the completion of construction.

IX. DESIGN REQUIREMENTS FOR ALL NEW CONCRETE STORAGE FACILITIES FOR LIQUID MANURE CHECKLIST

A. Does the design of the concrete liquid manure storage facility comply with the design standards of Mid West Plan Service-36: Rectangular Concrete Manure Storages, 2nd Edition 2005 or TR-9: Circular Concrete Manure Tanks, March 1998? (327 IAC 19-12-4(e))	Yes	No	N/A
	☐	☒	☐

If no, provide an explanation.

An alternate design or compliance approach (327 IAC 19-5-1) is submitted for the design of the 1) 12"x12" reinforced concrete column; 2) 12"x16" concrete masonry block column; 3) 12"x12" reinforced concrete column continuous footer; and 4) 12"x16" concrete masonry block column continuous footer.

B. Does the application contain the Indiana NRCS Concrete Construction Specification, October 2005? (327 IAC 19-12-4(e))	Yes	No	N/A
	☐	☒	☐

If no, provide an explanation.

An adapted version of the Indiana NRCS Concrete Construction Specification, October 2005 is included. An alternate design or compliance approach (327 IAC 19-5-1) is submitted to remove unnecessary or unintential references, to include specifications and restrictions to address project specific details, and incorporate new specifications from the recently revised Indiana NRCS Concrete Construction Specification, May 2015.

C. Does the application contain drawings for the concrete liquid manure storage facility that include:	Yes	No	
1. Joints properly sized and spaced.	☒	☐	☐
2. Reinforcing steel adequately sized and spaced.			
3. A foundation that provides necessary support.			
4. Waterstops properly located and specified.			

X. DESIGN REQUIREMENTS FOR ALL NEW EARTHEN STORAGE FACILITIES FOR LIQUID MANURE CHECKLIST

A. Does the pond or lagoon clay liner comply with the maximum seepage rate of 1/16 cubic inch per square inch per day? (327 IAC 19-12-5)	Yes	No	N/A
	☐	☐	☒

If no, provide an explanation.

B. Does the pond or lagoon have a flexible membrane liner or modified soil liner that complies with the appropriate specification identified in 327 IAC 19-12-5(b)(1) (2) or (3)?	Yes	No	N/A
	☐	☐	☒

XI. DESIGN REQUIREMENTS FOR MANURE STORAGE TANKS CHECKLIST

Note: Underground steel storage tanks are prohibited.

Does the plastic or fiberglass tank and/or above ground steel tank comply with the requirements in 327 IAC 19-12-4(k)?	Yes	No	N/A
	☐	☐	●

If no, provide an explanation.

XII. DESIGN REQUIREMENTS FOR ALL NEW EARTHEN WASTE TREATMENT LAGOONS CHECKLIST

Does the earthen waste treatment lagoon comply with the design requirements with NRCS Code 359? (327 IAC 19-12-4(f))	Yes	No	N/A
	☐	☐	☒

If no, provide an explanation.

XIII. DESIGN REQUIREMENTS FOR ALL NEW SOLID MANURE STORAGE FACILITIES CHECKLIST

A. An earthen floor without a liner may be used if the following requirements are satisfied:	Yes	No	N/A
1. Is the earthen floor at least five (5) feet above any sand or gravel soils?	☐	☐	☒
2. Is the seasonal high water table at least five (5) feet below the bottom of the floor?	☐	☐	☒
a. If no, will a perimeter drain be constructed to lower the water table five (5) feet below the bottom of the floor?	☐	☐	●

	Yes	No	N/A
3. Will the earthen floor be compacted using a sheepsfoot roller, a rubber tire roller or a loaded earthmover following the compaction specifications identified in the NRCS Construction Specification Earthfill, available at: http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_030847.pdf?	☐	☐	☒
Will the solid manure storage facility be constructed with either a liner or a five (5) inch thick concrete slab/floor if the storage facility is located in a karst terrain or prohibited soil type (327 IAC 19-12-4(g))?	☐	☐	☒

If no, provide an explanation.

	Yes	No	N/A
C. Will run-on and precipitation be diverted away from the solid manure storage facility? *If no, the solid manure storage facility must include a method to collect and manage the contaminated run-off.*	☐	☐	☒
D. Does the structure have a roof? *If no, the solid manure storage facility must include a method to collect and manage the contaminated run-off.*	☐	☐	☒
E. Is the structure at least two (2) feet above bedrock? *If no, the solid manure storage facility must be constructed with either a liner as described in Section X of this checklist or a five (5) inch thick concrete slab/floor.*	☐	☐	☒

Note: Additional design requirements for solid manure storage facilities may be found in the "Design and Construction Requirements & Site Restrictions for New Waste Management System" section of the Guidance Manual for Indiana's Confined Feeding Program.

XIV. DESIGN REQUIREMENTS FOR ALL OTHER WASTE MANAGEMENT SYSTEMS CHECKLIST

Waste management systems not listed in 327 IAC 19-12-4 must be designed and constructed in accordance with IC 13-18-10-4(b).

	Yes	No	N/A
If the waste management system is not listed in 327 IAC 19-12-4, is it designed under IC 13-18.10-4(b)?	☐	☐	☒

If no, provide an explanation.

XV. DESIGN REQUIREMENTS FOR ALL PIPELINES CHECKLIST

	Yes	No	N/A
Will the pipeline be constructed complying with NRCS Code 634? (327 IAC 19-12-4(i))	☐	☐	☒

If no, provide an explanation.

XVI. VEGETATIVE MANAGEMENT SYSTEMS CHECKLIST

	Yes	No	N/A
Does the vegetative management system comply with NRCS Code 635? (327 IAC 19-12-4(l))	☐	☐	☒

If no, provide an explanation.

XVII. CONSTRUCTED WETLANDS CHECKLIST

	Yes	No	N/A
Does the constructed wetland comply with NRCS Code 656? (327 IAC 19-12-4(m))	☐	☐	☒
If no, provide an explanation.			

XVIII. DESIGN REQUIREMENTS FOR PERIMETER DRAINS CHECKLIST

	Yes	No	N/A
Does the perimeter drain system comply with the requirements of 327 IAC 19-12-2(a)(5), 327 IAC 19-12-4(n) and (o)?	☒	☐	☐
If no, provide an explanation.			

XIX. ALTERNATE DESIGN CHECKLIST

	Yes	No	N/A
A. Is an alternative design, compliance approach or innovative technology, complying with the requirements of 327 IAC 19-5-1 proposed?	☒	☐	☐
1. If yes, does it include calculations with adequate justification for the alternative design/compliance approach?	☒	☐	☐

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

CONSTRUCTION ATTACHMENTS

Prepared for:

Pumps Hogs LLC

5200 S 500 W

Bringhurst, Indiana 46913

WASTE MANAGEMENT SYSTEM DRAWINGS
AND
SUPPORTING INFORMATION

DESIGN SUMMARY
BELOW-BUILDING CONCRETE MANURE STORAGE DESIGN PLANS
Wean-to-Finish Pig Buildings (1P & 2P)

SITE PREPARATION AND BACKFILL

CONCRETE DESIGN SPECIFICATION
NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATIONS
CONCRETE CONSTRUCTION
OCTOBER 2005
(ADAPTED TO ADDRESS PROJECT SPECIFIC DETAILS)

CONCRETE MANURE STORAGE DESIGNS
SITE SPECIFIC ANALYSIS AND DESIGN

ALTERNATE DESIGN OR COMPLIANCE APPROACH
327 IAC 19-5-1 & 327 IAC 19-3-1
ALTERNATE DESIGN OR COMPLIANCE APPROACH ANALYSIS AND DESIGN

SEASONAL WATER TABLE MANAGEMENT

Prepared by:
LIVESTOCK ENGINEERING SOLUTIONS, INC.

Michael A. Veenhuizen, Ph. D.
2967 S. Honey Creek Road · Greenwood, IN 46143 · (317) 535-1829

2016 Confined Feeding Operation Approval Application
Below-Building Concrete Manure Storage Design Plans
Design Summary
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

The proposed waste treatment control structures for the wean-to-finish buildings include below-building concrete storage tanks. The outside dimensions of each concrete storage tank are 81'-4" x 413'-0". The inside dimensions of each of the two compartment tanks are 1) 8'-0" deep, 80'-0" wide and 199'-9" long; and 2) 8'-0" deep, 80'-0" wide and 211'-3" long. The following details pertain to the waste treatment control plans.

1. Subgrade preparation. The presumptive bearing capacity of the subgrade soils is 2,000 psf. Large rocks, organic vegetation, or foreign material shall be removed.

   For the design, the presumptive bearing capacity of the foundation soils beneath the structure footings was assumed to be 2,000 psf. The soil texture classifications within the soil profile in the area of the proposed concrete manure storage structures are silt loam (ML), silty clay loam (ML-CL), clay loam (CL), and loam (ML). Table 3 "Presumptive Allowing Bearing Stress Values" of the NRCS Conservation Practice Standard, Waste Storage Facility, Code 313 indicates that clay, sandy clay, silty clay and clayey silt have a presumptive bearing capacity of 2,000 psf. A bearing capacity of 2,000 psf was used. No on-site investigation was conducted to verify the soil bearing capacity.

2. All concrete work shall conform to the ACI Manual of Concrete Practices, ACI 301.

3. All concrete used on manure tank walls and floors, beams, and columns shall have a minimum 28-day compressive strength of 4,000 psi.

4. Footers formed and placed monolithically with the floor slab shall have a minimum 28-day compressive strength of 4,000 psi. Footers formed and placed independent of the floor slab shall have a minimum 28-day compressive strength of 4,000 psi.

5. Slats shall have a minimum 28-day compressive strength of 4,500 psi.

6. Lintels shall have a minimum 28 day compressive strength of 5,000 psi.

7. Solid floors and support beams shall meet a minimum design live load due to animals of 57.5 pound per square foot, psf (up to 300-lb pigs). (adapted from Table 2-4, MWPS-36 Rectangular Concrete Manure Storages, second edition)

8. Slats shall meet a minimum design live load due to animals of 125 pounds per lineal foot, plf (up to 300-lb pigs). (adapted from Table 2-4, MWPS-36 Rectangular Concrete Manure Storages, second edition)

9. Finishes of concrete walls -- standard form finish.

10. All reinforcing steel, as rebar, shall be Grade 60 or higher, deformed bars of new billet steel conforming to ASTM A615, Grade 60.

11. Rebar – Minimum 12" lap on all reinforcing steel. Provide a minimum 19" lap on all #5 rebar, a minimum 15" lap on all #4 rebar, and a minimum 12" lap on reinforcing steel smaller than #4 rebar. Provide a minimum spacing of 3' between laps in rebar.

12. All reinforcing steel, as welded wire reinforcement, shall have a tensile strength (yield strength) of 60,000 psi or higher. Design specifications are based on 60,000 psi and 90,000 psi tensile strength (yield strength). If the welded wire reinforcement tensile strength is less than 90,000 psi, the design requirements for a tensile strength of 60,000 psi shall be used.
13. Welded wire reinforcement – Minimum lap between welded wire reinforcement sheets is at least one mesh width.
14. Welded wire reinforcement shall be placed as sheets rather than rolls.
15. Welded wire reinforcement shall be placed, adequately supported, and sufficiently secured to minimize displacement during concrete placement.
16. Design loads for the concrete tank sidewalls, concrete tank end walls, and the manure pump out sidewalls (perpendicular to the concrete tank walls) are due to lateral earth pressures. The lateral earth pressure (soil load) was assumed to be 75 psf per foot of depth (NRCS-313; Table 4 – Lateral Earth Pressure Values, frame tank, above seasonal high water table). No vehicle surcharge load is included in the design of the concrete tank sidewalls, concrete tank end walls, and manure pump out sidewalls. No vehicle loads are required since vehicle traffic and activities do not occur within five feet of the side walls due to the placement of the manure pump outs and feed bins, within five feet of the end walls due to fan placement, and within five feet of the manure pump out side walls due to the orientation and placement of the manure pump outs.
17. Design loads for the front face of the manure pump outs are due to lateral earth pressures and vehicle loads. The lateral earth pressure (soil load) was assumed to be 75 psf per foot of depth for the soil pressure (NRCS-313; Table 4 – Lateral Earth Pressure Values, frame tank, above seasonal high water table). A uniform vehicle surcharge of 150 psf is assumed for the walls subject to vehicle loads within five (5) feet of the wall (MWPS-36, Rectangular Concrete Manure Storages, second edition). The front face of the manure pump out (parallel to the concrete sidewall) is assumed to be subject to a vehicle load and the vehicle surcharge is included in the design.
18. The manure storage tanks will be below ground, so the design is controlled by soil pressure and vehicle surcharge, where applicable, when the tank is empty.
19. Minimum exterior concrete pit wall thickness is 8".
20. Minimum floor thickness is 5".
21. Minimum concrete cover between the earth and rebar and/or welded wire reinforcement in floor slabs in contact with the earth is 3".
22. Minimum concrete cover between the interior surface of the wall and vertical rebar in the walls is 2". Minimum concrete cover between the interior surface of the wall and horizontal rebar in the wall is 1-1/2".
23. Rebar specifications and spacing for the principle sidewalls and endwalls of the concrete tank are:
    - Vertical reinforcement steel; #5, Grade 60 rebars at 17.5" (max.) on-center spacing or #4, Grade 60 rebars at 11.25" (max.) on-center spacing
    - Horizontal reinforcement steel; #5, Grade 60 rebars at 18" on-center spacing or #4, Grade 60 rebars at 12.0" on-center spacing.
24. Rebar specifications and spacing for the manure pumpout sidewalls (perpendicular to the principle concrete tank sidewalls) are:
    - Vertical reinforcement steel; #5, Grade 60 rebars at 17.5" (max.) on-center spacing or #4, Grade 60 rebars at 11.25" (max.) on-center spacing
    - Horizontal reinforcement steel; #5, Grade 60 rebars at 18" on-center spacing or #4, Grade 60 rebars at 12" on-center spacing.

25. Rebar specifications and spacing for the manure pumpout front face (parallel to the concrete tank sidewall) to withstand the vehicle surcharge are:
    - Vertical reinforcement steel; #5, Grade 60 rebars at 11.5" on-center spacing or #4, Grade 60 rebars at 10.0" on-center spacing
    - Horizontal reinforcement steel; #5, Grade 60 rebars at 18" on-center spacing or #4, Grade 60 rebars at 12" on-center spacing.
26. Rebar specifications and spacing for the manure storage cross wall (8" thick) are:
    - Vertical reinforcement steel; #5, Grade 60 rebars at 18.0" on-center spacing or #4, Grade 60 rebars at 18.0" on-center spacing
    - Horizontal reinforcement steel; #5, Grade 60 rebars at 18" on-center spacing or #4, Grade 60 rebars at 12" on-center spacing.
27. Welded wire reinforcement specifications for the floor slabs are:
    - 6 x 6, #6 welded wire reinforcement (90,000 psi tensile strength) with floor construction joints every 64' on center, or
    - 6 x 6, #10 welded wire reinforcement (90,000 psi tensile strength) with floor construction joints every 31'on center, or
    - 6 x 6, #6 welded wire reinforcement (60,000 psi tensile strength) with floor construction joints every 43' on center, or
    - 6 x 6, #10 welded wire reinforcement (60,000 psi tensile strength) with floor construction joints every 21'on center
28. Top of the wall support in the sidewalls is provided by the bearing surface of the slats. No additional top of wall reinforcement is necessary to provide top of wall support. A design soil load pressure of 75 psf per foot of depth (Table 4 – Lateral Earth Pressure Values, frame tank, above seasonal high water table) was assumed to determine the sidewall design. No vehicle traffic occurs within five feet of the end walls. Therefore, no vehicle surcharge load is applied in the sidewall design.
29. Top of the wall support in the end walls is provided by the lintels and side supports of the gang slats. The lintels are typically spaced ten (10') feet on center. Gang slats are placed against the end wall providing lateral top of wall support. The gang slats are typically ten (10') feet long and have support beam cross members at either five (5') feet or ten (10') feet on center. To be conservative it is assumed that the slat support is ten (10') feet on center.

    A design soil load pressure of 75 psf per foot of depth (Table 4 – Lateral Earth Pressure Values, frame tank, above seasonal high water table) was assumed to determine adequate end wall lateral top support. No vehicle traffic occurs within five feet of the end walls. Therefore, no vehicle surcharge load is applied in the end wall top of wall beam design. Three #5, Grade 60 rebar spaced 4 inches on center are placed in the upper 12" of the wall to provided adequate top of wall lateral support.
30. Columns are spaced 12' on-center. Lintels spanning between columns are 8"x 10"x 12' concrete beams supporting the concrete slats. Support columns for the lintels and concrete slats are either:
    - 12"x12" square columns The 12"x12" square columns are reinforced with 4 - #5 vertical rebars tied with #3 rebar every 12" or 4-#4 vertical rebar tied with #3 rebar every 12". Columns are secured to the floor by extending the reinforcement steel into the floor slab or securing a dowel rebar in the floor slab and tying the reinforcement steel to the dowel rebar.
    - 12"x16" masonry concrete columns. The masonry concrete columns are reinforced with a continuous rebar in each core of the block column. The continuous rebar can be either #4 or #5 rebar. Columns are secured to the floor by extending the reinforcement steel into the floor slab or securing a dowel rebar in the floor slab and tying the reinforcement steel to the dowel rebar.
    - See plans for details.

31. Footings (footers) are designed to carry the bearing load from columns and walls. Wall footers are continuous footers centered under the walls. Column footers are square area footers or continuous footers centered under the columns.

    Footers for walls are:

    - 24" wide x 8" thick continuous footers for the 8" outside wall.
    - 24" wide x 8" thick continuous footers for the 8" manure storage cross walls that spans from side-to-side.

    Footers for the columns are:

    - 42" x 42" x 10" thick square plain concrete footers for 12" x 12" reinforced columns.
    - 30" wide x 10" thick continuous plain concrete footers for 12" x 12" reinforced concrete columns
    - 42" x 42" x 8" thick square plain concrete footers for 12" x 16" masonry concrete columns.
    - 30" wide x 9" thick continuous plain concrete footers for 12" x 16" masonry concrete columns.
    - See plans for details.

START OF 4"ø PERIMETER TILE 3'-4" FROM OUTSIDE WALLS AT A BOTTOM ELEV. 98'-7"

START OF 4"ø PERIMETER TILE 8'-0" FROM OUTSIDE WALLS AT A BOTTOM ELEV. 98'-7" RELATIVE TO THE TOP OF PIT FLOOR ELEV. 100'-0"

MANURE PUMP-OUT SUMP 36" SQUARE, 12" DEEP (SEE DETAIL SHEET 10B FOR DIMENSIONS)

PIT VENTILATION OPENING MANURE PUMP-OUT (SEE DETAIL SHEET 11B FOR DIMENSIONS)

4"ø PERIMETER TILE(PERFORATED) SLOPE 0.25% TO OUTLET

TILE BOTTOM ELEV. 97'-6.5"

FLOOR CONTROL JOINTS (24'o.c. TYP., 31'o.c. MAX.)

FLOOR CONTROL JOINT

TILE BOTTOM ELEV. 98'-4.5"

12"x12" REINFORCED COLUMNS, 12'-0" o.c.

42" SQUARE AREA FOOTER UNDER EACH COLUMN x 10" THICK

WALL CONSTRUCTION JOINTS (100' MAX.)

(4)LIQUID LEVEL EQUALIZATION PORTS, 12"x36" LOCATE IN DIVIDING WALL

4"ø PERIMETER TILE(PERFORATED) SLOPE 0.25% TO OUTLET

36"ø PERIMETER TILE RISER OBSERVATION POINT WITH CLOSURE VALVE OR COMPARABLE. WATER TO BE PUMPED TO A ROCK OUTLET CENTERED EAST OF PROPOSED BUILDINGS 1P. & 2P.

TILE INLET ELEV. 97'-3.5" BOTTOM OF TILE

20'x25' VEGETATIVE INFILTRATION AREA

4"ø SOLID PIPE

5'x20' ROCK OUTLET DISTRIBUTOR

4"ø SOLID PIPE FROM PROPOSED BUILDING 2P.

82'-4" FOOTER O.D.
81'-4" PIT O.D.
80' PIT I.D.
199'-9" PIT I.D.
211'-3" PIT I.D.
411'-8" O.A. PIT I.D.
413' PIT O.D.
414' FOOTER O.D.

CONCRETE PIT FOUNDATION
PLAN VIEW
(PROPOSED BUILDING 1P. SHOWN)

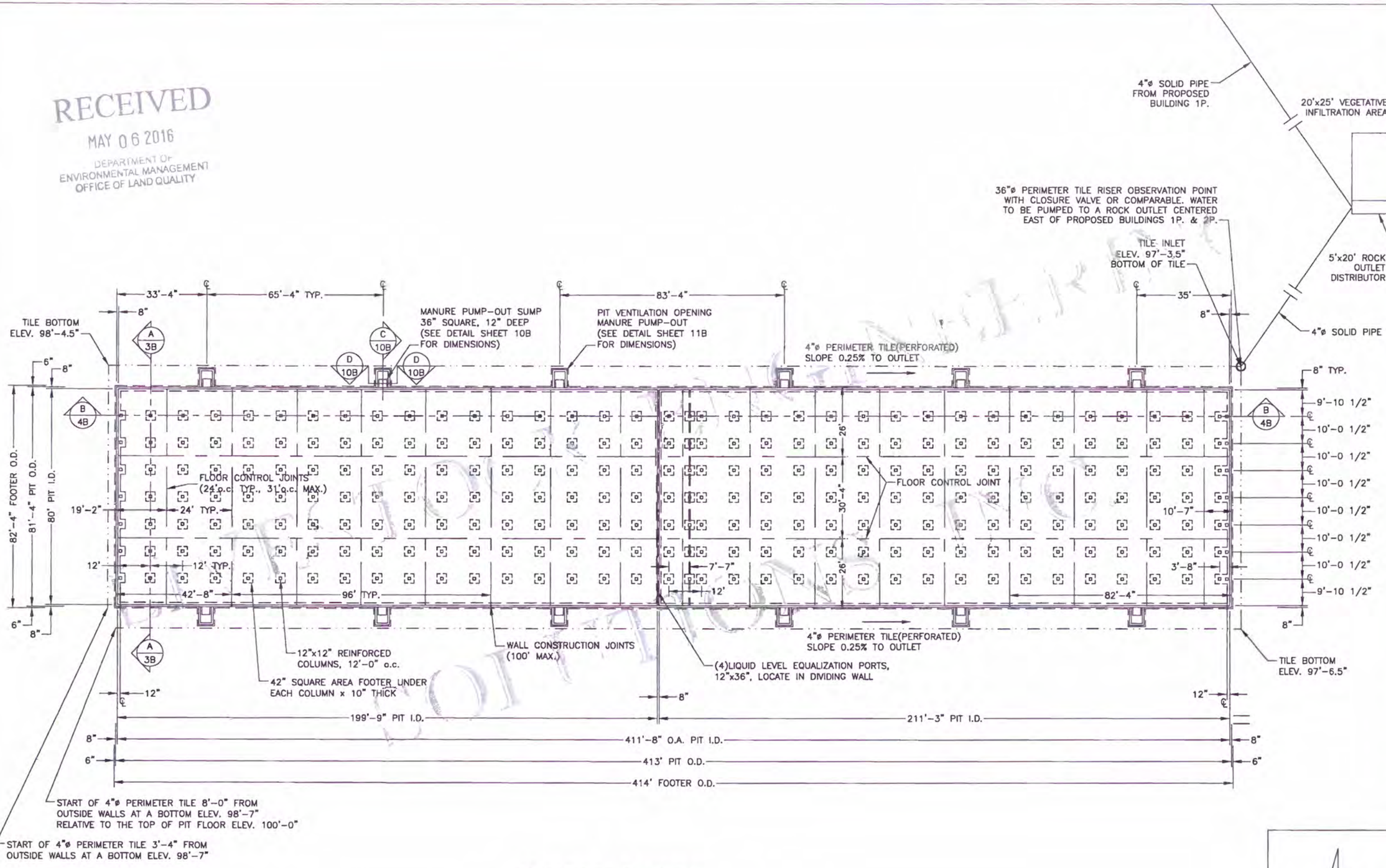
N

SHEET: 1B of 15B	DRAWING NO: PHL0116- 01B
DRAWN BY: DL	
DATE: 05/05/16	

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

CONCRETE PIT FOUNDATION PLAN
(BUILINDG 1P. SHOWN)

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL



CONCRETE PIT FOUNDATION
PLAN VIEW
(PROPOSED BUILDING 2P. SHOWN)

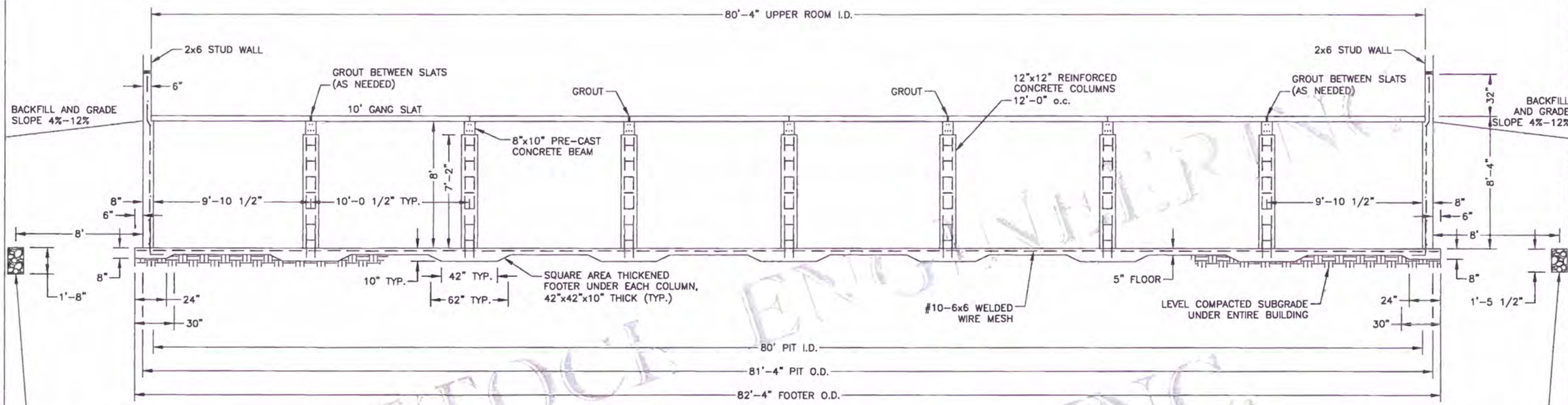
SHEET: 2B of 15B | DRAWING NO: PHL0116-02B

DATE: 05/05/16 | DRAWN BY: DL

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

CONCRETE PIT
FOUNDATION PLAN
(BUILDING 2P. SHOWN)

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL



4"ø PERIMETER TILE
8'-0" FROM PIT WALL
BOTTOM TILE ELEV. 98'-4"
PLACED WASHED GRAVEL AROUND
TILE IN 12" WIDE TRENCH TO
TOP OF PIT FLOOR

4"ø PERIMETER TILE
8'-0" FROM PIT WALL
BOTTOM TILE ELEV. 98'-6.5"
PLACED WASHED GRAVEL AROUND
TILE IN 12" WIDE TRENCH TO
TOP OF PIT FLOOR

A/3B CONCRETE PIT CROSS-SECTION
ENDVIEW

NOTE:

1. SOLID FLOOR AND SUPPORT BEAMS SHALL MEET A MINIMUM DESIGN LIVE LOAD DUE TO ANIMALS OF 57.5 POUNDS PER SQUARE FOOT, PSF(UP TO 300 LB PIGS).
2. SLATS SHALL MEET A MINIMUM DESIGN LIVE LOAD DUE TO ANIMALS OF 125 POUNDS PER LINEAL FOOT, PLF (UP TO 300 LB PIGS)
3. REINFORCEMENT STEEL FOR TANK WALLS:
   8" OUTSIDE WALL: VERTICAL REBAR --#5 GRADE 60, 17.5" O.C.
   HORIZONTAL REBAR -- #5 GRADE 60, 18" O.C.
   TOP OF WALL 12" BEAM: 3 - #5 GRADE 60, 4" O.C.
4. ALTERNATIVE REINFORCEMENT STEEL FOR TANK WALLS:
   8" OUTSIDE WALL: VERTICAL REBAR --#4 GRADE 60, 11.25" O.C.
   HORIZONTAL REBAR -- #4 GRADE 60, 12" O.C.
   TOP OF WALL 12" BEAM: 5 - #4 GRADE 60, 2.5" O.C.
5. ACCEPTABLE BACKFILL MATERIALS SHALL CONSIST OF THE NATURALLY OCCURRING SOILS FROM THE EXCAVATION OR DESIGNATED BORROW AREA. LARGE ROCKS, ORGANIC MATERIALS, VEGETATION, DEBRIS, SNOW, ICE AND FOREIGN MATERIALS SHOULD BE REMOVED FROM BACKFILL.
6. BACKFILL ADJACENT TO THE CONCRETE WALLS SHOULD NOT BEGIN:
   A. UNTIL THE SLATS OR FLOOR ARE IN PLACE, AND
   B. IN LESS THAN 10 DAYS AFTER PLACEMENT OF CONCRETE, OR
   C. UNTIL THE CONCRETE STRENGTH IS AT LEAST 3,000 PSI.
7. HEAVY EQUIPMENT SHOULD NOT BE OPERATED WITHIN 5 FEET OF THE CONCRETE WALLS.
8. COMPACTION OF BACKFILL MATERIALS WILL BE BY NATURAL SETTLING AND COMPACTION OR BY MANUAL TAMPING OR HAND COMPACTION EQUIPMENT WITHIN 5 FEET OF THE CONCRETE WALLS.
9. BACKFILL SHOULD BE GRADED TO ESTABLISH AND MAINTAIN AT LEAST A 4%-12% SLOPE AWAY FROM THE BUILDING.

NOTE:

SEE FOR DETAILS:

*SHEET 5B - SIDE WALLS AND FOOTERS
*SHEETS 8B & 9B - COLUMNS AND FOOTERS

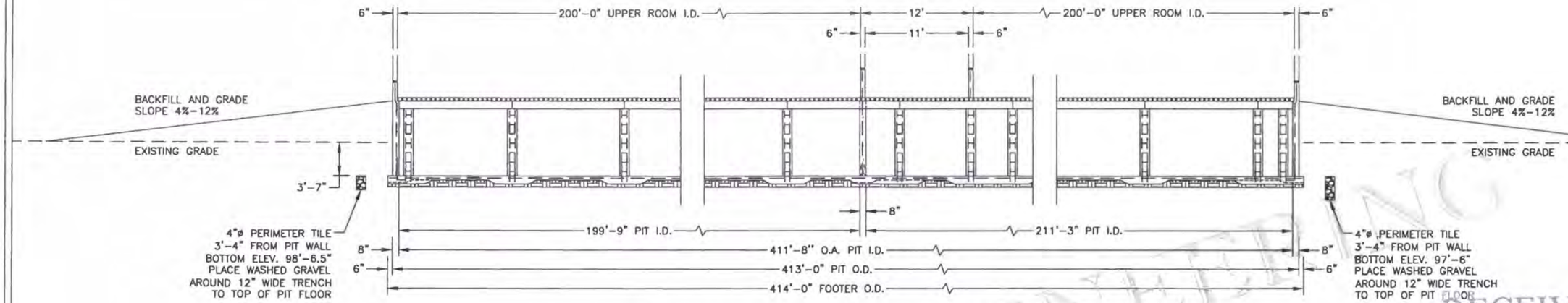
*INCLUDING DIMENSIONS AND REBAR LOCATION

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

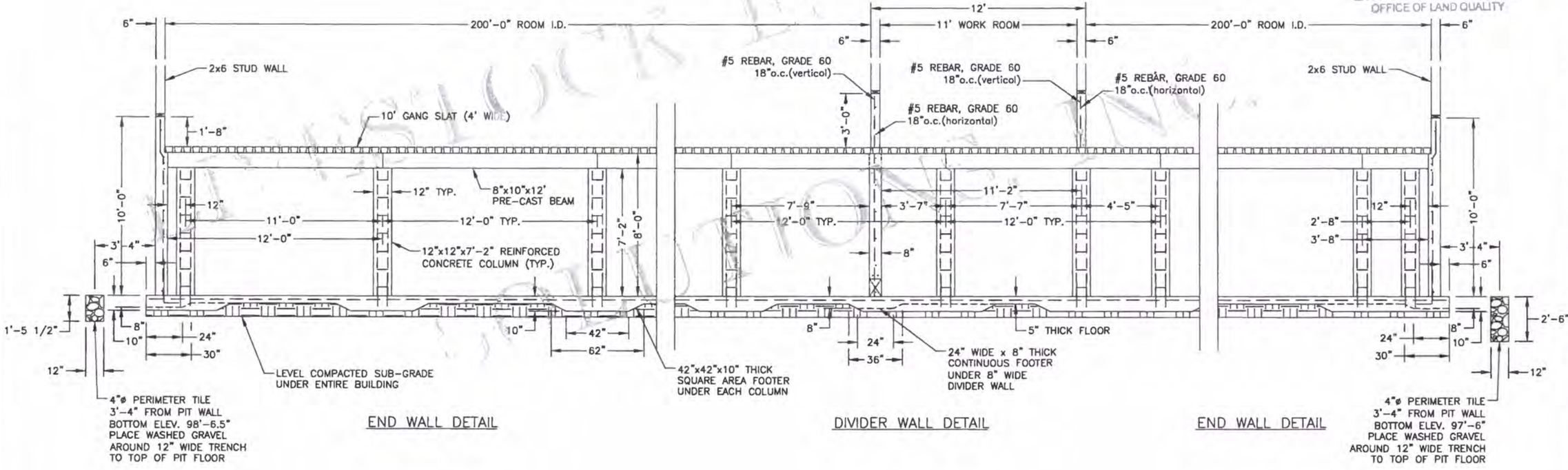
ENDVIEW BUILDING
CROSS-SECTION
SECTION A
(BUILDING 1P. SHOWN)

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 3B of 15B | DRAWING NO: PHL0116-03B

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143



B
4B
CONCRETE PIT CROSS-SECTION
SIDE ELEVATION



END WALL DETAIL

DIVIDER WALL DETAIL

END WALL DETAIL

NOTE:

SEE FOR DETAILS:

*SHEET 6B – END WALL AND FOOTERS
*SHEET 7B – DIVIDING WALL AND FOOTER
*SHEETS 8B & 9B – COLUMNS AND FOOTERS

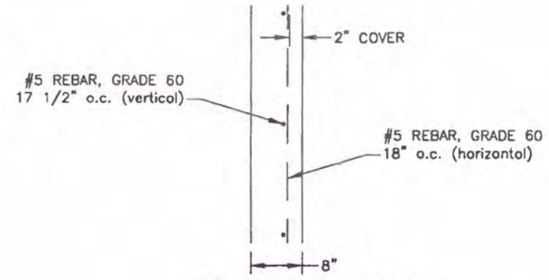
*INCLUDING DIMENSIONS AND REBAR LOCATION

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 4B of 15B | DRAWING NO: PHL0116-04B

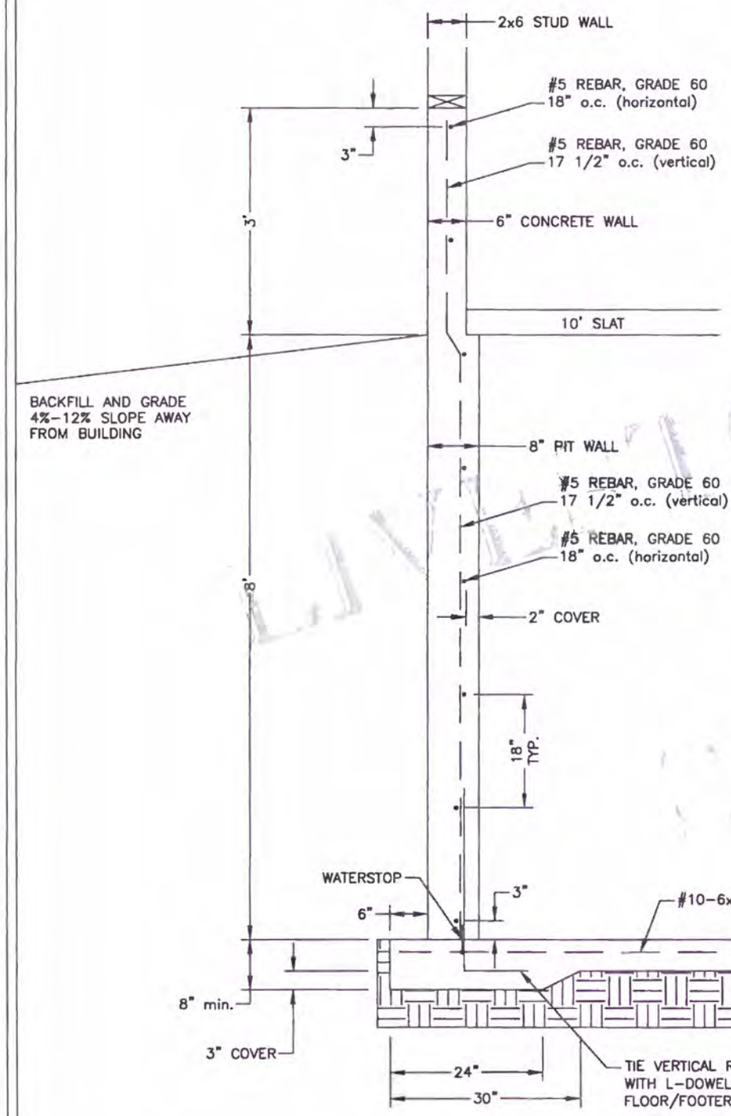
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

SIDE ELEVATION
SECTION B
(BUILDING 1P. SHOWN)

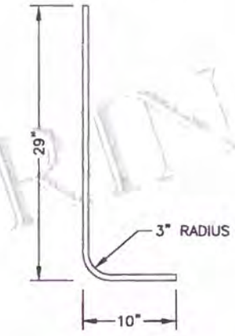
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL



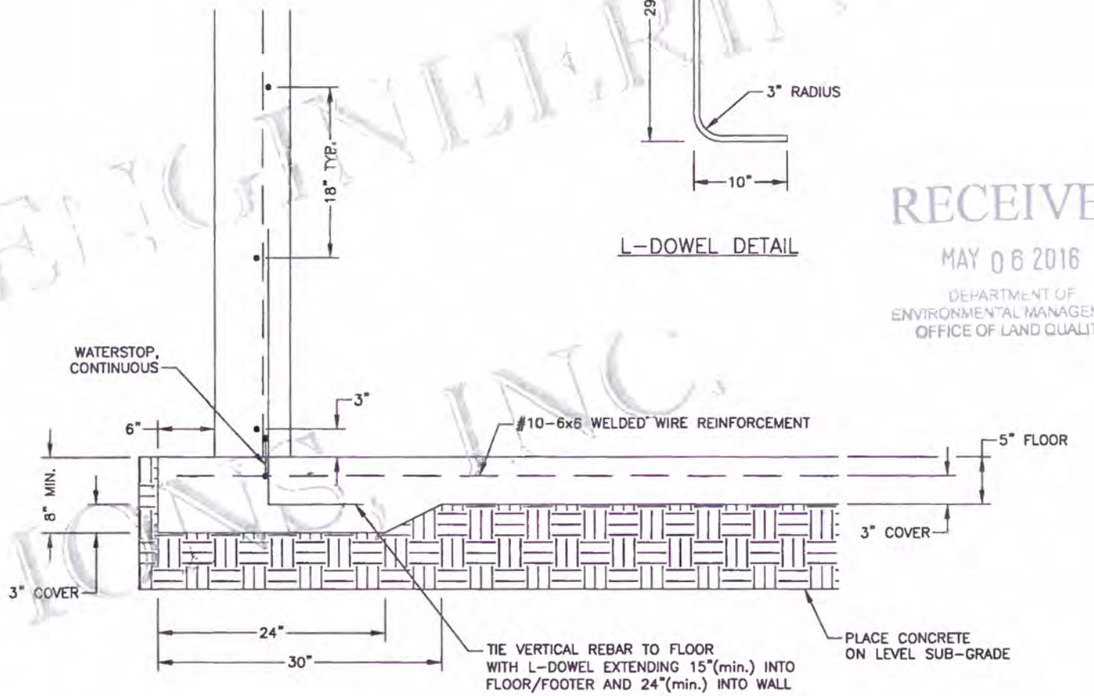
SIDE WALL – PIT WALL
TOP VIEW



SIDE WALL DETAIL



L–DOWEL DETAIL



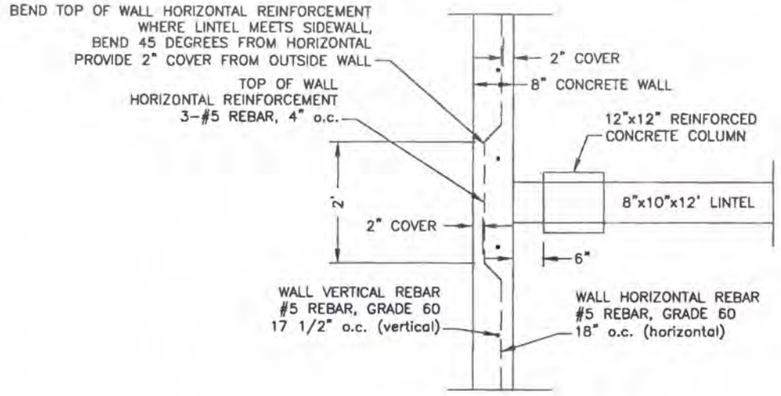
WALL FOOTER DETAIL

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 5B of 15B | DRAWING NO: PHL0116– 05B

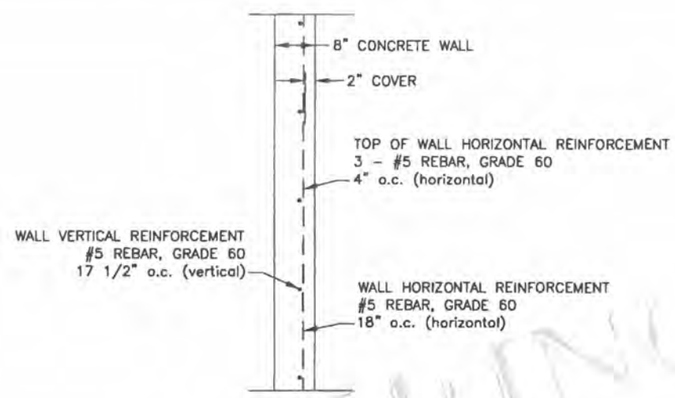
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

CONCRETE WALL DETAILS
SIDE WALL

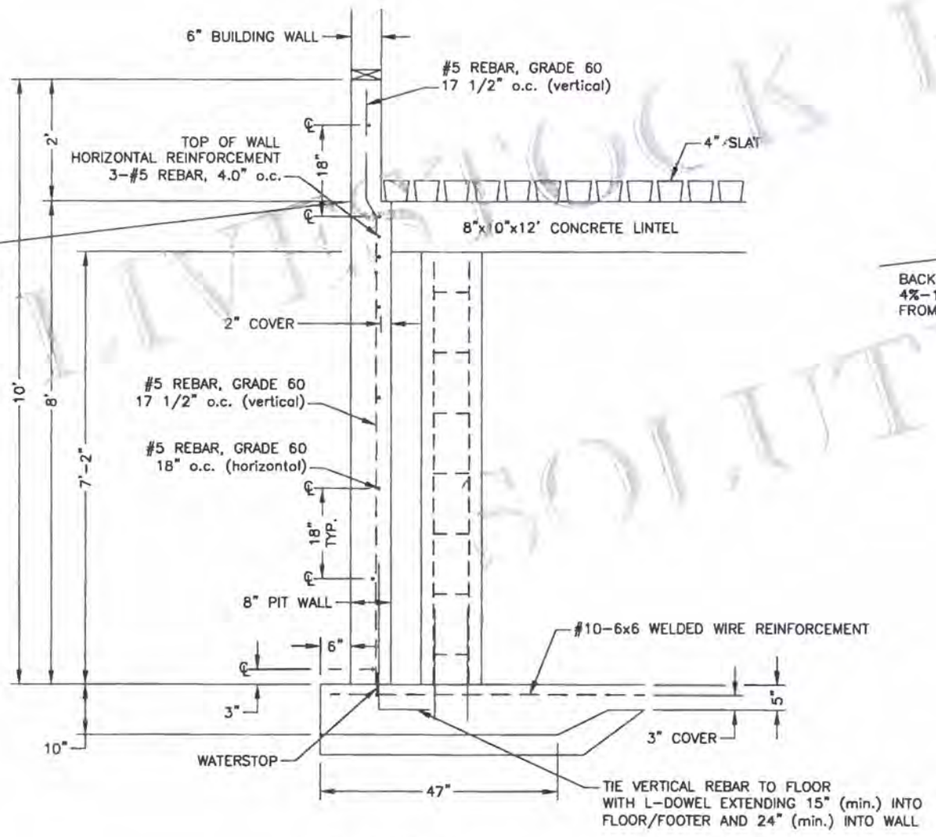
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL



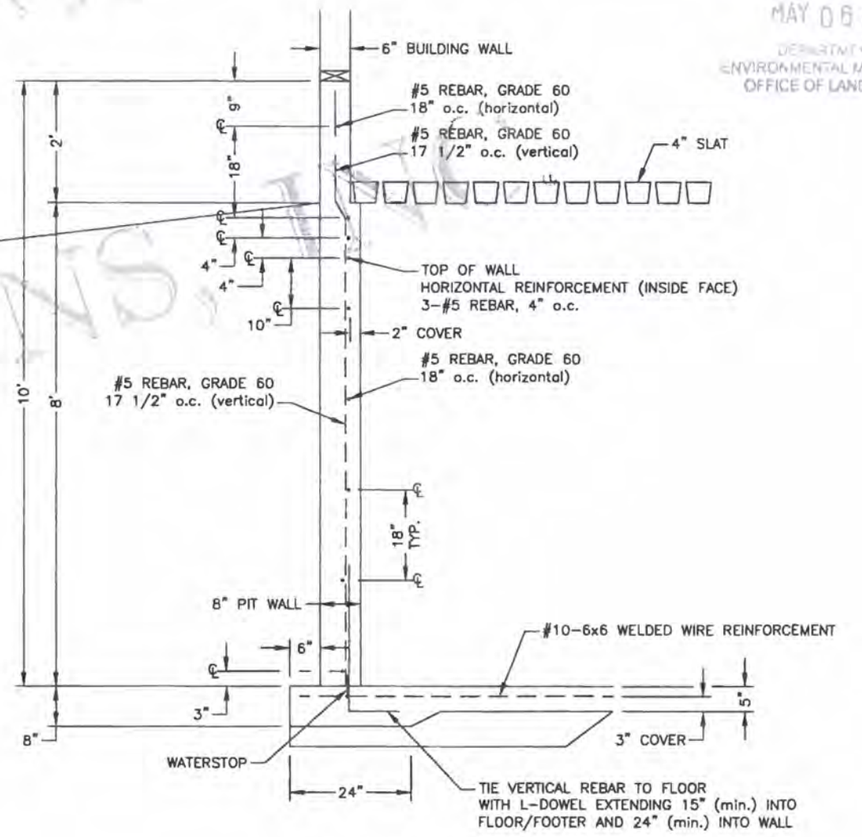
TOP OF WALL AT LINTEL AND COLUMN SUPPORT
TOP VIEW: PLACE TOP OF WALL REINFORCEMENT IN OUTSIDE FACE



TOP OF WALL BETWEEN LINTEL AND COLUMN SUPPORTS
TOP VIEW: PLACE TOP OF WALL REINFORCEMENT IN INSIDE FACE

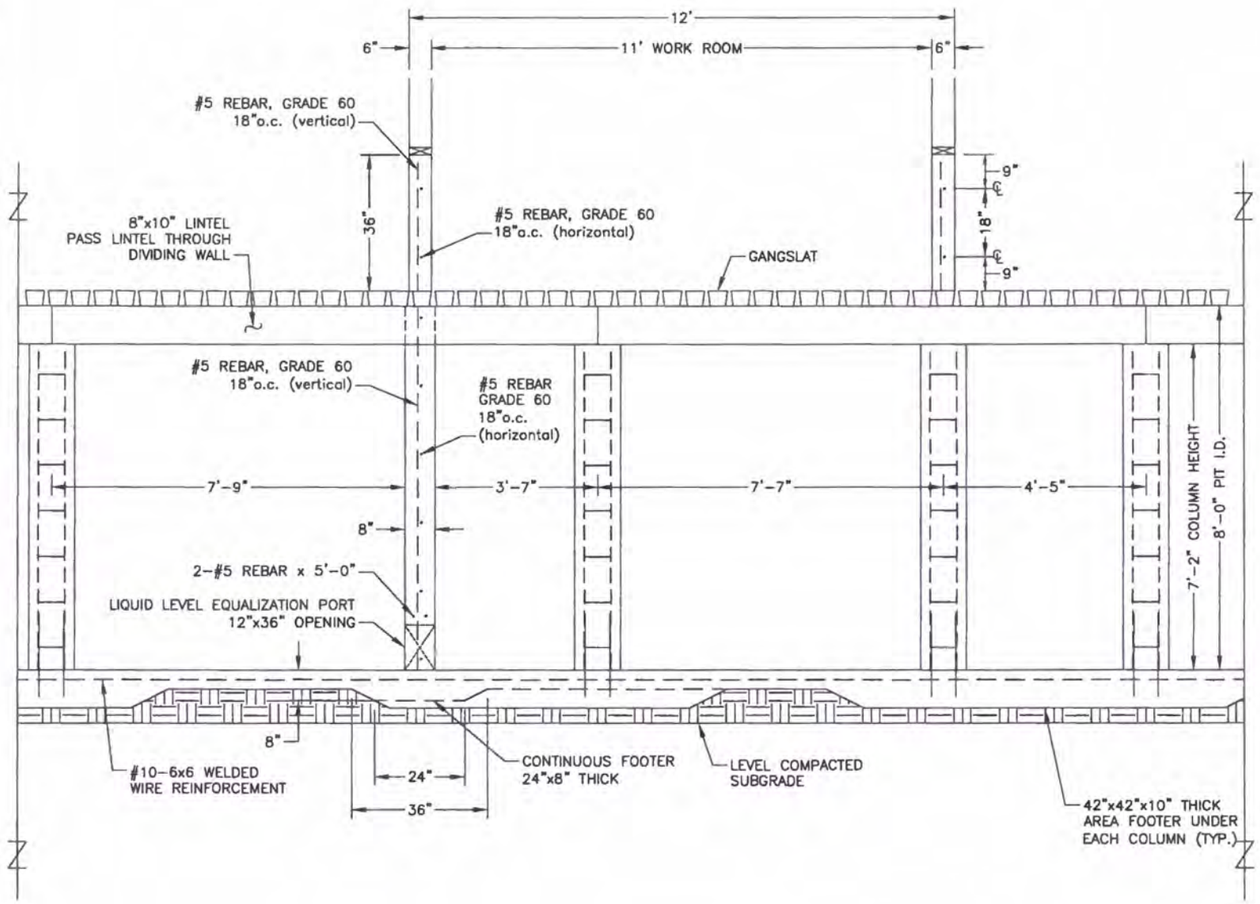


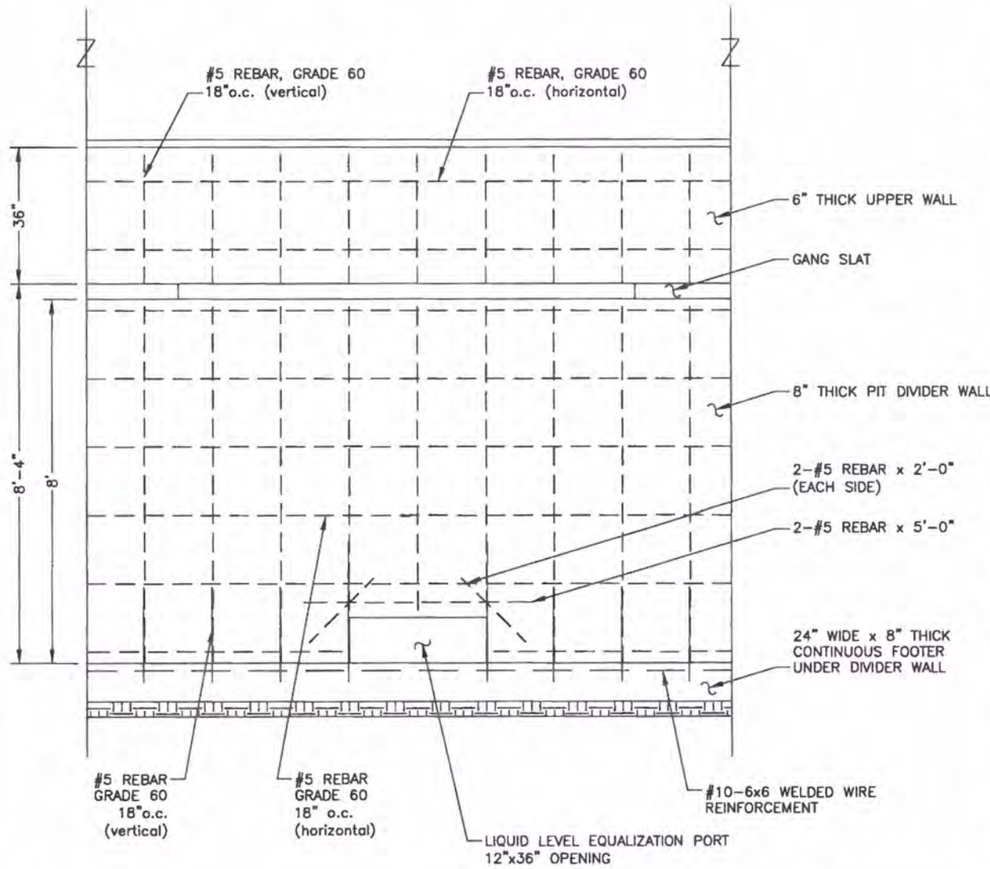
END WALL DETAIL
AT LINTEL COLUMN SUPPORT



END WALL DETAIL
BETWEEN LINTEL COLUMN SUPPORT

PUMPS HOGS LLC U.S. 421 & CO. ROAD 500S BRINGHURST, IN 46913 2016 CFO APPROVAL	CONCRETE WALL DETAILS END WALL DETAIL TOP OF WALL REINFORCEMENT
DATE: 05/05/16	DRAWN BY: DL
LIVESTOCK ENGINEERING SOLUTIONS, INC. MICHAEL A. VEENHUIZEN 2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143	SHEET: 6B of 15B | DRAWING NO: PHL0116– 06B



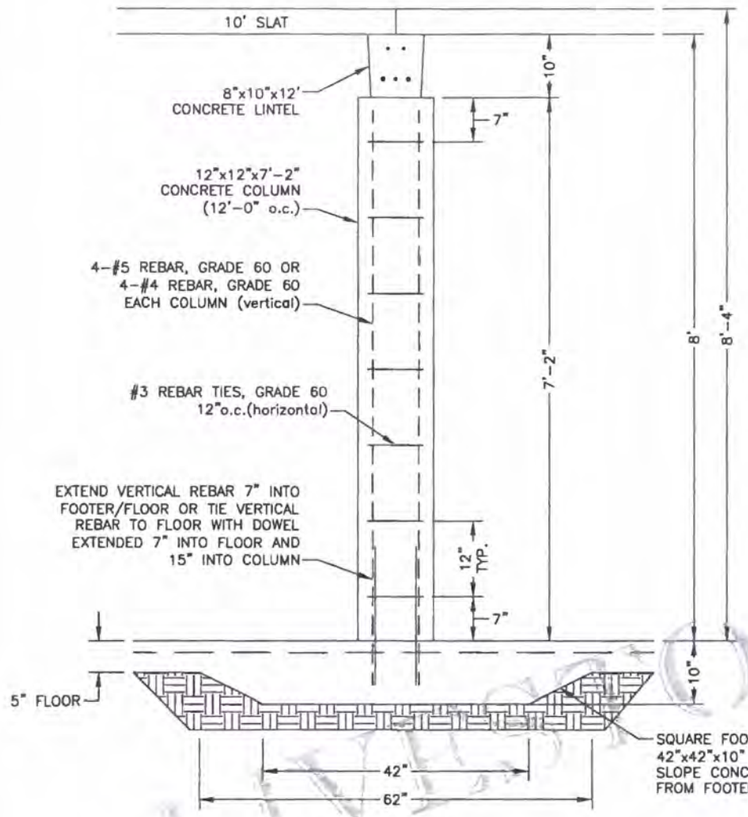


DATE: 05/05/16 | DRAWN BY: DL | SHEET: 7B of 15B | DRAWING NO: PHL0116- 07B

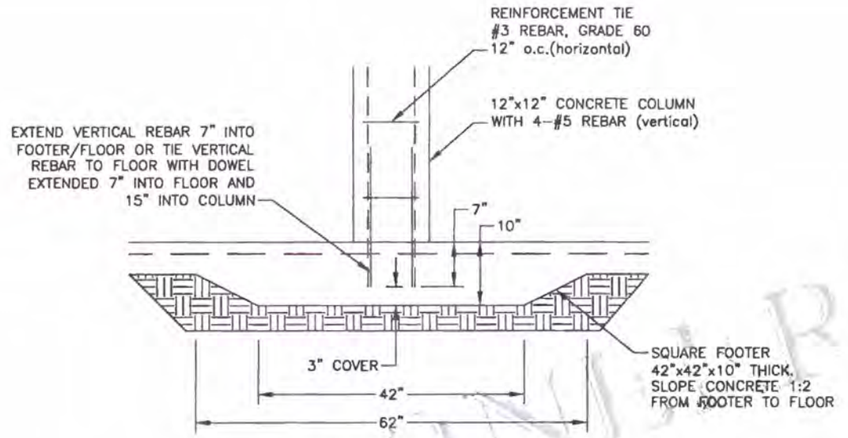
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

PIT DIVIDER WALL
8" THICK CROSS WALL

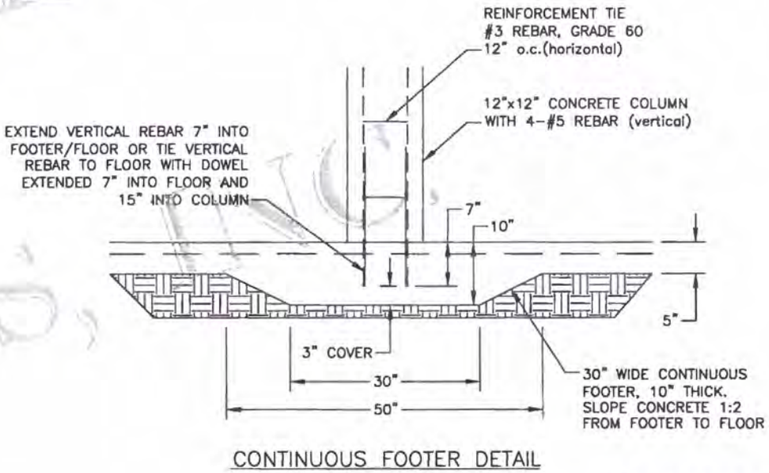
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL



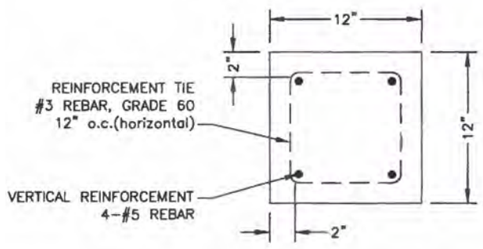
COLUMN DETAIL
REINFORCED CONCRETE COLUMN
4-#5 OR 4-#4 REBAR



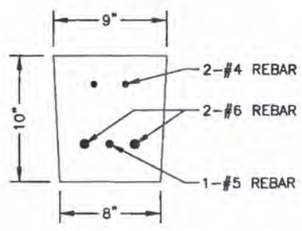
SQUARE FOOTER DETAIL



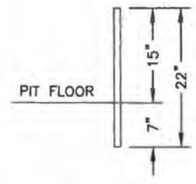
CONTINUOUS FOOTER DETAIL



12"x12" REINFORCED COLUMN DETAIL
TOP VIEW
4-#5 OR 4-#4 REBAR (vertical)
#3 REBAR TIE (horizontal) 12" o.c.



8"x10"x12' CONCRETE LINTEL
(REBAR GRADE 60)
(5000 PSI CONCRETE)
(HOG SLAT, INC. OR COMPARABLE)



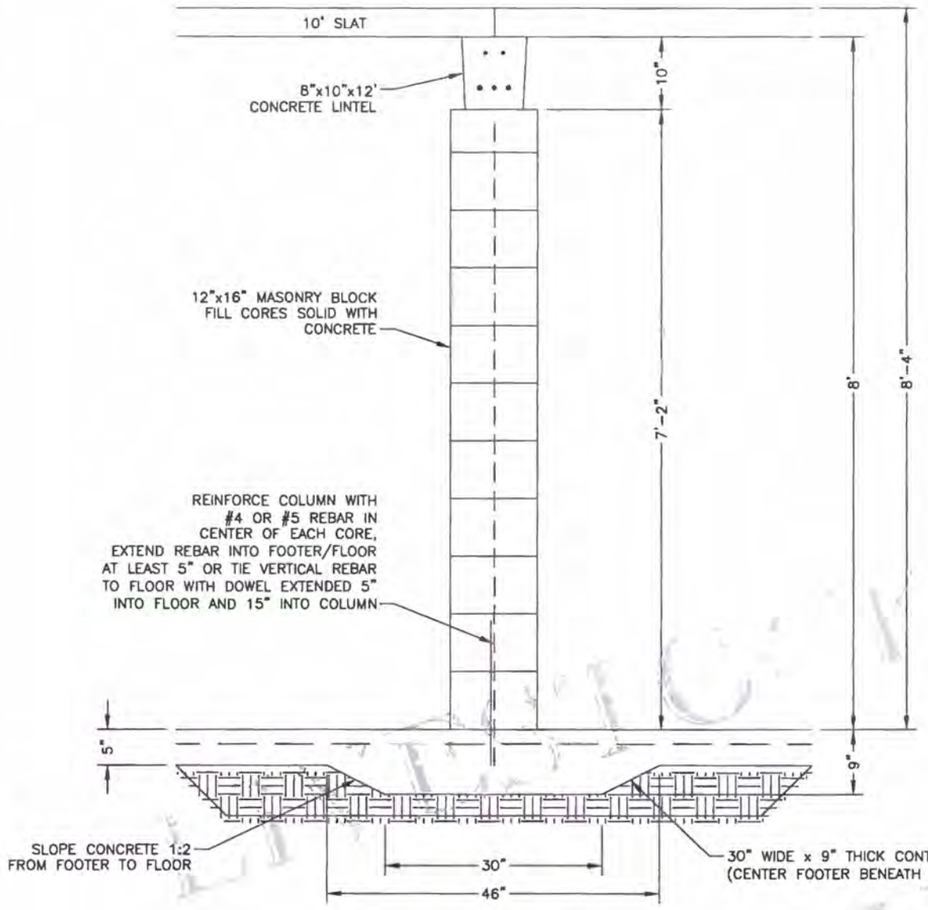
DOWEL DETAIL
#4 OR #5 REBAR, GRADE 60

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 8B of 15B | DRAWING NO: PHL0116-08B

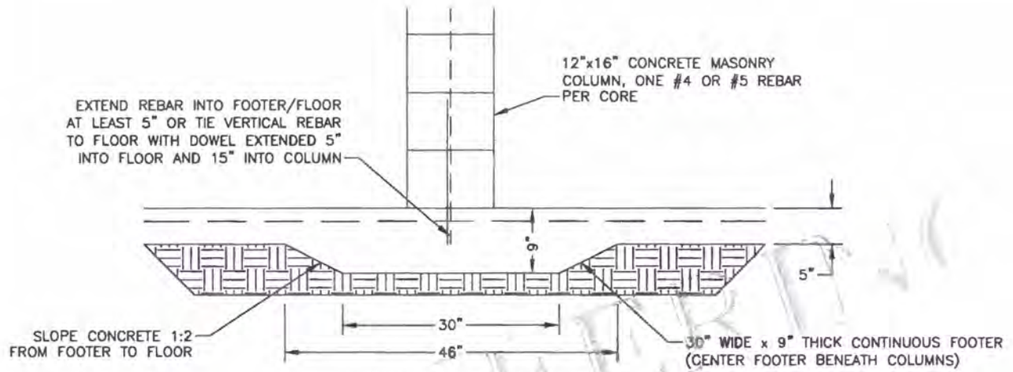
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

COLUMN DETAILS,
REINFORCED CONCRETE

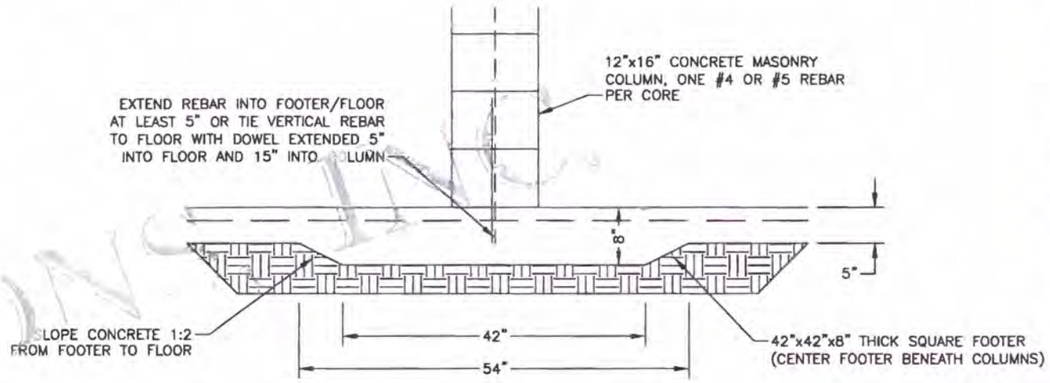
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL



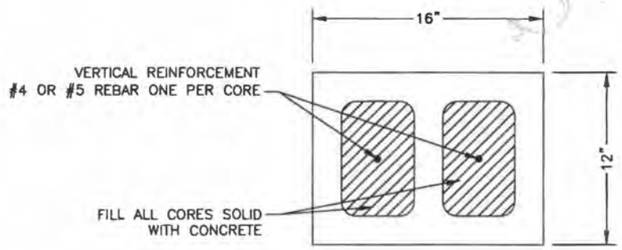
COLUMN DETAIL
MASONRY COLUMN



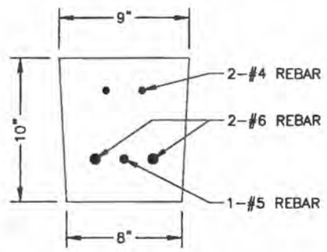
CONTINUOUS FOOTER



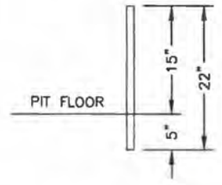
SQUARE COLUMN FOOTER



MASONRY COLUMN DETAIL
TOP VIEW



8"x10"x12' CONCRETE LINTEL
(REBAR GRADE 60)
(5000 PSI CONCRETE)
(HOG SLAT, INC. OR COMPARABLE)



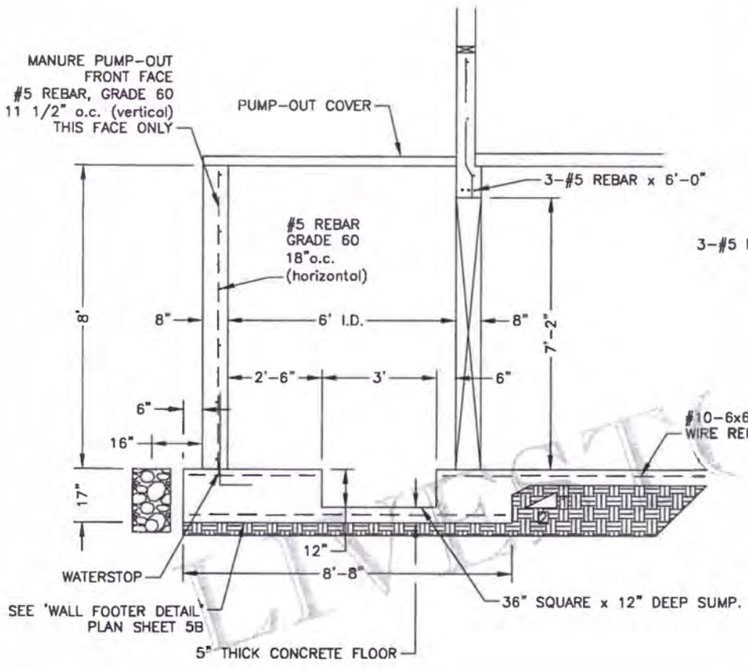
DOWEL DETAIL
#4 OR #5 REBAR, GRADE 60

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

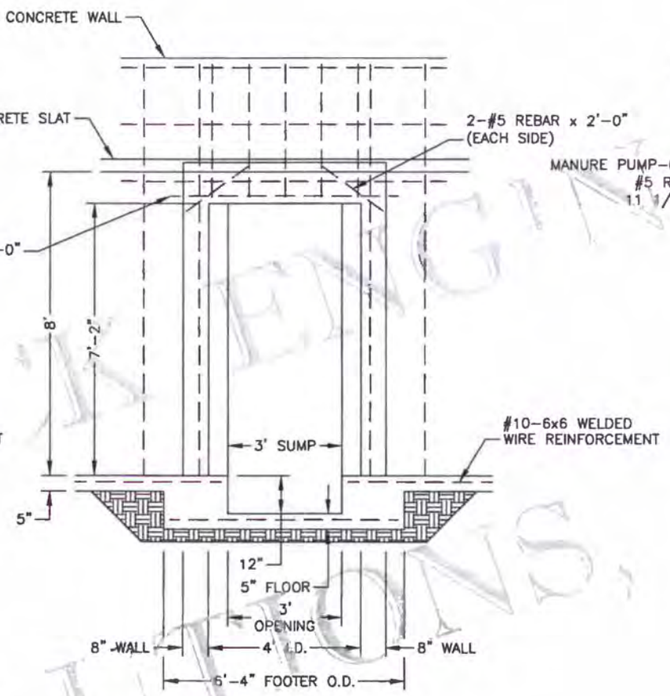
COLUMN DETAILS, MASONRY

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 9B of 15B | DRAWING NO: PHL0116-09B

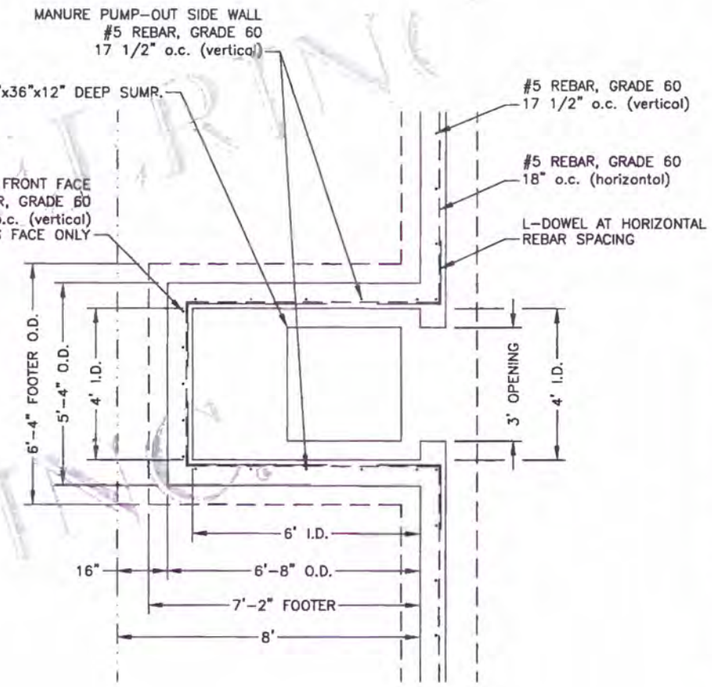
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143



C 10B MANURE PUMP-OUT SUMP
SECTION



D 10B MANURE PUMP-OUT SUMP
ELEVATION



MANURE PUMP-OUT SUMP
PLAN VIEW

MANURE PUMP-OUT DETAILS W/SUMP
SECTION, ELEVATION & PLAN VIEWS

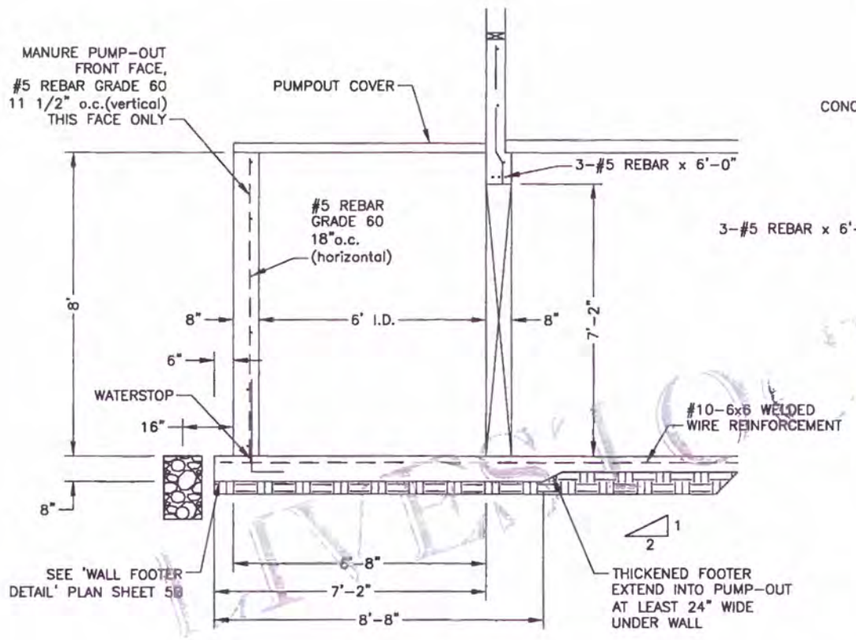
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

MANURE PUMP-OUT W/SUMP
SECTION, ELEVATION AND
PLAN VIEW

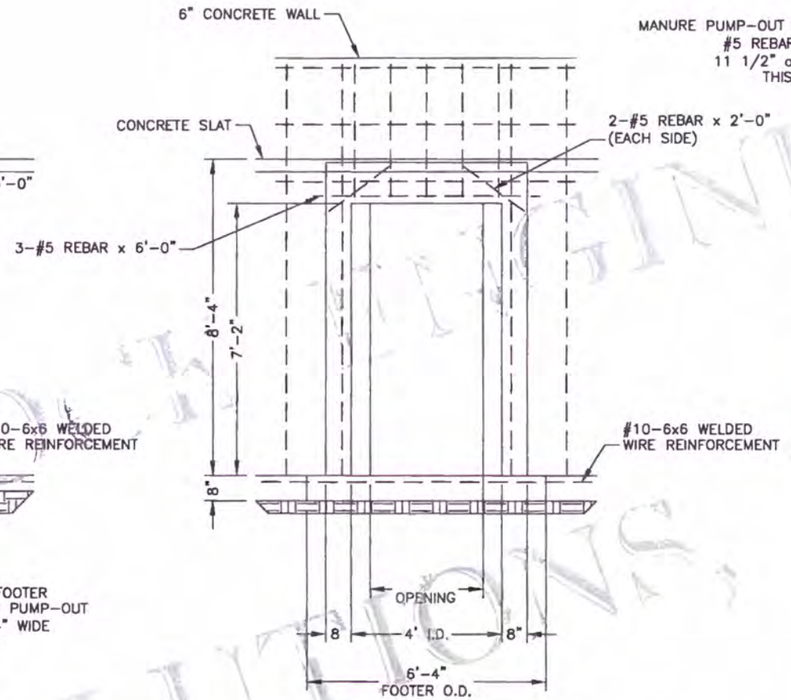
DATE: 05/05/16 | DRAWN BY: DL

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

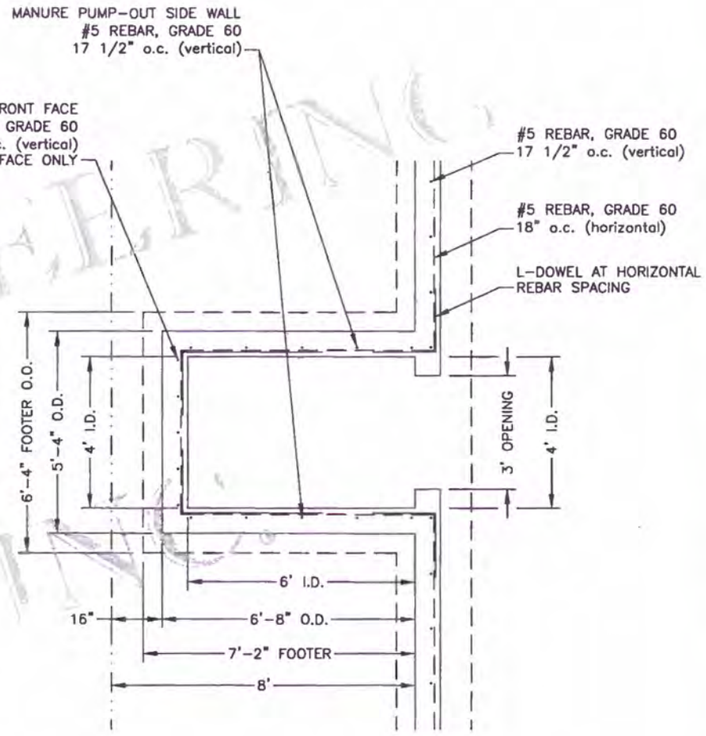
SHEET: 10B of 15B | DRAWING NO: PHL0116- 10B



MANURE PUMP-OUT (FLAT FLOOR OPTION)
SECTION



MANURE PUMP-OUT (FLAT FLOOR OPTION)
ELEVATION



MANURE PUMP-OUT (FLAT FLOOR OPTION)
PLAN VIEW

MANURE PUMP-OUT DETAILS
SECTION, ELEVATION & PLAN VIEWS
(FLAT FLOOR OPTION)

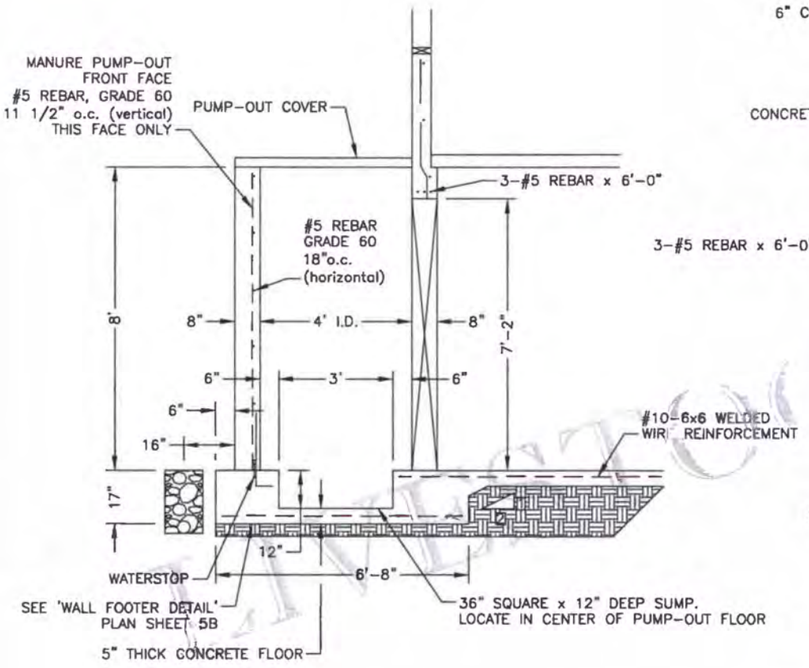
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

MANURE PUMP-OUT
SECTION, ELEVATION, AND
PLAN VIEW
(FLAT FLOOR OPTION)

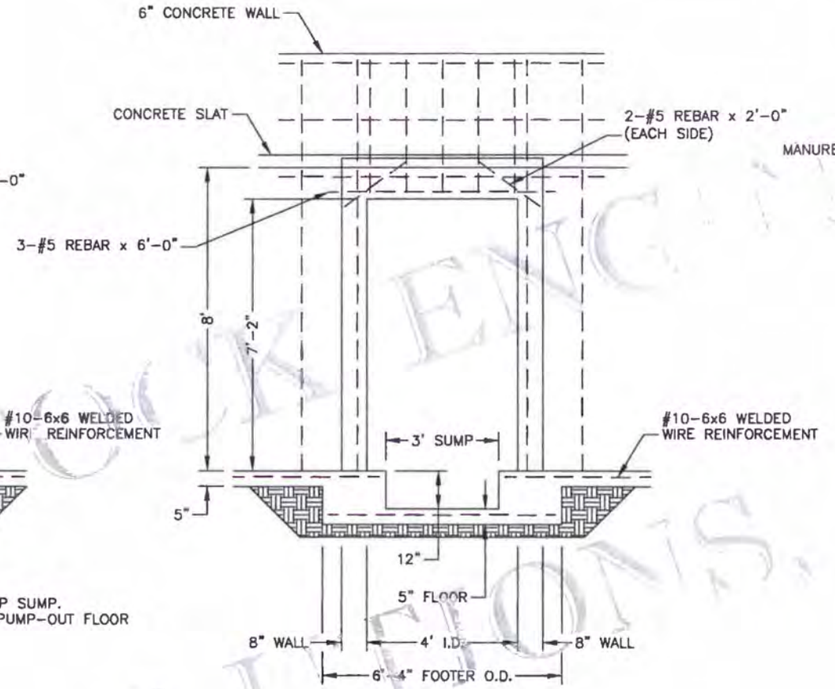
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

DATE: 05/05/16 | DRAWN BY: DL

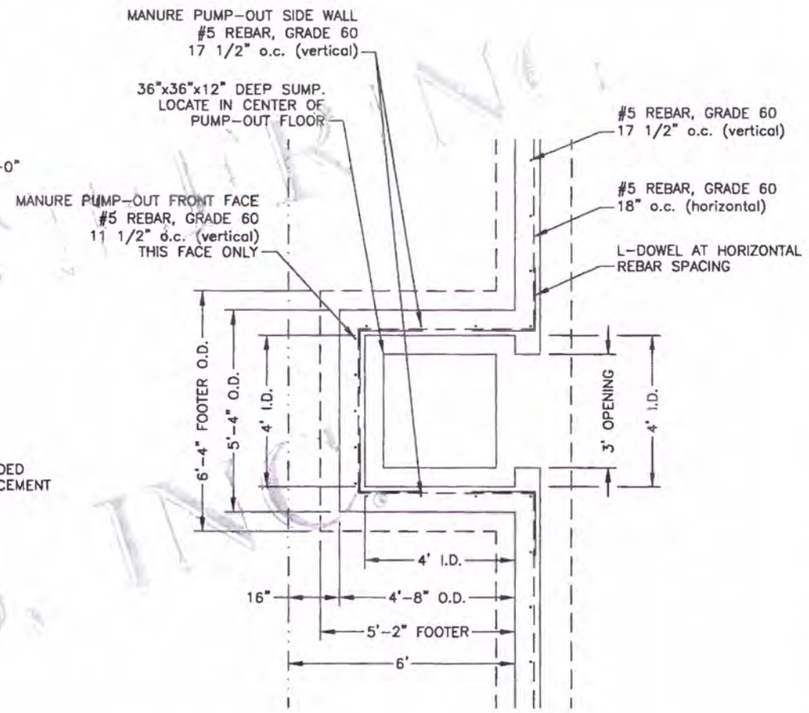
SHEET: 11B of 15B | DRAWING NO: PHL0116-11B



MANURE PUMP-OUT (4x4 SUMP OPTION)
SECTION



MANURE PUMP-OUT (4x4 SUMP OPTION)
ELEVATION



MANURE PUMP-OUT (4x4 SUMP OPTION)
PLAN VIEW

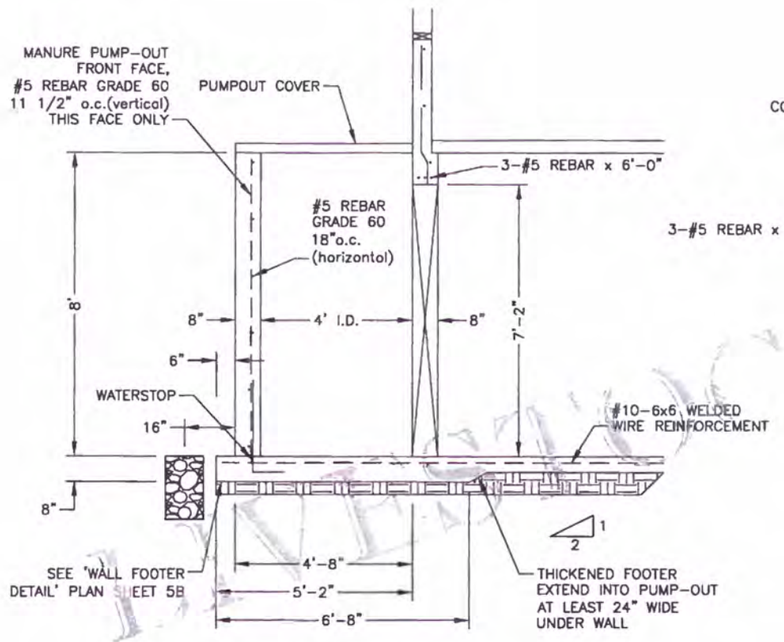
MANURE PUMP-OUT WITH SUMP DETAILS
4x4 I.D. (OPTION)
SECTION, ELEVATION AND PLAN VIEW

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

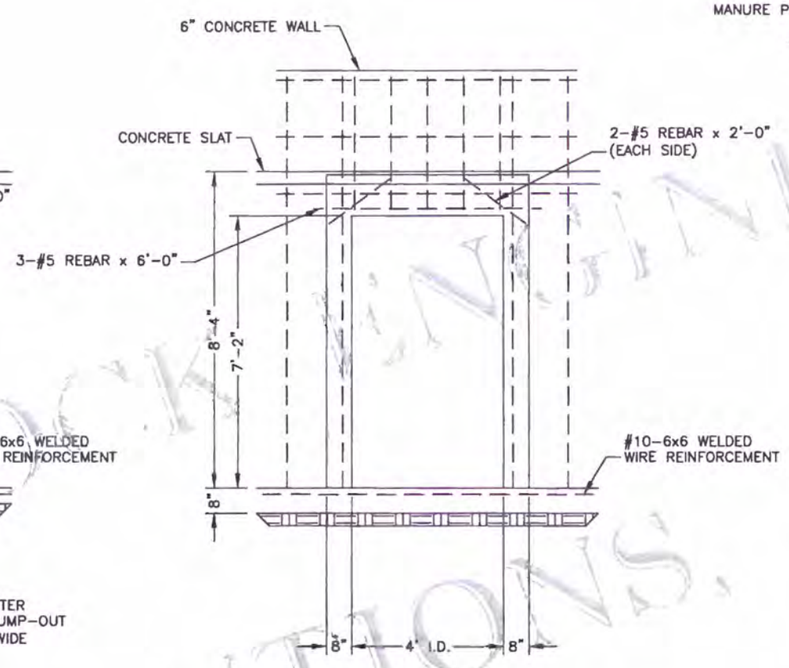
MANURE PUMP-OUT W/SUMP
(4x4 OPTION)
SECTION, ELEVATION &
PLAN VIEWS

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 12B of 15B | DRAWING NO: PHL0116- 12B

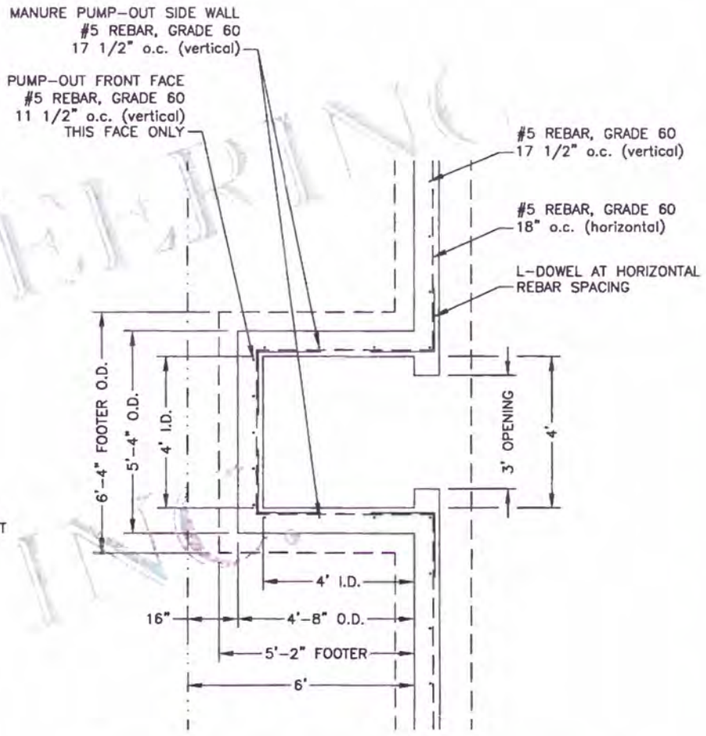
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143



MANURE PUMP-OUT (4x4 FLAT FLOOR OPTION)
SECTION



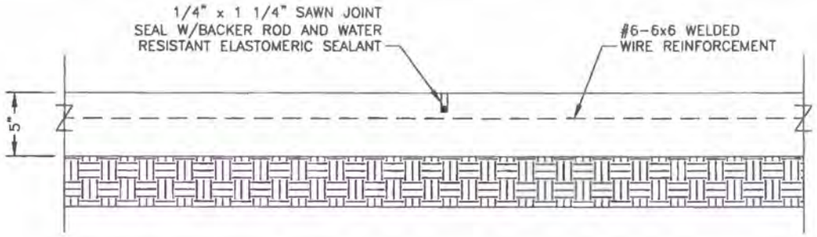
MANURE PUMP-OUT (4x4 FLAT FLOOR OPTION)
ELEVATION



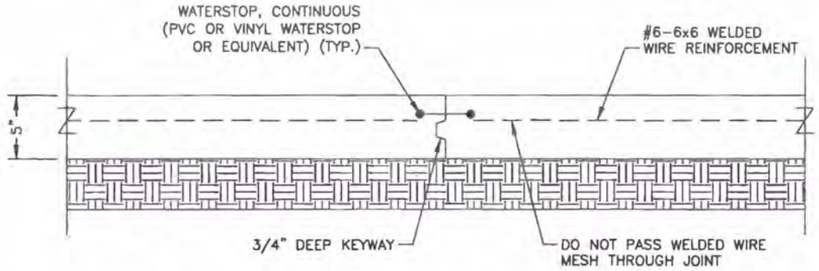
MANURE PUMP-OUT (4x4 FLAT FLOOR OPTION)
PLAN VIEW

MANURE PUMP-OUT DETAILS
4x4 I.D. (OPTION)
(FLAT FLOOR OPTION)
SECTION, ELEVATION & PLAN VIEW

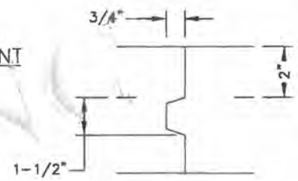
DATE: 05/05/16	SHEET: 13B of 15B | DRAWING NO: PHL0116- 13B
LIVESTOCK ENGINEERING SOLUTIONS, INC. MICHAEL A. VEENHUIZEN 2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143	THE IDEAS, DESIGNS, AND DRAWINGS REPRESENTED HERE ARE THE PROPERTY OF LIVESTOCK ENGINEERING SOLUTIONS, INC. REPRODUCTION OR USE, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT WRITTEN AUTHORIZATION OF LIVESTOCK ENGINEERING SOLUTIONS, INC. IS PROHIBITED.
MANURE PUMP-OUT (4x4 OPTION) (FLAT FLOOR OPTION)	DRAWN BY: DL
PUMPS HOGS LLC U.S. 421 & CO. ROAD 500S BRINGHURST, IN 46913 2016 CFO APPROVAL	



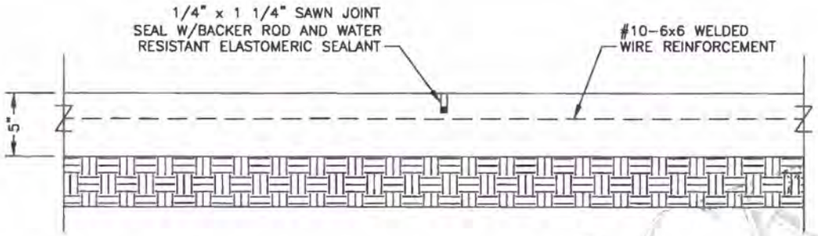
SAWN CONSTRUCTION JOINT WITH #6-6x6 WELDED WIRE REINFORCEMENT
60,000 PSI TENSILE STRENGTH: 43'-0" SPACING (MAX.)
90,000 PSI TENSILE STRENGTH: 64'-0" SPACING (MAX.)



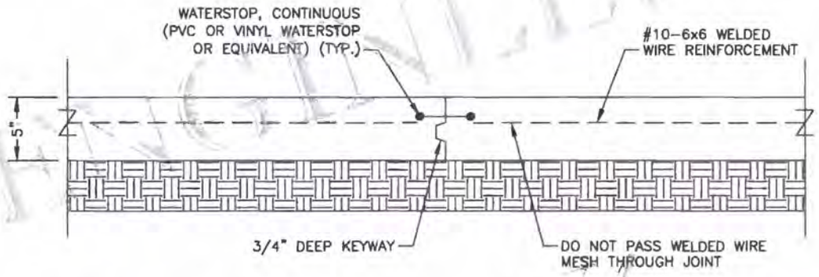
PVC OR VINYL WATERSTOP WITH #6-6x6 WELDED WIRE REINFORCEMENT
60,000 PSI TENSILE STRENGTH: 43'-0" SPACING (MAX.)
90,000 PSI TENSILE STRENGTH: 64'-0" SPACING (MAX.)



KEYWAY DETAIL



SAWN CONSTRUCTION JOINT WITH #10-6x6 WELDED WIRE REINFORCEMENT
60,000 PSI TENSILE STRENGTH: 21'-0" SPACING (MAX.)
90,000 PSI TENSILE STRENGTH: 31'-0" SPACING (MAX.)



PVC OR VINYL WATERSTOP WITH #10-6x6 WELDED WIRE REINFORCEMENT
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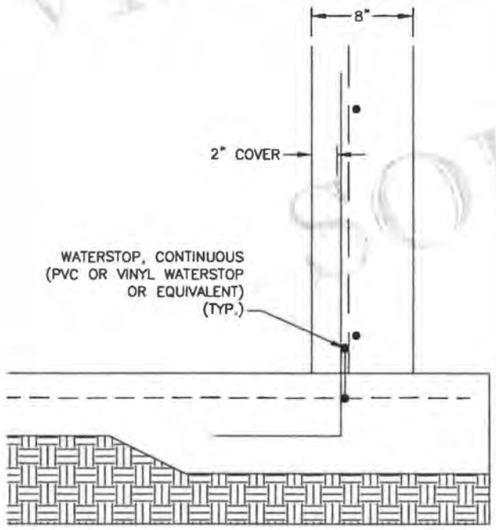
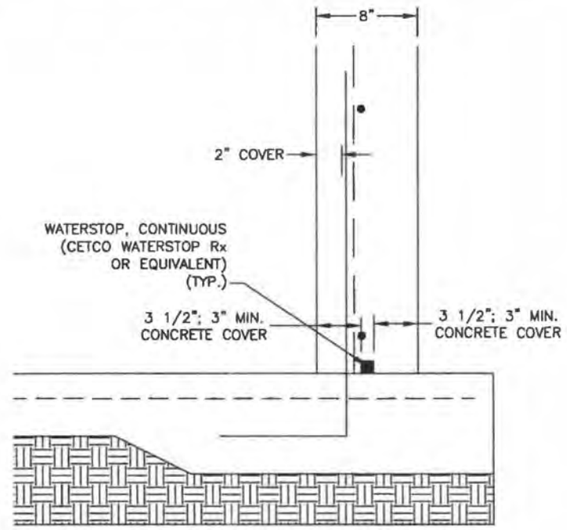
90,000 PSI TENSILE STRENGTH: 31'-0" SPACING (MAX.)



PVC OR VINYL WATERSTOP



COLLOIDAL WATERSTOP

WALL FOOTER DETAIL OPTIONS - 8" WALL

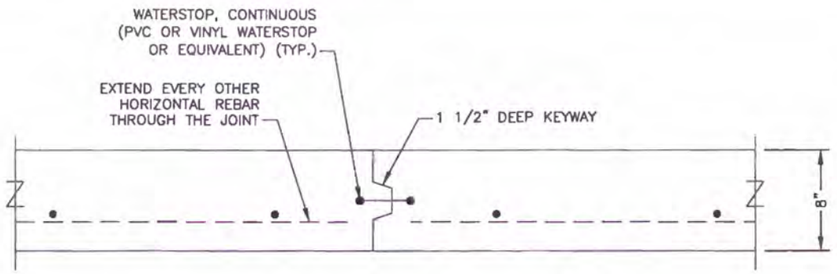
RECEIVED
MAY 06 2016
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

DATE: 05/05/16	DRAWN BY: DL
SHEET: 14B of 15B	DRAWING NO: PHL0116- 14B

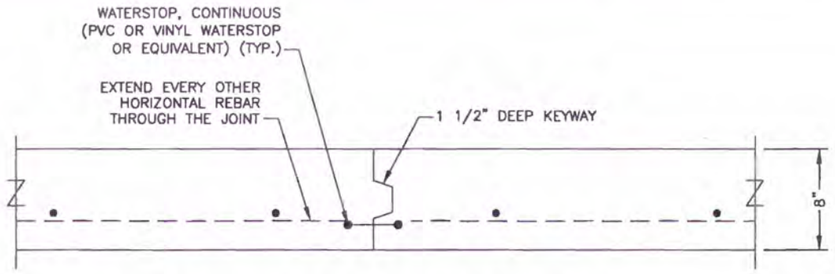
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

FLOOR DETAILS, JOINT AND WATERSTOP DETAILS; WALL/FOOTER WATERSTOP

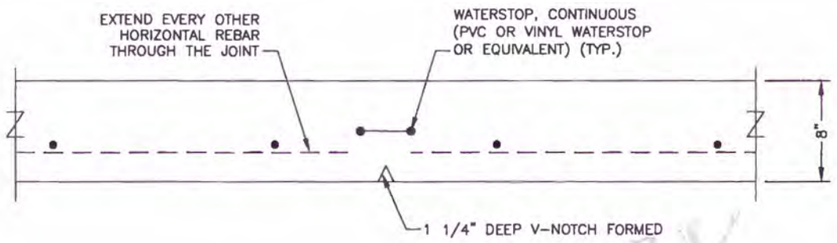
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL



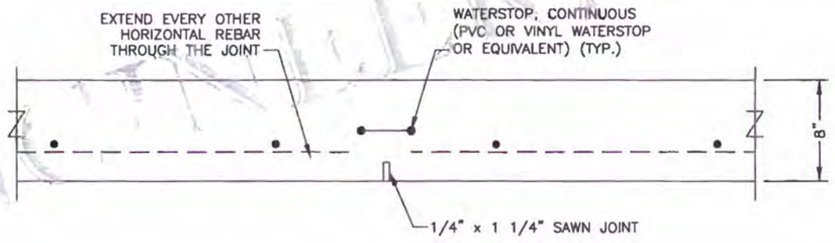
WATERSTOP PLACED IN MIDDLE OF KEYWAY FORM
SPLIT FORM AND PLACE WATERSTOP BETWEEN
TWO HALVES OF FORM



WATERSTOP PLACED OUTSIDE KEYWAY FORM
PLACE WATERSTOP AT LEAST 1 1/2"
FROM WALL

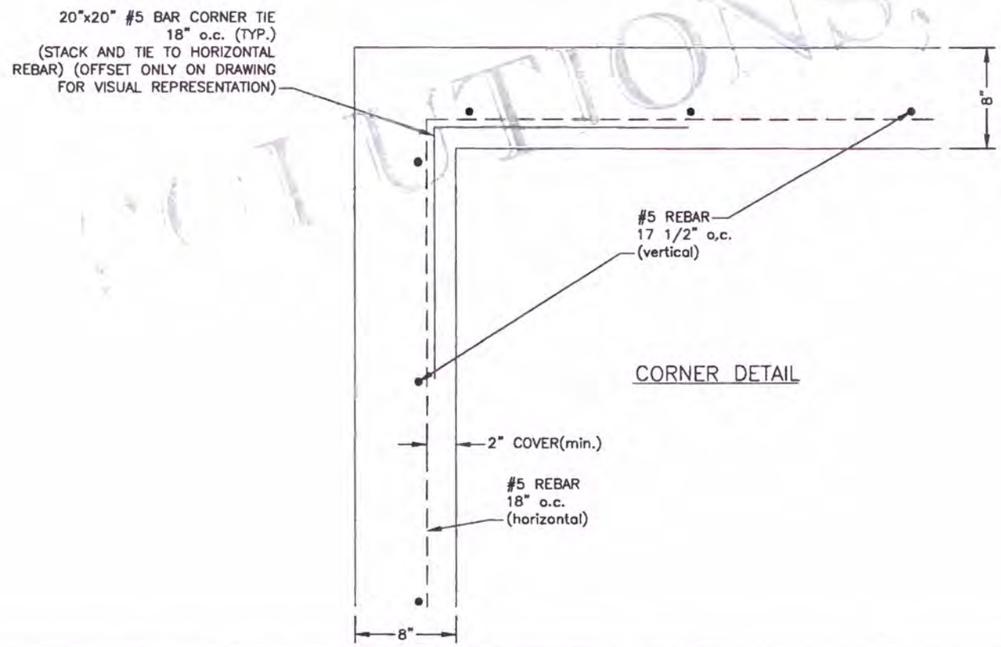


WATERSTOP PLACED IN MIDDLE OF WALL
1 1/4" DEEP x 1 1/4" WIDE 'V'-NOTCH
GROOVE FORMED IN THE WALL



WATERSTOP PLACED IN MIDDLE OF WALL
SAWN JOINT IS CUT INTO THE WALL

WALL CONSTRUCTION JOINT OPTIONS
PVC OR VINYL WATERSTOP



CORNER DETAIL

DATE: 05/05/16 | DRAWN BY: DL	SHEET: 15B of 15B | DRAWING NO: PHL0116– 15B
LIVESTOCK ENGINEERING SOLUTIONS, INC. MICHAEL A. VEENHUIZEN 2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143	THE IDEAS, DESIGNS, AND DRAWINGS REPRESENTED HERE ARE THE PROPERTY OF LIVESTOCK ENGINEERING SOLUTIONS, INC. REPRODUCTION OR USE, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT WRITTEN AUTHORIZATION OF LIVESTOCK ENGINEERING SOLUTIONS, INC. IS PROHIBITED.
WALL DETAILS, JOINT AND WATERSTOP DETAILS; CORNER REINFORCEMENT	
PUMPS HOGS LLC U.S. 421 & CO. ROAD 500S BRINGHURST, IN 46913 2016 CFO APPROVAL	

2016 Confined Feeding Operation Approval Application
Site Preparation and Backfill
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

1. The foundation and subgrade shall have large rocks, organic vegetation, and foreign material removed.
2. The foundation and subgrade shall be smoothly graded and compacted, as necessary, to a uniform density throughout prior to concrete placement. A level and smooth subgrade shall be established to maintain specified floor slab and footer thicknesses.
3. Undisturbed earth foundation surfaces shall be graded to remove surface irregularities. Where fill materials are required to establish the foundation the surface shall be scarified to a depth of not less than 2 inches to allow for adequate bonding between the existing subgrade surface and fill materials.
4. All fill and foundation materials shall be obtained from the required excavations and designated borrow areas located on the site.
5. Fill materials shall not contain large stones, sod, roots, debris, frozen soil, snow or ice, or other perishable materials. Stones larger than 6 inches in diameter shall be removed prior to placement of the fill.
6. The soil materials that are acceptable for fill and foundation soils shall consist of the naturally occurring soil materials excavated from the site or designated from a borrow area on the site.
7. Backfill should not be placed upon a frozen surface, nor should snow, ice or frozen materials be incorporated in the fill.
8. Backfilling and compaction of fill adjacent to new concrete walls should not begin in less than 10 days after placement of concrete or until the concrete strength at the site has been tested to be at least 3,000 psi to protect the structural integrity of the wall during backfilling. Refer to 11, 12, and 13 for specific compaction methods.
9. Backfilling and compaction of fill adjacent to new concrete walls should not begin until slats or floor are in place providing lateral support of the top and bottom of the wall. The timing of backfilling and compaction after the placement of slats and floors is required to ensure that the wall behaves as designed and is consistent with the requirements of the Indiana NRCS Construction Specifications, Concrete Construction, October 2005 to protect the walls from potential damage due to backfilling and compaction.
10. Fill materials used for backfill shall be placed against the walls with a bulldozer, skid-steer type loader, or similar earth moving type equipment. Fill materials will be allowed to settle and compact naturally. Fill materials used for backfill will typically be moved and placed against the walls with earth moving equipment two to four times depending on settling and natural compaction of backfill soils.
11. Adjacent to concrete storage tank walls, backfill shall be placed in a manner which will prevent damage to the structures. Manual tamping or compaction can be used to establish a uniform backfill against the building wall.

12. The tracks or tires of heavy earth moving equipment, such as bulldozers, shall not be operated within five (5) feet of the exterior of the concrete walls to prevent vehicle surcharge loads during construction. Light-duty earth moving equipment (i.e. skid-steer type loader) may be operated within five (5) feet of the exterior of the concrete walls to place backfill. Compaction within five (5) of the exterior wall shall not be done with earth moving equipment.
13. Compacting within five (5) feet of a new wall will be either by natural settling and compaction, by means of hand tamping, or by small hand-held tamping or vibrating equipment.
14. Backfill should be graded as needed prior to seeding or installation of other erosion control methods to establish and maintain at least a 4%-12% slope away from the building to promote water movement and drainage away from the building.

NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATION

CONCRETE CONSTRUCTION

ADAPTED: June 26, 2015

BY: Livestock Engineering Solutions, Inc.

1. SCOPE

This specification covers concrete construction for reinforced structures, plain concrete for waste storage pond liners, and other slabs.

2A. PREPARATION OF FORMS AND SUBGRADE

Unless otherwise indicated on the construction drawings, concrete shall be placed on a smoothly graded soil or sand subgrade compacted, as necessary, to a uniform density throughout. Plain concrete, where vehicle traffic is expected, shall be placed on a minimum 3 inches of gravel. Over-excavation shall be corrected by a procedure approved by the Engineer or the designated representative.

Concrete shall not be placed until the subgrade, forms and steel reinforcement have been inspected and approved by the Engineer or the designated representative. The Engineer shall be notified far enough in advance to provide time for the inspection.

Prior to placement of concrete, the forms and subgrade shall be free of chips, sawdust, debris, standing water, ice, snow, extraneous oil, mortar or other harmful substances or coatings.

Surfaces against which concrete is to be placed shall be firm and damp. Placement of concrete on mud, dried earth, or uncompacted fill or frozen subgrade will not be permitted. Placement of concrete on plastic is not allowed except where plastic sheeting is required to maintain subgrade integrity. Refer to Section 2B. "Subgrade Stabilization".

2B. SUBGRADE STABILIZATION (PRECIPITATION PROTECTION)

The subgrade shall be prepared in accordance with 2A. PREPARATION OF FORMS AND SUBGRADE.

After subgrade preparation is completed in accordance with Section 2A, if a pending precipitation event threatens to impact the stability and integrity of the subgrade, plastic sheets may be used to protect the subgrade and prevent wet, soft, muddy areas in the subgrade when concrete is placed. Prior to placing plastic sheets for subgrade protection, the Engineer shall be notified far enough in advance to allow for the existing and pending conditions to be evaluated and provide an approval.

Plastic sheets shall be prepared and placed directly on the smoothly graded soil or sand subgrade surface. Plastic sheets shall be placed to allow for the plastic to fully cover the footers and maintain the footer dimensions (width, length, thickness)

Plastic sheets should be 0.25 mm to 0.40 m (10 mil to 15 mil) polyethylene sheets. Plastic sheet shall not be overlapped more than six (6") inches. Plastic sheets shall not be taped or sealed to allow for moisture migration between seams.

Prior to placement of concrete, the plastic sheets shall be sliced or perforated to allow for release of concrete mix water from the concrete to the subgrade during curing. Sliced openings and/or perforations shall be placed uniformly over the surface and the perforated area shall be at least 1% of the surface area to allow adequate opening in the plastic sheets to allow for free water from the concrete to pass through the plastic during concrete curing.

Prior to placement of concrete, standing water shall be removed by pumping, pushing, or screeding to an outlet, sump, subsurface drainage tile or comparable to minimize free water on the surface of the plastic sheets.

In slabs, reinforcement steel supports shall be placed above the plastic sheets.

Concrete placed on plastic sheets should have a water-cement ratio of 0.45 or less to control excess concrete mix water and promote release of bleed water to the surface.

Adjust the time before final concrete finishing allowing adequate time for moisture migration from the concrete mix during curing.

3. FORMS

Forms shall be of wood, plywood, steel or other approved material and shall be mortar tight. The forms and associated false work shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and contours.

Items to be embedded in the concrete shall be positioned accurately and anchored firmly.

Tolerance on formed concrete is + 3/8 inch. Tolerance on concrete formed in earth is – 1 inch to +6 inches.

4. CONCRETE MIX

Portland cement shall be Type I, IA, II or IIA (Type I with an added air entrainment admixture is preferred). If Type IA or IIA cement is used, additional air entrainment admixture shall be the same type that was used in the cement. Cement that is partially hydrated (hardened), or otherwise damaged, shall not be used. Air entrainment shall be 4 to 7 percent.

Air entraining admixtures shall conform to the requirements of ASTM Specification C 260.

Aggregates shall consist of clean, hard, strong and durable particles that are free of silt, clay or any other material that may affect bonding of the cement paste.

Fine aggregate shall meet the requirements of INDOT fine aggregate number 23. Maximum coarse aggregate size shall be 3/4 inch.

Water shall be clean and free of injurious amounts of oil, salt, acid, alkali, organic matter or other deleterious substances.

Concrete shall have a minimum 28-day compressive strength of 4,000 psi. In lieu of strength tests, a mix containing an acceptable aggregate, 6 bags of cement per cubic yard and no more than 5.5 gallons or 46 pounds of water per bag of cement (including moisture in the aggregate) may be accepted.

The slump of the concrete shall be 3 to 5 inches.

5. MIXING AND PLACING CONCRETE

Concrete shall be uniform and thoroughly mixed when delivered to the job sites.

Concrete shall be discharged into the forms, vibrated and spaded within 90 minutes after the cement has been introduced into the aggregates. When air temperatures are above 85 degrees, this time must be reduced to 45 minutes.

The Inspector may allow a longer time if an approved set retarding admixture is used.

Concrete shall be deposited as close as possible in its final position. It shall not be allowed to drop more than 5 feet in forms and must not be required to flow laterally more than 8 feet.

If concrete must be dropped more than 5 feet, hoppers and chutes, "elephant trunks", etc., shall be used to prevent segregation.

If concrete must be moved laterally more than 8 feet, it shall be moved by shoveling, chutes, conveyors, wheelbarrows or similar equipment. Vibration must not be used to make concrete flow in the forms.

Plasticizing or plasticizing and retarding admixtures used shall conform to ASTM C 494, Types F or G or C 1017 as applicable.

Immediately after placement, concrete shall be consolidated by spading and vibrating, or spading and hand tamping. It shall be worked into corners and angles of the forms and around all reinforcement and embedded items in a manner which prevents segregation or the formation of "honeycomb". Excessive vibration which results in segregation of materials will not be allowed. The vibrator head shall be kept vertical when inserted into the concrete and shall penetrate at least 6" into the previously placed layer.

Slab concrete shall be placed at design thickness in one layer, but walls should be placed in essentially horizontal layers not more than 24 inches high. Successive layers shall be placed and consolidated fast enough to ensure a good bond between layers and to prevent "cold joints".

If the surface of a layer in place will develop its initial set before more concrete is placed on it, a construction joint (of the type shown in the plan) shall be made.

If freshly mixed concrete is to be placed against hardened concrete, the hardened concrete must be clean, sound, fairly level and roughened with some coarse aggregate particles exposed. Any dirt, form oil, wood chips or other foreign material shall be removed.

Concrete surfaces shall be smooth and even. Careful screeding (striking-off) and/or wood or magnesium float finishing are required.

The addition of dry cement or water to the surface of screeded concrete to expedite finishing will not be allowed.

6. REINFORCING STEEL

Reinforcing steel shall be deformed bars manufactured specifically for concrete reinforcement and shall be Grade 60 or higher (more details can be found in ASTM-A-615, A-616 or A-617).

Reinforcing steel shall be free from loose rust, concrete, oil, grease, paint or other deleterious coatings.

Reinforcement shall be accurately placed and secured in position in a manner that will prevent its displacement during the placement of concrete. This shall be accomplished by tying reinforcing steel or special tie bars to the form "snap ties" or by other methods of tying. No welding of either stress steel or temperature and shrinkage steel will be permitted. Reinforcing steel shall not be heated to facilitate bending.

In slabs, steel shall be supported by precast concrete bricks (not clay bricks), corrosion resistant metal chairs or plastic chairs.

The following tolerances will be allowed in the placement of reinforcing bars.

a. Where 1.5 inches clear distance is shown between reinforcing bars and forms, allowable clear distance is 1.125 to 1.5 inches.

b. Where 2 inches clear distance is shown between reinforcing bars and forms, allowable clear distance is 1.625 to 2 inches.

c. Where 3 inches clear distance is shown between reinforcing bars and earth or forms, allowable clear distance is 2.5 to 3 inches. Over excavation backfilled with concrete shall not count toward clear distance.

d. Maximum variation from indicated reinforcing bar spacing: 1/12th of indicated spacing, but no reduction in amount of bars specified.

Unless otherwise indicated on the drawings, splices of reinforcing bars shall provide a lap of not less than 30 diameters of the smaller bar but not less than 12 inches. Bars will not be spliced by welding. Welded wire reinforcement shall be lapped at least one mesh width.

The ends of all stress or temperature and shrinkage bars shall be covered with at least 2 inches of concrete.

7. CURING

Concrete shall be prevented from drying for at least 7 days after it is placed. Exposed surfaces shall be kept continuously moist during this period by covering with moistened canvas, burlap, straw, sand or other approved material, unless they are sprayed with a curing compound or covered with a 4 mil or thicker polyethylene. Forms left in place during the curing period shall be kept wet.

Concrete, except at construction joints, may be coated with a curing compound in lieu of continued application of moisture. The compound shall be sprayed on moist concrete surfaces as soon as free water has disappeared, but shall not be applied to any surface until patching, repairs and finishing of that surface are completed.

Curing compound shall be applied in a uniform layer over all surfaces requiring protection at a rate of not less than 1 gallon per 150 square feet of surface or to manufacturer's recommendation, whichever is greater.

8. FORM REMOVAL AND CONCRETE REPAIR

Forms for structure walls shall not be removed until 24 hours or more after concrete placement. When forms are removed in less than 7 days, the concrete shall be sprayed with a curing compound or be kept wet continuously by methods allowed in Section 7 of this specification.

Forms shall be removed in such a way as to prevent damage to the concrete. Forms shall be removed before walls are backfilled.

Where minor areas of the concrete surface are "honeycombed", damaged or otherwise defective, it shall be removed, the area wetted and then filled with a dry-pack mortar.

Dry-pack mortar shall consist of one part Portland cement and three parts sand, with just enough water to produce a workable consistency.

9. CONCRETING IN COLD WEATHER

Concrete shall not be mixed nor placed when the daily atmospheric low temperature is less than 40 degrees unless alternate concrete mixing and placement practices are provided to prevent the concrete from freezing.

Concrete mixing and placement practices for cold weather concreting shall consist of:

a. Use of warm concrete with temperatures from 55 degrees F to 65 degrees F.

b. Adequate protection from the weather, including the use of artificial heat, to prevent the temperature of the concrete from falling below 50 degrees F for a period of 3 days, and the relative humidity of the air near the concrete from falling below 40 percent.

c. Chloride accelerators such as calcium chloride may not be used to speed the hardening of concrete.

d. Non-chloride, water reducing accelerators such as calcium nitrate and sodium thiocyanate based products, or comparable, may be used to speed the hardening of concrete.

e. Accelerating or water-reducing and accelerating admixtures shall be noncorrosive and conform to the requirements of ASTM C 494, Types C and E as applicable.

f. The contractor shall furnish to the Engineer or designated representative for approval, a written plan that shows how the contractor will meet the requirements of this specification. The plan must also show how the requirements of ACI Specification 306 will be met.

10. CONCRETING IN HOT WEATHER

Hot weather precautions should be taken when air temperatures are at or above 85 degrees F.

Concrete temperature shall be less than 90 degrees F during mixing, conveying and placing.

Water-reducing and/or retarding admixtures shall conform to the requirements of ASTM Specification C 494, Types A, B, D, F or G.

11. BACKFILLING NEW CONCRETE WALLS

Heavy equipment may not be operated within five (5) feet of the new concrete wall.

Compaction within five (5) feet of the wall will be by means of hand tamping or small hand-held tamping or vibrating equipment.

Backfilling and compaction of fill adjacent to new concrete walls shall not begin in less than 10 days after placement of the concrete or until the concrete strength at the site has been tested to be at least 3,000 psi. Backfill material shall be the type indicated on the drawings and shall be free of large stones or debris.

12. <u>ADDITIONAL ITEMS WHICH APPLY TO THIS JOB</u>

a. "Section 2 PREPARATION OF FORMS AND SUBGRADE" has been relabeled to "Section 2A. PREPARATION OF FORMS AND SUBGRADE" to distinguish this Section from a new Section "2B. SUBGRADE STABILIZATION (PRECIPITATION PROTECTION)". [Change to Section 2.]
b. Plans and procedures requiring prior approval shall be submitted to the project Engineer or designated representative in place of the NRCS Engineer or designated representative. [Change to Section 2 and 9.]
c. Notifications for inspections and approvals shall be directed to the project Engineer or designated representative in place of the NRCS Engineer or designated representative. [Change to Section 2.]
d. Placement of concrete on plastic is not allowed except under specific conditions. "Plastic" has been removed from the specification stating the conditions that placement of concrete is not permitted. An exception is added to allow the use of plastic sheets when necessary and with prior approval to protect the integrity and stability of the subgrade due to precipitation events. A reference to a new Section 2B is added. [Change to Section 2.]
e. New Section "2B. SUBGRADE STABILIZATION (PRECIPITATION PROTECTION)" added to provide specifications for the exception that allows the use of plastic sheets to protect the integrity and stability of the subgrade. [New Section 2B]
f. The term "falsework" has been updated to "false work" in Section 3. [Change to Section 3]

g. Air entraining admixtures may be used in concrete mixes. Air entraining admixtures ASTM Specification reference added to provide specific specifications for air entraining admixtures and to conform to the updated Natural Resources Conservation Service Construction Specification – Concrete Construction – May 2015. [Change to Section 4.]
h. The use of plasticizing or plasticizing and retarding admixtures was added to the Natural Resources Conservation Service Construction Specification – Concrete Construction – May 2015. Plasticizing or plasticizing and retarding admixtures may be used in concrete mixes. Plasticizing or plasticizing and retarding admixtures ASTM Specification reference added to provide specific specifications for plasticizers and to conform to the updated Natural Resources Conservation Service Construction Specification – Concrete Construction – May 2015. [Change to Section 5.]
i. The term "Overexcavation" has been updated to "Over excavation" in Section 6. [Change to Section 6]
j. The term "Welded wire fabric" has been updated to "Welded wire reinforcement" to be more consistent with concrete reinforcement specifications. [Change to Section 6]
k. The term "facilities" has been updated to "alternate concrete mixing and placement practices" and "concrete mixing and placement practices" to more accurately describe the activity or action referenced in the specification. [Change to Section 9]
l. Non-chloride, water reducing accelerators may be used to speed the hardening of concrete when concreting in cold weather. The term "Accelerators" is updated to "Chloride accelerators" to allow for the use of non-chloride admixtures. [Change to Section 9.]
m. Chloride accelerators may not be used to speed the hardening of concrete. Specification to allow non-chloride, water reducing accelerators is added. [Change to Section 9.]
n. Specification for non-corrosive accelerating or water-reducing and accelerating admixtures was added to the Natural Resources Conservation Service Construction Specification – Concrete Construction – May 2015. A specification that accelerating or water-reducing and accelerating admixtures be noncorrosive and an ASTM Specification reference for accelerating or water-reducing and accelerating admixtures was added to provide specific specifications and to conform to the updated Natural Resources Conservation Service Construction Specification – Concrete Construction – May 2015. [Change to Section 9.]
o. The use of water-reducing and/or retarding admixtures for concreting in hot weather was added to the Natural Resources Conservation Service Construction Specification – Concrete Construction – May 2015. Water-reducing and/or retarding admixtures may be used in concrete mixes during hot weather concreting. Water-reducing and/or retarding admixtures ASTM Specification reference added to provide specific specifications and to conform to the updated Natural Resources Conservation Service Construction Specification – Concrete Construction – May 2015. [Change to Section 10.]
p. The distance from a new concrete wall that heavy equipment may not be operated adjacent to is five (5) feet in place of 3 feet. [Change to Section 11.]
q. The distance from a concrete wall that requires compaction be done by means of hand tamping or small hand-held tamping or vibrating equipment is five (5) feet in place of 3 feet. [Change to Section 11.]

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

Prepared for:

Pumps Hogs LLC

5200 S 500 W

Bringhurst, Indiana 46913

CONCRETE MANURE STORAGE DESIGN
SITE SPECIFIC ANALYSIS AND DESIGN

12" x 12" Concrete Column Footer Design (42" x 42" x 10")

12" x 16" Concrete Masonry Column Footer Design (42" x 42" x 8")

End Wall Lateral Support Design

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2016 Confined Feeding Operation Approval Application

Site Specific Analysis and Design

for

Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

Site Specific Analysis and Design:

The provisions of Article 19 Confined Feeding Operations rule (327 IAC 19) **Rule 12 Manure Handling and Storage; Site, Design, and Construction Requirements for Waste Management Systems** specifies the design requirements for manure handling and storage systems. Specifically, 327 IAC 19-12-4 *Storage capacity and design requirements* outlines the design and construction standards required for manure storage facilities. 327 IAC 19-12-4(d) states: "*All liquid manure storage facilities must be constructed according to the Indiana NRCS Conservation Practice Standard Code 313: Waste Storage Facility, September 2005.*" In addition 327 IAC 19-12-4(e) states: "*In addition to subsection (d), all concrete manure storage facilities must be constructed according to either of the following design standards: (1) MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005*. (2) TR-9: Circular Concrete Manure Tanks, march 1998**"

The design standards presented in MWPS-36: Rectangular Concrete Manure Storages; Second Edition, 2005 apply to the design of the proposed rectangular concrete manure storages. The requirements of MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005 were considered in the design and planned construction of the concrete manure storage structure. Specifically, the manure storage construction is based on the design and construction procedures presented in this design standard, including design and construction data (Table 2-1), load table (Tables 2-2, 2-4), design tables (Tables 3-1, 3-2, 3-3, 3-10, 3-11, 3-14, 3-15), design equations (Appendix C), and top of wall beam support (Appendix D).

A site specific analysis and design of the concrete footer for the 12" x 12" reinforced concrete columns and 12" x 16" concrete masonry columns result in a design different than the values presented in the MWPS-36 design tables. The site specific analysis and design is based on the design equations presented in Appendix C, MWPS-36 and ACI 318-11 Building Code Requirements for Structural Concrete.

MWPS-36 also describes the design assumptions and rationale for designing rectangular concrete manure storages. One of the design assumptions for the designs presented in MWPS-36 is that "*Rectangular tank designs assume the walls have full lateral top and bottom support*". Top of wall support is typically provided by tank tops, slats, or a specially designed beam. MWPS-36 states that "*Properly placed gang slats can be used to provide lateral top support for side and end walls.*" It is concluded based on the design information presented in MWPS-36 that specially designed beams may not be required in a totally slatted floor building The specific design requirements for this concrete manure storage will be considered to determine if a top of wall beam is required.

A site specific analysis and design is presented for the square plain concrete column footer designs and end wall lateral support to demonstrate that the design is based on MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005 in accordance with 327 IAC 19-12-4(e).

2016 Confined Feeding Operation Approval Application

Site Specific Analysis and Design

12" x 12" Concrete Column Footer Design (42" x 42" x 10")

Wean-to-Finish Building

for

Pumps Hogs LLC

5200 S 500 W

Bringhurst, Indiana 46913

Concrete Column Footer Design:

A concrete footer option is shown on the construction plans depicting a 42" x 42"x 10" thick plain square concrete column footing. The construction plans include a 12" x 12" x 7'-2" reinforced concrete column. The column load (P_u, factored load) for the 12" x 12" x 7'-2" column is 20,423 lb.

Table 3-15 "Plain square concrete column footings.", MWPS-36; Rectangular Concrete Manure Storages – Second Edition, 2005, page 28, provides design information for 10,000 lb, 20,000 lb, 30,000 lb, 40,000 lb, 50,000 lb, and 60,000 lb column loads. Selecting a plain square concrete column footing size from Table 3-15 indicates that the footing size for a 12"x12" reinforced concrete column load of 20,423 lb (up to a 30,000 pound column load) is 49" x 49" x 13" thick. A 39" x 39" x 11" thick square column footer cannot be used since the column load is greater than 20,000 lb. Based on the information presented in Table 3-15 of MWPS-36, the proposed footing size and design depicted on the design plans is not consistent with Table 3-15 of the MWPS-36 design guide.

It is noted that the caption to Table 3-15 "Plain square concrete column footings." States "*Refer to **Appendix C, Design Load Equations** for specific design equation. Concrete strength: 4,000 psi.*" Specifically, this caption refers to Equation C-28 Plain column footing width and Equation C-29 Plain square footing thickness for square columns using 3,000 to 4,000 psi concrete. In accordance with these design equations and the design methods presented in ACI 318-11 "Building Code Requirements for Structural Concrete" the proposed footer design (42" x 42" x 10" thick) meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e). The following site specific design is presented to confirm this conclusion.

Equation C-28. Plain column footing width (adapted)

The description of the design equations for footings in MWPS-36, page 68 states that the equations are based on ACI 318 Chapter 22 and Section 9.3.5 and a modified design approach shown in the 1993 edition of PCA's Simplified Design. Equation C-28 is used to determine the width of a square plain concrete footer. Equation C-28 depicts the axial load in the equation as P_u (factored axial load, ACI 318-11, Chapter 2 – Notation and Definitions). The factored axial load may be a combination of dead load, live load, and snow load. Each loading condition or combination of loads has a different load factor (L_L = 1.6; L_D = 1.2; L_S = 0.5). There are no snow loads in the column or column footer design. The column and column footer design includes dead load and live loads.

Equation C-28, MWPS-36 includes a constant in the denominator of 1.6. It is unclear in the derivation of Equation C-28, MWPS-36 whether the constant, 1.6, represents a live load factor (L_L) to convert P_u (factored load) to an unfactored load, P. If this is the correct interpretation and the column load is a combination of dead and live loads, it is possible that Equation C-28 may not accurately determine the unfactored load applied to the column and column footer based on the factored load.

ACI 318-11, Section 22.7.2 states "*Base area of footing shall be determined from unfactored forces and moments transmitted by footing to soil and permissible soil pressure selected through principles of soil mechanics.*" An unfactored load (P) should be used to determine the base area of the footing. In addition to the axial load from the column transferred to the footer, the footer and allowable soil pressure must also account for the weight of the manure above the footer and weight of the concrete in the footer. Since the dimensions of the footer are undetermined, the forces due to manure and concrete are represented as a

pressure, lbs/in^2, and are subtracted from the allowable soil pressure. In accordance with ACI 318-11; 22.7.2 the based area of the footer is determined using the following equations and relationships.

Incorporating the requirements of ACI 318-11; Section 22.7.2, Equation C-28 is adapted to determine the required base area of footing.

$W_f = \{P_u \div [1.6 \times (q_a - (65.0 \text{ lb/cu ft} \times D_{manure}) - Wt_{footing})]\}^{0.5} \times 12 \text{ in/ft}$ Equation C-28

$A_f = P \div [q_a - (\delta_{manure} \times D_{manure}) - Wt_{footing}]$ Adapted Equation C-28

P = pig load + slat load + lintel load + column load + equipment load

P_u = factored axial load

Pig load = 57.5psf (300 lb pig, adapted from MWPS-36, Table 2-4)

Slat load = 38.84 psf (1" slot, 5-7/8" wide, 4" deep; adapted from MWPS-36. Table 3-10)

Lintel load = (8.5 in x 10 in ÷ 144 sq in/sq ft) x 150 pcf = 88.54 plf

Column load (reinforced concrete) = 1 ft x 1ft x 7.167 ft x 150 pcf = 1,075 lb (7'-2" column)

Use column load (reinforced concrete) = 1,075 lb

Equipment load = 8.5 psf

A_f = Base area of footer, ft^2

q_a = soil bearing capacity, psf

δ_{manure} = density of manure (62.5 lb/ft^3)

D_{manure} = depth of manure, ft

$Wt_{footing}$ = footer thickness

Plain Concrete Footer Base Area, A_f((ACI 318-11; 22.7.2; MWPS-36, Equation C-28, adapted)

Determine footer base area and footer width, A_f & W_f

Reinforced concrete column – 12" x 12"

P = (57.5 psf x 10 ft x 12 ft) + (38.84 psf x 10 ft x 12 ft) + (88.54 plf x 12 ft) + 1,075 lb + (8.5 psf x 10 ft x 12ft)

P = 6,900 lb + 4,661 lb + 1,063 lb + 1,075 lb + 1,020 = 14,719 lb

P_u = 1.6 x 6,900 lb + 1.2 x (4,661 lb + 1,063 lb + 1,075 lb + 1,020 lb) = 20,423 lb

q_s = 2,000 psf (presumptive soil bearing)

Manure density = 62.5 pcf

D_{manure} = depth of manure = 8.0 ft (7'-2" column)

$Wt_{footing}$ = 10 in ÷ 12 in/ft x 150 pcf = 125 psf (assume footing 10" thick)

A_f= 14,719 lb ÷ (2,000 psf – (62.5 lb/cu ft x 8.0 ft) – 125 psf)

A_f= 14,719 lb ÷ 1,375 psf

A_f= 10.7 ft^2 (1,541 in^2)

Determine width of a square footer:

$W_f = (10.7 \text{ ft}^2)^{0.5} = 3.27$ ft (39.3 in)

Required: A 40" wide square footer

Use: A 42" x 42" square footer

Equation C-29. Plain square footing thickness for square columns using 3,000 to 4,000 psi concrete

Equation C-29, MWPS-36 is a derived equation to determine footing thickness for a square footer based on the principles of concrete design. Equation C-29 has been developed specifically for square plain concrete footers. For plain (unreinforced) concrete, flexure strength usually controls footer thickness. In accordance with ACI 318-11, the required footer thickness is based on the flexure strength (moment), beam action shear, and punching shear (two-way action). The footer thickness design will be determined in accordance with the design methods presented in ACI 318-11.

It is assumed that Equation C-29 is derived from the flexure strength and calculated moment at the face of the concrete column. Based on the variables presented in Equation C-29, the footer thickness can be determined if the column width, footer width, dead load factor, and factored axial load are known.

Equation C-29 will be used to estimate the footer thickness based on MWPS-36. The footer thickness design will be determined in accordance with the design methods presented in ACI 318-11.

Plain Concrete Footer Thickness Design; MWPS-36; Equation C-29

Determine footer thickness, h; Equation C-29, MWPS-36

$h_f = 0.07 \times (1 - (d_{width} \div W_f) \times (L_D \times P_u)^{0.5} + 2 \text{ inches} >= 8 \text{ inches}$ Equation C-29, MWPS-36

d_{width} = Column width, 12"

W_f = Footer width, 42"

L_D = Dead load factor, 1.2

P_u = 20,423 lb (concrete column)

$h_f = 0.07 \times (1 - (12 \div 42)) \times (1.2 \times 20{,}423)^{0.5} + 2 \text{ inches}$

$h_f = 0.07 \times (0.714 \times 156.549) + 2 \text{ inches}$

$h_f = 9.83$ inches (use a 10" thick footer)

Plain Concrete Footer Thickness Design; ACI 318-11; 22.7.4 – 22.7.6

Determine plain rectangular footing thickness

Flexure strength - maximum factored moment at face of column

Determine soil resistance pressure, q_s

$q_s = P_u \div (A_f)$

P_u = 20,423 lb

$A_f = 42" \times 42" = 1{,}764 \text{ in}^2$

$q_s = 20{,}423 \text{ lb} \div 1{,}764 \text{ in}^2$

$q_s = 11.6$ psi (1,670 psf)

Determine moment at face of column, M_u

$M_u = q_s \times W_f \times (L_f - L_c)/2 \times (L_f - L_c)/4$

$W_f = 42"$

$L_f = 42"$

$L_c = 12"$

$M_u = 11.6 \text{ psi} \times 42" \times [(42"-12") \div 2] \times [(42"-12") \div 4] = 54{,}810 \text{ in-lb } (4{,}567.5 \text{ ft-lb})$

Determine thickness, h_f

The nominal moment (M_n) with reduction factor must be greater than or equal to factored moment (M_u)

$\varphi M_n \geq M_u$

$\varphi = 0.6$ (strength reduction factor; ACI 318-11, Section 9.3.5)

$M_n = [(5 \times \lambda \times \sqrt{f'_c})] \times [(b \times d^2) \div 6]$ (Strength design -- ACI 318-11; 22.5.1; Equation 22-2)

$\lambda = 1$

$f'_c = 4{,}000$ psi

$b = W_f = 42$"

$d = h$ = effective depth ($h_f - 2$)

$M_n = (5 \times 1 \times \sqrt{4{,}000} \times 42" \times h^2) \div 6$

$M_u = 54{,}810$ in-lb

Set $M_n = M_u$

Rearrange to find h^2

$h^2 = (54{,}810 \text{ in-lb} \times 6) \div (5 \times 1 \times \sqrt{4{,}000} \text{ psi} \times 42")$

$h^2 = (328{,}860) \div (13{,}281.6)$

$h = \sqrt{24.76} = 4.98$

$h_f = h + 2 = 4.98 + 2 = 6.98$" [ACI 318-11; 22-7-4 requires a minimum 8" thick footer]

Use a 10" thick footer [an 8" thick footer is allowed]

Beam action shear – critical section located at h from face of column

Use an effective thickness, h = 8" (10" – 2")

$b_w = W_f = 42$"

$c = W_c = 12$"

$L_f = 42$"

Critical section location (h from face of column):

(12" ÷ 2) + 8" = 14" from center of column; 7" from edge of footer [(42" ÷ 2) – 14"]

Critical section location occurs within the footer. Use h = 8"

Calculate shear (V_u) at critical section

$V_u = q_s \times$ tributary area

$q_s = 11.6$ psi

tributary area = $W_f \times [(L_f/2) - (W_c/2) - h]$

$V_u = 11.6 \text{ psi} \times 42" \times [42"/2 - 12"/2 - 8"] = 11.6 \text{ psi} \times 42" \times 7" = 3{,}410.4$ lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

$\varphi = 0.6$ (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = (4/3) \times \lambda \times \sqrt{f'_c} \times b_w \times h$ (Strength design -- ACI 318-11; 22.5.4; Equation 22-9)

$\varphi V_n = 0.6 \times (4/3) \times 1 \times \sqrt{4{,}000} \times 42" \times 8" = 17{,}000$ lb

17,000 lb > 3,410.4 lb **OKAY**

Punching shear (two-way action) – critical section located at one-half effective footing thickness, h, from face of column

Use an effective thickness, h = 8" (10" -2")

Check punching shear. The critical section is a perimeter (b_o) related to the column length and width and effective depth, h.

$W_f = 42"$

$L_f = 42"$

$W_c = L_c = 12"$

Critical section location:

(12" ÷ 2) + (8" ÷ 2) = 10" from center of column; 11" from the edge of the footer [(42" ÷ 2) – 10"]

Calculate punching shear (V_u) at critical section

$V_u = q_s \times$ tributary area

$q_s = 11.6$ psi

tributary area $= W_f \times L_f - [(h/2 + W_c + h/2) \times (h/2 + L_c + h/2)] = \{(W_f \times L_f) - [(W_c + h) \times (L_c + h)]\}$

$V_u = 11.6$ psi x {(42" x 42") - [(12" + 8") x (12" + 8")]}

$V_u = 11.6$ psi x $\{1{,}764$ in$^2 - 400$ in$^2\} = 15{,}823$ lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

$\varphi = 0.6$ (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = [(4/3) + (8/3\beta)] \times \varphi \times \lambda \times \sqrt{f'_c} \times b_o \times h$ and $V_n \leq 2.66 \times \varphi \times \lambda \times \sqrt{f'_c} \times b_o \times h$

(Strength design -- ACI 318-11; 22.5.4; Equation 22-10)

b_o = perimeter of critical section

$b_o = 2 \times (W_c + L_c) + (4 \times h) = 2 \times (12" + 12") + 4 \times 8" = 80"$

β = ratio of long-to-short side = 42" ÷ 42" = 1.0

(4/3) + 8/(3 x 1.0) = 4.0; 4.0 > 2.66 Therefore,

$V_n = 2.66 \times \lambda \times \sqrt{f'_c} \times b_o \times h$

$\varphi V_n = 0.6 \times 2.66 \times 1 \times \sqrt{4{,}000} \times 80" \times 8" = 64{,}602$ lb

64,602 lb > 15,823 lb **OKAY**

Design Check

Required footer base area: $A_f = 10.7\ ft^2\ (1{,}541\ in^2)$

Footer width (minimum): $W_f = (10.7\ ft^2)^{0.5} = 3.27\ ft\ (39.3\ in)$

Use 42" x 42" footer

Proposed footer: $1{,}764\ in^2 > 1{,}541\ in^2$ **OKAY**

MWPS-36

Footer thickness: $h_f = h + 2 = 7.83 + 2 = 9.83$ **Use 10" thick footer**

ACI 318-11

Flexure analysis:

Footer thickness: $h_f = h + 2 = 4.98 + 2 = 6.98$ **Use 10" thick footer**

Beam action shear:

Footer thickness: $h_f = 10$"; 17,000 lb > 3,410.4 lb **Use 10" thick footer**

Punching shear (two-way shear action):

Footer thickness: $h_f = 10$"; 64,602 lb > 15,823 lb **Use 10" thick footer**

USE: 42" x 42" x 10" square footer

Based on this analysis, a 42" x 42" x 10" thick footer meets or exceeds the design criteria presented in MWPS-36: Rectangular Concrete Manure Storages – Second Edition, 2005 and ACI 318-11 Building Code Requirements for Structural Concrete. It is noted that the footer thickness determined by the MWPS-36 design equations is 9.83". Based on the ACI 318-11 design standards an 8" thick footer is required and is sufficient to support the factored design load transferred from the column to the footer.

A 10" thick footer is selected for this design based on the analysis to meet or exceed the expected design and service load conditions. Based on this analysis, the proposed footer design (42" x 42" x 10" thick) meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e).

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A concrete footer option shown on the construction plans for the 12"x16" masonry column includes a 42" x 42"x 8" thick plain square concrete column footing. The construction plans include a 12" x 16" x 7'-2" concrete masonry column. The column load (P_u, factored load) for the 12" x 12" x 7'-2" column is 20,633 lb.

Table 3-15 "Plain square concrete column footings.", MWPS-36: Rectangular Concrete Manure Storages – Second Edition, 2005, page 28, provides design information to determine the width of a square footer and footer thickness for 10,000 lb, 20,000 lb, 30,000 lb, 40,000 lb, 50,000 lb, and 60,000 lb column loads. Table 3-15, MWPS-36 provides design information for square columns (i.e. 9 x 9, 10 x 10, 11 x 11, 12 x 12, 14 x 14, and 16 x 16) located in the center of a square footer.

Although, Table 3-15, MWPS-36 is based on square columns, an estimate of the base area (square footer width) for a specific concrete masonry column load can be estimated from Table 3-15. Estimating a plain square concrete column footing width for a 12" x 16" concrete masonry column load of 20,633 lb (up to a 30,000 pound column load) from Table 3-15 is 49" x 49" x 13" thick. A 39" x 39" x 11" thick square column footer cannot be used since the column load is greater than 20,000 lb. Based on the information presented in Table 3-15 of MWPS-36, the proposed footing size and design depicted on the design plans is not consistent with Table 3-15 of the MWPS-36 design guide.

ACI 318-11 "Building Code Requirements for Structural Concrete" presents a design method for determining the required size and thickness of a plain (unreinforced) concrete footer. ACI 318-11, Section 22.7.2 states "*Base area of footing shall be determined from unfactored forces and moments transmitted by footing to soil and permissible soil pressure selected through principles of soil mechanics.*" According to ACI 318-11, the required footer thickness is based on the flexure strength (moment), beam action shear, and punching shear (two-way action). The column dimensions (12" x 16") are used in the calculation of the flexure strength, beam action shear, and punching shear. Since Table 3-15, MWPS-36 is based on a square column, the footer thickness presented in Table 3-15, MWPS-36 is not applicable to determine the required footer thickness. The required footer thickness is determined based on ACI 318-11.

A specific design table for plain (unreinforced) square concrete column footers for rectangular masonry columns was not found in MWPS-36. Since a design table was not identified during the design, a project specific design based on the design equations presented in Appendix C of MWPS-36, Second Edition and the design methods presented in ACI318-11"Building Code Requirements for Structural Concrete" was conducted.

In accordance with these design equations and the design methods presented in ACI 318-11 "Building Code Requirements for Structural Concrete" the proposed footer design (42" x 42" x 8" thick) meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e). The following design is presented to confirm this conclusion.

Equation C-28. Plain column footing width (adapted)

The description of the design equations for footings in MWPS-36, page 68 states that the equations are based on ACI 318 Chapter 22 and Section 9.3.5 and a modified design approach shown in the 1993 edition of PCA's Simplified Design. Equation C-28 is used to determine the width of a square plain concrete footer. Equation C-28 depicts the axial load in the equation as P_u (factored axial load, ACI 318-11, Chapter 2 – Notation and Definitions). The factored axial load may be a combination of dead load, live load, and snow load. Each loading condition or combination of loads has a different load factor (L_L = 1.6; L_D = 1.2; L_S = 0.5). There are no snow loads in the column or column footer design. The column and column footer design includes dead load and live loads.

Equation C-28, MWPS-36 includes a constant in the denominator of 1.6. It is unclear in the derivation of Equation C-28, MWPS-36 whether the constant, 1.6, represents a live load factor (L_L) to convert P_u (factored load) to an unfactored load, P. If this is the correct interpretation and the column load is a combination of dead and live loads, it is possible that Equation C-28 may not accurately determine the unfactored load applied to the column and column footer based on the factored load.

In accordance with ACI 318-11, Section 22.7.2, an unfactored load (P) should be used to determine the base area of the footing. In addition to the axial load from the column transferred to the footer, the footer and allowable soil pressure must also account for the weight of the manure above the footer and weight of the concrete in the footer. Since the dimensions of the footer are undetermined, the forces due to manure and concrete are represented as a pressure, lbs/in^2, and are subtracted from the allowable soil pressure. In accordance with ACI 318-11; 22.7.2 the based area of the footer is determined using the following equations and relationships.

Incorporating the requirements of ACI 318-11; Section 22.7.2, Equation C-28 is adapted to determine the required base area of footing.

$W_f = \{P_u \div [1.6 \times (q_a - (65.0 \text{ lb/cu ft} \times D_{manure}) - Wt_{footing})]\}^{0.5} \times 12 \text{ in/ft}$ Equation C-28

$A_f = P \div [q_a - (\delta_{manure} \times D_{manure}) - Wt_{footing}]$ Adapted Equation C-28

P = pig load + slat load + lintel load + column load + equipment load

P_u = factored axial load

Pig load = 57.5psf (300 lb pig, adapted from MWPS-36, Table 2-4)

Slat load = 38.84 psf (1" slot, 5-7/8" wide, 4" deep; adapted from MWPS-36. Table 3-10)

Lintel load = (8.5 in x 10 in ÷ 144 sq in/sq ft) x 150 pcf = 88.54 plf

Column load (7'-2" masonry column with a 2-1/8" concrete cap and 2 #4 or #5 rebar) =

Determine gross area of concrete masonry block, A_{gm}

Actual dimensions of block: 11-5/8" x 15-5/8" with two cores 9-5/8" x 6-5/16"

A_{gm} = 11.625" x 15.625" – 2 x 9.625" x 6.3125"

A_{gm} = 60.125 in^2

Determine gross area of concrete core, A_{gc}

A_{gc} = 2 x 9.625" x 6.3125"

A_{gc} = 121.5 in^2

Determine area of reinforcement steel -- #4 & #5 rebar

Area (#5 rebar) = (5/8" ÷ 2)^2 x π = 0.307 in^2

2 - #5 rebar = 2 x 0.307 in^2 = 0.614 in^2

Area (#4 rebar) = (1/2" ÷ 2)^2 x π = 0.196 in^2

2 - #4 rebar = 2 x 0.196 in^2 = 0.392 in^2

Determine net area of concrete core, A_{gc}

$A_{gc} = 121.5\ in^2 - .614\ in^2 = 120.886\ in^2$ (#5 rebar)

$A_{gc} = 121.5\ in^2 - .307\ in^2 = 121.193\ in^2$ (#4 rebar)

Column load = $60.125\ in^2 \div 144\ in^2/ft^2 \times 6.99\ ft \times 110\ pcf + 120.886\ in^2 \div 144\ in^2/ft^2 \times 6.99\ ft \times 150\ pcf + 0.614\ in^2 \times 6.99\ ft \times 12\ in/ft \times 0.284\ lb/in^3 + (11.625\ in \times 15.625\ in \times 2.125\ in) \div 1{,}728\ in^3/ft^3 \times 150\ pcf$

Column load = 1,249.4 lb (7'-2" column)
Density of masonry = 110 pcf
Density of concrete = 150 pcf

Use column load (concrete masonry) = 1,250 lb

Equipment load = 8.5 psf

A_f = Base area of footer, ft^2

q_a = soil bearing capacity, psf

δ_{manure} = density of manure (62.5 lb/ft^3)

D_{manure} = depth of manure, ft

$Wt_{footing}$ = footer thickness

MWPS-36; Plain Concrete Footer Design

Determine footer width, W_f

Masonry concrete column – 12" x 16"

P = (57.5 psf x 10 ft x 12 ft) + (38.84 psf x 10 ft x 12 ft) + (88.54 plf x 12 ft) + 1,250 lb + (8.5 psf x 10 ft x 12ft)

P = 6,900 lb + 4,661 lb + 1,063 lb + 1,250 lb + 1,020 = 14,894 lb

P_u = 1.6 x 6,900 lb + 1.2 x (4,661 lb + 1,063 lb + 1,250 lb + 1,020 lb) = 20,633 lb

q_s = 2,000 psf (presumptive soil bearing)

Manure density = 62.5 pcf

D_{manure} = depth of manure = 8.0 ft (7'-2" column)

$Wt_{footing}$ = 10 in ÷ 12 in/ft x 150 pcf = 125 psf (assume footing 10" thick)

A_f= 14,894 lb ÷ (2,000 psf – (62.5 lb/cu ft x 8.0 ft) – 125 psf)

A_f= 14,894 lb ÷ 1,375 psf

A_f= 10.83 ft^2 (1,560 in^2)

Determine width of a square footer:

$W_f = (10.83\ ft^2)^{0.5} = 3.29$ ft (39.48 in)

Required: A 40" wide square footer

Use: A 42" x 42" square footer

Equation C-29. Plain square footing thickness for square columns using 3,000 to 4,000 psi concrete

Equation C-29, MWPS-36 is a derived equation to determine footing thickness for a square footer and square column based on the principles of concrete design. Equation C-29 has been developed specifically for square columns and is not directly applicable to rectangular concrete masonry columns. For plain

(unreinforced) concrete footers, flexure strength usually controls footer thickness. In accordance with ACI 318-11, the required footer thickness is based on the flexure strength (moment), beam action shear, and punching shear (two-way action). The footer thickness design will be determined in accordance with the design methods presented in ACI 318-11.

Plain Concrete Footer Thickness Design; ACI 318-11; 22.7.4 – 22.7.6

Determine plain square footing thickness

Flexure strength - maximum factored moment at face of column

Determine soil resistance pressure, q_s

$q_s = P_u \div (A_f) = (20{,}633 \text{ lb}) \div (42" \times 42")$

$q_s = 11.7$ psi (1,684.8 psf)

Determine moment at face of column, M_u

$M_u = q_s \times W_f \times (L_f - L_c)/2 \times (L_f - L_c)/4$

$W_f = 42"$

$L_f = 42"$

$L_c = 12"$ & $16"$

Check $L_c = 12"$

$M_u = 11.7$ psi $\times$ 42" x [(42"-12") ÷ 2] x [(42"-12") ÷ 4]

$M_u = 55{,}283$ in-lb (4,607 ft-lb) – Moment creates tension in the footer

Determine thickness, h_f

The nominal moment (M_n) with reduction factor must be greater than or equal to the factored Moment (M_u)

$\varphi M_n \geq M_u$

$\varphi = 0.6$ (strength reduction factor; ACI 318-11, Section 9.3.5)

$M_n = [(5 \times \lambda \times \sqrt{f'_c})] \times [(b \times d^2) \div 6]$ (Strength design -- ACI 318-11; 22.5.1; Equation 22-2)

$\lambda = 1$

$f'_c = 4{,}000$ psi

$b = W_f = 42"$

$d = h =$ effective depth (h_f - 2)

$M_n = (5 \times 1 \times \sqrt{4{,}000} \times 42" \times h^2) \div 6$

$M_u = 55{,}283$ in-lb

Set $M_n = M_u$

Rearrange to find h^2

$h^2 = (55{,}283 \text{ in-lb} \times 6) \div (5 \times 1 \times \sqrt{4{,}000} \text{ psi} \times 42")$

$h^2 = (331{,}698) \div (13{,}281.6)$

$h = \sqrt{24.97} = 5.0$

$h_f = h + 2 = 5.0 + 2 = 7.0"$ [ACI 318-11; 22-7-4 requires a minimum 8" thick footer]

Use an 8" thick footer

Check L_c = 16"

M_u = 11.7 psi x 42" x [(42"-16") ÷ 2] x [(42"-16") ÷ 4]

M_u = 41,523.3 in-lb (3,460.3 ft-lb) – Moment creates tension in the footer

Determine thickness, h_f

The nominal moment (M_n) with reduction factor must be greater than or equal to the factored Moment (M_u)

$\varphi M_n \geq M_u$

φ = 0.6 (strength reduction factor; ACI 318-11, Section 9.3.5)

$M_n = [(5 \times \lambda \times \sqrt{f'_c})] \times [(b \times d^2) \div 6]$ (Strength design -- ACI 318-11; 22.5.1; Equation 22-2)

λ = 1

f'_c = 4,000 psi

b = W_f = 42"

d = h = effective depth (h_f - 2)

$M_n = (5 \times 1 \times \sqrt{4{,}000} \times 42" \times h^2) \div 6$

M_u = 41,524 in-lb

Set $M_n = M_u$

Rearrange to find h^2

$h^2 = (41{,}524 \text{ in-lb} \times 6) \div (5 \times 1 \times \sqrt{4{,}000 \text{ psi}} \times 42")$

$h^2 = (249{,}144) \div (13{,}281.6)$

$h = \sqrt{18.76} = 4.33$

$h_f = h + 2 = 4.33 + 2 = 6.33"$ Use at least 8" (ACI 318-11; 22.7.4)

Use an 8" thick footer

Beam action shear – critical section located at h from face of column

Use an effective thickness, h = 6"

1. Critical section location: (12" ÷ 2) + 6" = 12" from center of column; 9" from edge of footer
2. Critical section location: (16" ÷ 2) + 6" = 14" from center of column; 7" from edge of footer

Calculate shear (V_u) at critical section

$V_u = q_s \times b \times [(b/2) - (c/2) - h]$

q_s = 11.7 psi

b = 42"

c = 12" & 16"

Check c = 12"

V_u = 11.7 psi x 42" x [21" – 6" – 6"] = 4,423 lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

φ = 0.6 (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = (4/3) \times \lambda \times \sqrt{f'_c} \times b_w \times h$ (Strength design -- ACI 318-11; 22.5.4; Equation 22-9)

$\varphi V_n = 0.6 \times (4/3) \times 1 \times \sqrt{4{,}000} \times 42" \times 6" = 12{,}750$ lb

12,750 lb > 4,423 lb **OKAY**

Check c = 16"

$V_u = 11.7$ psi x 42" x [21" – 8" – 6"] = 3,440 lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

$\varphi = 0.6$ (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = (4/3) \times \lambda \times \sqrt{f'_c} \times b_w \times h$ (Strength design -- ACI 318-11; 22.5.4; Equation 22-9)

$\varphi V_n = 0.6 \times (4/3) \times 1 \times \sqrt{4{,}000} \times 42" \times 6" = 12{,}750$ lb

12,750 lb > 3,440 lb **OKAY**

Punching shear (two-way action) – critical section located at one-half effective footing thickness, h, from face of column

Use an effective thickness, h = 8"

1. Critical section location: (12" ÷ 2) + (6" ÷ 2) = 9" from center of column; 12" from edge of footer
2. Critical section location: (16" ÷ 2) + (6" ÷ 2) = 11" from center of column; 10" from edge of footer

Calculate punching shear (V_u) at critical section

$V_u = q_s \times [b^2 - (c + h)^2]$

$q_s = 11.7$ psi

b = 42"

c = 12" &16"

Check c = 12"

$V_u = 11.7$ psi x $[(42")^2 - (12" + 6")^2] = 16{,}848$ lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

$\varphi = 0.6$ (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = [(4/3) + (8/3\beta)] \times \lambda \times \sqrt{f'_c} \times b_o \times h$ and $V_n \leq 2.66 \times \varphi \times \lambda \times \sqrt{f'_c} \times b_o \times h$

(Strength design -- ACI 318-11; 22.5.4; Equation 22-10)

b_o = perimeter of critical section = $2 \times [(6/2 + 12 + 6/2) + (6/2 + 16 + 6/2)] = 80"$

β = ratio of long-to-short side = 42" ÷ 42" = 1

$(4/3) + 8/(3 \times 1) = 4$; $4 > 2.66$ Therefore,

$V_n = 2.66 \times \varphi \times \lambda \times \sqrt{f'_c} \times b_o \times h$

$\varphi V_n = 2.66 \times 0.6 \times 1 \times \sqrt{4{,}000} \times 80" \times 6" = 48{,}451$ lb

48,451 lb > 16,848 lb **OKAY**

Check c = 16"

$V_u = 11.7 \text{ psi} \times [(42")^2 - (16" + 6")^2] = 14{,}976 \text{ lb}$

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

$\varphi = 0.6$ (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = [(4/3) + (8/3\beta)] \times \lambda \times \sqrt{f'_c} \times b_o \times h$ and $V_n \leq 2.66 \times \varphi \times \lambda \times \sqrt{f'_c} \times b_o \times h$

(Strength design -- ACI 318-11; 22.5.4; Equation 22-10)

b_o = perimeter of critical section = $2 \times [(6/2 + 12 + 6/2) + (6/2 + 16 + 6/2)] = 80"$

β = ratio of long-to-short side = $42" \div 42" = 1$

$(4/3) + 8/(3x1) = 4$; $4 > 2.66$ Therefore,

$V_n = 2.66 \times \varphi \times \lambda \times \sqrt{f'_c} \times b_o \times h$

$\varphi V_n = 2.66 \times 0.6 \times 1 \times \sqrt{4{,}000} \times 80" \times 6" = 48{,}451 \text{ lb}$

$48{,}451 \text{ lb} > 14{,}976 \text{ lb}$ **OKAY**

Design Check

Footer base area: $A_f = 10.83 \text{ ft}^2$ (1,560 in^2)

Footer width (minimum): $W_f = (10.82 \text{ ft}^2)^{0.5} = 3.29$ ft (39.48 in)

Use 42" x 42" footer

Proposed footer: 1,764 in^2 > 1,560 in^2 **OKAY**

ACI 318-11

Footer thickness: $h_f = h + 2 = 5.0 + 2 = 7.0$ (12" width)	**Use 8" thick footer**	(flexure)
Footer thickness: $h_f = h + 2 = 4.34 + 2 = 6.34$ (16" width)	**Use 8" thick footer**	(flexure)
Footer thickness: h_f = 8"; 12,750 lb > 4,423 lb (12" width)	**Use 8" thick footer**	(beam shear)
Footer thickness: h_f = 8"; 12,750 lb > 3,440 lb (16" width)	**Use 8" thick footer**	(beam shear)
Footer thickness: h_f =8"; 48,451 lb > 16,848 lb (12" width)	**Use 8" thick footer**	(punching shear)
Footer thickness: h_f =8"; 48,451 lb > 14,976 lb (16" width)	**Use 8" thick footer**	(punching shear)

USE: 42" x 42" x 8" square footer

Based on this analysis, a 42"x42"x 8" thick footer meets or exceeds the design criteria presented in MWPS-36: Rectangular Concrete Manure Storages – Second Edition, 2005 and ACI 318-11 Building Code Requirements for Structural Concrete. Based on the ACI 318-11 design standards an 8" thick footer is required and is sufficient to support the factored design load transferred from the column to the footer.

A 8" thick footer is selected for this design based on the analysis to meet or exceed the expected design and service load conditions. Based on this analysis, the proposed footer design (42" x 42" x 8" thick) meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e).

2016 Confined Feeding Operation Approval Application

Site Specific Analysis and Design
End Wall Lateral Support Design
Wean-to-Finish Building
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

Concrete Manure Storage Wall End Wall Lateral Support Design (Top-of-wall beam):

The requirements of 327 IAC 19-12-4(e)(1) state that all concrete manure storage facilities must be constructed according to the design standards presented in MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005 (MWPS-36). MWPS-36 includes the design assumptions and rationale for designing rectangular concrete manure storages. MWPS-36 states on page 14 under the Walls section:

"*Rectangular tank designs assume the walls have full lateral top and bottom support. A wall top support must be provided for tanks without tops or slatted floors. Refer to* ***Wall Top Support*** *for additional design information.*"

MWPS-36 also states on page 16 under the "Wall Top Support" section:

"*Rectangular tank designs assume the walls have full lateral top and bottom support. The bottoms of the walls are supported laterally by the floor and footing. The tops of the tank walls are laterally supported by tank tops, slats, or specially designed beams called wall top beams. Properly placed gang slats can be used to provide lateral top support for side and end walls. Slats typically provide enough lateral support for walls. Additional wall top analysis may be needed for walls under extreme loading conditions. Individual slats placed across the building width most likely will not provide adequate support for the end walls. In this case, a wall top beam will need to be used to provide adequate lateral support for the top of the end wall.*

Top of wall support for the side walls is provided by continuous top of wall contact with the gang slats placed adjacent to the side wall. The gang slats (4' x10', typical) are placed side-by-side across the width of the building providing a continuous support from side-to-side by the gang slats. The gang slats are placed adjacent to and touching each other across the width of the building. Gaps between lines of slats are grouted to maintain continuous contact between gang slats.

Top of wall support for the end walls is provided by the lintel support beams and interior support members of the gang slats. The lintel support beams and gang slats are placed end-to-end across the length of the building. Typically, the spacing between rows of lintels is ten (10') feet and gang slats support members is every five (5) and/or ten (10) feet. Top of wall support design for the end walls has been based on lateral support every ten (10') feet.

The top of wall support for the end walls shown on the construction plans is 3 - #5 rebar, spaced 4" on-center located in the top twelve (12") of the wall. The design tables in Appendix D of MWPS-36 (Table D-1 and Table D-2) provide the recommended number and size of reinforcement steel bars to place in the top 12" of the concrete wall to provide continuous lateral support when support is 10'-0" on-center. The recommended top of wall reinforcement for an eight (8") inch thick, eight (8') foot deep concrete manure storage tank wall is four (4) #5 rebar located in the top twelve (12") inches. Based on the information presented in Table D-1 of MWPS-36, the proposed top of wall support design depicted on the design plans is not consistent with Table D-1 of the MWPS-36 design guide.

The design equations for wall top beams in Appendix C of MWPS-36 are based on a simply supported beam lying on its side (page 67). This design method effectively determines the maximum moment that occurs in the inside face of the wall located at the center of the span between the lintel support beams. Since the top of wall beam is a continuous beam, moments also occur in the outside face of the concrete

wall at the interior supports (lintel support beams). The moments at the interior supports (lintel support beams) are less than the moments that occur at the center of the span. The maximum moment at the center of the span is used to determine the required top of wall reinforcement.

To determine the maximum shear and moments along the wall due to soil pressure loads, an analysis and design is completed based on the design equations in MWPS-36, Appendix C. In accordance with these design equations the proposed top of wall design (3-#5 rebar) meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e). The following site specific design is presented to confirm this conclusion.

Top of Wall Support Design

The concrete wall of a rectangular concrete manure storage is designed with full lateral support at the bottom and top. Based on MWPS-36, Appendix C Design Equations, a top of wall support beam is designed using the same design equations for the concrete wall with full lateral support.

Reference Equations (MWPS-36; Appendix C)

Equation C-1. Moment for walls, wall top beams

$M = 0.90 \times A_s \times f_y \times d \times \{1 - [(0.59 \times A_s \times f_y) \div (f'_c \times b \times d)]\} \{1\ ft/12\ in\}$

M = moment, ft-lb

A_s = area of steel, in^2

f_y = steel yield strength, lb/in^2

b = width, in

d = distance from extreme compression fiber to centroid of tension reinforcement, in

f'_c = concrete compressive strength, lb/in^2

Equation C-2. Shear for walls, wall top beams

$V = 0.85 \times (2) \times (\sqrt{f'_c}) \times b \times d$

V = shear, lb

b = width, in

d = distance from extreme compression fiber to centroid of tension reinforcement, in

f'_c = concrete compressive strength, lb/in^2

Equation C-7. Largest end shear; linearly increasing or decreasing load on a beam

$V_1 = (w \times L) \div 3$

V_1 = shear, lb

w = linear load, pounds per linear foot

L = length, feet

Equation C-8. Smallest end shear; linearly increasing or decreasing load on beam

$V_2 = (w \times L) \div 6$

V_2 = shear, lb

w = linear load, pounds per linear foot

L = length, feet

Equation C-9. Maximum moment; linearly increasing or decreasing load on beam

$M = (w \times L^2) \div (9 \times \sqrt{3})$

M = moment, ft-lb

w = linear load, pounds per linear foot

L = length, feet

Equation C-10. Shear; uniformly loaded beam

$V = (w \times L) \div 2$

V = shear, lb

w = linear load, pounds per linear foot

L = length, feet

Equation C-11. Maximum moment; uniformly loaded beam

$M = (w \times L^2) \div 8$

M = moment, ft-lb

w = linear load, pounds per linear foot

L = length, feet

Design

Determine w, linearly increasing load on beam (concrete wall)

Equivalent fluid pressure due to soil load = 75 $lb/ft^2/ft$ of depth (NRCS Code 313, Table 4)

Concrete manure storage tank side wall depth = 8 ft

Soil backfill depth = 8.0 ft (maximum; typically less)

Beam design width = 1 foot

L_L, Load factor = 1.6 (ACI 318-11; 9.2.5)

$w = 75\ lb/ft^2/ft$ of depth x 1 ft x 8.0 ft

w = 600.0 lb/ft

w_u = 600 lb/ft x 1.6 = 960 lb/ft (factored load)

Determine factored shear at top of concrete wall, V_2 (uniform load)

$V_2 = (w \times L) \div 6$ (Equation C-8, MWPS-36)

$V_2 = (960\ lb/ft \times 8\ ft) \div 6 = 1{,}280$ lb

MWPS-36, Appendix C Design (simply supported beam)

Determine shear; uniformly loaded beam, V_u

$V_u = (w_u \times L) \div 2$ (Equation C-10)

$w_u = 1{,}280$ lb/ft (factored shear at top of wall due to soil load)

L = 10 feet (lintel spacing, beam span)

$V_u = (1{,}280\ lb/ft \times 10\ ft) \div 2$

$V_u = 6{,}400$ lb

In accordance with ACI 318-11, 11.1.3.1 sections located less than a distance d from the face of the support shall be permitted to be designed for V_{ud} computed at a distance d from the face of the support.

$V_{ud} = V_u - w_u \times (d + s_w / 2)$

$V_u = 6{,}400$ lb

$w_u = 1{,}280$ lb/ft

s_w = support width = 8.5 inches (average of 8 in bottom and 9 in top)

c = concrete cover = 2.0 inches

d = 8 inches – 2.0 inches – (5/8" / 2) = 5.6875 inches

$V_{ud} = 6{,}400$ lb – 1,280 lb/ft x (5.6875 + 8.5 / 2)/12 in/ft = 5,340 lb

Determine maximum moment; uniformly loaded beam, M_u

$M_u = (w_u \times L^2) \div 8$ (Equation C-11)

$w_u = 1{,}280$ lb/ft (factored shear at top of wall due to soil load)

L = 10 feet (lintel spacing, beam span)

$M_u = [1{,}280 \text{ lb/ft} \times (10)^2] \div 8$

$M_u = 16{,}000$ ft-lb (inside face, maximum moment in length of wall)

ACI 318-11; Allowable Shear and Moment

Determine Allowable Shear and Moment

Check 3 - #5, Grade 60 reinforcement bar in the top 12" of wall and wall thickness 8".

#5 rebar diameter = 5/8 in (0.625 in)

$d_b = 0.625$ in

$A_b = 0.307$ in^2

$A_{s3} = 3 \times 0.307$ in^2 = 0.921 in^2

Allowable Shear

$V_c = 2 \times \sqrt{f'_c} \times b \times d$ (ACI 318-11; 11.2.1.1, Eq 11-3)

Concrete cover = 2.0 in

b = 12 in

d = [8 in – 2.0 in – (½ x 5/8 in)]

d = 5.6875 in

$f'_c = 4{,}000$ psi

$V_c = 2 \times \sqrt{4{,}000} \times 12 \times 5.6875$

$V_c = 8{,}633$ lb

Check $fV_c > V_u$

f = 0.75 (ACI 318-11; 9.3.2.3)

$fV_c = 0.75 \times 8{,}633$ lb = 6,474 lb

Allowable shear = 6,474 lb

Allowable Moment

$M = 0.90 \times A_s \times f_y \times d \times \{1 - [(0.59 \times A_s \times f_y) \div (f'_c \times b \times d)]\} \times \{1\ ft/12\ in\}$

3 - #5 rebar

$A_{s3} = 0.921\ in^2$

$f_y = 60{,}000\ psi$

$b = 12\ in$

$d = 5.6875\ in$

$f'_c = 4{,}000\ psi$

$M = 0.90 \times 0.921\ in^2 \times 60{,}000\ psi \times 5.6875\ in \times \{1-[(0.59 \times 0.921\ in^2 \times 60{,}000\ psi) \div (4{,}000\ psi \times 12\ in \times 5.6875\ in)]\} \times \{1\ ft/12\ in\}$

$M = 282{,}862\ psi \times 0.881 \times \{1\ ft/12\ in\}$

$M = 20{,}908\ ft\text{-}lb$

Allowable moment = 20,908 ft-lb (3-#5 rebar)

Design Check

Maximum Shear

$V_u = 5{,}340\ lb$ (MWPS-36 design equations, simply supported beam)

Allowable Shear

$V_u = 6{,}474\ lb$

$5{,}340\ lb < 6{,}474\ lb$ **OKAY**

Maximum Moment

$M_u = 16{,}000\ ft\text{-}lb$ (MWPS-36 design equations, simply supported beam, inside face within span)

Use $M_u = 16{,}000\ ft\text{-}lb$ (inside face within span and at interior support (lintel support beams)

Allowable Moment

$M_u = 20{,}908\ ft\text{-}lb$ (3 - #5 rebar)

$16{,}000\ ft\text{-}lb < 20{,}908\ ft\text{-}lb$ (3-#5 rebar) **Use 3-#5 REBAR** **OKAY**

In accordance with the most conservative design method (simply-supported beam), 3 - #5 rebar are placed in the 8" thick wall in a 12" section of the wall centered on the 8" x 10" support lintel.

A top of wall beam to provide lateral support on the end wall is designed based on a wall support spacing of 10 feet on-center. A soil lateral pressure load at the top of wall due to soil back fill up to 8'-0" high is considered in the design. Three (3)-#5 rebar located in the top twelve (12") inches of the wall and spaced 4" on-center is used in accordance with the most conservative design method to provide adequate lateral support in the end wall. The top wall beam and top wall reinforcement have been demonstrated to provide full lateral support at the top of wall for design.

A 12" wide, 8" thick top of wall beam with three (3) #5 rebar, Grade 60 is selected for this design based on the analysis to meet or exceed the expected design and service load conditions. Based on this analysis, the proposed top of wall beam provides adequate lateral support and meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e).

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

Prepared for:

Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

ALTERNATE DESIGN OR COMPLIANCE APPROACH INNOVATIVE TECHNOLOGY

327 IAC 19-5-1 "Alternate design or compliance approach; innovative technology"

327 IAC 19-3-1 "Performance Standards"

12" X 12" Reinforced Concrete Column Design
4 - #5 Vertical Rebar
4 - #4 Vertical Rebar

12" x 16" Concrete Masonry Column Design

12" X 12" Concrete Column Square Footer Design
30" wide x 10" thick Continuous Footer

12" x 16" Concrete Masonry Column Continuous Footer Design
30" wide x 9" thick Continuous Footer

Concrete Construction Specification
Natural Resource Conservation Service
Concrete Construction
Construction Specification
Adapted

Prepared by:
LIVESTOCK ENGINEERING SOLUTIONS, INC.

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Alternate Design or Compliance Approach:

Confined Feeding Operations rule (327 IAC 19) allows for the use of a design or compliance approach that is not specifically described in the requirements outlined in 327 IAC 19). The requirements for an alternate design or compliance approach request are presented in 327 IAC 19-5-1 "Alternate design or compliance approach; innovative technology." Compliance with the performance standards outlined in 327 IAC 19-3-1 is identified as one of the requirements of an alternate design or compliance approach approval. The requirements of 327 IAC 19-5-1 and 327 IAC 19-3-1 are presented below.

327 IAC 19-5-1 "Alternate design or compliance approach; innovative technology"

Sec. 1. (a) The use of a design or compliance approach other than the requirements specified in this article, or an innovative technology may be proposed by the owner/operator in accordance with the following:

(1) The proposal for the alternative design or compliance approach, or innovative technology must be accompanied by documentation that indicates that the performance standards in 327 IAC 19-3-1 will be met. The alternate design or compliance approach, or innovative technology must comply with all existing environmental rules and laws.
(2) The proposed design or compliance approach, or innovative technology must be incorporated into the approval.

(b) In making a determination on an alternate design or compliance approach, or innovative technology, the commissioner shall consider the applicable criteria that may include the following:

(1) Design specifications that indicate adequate structural integrity
(2) Protective measures that reduce the potential for manure releases and spills
(3) The existence of barriers or surface gradient that directs liquid flow away from features specified for protection
(4) Operational practices that provide additional protection
(5) Threats of adverse impacts to water quality or other specified sensitive areas.
(6) Other criteria related to protection of the environment or human health.

(c) The commissioner shall provide written documentation describing the basis for the approval or denial of the proposed alternate design, compliance approach, or innovative technology

327 IAC 19-3-1 "Performance Standards"

Sec. 1. (a) A CFO shall be managed so as to avoid an unpermitted discharge into waters of the state.
(b) A CFO must be constructed and operated in a manner that minimizes nonpoint source pollution entering waters of the state.
(c) A CFO shall take all reasonable steps to prevent manure releases, spills or the discharge of manure in violation of the approval or this article, including seepage and leakage.
(d) All waste management systems must be designed, constructed, and maintained to minimize leaks and seepage and prevent manure releases or spills, as well as ensure compliance with the water quality standards in 327 IAC 2.
(e) Manure must be staged in such a manner as to:
(1) not threaten or enter waters of the state
(2) prevent:
(A) runoff;
(B) manure releases; and
(C) spills
(f) Manure must be applied in such a manner as to:
(1) not threaten or enter waters of the state
(2) prevent:
(A) ponding for more than twenty-four (24) hours;
(B) manure release; and
(C) spills; and
(3) minimize nutrient leaching beyond the root zone.

2016 Confined Feeding Operation Approval Application
Alternate Design or Compliance Approach (327 IAC 19-5)
12" x 12" Reinforced Concrete Column Design
Wean-to-Finish Building
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

Alternate Compliance Approach Request:

The requirements of 327 IAC 19-12-4(d) states:

> *"All liquid manure storage facilities must be constructed to the Indiana NRCS Conservation Practice Standard Code 313: Waste Storage Facility, September 2005. . . ."*

The requirements of 327 IAC 19-12-4(e) states:

> *"In addition to subsection (d), all concrete manure storage facilities must be constructed according to either of the following design standards:*
> *(1) MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005".*
> (2) *TR-9: Circular Concrete Manure Tans, March 1998."*

Concrete Column Reinforcement Design:

The 12"x12"concrete columns shown on the construction plans specify 4 - #5 vertical rebar tied with #3 rebar every 12" and 4-#4 vertical rebar tied with #3 rebar every 12". Table 3-11 "Reinforced concrete columns.", MWPS-36: Rectangular Concrete Manure Storages – Second Edition, 2005, page 26, indicates that the vertical reinforcement for a 12"x12" concrete column is 4-#7 vertical rebar. Based on the information presented in Table 3-11 of MWPS-36, the proposed vertical reinforcement for the 12"x12" concrete columns depicted on the design plans is not consistent with the MWPS-36 design guide. Based strictly on Table 3-11 of MWPS-36 the proposed design does not meet the requirements of 327 IAC 19-12-4(e).

It is noted that the caption to Table 3-11 "Reinforced concrete columns." states "*Refer to Appendix C, Design Strength Equations or Maximum Allowable Load Equations for specific design equations.*" Specifically, this caption refers to Equations C-4. Axial loading for square columns with a maximum unsupported column length (ACI 318 Section 10.12.2) and Equation C-5. Axial loading for square columns (ACI 318 Section 10.3.5.2) for the design equations used in Table 3-11. ACI 318 is referenced in MWPS-36: Rectangular Concrete Manure Storages establishing the basis for the column design and standards. The standards for column design are detailed in Chapters 9 and 10 of Building Code Requirements for Structural Concrete (ACI 318-11). In accordance with the design equations and design standards in Appendix C, MWPS-36 and ACI 318-11, the 12"x12"column vertical reinforcement (4-#5 or 4-#4 rebar) meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e). The following design is presented to confirm this conclusion.

MWPS-36: Appendix C Equations

Equation C-4. Axial loading for square columns with a maximum unsupported column length (ACI 318 Section 10.12.2) [unsupported length]

$L_{colm} \leq (34)(0.3)b[1\ ft/12\ in]$

b = column width, in

L_{colm} = column length, ft

Equation C-5. Axial loading for square columns (ACI 318 Section 10.3.5.2)

$P_a = \varphi(0.85)[(0.80)\, f'_c\, (A_g - A_{st}) + (f_y\, A_{st})]$

P_a = axial load, lb

φ = strength reduction factor (ACI 318-11; 9.3.2.2)

f'_c = concrete compressive strength, psi

A_g = concrete gross area, in^2

A_{st} = steel area, in^2

f_y = yield strength, psi

ACI 318-11 References

ACI 10.3.6 Design axial strength (page 139)

$\varphi P_{n,max} = 0.80\, \varphi\, [0.85\, f'_c\, (A_g - A_{st}) + (f_y\, A_{st})]$ (Equation 10-2)

ACI 9.3.2 Strength reduction factor, φ (page 122)

9.3.2.2. – Compression-controlled sections, as defined in 10.3.3:

(a) Members with spiral reinforcement conforming to 10.9.3 ..... 0.75

(b) Other reinforced members 0.65

ACI 10.8. – Design dimensions for compression members

10.8.4. – Limits of section. For a compression member with a cross section larger than required by considerations of loading, it shall be permitted to base the minimum reinforcement and strength on a reduced effective area A_g not less than one-half the total area. This provision shall not apply to special moment frames or special structural walls designed in accordance with Chapter 21.

ACI 10.9. – Limits for reinforcement of compression members

10.9.1. – Area of longitudinal reinforcement, A_{st}, for noncomposite compression members shall be not less than 0.01 A_g or more than 0.08 A_g.

10.9.2. – Minimum number of longitudinal bars in compression members shall be 4 for bars within rectangular or circular ties, 3 for bars within triangular ties, and 6 for bars enclosed by spiral conforming to 10.9.3.

ACI 10.10. – Slenderness effects in compression members

10.10.1. – Slenderness effects shall be permitted to be neglected in the following cases:

(a) for compression members not braced against sideway when

$k\, l_u / r \leq 22$

(b) for compression members braced against side-sway when

$k\, l_u / r \leq 34$

k = effective length factor

l_u = unsupported length, in

r = radius of gyration, 0.3 x b (ACI 318-11; 10.10.1.2)

b = column width, in

Design

Assumptions:

$f'_c = 4{,}000$ psi

$f_y = 60{,}000$ psi

$\varphi = 0.65$ (ACI 318-11; 9.3.2)

12" x 12" x 7'-2" concrete column, and

Vertical reinforcement – 4 - #5 rebar or 4-#4 rebar

Determine design axial load, P_u

$P_u = P_a$ x design load factor (L_D or L_L)

P_a = pig load + slat load + lintel load + equipment load

Pig load = 57.5 psf

Slat load = 38.84 psf (1" slot, 5-7/8" wide, 4" deep; adapted from MWPS-36)

Lintel load = (8.5 in x 10 in ÷ 144 sq in/sq ft) x 150 pcf = 88.54 plf

Equipment load = 8.5 psf

Live load factor, $L_L = 1.6$

Dead load factor, $L_D = 1.2$

P_u = [(57.5 psf x 10 ft x 12 ft) x 1.6] + [(38.84 psf x 10 ft x 12 ft) x 1.2] + [(88.54 plf x 12 ft) x 1.2] + [8.5 psf x 10 ft x 12 ft x 1.2]

P_u = 11,040 lb + 5,593 lb + 1,275 lb + 1,224 lb = 19,132 lb

Determine gross area of concrete, A_g

A_g = 12" x 12" = 144"

Determine area of reinforcement steel -- #5 rebar

Area (#5 rebar) = $(5/8" \div 2)^2 \times \pi = 0.307$ in^2

4 - #5 rebar = 4 x 0.307 in^2 = 1.228 in^2

Determine area of reinforcement steel -- #4 rebar

Area (#4 rebar) = $(1/2" \div 2)^2 \times \pi = 0.196$ in^2

4 - #4 rebar = 4 x 0.196 in^2 = 0.784 in^2

Determine maximum allowable unsupported length, L_{colm}

$L_{colm} = (34)(0.3)b[1 \text{ ft}/12 \text{ in}]$ (Equation C-4)

b = 12"

L_{colm} = 34 x 0.3 x 12" x 1 ft/12 in

L_{colm} = 10.2 feet (slenderness effects neglected)

7.167' < 10.2 ' **OKAY**

Determine slenderness factor, k l_u / r

k = 1.0 (column braced at top and bottom against sideway)

l_u = 7.167 ft (86 in)

b = 12 in

r = 0.30 x 12" = 3.6 in

k l_u / r = 1.0 x 86 in / (0.30 x 12 in) = 23.9

23.9 < 34 OKAY (ACI 10.10.1)

Slenderness effects can be neglected in design

Determine maximum allowable axial load, $P_{n,\,max}$; (Equation C-5 & ACI 318-11, 10-2)

$P_{n,\,max} = 0.80\ \varphi\ [0.85\ f'_c\ (A_g - A_{st}) + (f_y\ A_{st})]$

φ = 0.65; strength reduction factor (ACI 318-11; 9.3.2.2)

f'_c = 4,000 psi; concrete compressive strength, psi

A_g = 144 in^2; concrete gross area, in^2

A_{st} = 1.228 in^2 (#5); steel area, in^2

A_{st} = 0.784 in^2 (#4); steel area, in^2

f_y = 60,000 psi; yield strength, psi

$P_{n,\,max}$ = 0.80 x 0.65 x [0.85 x 4,000 x (144 – 1.228) + (60,000 x 1.228)]

$P_{n,\,max}$ = 290,734 lb (4 - #5 rebar)

$P_{n,\,max}$ = 0.80 x 0.65 x [0.85 x 4,000 x (144 – 0.784) + (60,000 x 0.784)]

$P_{n,\,max}$ = 277,667 lb (4 - #4 rebar)

Determine ratio of actual load (P_u) and maximum allowable axial load, $P_{n,\,max}$

$P_u / P_{n,\,max}$ = 19,228 lb / 290,734 lb = 0.066 (4 - #5 rebar)

$P_u / P_{n,\,max}$ = 19,228 lb / 277,667 lb = 0.069 (4 - #4 rebar)

0.066 < 0.069 << 1.0; therefore the cross sectional area of the column is significantly larger than required when considering actual loading.

In accordance with ACI 318-11, Chapter 10, Section 10.84 the minimum reinforcement and strength can be based on a reduced effective area A_g not less than one-half the total area.

A_g = 144"

½ A_g = ½ x 144 in^2 = 72 in^2

Recalculate maximum allowable axial load, $P_{n,\,max}$

$P_{n,\,max}$ = 0.80 x 0.65 x [0.85 x 4,000 x (72 – 1.228) + (60,000 x 1.228)]

$P_{n,\,max}$ = 163,438 lb (4 - #5 rebar)

19,228 lb < 163,438 lb OKAY

$P_{n,\,max}$ = 0.80 x 0.65 x [0.85 x 4,000 x (72 – 0.784) + (60,000 x 0.784)]

$P_{n,\,max}$ = 150,371 lb (4 - #4 rebar)

19,228 lb < 150,371 lb OKAY

Determine minimum reinforcement of compression members (ACI 318-11, 10-9.1)

$0.01 \times A_g < A_{st} < 0.08 \times A_g$

$A_g = 72$ in^2

$A_{st} = 1.228$ in^2 (4-#5 rebar)

$0.01 \times A_g = 0.72$ in^2

$0.08 \times A_g = 5.76$ in^2

#5 rebar: 0.72 in^2 < 1.228 in^2 < 5.76 in^2 OKAY

$A_{st} = 0.784$ in^2 (4-#4 rebar)

$0.01 \times A_g = 0.72$ in^2

$0.08 \times A_g = 5.76$ in^2

#4 rebar: 0.72 in^2 < 0.784 in^2 < 5.76 in^2 OKAY

Design Confirmation:

Design load

P_u (design axial load) = 19,132 lb

$P_{n,\,max}$ (max allowable load) = 290,734 lb (4 - #5 rebar) (ACI 318-11, Chapter 10, Section 10.2)

$P_{n,\,max}$ (max allowable load) = 277,667 lb (4 - #4 rebar) (ACI 318-11, Chapter 10, Section 10.2)

$P_{n,\,max}$ (max allowable load) = 163,438 lb (4 - #5 rebar) (ACI 318-11, Chapter 10, Section 10.8.4)

$P_{n,\,max}$ (max allowable load) = 150,371 lb (4 - #4 rebar) (ACI 318-11, Chapter 10, Section 10.8.4)

19,132 lb < 290,734 lb (4-#5 rebar) OKAY

19,132 lb < 163,438 lb (4-#5 rebar) OKAY

19,132 lb < 277,667 lb (4-#4 rebar) OKAY

19,132 lb < 150,371 lb (4-#4 rebar) OKAY

Slenderness factor

23.9 < 34 OKAY

Minimum reinforcement (controls design)

#5 rebar: 0.72 in^2 < 1.228 in^2 < 5.76 in^2 OKAY

#4 rebar: 0.72 in^2 < 0.784 in^2 < 5.76 in^2 OKAY

Based on this analysis, a 12" x 12" x 7'-2" concrete column with 4-#5 vertical rebar tied every 12" with #3 rebar or 4-#4 vertical rebar tied every 12" with #3 rebar meets the design load and design criteria presented in MWPS-36: Rectangular Concrete Manure Storages – Second Edition, 2005 and Building Code Requirements for Structural Concrete (ACI 318-11).

2016 Confined Feeding Operation Approval Application
Alternate Design or Compliance Approach (327 IAC 19-5)
12" x 16" Concrete Masonry Column Design
Wean-to-Finish Building
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

Alternate Compliance Approach Request:

The requirements of 327 IAC 19-12-4(d) states:

> *"All liquid manure storage facilities must be constructed to the Indiana NRCS Conservation Practice Standard Code 313: Waste Storage Facility, September 2005. . . ."*

The requirements of 327 IAC 19-12-4(e) states:

> *"In addition to subsection (d), all concrete manure storage facilities must be constructed according to either of the following design standards:*
>
> *(1) MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005".*
>
> (2) *TR-9: Circular Concrete Manure Tans, March 1998."*

Concrete Masonry Column Design:

The requirements of 327 IAC 19-12-4(e)(1) state that all concrete manure storage facilities must be constructed according to the design standards presented in MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005 (MWPS-36). MWPS-36 includes the design assumptions and rationale for designing rectangular concrete manure storages. MWPS-36 states on page 1 in the Preface that

> *"This handbook reflects the several revisions that ACI 318 has undergone since the first edition of this book in 1994, including a major revision to ACI 318 in 2002 and another revision in 2005. Major changes from the previous edition of MWPS-36 include the following:*
>
> - *Major revisions to all the design tables.*
> - *Expanded discussion of floor design.*
> - *Expanded footing-design tables.*
> - *Expanded discussion of design criteria background.*
> - *More detailed design examples.*
> - *Removal of the section on circular concrete manure storage designs.*
> - *Removal of the section on masonry column designs.*
>
> *The circular concrete manure storage designs were deleted because more detailed designs can be found in Circular Concrete Manure Tanks, TR-9. Masonry columns are rarely used in manure storages and are susceptible to poor construction; therefore, these designs were removed."*

In the state of Indiana, the statement "*Masonry columns are rarely used in manure storages and are susceptible to poor construction*" presented above is inaccurate. Numerous designs have been approved that include concrete masonry columns and numerous rectangular concrete manure storages have been constructed with concrete masonry columns. These concrete manure storages are still being used and the concrete masonry columns constructed as designed have provided a long service life without failure. The experience of the authors of MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005 (MWPS-36) apparently differs from the construction methods commonly used in Indiana resulting in the included statement and removal of the section on masonry column designs.

Since the section on masonry columns has been removed from MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005 (MWPS-36), a specific reference to design information for masonry columns is not provided in 327 IAC 19. It could be interpreted that since the section on masonry columns has been removed from MWPS-36 masonry columns should not be used in concrete manures storages. It is believed that this would be an inaccurate conclusion. It is noted that the reference to concrete masonry columns in MWPS-36 does not prohibit the use of concrete masonry columns. Specifically, the authors of MWPS-36 in the preparation of the Second Edition decided to remove the section on masonry design from the design guide. In support of their decision, the authors point out that masonry columns are rarely used and that they are susceptible to poor construction. Concrete manure storage construction that includes concrete masonry columns in Indiana does not support these conclusions and should not be prohibited due to the removal of the section on masonry column design from MWPS-36.

A more accurate conclusion would be that masonry columns can be used in concrete manure storages and that approval by the Indiana Department of Environmental Management is required prior to construction. Since there is no information included in MWPS-36 pertaining to concrete masonry columns, construction of a concrete manure storage with concrete masonry columns can be completed in accordance with the requirements of 327 IAC 19-12-4(e) as long as all other concrete components are constructed in accordance with the design standards of MWPS-36.

It is noted that 327 IAC 19-12-4(h) states
"*Waste management systems not specifically listed in this section must be designed and constructed in accordance with the requirements of IC 13-18-10-4(b). The design must be submitted to the department for approval under subsection (a) before construction can commence.*

IC 13-18-10-4(b) states:
Sec. 4. (a) The board may adopt rules under IC 4-22-2 and IC 13-14-9 and the department may adopt policies or statements under IC 13-14-1-11.5 that are necessary for the proper administration of this chapter. The rules, policies, or statements may concern construction, expansion, and operation of confined feeding operations and may include uniform standards for:
(1) construction, expansion, and manure containment that are appropriate for a specific site; and
(2) manure application and handling that are consistent with best management practices:
(A) designed to reduce the potential for manure to be conveyed off a site by runoff or soil erosion; and
(B) that are appropriate for a specific site.
(b) Standards adopted in a rule, policy, or statement under subsection (a) must:
(1) consider confined feeding standards that are consistent with standards found in publications from:
(A) the United States Department of Agriculture;
(B) the Natural Resources Conservation Service of the United States Department of Agriculture;
(C) the Midwest Plan Service; and
(D) postsecondary educational institution extension bulletins; and
(2) be developed through technical review by the department, postsecondary educational institution specialists, and other animal industry specialists.

Based on a review of 327 IAC 19-12-4(h) it is interpreted that the use of concrete masonry columns is allowed if the design is submitted to the department for approval prior to construction. In accordance with the requirements of IC 13-18-10-4(b), an alternative compliance approach presenting the design and requesting approval to use concrete masonry columns in the construction of concrete manure storages is submitted.

Concrete Masonry Column Design

MWPS-36, Concrete Manure Storages Handbook, First Edition, 1994 included a section on Columns (page 16) that presented design information and specifications for unreinforced concrete masonry columns. The designs for concrete masonry columns in MWPS-36, First Edition were presented in Table 16. Consistent with the designs presented in MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005 for columns the designs presented in MWPS-36, Concrete Manure Storages Handbook, First Edition, 1994 are based on design equations presented in Appendix C: Design Equations. The design equations presented in MWPS-36, Concrete Manure Storages Handbook, First Edition, 1994 are the same design equations presented in MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005.

The design strength equations and load equations from MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005 are used in the concrete masonry column design.

MWPS-36: Appendix C Equations

Equation C-4. Axial loading for square columns with a maximum unsupported column length (ACI 318 Section 10.12.2) [unsupported length]

$L_{colm} \leq (34)(0.3)b[1\ ft/12\ in]$

b = column width, in

L_{colm} = column length, ft

Equation C-5. Axial loading for square columns (ACI 318 Section 10.3.5.2)

$P_a = \varphi(0.85)[(0.80)\ f'_c\ (A_g - A_{st}) + (f_y\ A_{st})]$

P_a = axial load, lb

φ = strength reduction factor (ACI 318-11; 9.3.2.2)

f'_c = concrete compressive strength, psi

A_g = concrete gross area, in^2

A_{st} = steel area, in^2

f_y = yield strength, psi

Equation C-24 Axial loading of a reinforced column

$P_a = L_L \times P_u$

P_u = axial load, lb

L_L = load factor, 1.2 or 1.6

ACI 318-11 References

ACI 10.3.6 Design axial strength (page 139)

$\varphi\ P_{n,\ max} = 0.80\ \varphi\ [0.85\ f'_c\ (A_g - A_{st}) + (f_y\ A_{st})]$ (Equation 10-2)

ACI 9.3.2 Strength reduction factor, φ (page 122)

9.3.2.2. – Compression-controlled sections, as defined in 10.3.3:

(a) Members with spiral reinforcement conforming to 10.9.3 ..... 0.75

(b) Other reinforced members 0.65

10.10. – Slenderness effects in compression members

10.10.1. – Slenderness effects shall be permitted to be neglected in the following cases:

(a) for compression members not braced against sideway when

$k\, l_u / r \leq 22$

(b) for compression members braced against side-sway when

$k\, l_u / r \leq 34$

k = effective length factor

l_u = unsupported length, in

r = radius of gyration, 0.3 x b (ACI 318-11; 10.10.1.2)

b = column width, in

Design

Assumptions:

f'_m = 1,550 psi; masonry compressive strength, psi

f'_c = 4,000 psi; concrete compressive strength, psi

f_y = 60,000 psi

φ = 0.65 (ACI 318-11; 9.3.2)

12 "x 16" x 7'-2" concrete masonry columns with a 2-1/8" thick concrete cap, cores filled with concrete, and one #5 rebar or one #4 rebar per core. For design the concrete cap is assumed to be an extension of the concrete masonry block and concrete cores. No allowance is considered for the higher compressive strength of the concrete cap over the concrete masonry block.

Vertical reinforcement: 2 - #5 rebar, d_5 = 5/8", A_s = 0.307 in^2 or

2 - #4 rebar, d_5 = 1/2", A_s = 0.196 in^2

Determine design axial load, P_u

$P_u = P_a$ x design load factor (L_D or L_L)

P_a = pig load + slat load + lintel load + equipment load

Pig load = 57.5psf

Slat load = 38.84 psf (1" slot, 5-7/8" wide, 4" deep; adapted from MWPS-36)

Lintel load = (8.5 in x 10 in ÷ 144 sq in/sq ft) x 150 pcf = 88.54 plf

Equipment load = 8.5 psf

Live load factor, L_L = 1.6

Dead load factor, L_D = 1.2

P_u = [(57.5 psf x 10 ft x 12 ft) x 1.6] + [(38.84 psf x 10 ft x 12 ft) x 1.2] + [(88.54 plf x 12 ft) x 1.2] + [8.5 psf x 10' x 12' x 1.2]

P_u = 11,040 lb + 5,593 lb + 1,275 lb + 1,224 lb = 19,132 lb

Determine gross area of concrete masonry block, A_{gm}

Actual dimensions of block: 11-5/8" x 15-5/8" with two cores 9-5/8" x 6-5/16"

A_{gm} = 11.625" x 15.625" – 2 x 9.625" x 6.3125"

A_{gm} = 60.125 in^2

Determine gross area of concrete core, A_{gc}

Actual dimensions of block: 11-5/8" x 15-5/8" with two cores 9-5/8" x 6-5/16"

A_{gc} = 2 x 9.625" x 6.3125"

A_{gc} = 121.5 in^2

Determine area of reinforcement steel -- #4 & #5 rebar

Area (#5 rebar) = (5/8" ÷ 2)^2 x π = 0.307 in^2

2 - #5 rebar = 2 x 0.307 in^2 = 0.614 in^2

Area (#4 rebar) = (1/2" ÷ 2)^2 x π = 0.196 in^2

2 - #4 rebar = 2 x 0.196 in^2 = 0.392 in^2

Determine maximum allowable unsupported length, L_{colm}

Use the slenderness criteria for concrete columns to determine the maximum unsupported length.
Critical width = 11-5/8"

L_{colm} = (34)(0.3)b[1 ft/12 in] (Equation C-4)

b = 11-5/8"

L_{colm} = 34 x 0.3 x 11-5/8" x 1 ft/12 in

L_{colm} = 9.88 feet (slenderness effects neglected)

7.167' < 9.88' **OKAY**

Determine maximum allowable axial load, $P_{n,\,max}$; (masonry and concrete core)
(Masonry & Concrete -- Equation C-5 & ACI 318-11, 10-2)

$P_{n,\,max} = P_{nm} + P_{nc}$

$P_{nm} = 0.80\ \varphi\ [0.85\ f'_m\ (A_{gm})]$

$P_{nc} = 0.80\ \varphi\ [0.85\ f'_c\ (A_g - A_{st}) + (f_y\ A_{st})]$

φ = 0.65; strength reduction factor (ACI 318-11; 9.3.2.2)

f'_m = 1,550 psi; masonry compressive strength, psi

f'_c = 4,000 psi; concrete compressive strength, psi

A_{gm} = 60.125 in^2; masonry gross area, in^2

A_{gc} = 121.5 in^2; concrete gross area, in^2

A_{st} = 0.614 in^2 (#5); steel area, in^2

A_{st} = 0.392 in^2 (#4); steel area, in^2

f_y = 60,000 psi; yield strength, psi

P_{nm} = 0.80 x 0.65 x [0.85 x 1,550 x 60.125]

P_{nm} = 41,191.6 lb (12"x16" hollow core masonry block)

Rebar – 2-#5, Grade 60

P_{nc} = 0.80 x 0.65 x [0.85 x 4,000 x (121.5 – 0.614) + (60,000 x 0.614)] (2-#5 rebar)

P_{nc} = 232,883 lb (concrete cores)

$P_{n,\,max}$ = 41,191.6 lb + 232,883 lb

$P_{n,\,max}$ = 274,074.6 lb (concrete masonry column with cores filled and 2-#5 rebar)

Rebar – 2-#4, Grade 60

P_{nc} = 0.80 x 0.65 x [0.85 x 4,000 x (121.5 – 0.392) + (60,000 x 0.392)] (2-#4 rebar)

P_{nc} = 226,349 lb (concrete cores)

$P_{n,\ max}$ = 41,191.6 lb + 226,349 lb

$P_{n,\ max}$ = 267,640.6 lb (concrete masonry column with cores filled and 2-#4 rebar)

Design Confirmation:

Design load

P_u (design axial load) = **19,132 lb**

P_{nm} (hollow core masonry block) = **41,191.6 lb**

P_{nc} (concrete cores with 2-#5 rebar) = **232,883 lb**

P_{nc} (concrete cores with 2-#4 rebar) = **226,349 lb**

$P_{n,\ max}$ (#5 rebar) = **274,074.6 lb (2-#5 rebar)**

$P_{n,\ max}$ (#4 rebar) = **267,640.6 lb (2-#4 rebar)**

19,132 lb < 41,191.6 lb (concrete masonry block only) **OKAY**

19,132 lb < 232,883 lb (concrete core only with #5 rebar) **OKAY**

19,132 lb < 226,349 lb (concrete core only #4 rebar) **OKAY**

19,132 lb < 274,074 lb (complete concrete column, #5 rebar) **OKAY**

19,132 lb < 267,640.6 lb (complete concrete column, #4 rebar) **OKAY**

Based on this analysis, a 12" x 16" x 7'-2" concrete masonry column with a 2-1/8" thick concrete cap, cores filled with concrete, and one #5 rebar per core or one #4 rebar per core meets the design load and design criteria presented in MWPS-36: Rectangular Concrete Manure Storages – Second Edition, 2005 and Building Code Requirements for Structural Concrete (ACI 318-11).

2016 Confined Feeding Operation Approval Application

Alternate Design or Compliance Approach (327 IAC 19-5)

12" x 12" Concrete Column Continuous Footer Design
30" wide x 10" thick Continuous
Wean-to-Finish Building
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

Continuous Concrete Column Footer Design:

A concrete footer option shown on the construction plans is for the 12" x 12" reinforced concrete column includes a 30" wide continuous, 10" thick plain concrete column footing. The construction plans include a 12" x 12" x 7'-2" reinforced concrete column. The column load (P_u, factored load) for the 12" x 12" x 7'-2" column is 20,423 lb.

A design table for plain (unreinforced) continuous column footers for concrete columns was not found in MWPS-36. Since a design table was not identified during the design, a project specific design based on the design equations and standards presented in in ACI 318-11 "Building Code Requirements for Structural Concrete" was conducted.

Based on this analysis and design a 30" wide x 10" thick continuous concrete footer is included in the proposed design drawings. In accordance with these design equations the proposed footer design (30" wide x 10" thick continuous) meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e). The following design is presented to confirm this conclusion.

Equation C-28. Plain column footing width

The description of the design equations for footings in MWPS-36, page 68 states that the equations are based on ACI 318 Chapter 22 and Section 9.3.5 and a modified design approach shown in the 1993 edition of PCA's Simplified Design. Equation C-28 has been developed specifically for square plain concrete footers and is not directly applicable to a continuous plain concrete footer.

ACI 318-11, Section 22.7.2 states "*Base area of footing shall be determined from unfactored forces and moments transmitted by footing to soil and permissible soil pressure selected through principles of soil mechanics.*" An unfactored load (P) should be used to determine the base area of the footing. In addition to the axial load from the column transferred to the footer, the footer and allowable soil pressure must also account for the weight of the manure above the footer and weight of the concrete in the footer. Since the dimensions of the footer are undetermined, the forces due to manure and concrete are represented as a pressure, lbs/in^2, and are subtracted from the allowable soil pressure. In accordance with ACI 318-11; 22.7.2 the based area of the footer is determined using the following equations and relationships.

$A_f = P \div [q_a - (\delta_{manure} \times D_{manure}) - Wt_{footing}]$ ACI 318-11; 22.7.2

P = pig load + slat load + lintel load + column load + equipment load

P_u = factored axial load

Pig load = 57.5psf (up to 300 lb pig)

Slat load = 38.84 psf (1" slot, 5-7/8" wide, 4" deep; adapted from MWPS-36)

Lintel load = (8.5 in x 10 in ÷ 144 sq in/sq ft) x 150 pcf = 88.54 plf

Column load (reinforced concrete) = 1 ft x 1ft x 7.167 ft x 150 pcf = 1,075 lb

Equipment load = 8.5 psf

A_f = Base area of footer, ft^2

q_a = soil bearing capacity, psf

δ_{manure} = density of manure (62.5 lb/ft^3)

D_{manure} = depth of manure, ft

$Wt_{footing}$ = footer thickness

Plain Concrete Footer Base Area, A_f (ACI 318-11; 22.7.2)

Determine footer base area, A_f

Reinforced concrete column – 12" x 12"

P = (57.5 psf x 10 ft x 12 ft) + (38.84 psf x 10 ft x 12 ft) + (88.54 plf x 12 ft) + 1,075 lb + 8.5 psf x 10 ft x 12 ft

P = 6,900 lb + 4,661 lb + 1,063 lb + 1,075 lb + 1,020 = 14,719 lb

P_u = 1.6 x 6,900 lb + 1.2 x (4,661 lb + 1,063 lb + 1,075 lb + 1,020 lb) = 20,423 lb

q_s = 2,000 psf (presumptive soil bearing)

Manure density = 62.5 pcf

D_{manure} = depth of manure = 8.0 ft (7'-2" column)

$Wt_{footing}$ = 10 in ÷ 12 in/ft x 150 pcf = 125 psf (assume footing 10" thick)

A_f= 14,719 lb ÷ (2,000 psf – (62.5 lb/cu ft x 8.0 ft) – 125 psf)

A_f= 14,719 lb ÷ 1,375 psf

A_f= 10.7 ft^2 (1,541 in^2)

Determine length and width of footer:

W_{fW} = 30" (selected width)

W_{fL} = 1,541 in^2 ÷ 30" = 51.4" (use 52")

Effective Footer Dimensions:

Use: A 30" x 52" rectangular footer

Equation C-29. Plain square footing thickness for square columns using 3,000 to 4,000 psi concrete

Equation C-29, MWPS-36 is a derived equation to determine footing thickness for a square footer based on the principles of concrete design. Equation C-29 has been developed specifically for square plain concrete footers and is not directly applicable to a continuous plain concrete footer. For plain (unreinforced) concrete, flexure strength usually controls footer thickness. In accordance with ACI 318-11, the required footer thickness is based on the flexure strength (moment), beam action shear, and punching shear (two-way action). The footer thickness design will be determined in accordance with the design methods presented in ACI 318-11.

Plain Concrete Footer Thickness Design; ACI 318-11; 22.7.4 – 22.7.6

Determine plain rectangular footing thickness

Flexure strength - maximum factored moment at face of column

Determine soil resistance pressure, q_s

$q_s = P_u \div (A_f)$

$P_u = 20{,}423$ lb

$A_f = 30" \times 52" = 1{,}560$ in^2

$q_s = 20{,}423$ lb $\div$ 1,560 in^2

$q_s = 13.1$ psi (1,886 psf)

Determine moment at face of column, M_u

$M_u = q_s \times W_f \times (L_f - L_c)/2 \times (L_f - L_c)/4$

Check moment at face for $W_f = 30"$

$L_f = 52"$

$W_c = 12"$

$M_u = 13.1$ psi x 30" x [(52"-12") $\div$ 2] x [(52"-12") $\div$ 4]

$M_u = 78{,}600$ in-lb (6,550 ft-lb) – Moment creates tension in the footer

Check moment at face for $W_f = 52"$

$L_f = 30"$

$W_c = 12"$

$M_u = 13.1$ psi x 52" x [(30"-12") $\div$ 2] x [(30"-12") $\div$ 4]

$M_u = 27{,}589$ in-lb (2,299 ft-lb) – Moment creates tension in the footer

The moment when $W_f = 30"$ & $L_f = 52"$ controls

Determine thickness, h_f

The nominal moment (M_n) with reduction factor must be greater than or equal to the factored Moment (M_u)

$\varphi M_n \geq M_u$

$\varphi = 0.6$ (strength reduction factor; ACI 318-11, Section 9.3.5)

$M_n = [(5 \times \lambda \times \sqrt{f'_c})] \times [(b \times d^2) \div 6]$ (Strength design -- ACI 318-11; 22.5.1; Equation 22-2)

$\lambda = 1$

$f'_c = 4{,}000$ psi

$b = W_f = 30"$

$d = h =$ effective depth (h_f - 2)

$M_n = (5 \times 1 \times \sqrt{4{,}000} \times 30" \times h^2) \div 6$

$M_u = 78{,}600$ in-lb

Set $M_n = M_u$

Rearrange to find h^2

$h^2 = (78{,}600 \text{ in-lb} \times 6) \div (5 \times 1 \times \sqrt{4{,}000 \text{ psi}} \times 30")$

$h^2 = (471{,}600) \div (9{,}486.8)$

$h = \sqrt{49.7} = 7.05$

$h_f = h + 2 = 7.05 + 2 = 9.05"$ [ACI 318-11; 22-7-4 requires a minimum 8" thick footer]

Use a 10" thick footer

Beam action shear – critical section located at h from face of column

Use an effective thickness, h = 8"

Check beam action shear when $W_f = 30"$

$b_w = W_f = 30"$

$c = W_c = 12"$

$L_f = 52"$

Critical section location (h from face of column):

(12" ÷ 2) + 8" = 14" from center of column; 12" from edge of footer [(52" ÷ 2) – 14"]

Critical section location occurs within the footer. Use h = 8"

Calculate shear (V_u) at critical section

$V_u = q_s \times$ tributary area

$q_s = 13.1$ psi

tributary area = $W_f \times [(L_f/2) - (W_c/2) - h]$

$V_u = 13.1 \text{ psi} \times 30" \times [52"/2 - 12"/2 - 8"] = 4{,}716$ lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

$\varphi = 0.6$ (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = (4/3) \times \lambda \times \sqrt{f'_c} \times b_w \times h$ (Strength design -- ACI 318-11; 22.5.4; Equation 22-9)

$\varphi V_n = 0.6 \times (4/3) \times 1 \times \sqrt{4{,}000} \times 30" \times 8" = 12{,}143$ lb

Check beam action shear when $W_f = 52"$

$b_w = W_f = 52"$

$c = W_c = 12"$

$L_f = 30"$

Critical section location (h from face of column):

(12" ÷ 2) + 8" = 14" from center of column; 1" from the edge of the footer [(30" ÷ 2) – 14"]

Critical section location occurs within the footer. Use h = 8"

Calculate shear (V_u) at critical section

$V_u = q_s \times$ tributary area

$q_s = 13.1$ psi

tributary area = W_f x [(L_f/2) – (W_c/2) – h]

V_u = 13.1 psi x 52" x [30"/2 – 12"/2 – 8"] = 681.2 lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

φ = 0.6 (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = (4/3) \times \lambda \times \sqrt{f'_c} \times b_w \times h$ (Strength design -- ACI 318-11; 22.5.4; Equation 22-9)

φV_n = 0.6 x (4/3) x 1 x $\sqrt{4{,}000}$ x 52" x 8" = 21,048 lb

12,143 lb > 4,716 lb; (W_f = 30") **OKAY**

21,048 lb > 681.2 lb; (W_f = 52") **OKAY**

<u>Punching shear (two-way action) – critical section located at one-half effective footing thickness, h, from face of column</u>

Use an effective thickness, h = 8"

Check punching shear. Punching shear is the same in both directions when W_f = 30" and W_f = 52" because the critical section is a perimeter (b_o) related to the column length and width and effective depth, h.

W_f = 30"

L_f = 52"

$W_c = L_c$ = 12"

Critical section location:

(12" ÷ 2) + (8" ÷ 2) = 10.0" from center of column;

When W_f = 30", critical section 16.0" from edge of footer [(52" ÷ 2) – 10.0"]

When W_f = 52", critical section 5.0" from edge of footer [(30" ÷ 2) – 10.0"]

Calculate punching shear (V_u) at critical section

$V_u = q_s$ x tributary area

q_s = 13.1 psi

tributary area = W_f x L_f – [(h/2 + W_c + h/2) x (h/2 + L_c + h/2)] = {(W_f x L_f) – [(W_c + h) x (L_c + h)]}

V_u = 13.1 psi x {(52" x 30") - [(12" + 8") x (12" + 8")]} = 15,196 lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

φ = 0.6 (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = [(4/3) + (8/3\beta)] \times \varphi \times \lambda \times \sqrt{f'_c} \times b_o \times h \leq 2.66 \times \varphi \times \lambda \times \sqrt{f'_c} \times b_o \times h$

(Strength design -- ACI 318-11; 22.5.4; Equation 22-10)

b_o = perimeter of critical section

$b_o = 2 \times (W_c + L_c) + (4 \times h) = 2 \times (12" + 12") + 4 \times 8" = 80"$

β = ratio of long-to-short side = 52" ÷ 30" = 1.733

(4/3) + 8/(3 x 1.733) = 2.87; 2.87 > 2.66 Therefore,

$V_n = 2.66 \times \lambda \times \sqrt{f'_c} \times b_o \times h$

$\varphi V_n = 2.66 \times 0.6 \times 1 \times \sqrt{4{,}000} \times 80" \times 8" = 64{,}602$ lb

64,602 lb > 15,196 lb **OKAY**

Design Check

Required footer base area: $A_f = 10.7$ ft^2 (1,541 in^2)

Footer width: $W_f = 30"$

Footer length: $L_f = 51.4"$; use 52"

Proposed footer: 1,560 in^2 > 1,541 in^2 **OKAY**

Flexure analysis:

Footer thickness: $h_f = h + 2 = 7.05 + 2 = 9.05$ **Use 10" thick footer**

Beam action shear:

Footer thickness: $h_f = 10"$; 12,143 lb > 4,716 lb; ($W_f = 30"$) **OKAY**

$h_f = 10"$; 21,048 lb > 681.2 lb; ($W_f = 52"$) **OKAY**

Use 10" thick footer

Punching shear (two-way shear action):

Footer thickness: $h_f = 10"$; 64,602 lb > 15,196 lb **OKAY**

Use 10" thick footer

USE: 30" wide x 10" thick continuous footer

Based on this analysis, a 30" wide x 10" thick continuous footer meets or exceeds the design criteria presented in ACI 318-11 Building Code Requirements for Structural Concrete. Based on the ACI 318-11 design standards a 10.0" thick footer is calculated to support the factored design load transferred from the column to the footer. A 10" thick footer is selected for this design based on the analysis and requirements of ACI 318 to meet or exceed the expected design and service load conditions.

Based on this analysis, the proposed footer design (30" wide x 10" thick, continuous) meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e).

2016 Confined Feeding Operation Approval Application

Alternate Design or Compliance Approach (327 IAC 19-5)

12" x 16" Concrete Masonry Column Continuous Footer Design
30" wide x 9" thick Continuous
Wean-to-Finish Building
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

Continuous Concrete Masonry Column Footer Design:

A concrete footer option shown on the construction plans for the 12" x 16" masonry column includes a 30" wide continuous, 9" thick plain concrete column footing. The construction plans include a 12" x 16" x 7'-2" concrete masonry column. The column load (P_u, factored load) for the 12" x 12" x 7'-2" column is 20,633 lb.

A design table for plain (unreinforced) continuous column footers for concrete masonry columns was not found in MWPS-36. Since a design table was not identified during the design, a project specific design based on the design equations and standards presented in in ACI 318-11 "Building Code Requirements for Structural Concrete" was conducted.

Based on this analysis and design a 30" wide x 9" thick continuous concrete footer is included in the proposed design drawings. In accordance with these design equations the proposed footer design (30" wide x 9" thick continuous) meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e). The following design is presented to confirm this conclusion.

Equation C-28. Plain column footing width

The description of the design equations for footings in MWPS-36, page 68 states that the equations are based on ACI 318 Chapter 22 and Section 9.3.5 and a modified design approach shown in the 1993 edition of PCA's Simplified Design. Equation C-28 has been developed specifically for square plain concrete footers and is not directly applicable to a continuous plain concrete footer.

ACI 318-11, Section 22.7.2 states "*Base area of footing shall be determined from unfactored forces and moments transmitted by footing to soil and permissible soil pressure selected through principles of soil mechanics.*" An unfactored load (P) should be used to determine the base area of the footing. In addition to the axial load from the column transferred to the footer, the footer and allowable soil pressure must also account for the weight of the manure above the footer and weight of the concrete in the footer. Since the dimensions of the footer are undetermined, the forces due to manure and concrete are represented as a pressure, lbs/in^2, and are subtracted from the allowable soil pressure. In accordance with ACI 318-11; 22.7.2 the based area of the footer is determined using the following equations and relationships.

$A_f = P \div [q_a - (\delta_{manure} \times D_{manure}) - Wt_{footing}]$ ACI 318-11; 22.7.2

P = pig load + slat load + lintel load + column load + equipment load

P_u = factored axial load

Pig load = 57.5psf (up to 300 lb pig)

Slat load = 38.84 psf (1" slot, 5-7/8" wide, 4" deep; adapted from MWPS-36)

Lintel load = (8.5 in x 10 in ÷ 144 sq in/sq ft) x 150 pcf = 88.54 plf

Column load (7'-2" masonry column with a 2-1/8" concrete cap and 2 #4 or #5 rebar) =

Determine gross area of concrete masonry block, A_{gm}

Actual dimensions of block: 11-5/8" x 15-5/8" with two cores 9-5/8" x 6-5/16"

A_{gm} = 11.625" x 15.625" – 2 x 9.625" x 6.3125"

A_{gm} = 60.125 in^2

Determine gross area of concrete core, A_{gc}

A_{gc} = 2 x 9.625" x 6.3125"

A_{gc} = 121.5 in^2

Determine area of reinforcement steel -- #4 & #5 rebar

Area (#5 rebar) = (5/8" ÷ 2)^2 x π = 0.307 in^2

2 - #5 rebar = 2 x 0.307 in^2 = 0.614 in^2

Area (#4 rebar) = (1/2" ÷ 2)^2 x π = 0.196 in^2

2 - #4 rebar = 2 x 0.196 in^2 = 0.392 in^2

Determine net area of concrete core, A_{gc}

A_{gc} = 121.5 in^2 - .614 in^2 = 120.886 in^2 (#5 rebar)

A_{gc} = 121.5 in^2 - .307 in^2 = 121.193 in^2 (#4 rebar)

Column load = 60.125 in^2 ÷ 144 in^2/ft^2 x 6.99 ft x 110 pcf + 120.886 in^2 ÷ 144 in^2/ft^2 x 6.99 ft x 150 pcf + 0.614 in^2 x 6.99 ft x 12 in/ft x 0.284 lb/in^3 + (11.625 in x 15.625 in x 2.125 in) ÷ 1,728 in^3/ft^3 x 150 pcf

Column load = 1,249.4 lb

Density of masonry = 110 pcf

Density of concrete = 150 pcf

Use column load (concrete masonry) = 1,250 lb

Equipment load = 8.5 psf

A_f = Base area of footer, ft^2

q_a = soil bearing capacity, psf

δ_{manure} = density of manure (62.5 lb/ft^3)

D_{manure} = depth of manure, ft

$Wt_{footing}$ = footer thickness

Plain Concrete Footer Base Area, A_f (ACI 318-11; 22.7.2)

Determine footer base area, A_f

Masonry concrete column – 12" x 16"

P = (57.5 psf x 10 ft x 12 ft) + (38.84 psf x 10 ft x 12 ft) + (88.54 plf x 12 ft) + 1,249.4 lb + 8.5 psf x 10' x 12'

P = 6,900 lb + 4,661 lb + 1,063 lb + 1,250 lb + 1,020 = 14,894 lb

P_u = 1.6 x 6,900 lb + 1.2 x (4,661 lb + 1,063 lb + 1,249.4 lb + 1,020 lb) = 20,633 lb

q_s = 2,000 psf (presumptive soil bearing)

Manure density = 62.5 pcf

D_{manure} = depth of manure = 8.0 ft (7'-2" column)

$Wt_{footing}$ = 10 in ÷ 12 in/ft x 150 pcf = 125 psf (assume footing 10" thick)

A_f= 14,894 lb ÷ (2,000 psf – (62.5 lb/cu ft x 8.0 ft) – 125 psf)

A_f= 14,894 lb ÷ 1,375 psf

A_f= 10.83 ft^2 (1,560 in^2)

Determine length and width of footer:

W_{fW} = 30" (selected width)

W_{fL} = 1,560 in^2 ÷ 30" = 52.0" (use 52")

Effective Footer Dimensions:

Use: A 30" x 52" rectangular footer

Equation C-29. Plain square footing thickness for square columns using 3,000 to 4,000 psi concrete

Equation C-29, MWPS-36 is a derived equation to determine footing thickness for a square footer based on the principles of concrete design. Equation C-29 has been developed specifically for square plain concrete footers and is not directly applicable to a continuous plain concrete footer. For plain (unreinforced) concrete, flexure strength usually controls footer thickness. In accordance with ACI 318-11, the required footer thickness is based on the flexure strength (moment), beam action shear, and punching shear (two-way action). The footer thickness design will be determined in accordance with the design methods presented in ACI 318-11.

Plain Concrete Footer Thickness Design; ACI 318-11; 22.7.4 – 22.7.6

Determine plain rectangular footing thickness

Flexure strength - maximum factored moment at face of column

Determine soil resistance pressure, q_s

$q_s = P_u \div (A_f)$

P_u = 20,633 lb (concrete masonry column)

A_f = 30" x 52" = 1,560 in^2

q_s = 20,633 lb ÷ 1,560 in^2

q_s = 13.2 psi (1,904 psf)

Determine moment at face of column, M_u

$M_u = q_s \times W_f \times (L_f - L_c)/2 \times (L_f - L_c)/4$

W_f = 30"

L_f = 52"

L_c = 12" & 16"

Check moment at face for $W_f = 30"$

$L_f = 52"$

$L_c = 16"$

$M_u = 13.2$ psi x 30" x [(52"-16") ÷ 2] x [(52"-16") ÷ 4]

$M_u = 64{,}152$ in-lb (5,346 ft-lb) – Moment creates tension in the footer

Check moment at face for $W_f = 52"$

$L_f = 30"$

$L_c = 12"$

$M_u = 13.2$ psi x 52" x [(30"-12") ÷ 2] x [(30"-12") ÷ 4]

$M_u = 27{,}799$ in-lb (2,317 ft-lb) – Moment creates tension in the footer

The moment when $L_c = 16"$, $W_f = 30"$ & $L_f = 52"$ controls

Determine thickness, h_f

The nominal moment (M_n) with reduction factor must be greater than or equal to factored Moment (M_u)

$\varphi M_n \geq M_u$

$\varphi = 0.6$ (strength reduction factor; ACI 318-11, Section 9.3.5)

$M_n = [(5 \times \lambda \times \sqrt{f'_c})] \times [(b \times d^2) \div 6]$ (Strength design -- ACI 318-11; 22.5.1; Equation 22-2)

$\lambda = 1$

$f'_c = 4{,}000$ psi

$b = W_f = 30"$

$d = h$ = effective depth ($h_f - 2$)

$M_n = (5 \times 1 \times \sqrt{4{,}000} \times 30" \times h^2) \div 6$

$M_u = 64{,}152$ in-lb

Set $M_n = M_u$

Rearrange to find h^2

$h^2 = (64{,}152 \text{ in-lb} \times 6) \div (5 \times 1 \times \sqrt{4{,}000} \text{ psi} \times 30")$

$h^2 = (384{,}912) \div (9{,}486.8)$

$h = \sqrt{40.6} = 6.4$

$h_f = h + 2 = 6.4 + 2 = 8.4"$ [ACI 318-11; 22-7-4 requires a minimum 8" thick footer]

Use a 9" thick footer

Beam action shear – critical section located at h from face of column

Use an effective thickness, h = 7"

1. Critical section location, W_f = 30": (16" ÷ 2) + 7" = 15" from center of column; 11" from edge of footer
2. Critical section location, W_f = 52": (12" ÷ 2) + 7" = 13" from center of column; 2" from edge of footer

Calculate shear (V_u) at critical section

$V_u = q_s$ x tributary area

q_s = 13.2 psi

tributary area = W_f x [(L_f/2) – (W_c/2) – h]

Condition 1: W_f = 30", L_f = 52", W_c = 16"

Condition 2: W_f = 52", L_f = 30", W_c = 12"

Check Condition 1

V_u = 13.2 psi x 30" x [26" – 8" – 7"] = 4,356 lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

φ = 0.6 (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = (4/3) \times \lambda \times \sqrt{f'_c} \times b_w \times h$ (Strength design -- ACI 318-11; 22.5.4; Equation 22-9)

φV_n = 0.6 x (4/3) x 1 x $\sqrt{4{,}000}$ x 30" x 7" = 10,625 lb

10,625 lb > 4,356 lb **OKAY**

Check Condition 2

V_u = 13.2 psi x 52" x [15" – 6" – 7"] = 1,373 lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

φ = 0.6 (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = (4/3) \times \lambda \times \sqrt{f'_c} \times b_w \times h$ (Strength design -- ACI 318-11; 22.5.4; Equation 22-9)

φV_n = 0.6 x (4/3) x 1 x $\sqrt{4{,}000}$ x 52" x 7" = 18,417 lb

18,417 lb > 1,373 lb **OKAY**

Use a 9" thick footer

Punching shear (two-way action) – critical section located at one-half effective footing thickness, h, from face of column

Use an effective thickness, h = 7" (9" – 2")

Calculate punching shear (V_u) at critical section

Punching shear is the same in both directions when W_f = 30" and W_f = 52" because the critical section is a perimeter (b_o) related to the column length and width and effective depth, h.

W_f = 30"

L_f = 52"

W_c = 12"

L_c = 16"

$V_u = q_s$ x tributary area

q_s = 13.2 psi

tributary area = $W_f \times L_f - [(h/2 + W_c + h/2) \times (h/2 + L_c + h/2)] = \{(W_f \times L_f) - [(W_c + h) \times (L_c + h)]\}$

V_u = 13.2 psi x {(52" x 30") - [(12" + 7") x (16" + 7")]} = 14,824 lb

The nominal shear (V_n) with reduction factor must be greater than or equal to the factored shear (V_u)

$\varphi V_n \geq V_u$

φ = 0.6 (strength reduction factor; ACI 318-11, Section 9.3.5)

$V_n = [(4/3) + (8/3\beta)] \times \varphi \times \lambda \times \sqrt{f'_c} \times b_o \times h \leq 2.66 \times \varphi \times \lambda \times \sqrt{f'_c} \times b_o \times h$

(Strength design -- ACI 318-11; 22.5.4; Equation 22-10)

b_o = perimeter of critical section

$b_o = 2 \times (W_c + L_c) + (4 \times h) = 2 \times (12" + 16") + 4 \times 7" = 84"$

β = ratio of long-to-short side = 52" ÷ 30" = 1.733

(4/3) + 8/(3 x 1.733) = 2.87; 2.87 > 2.66 Therefore,

$V_n = 2.66 \times \lambda \times \sqrt{f'_c} \times b_o \times h$

$\varphi V_n = 2.66 \times 0.6 \times 1 \times \sqrt{4,000} \times 84" \times 7" = 59,353$ lb

59,353 lb > 14,824 lb **OKAY**

Use a 9" thick footer

Design Check

Required footer base area: A_f= 10.83 ft^2 (1,560 in^2)

Footer width: W_f = 30"

Footer length: L_f = 52.0"; use 52"

Proposed footer: 1,560 in^2 = 1,560 in^2 **OKAY**

Flexure analysis:

Footer thickness: $h_f = h + 2 = 6.4 + 2 = 8.4$" **Use 9" thick footer**

Beam action shear:

Footer thickness:	h_f = 9"; 10,625 lb > 4,356 lb; (W_f = 30")	**OKAY**
	h_f = 9"; 18,417 lb > 1,373 lb; (W_f = 52")	**OKAY**
	Use 9" thick footer	

Punching shear (two-way shear action):

Footer thickness:	h_f =9"; 59,353 lb > 14,824 lb	**OKAY**
	Use 9" thick footer	

USE: 30" wide x 9" thick continuous footer

Based on this analysis, a 30" wide x 9" thick continuous footer meets or exceeds the design criteria presented in ACI 318-11 Building Code Requirements for Structural Concrete. Based on the ACI 318-11 design standards a 9.0" thick footer is calculated to support the factored design load transferred from the column to the footer. A 9" thick footer is selected for this design based on the analysis and requirements of ACI 318 to meet or exceed the expected design and service load conditions.

Based on this analysis, the proposed footer design (30" wide x 9" thick, continuous) meets or exceeds the requirements and is in compliance with 327 IAC 19-12-4(e).

2016 Confined Feeding Operation Approval Application
Alternate Design or Compliance Approach (327 IAC 19-5)
Construction Specification - Concrete Construction
Wean-to-Finish Building
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

Alternate Compliance Approach Request:

The requirements of 327 IAC 19-12-4(d) states:

> *"All liquid manure storage facilities must be constructed to the Indiana NRCS Conservation Practice Standard Code 313: Waste Storage Facility, September 2005. . . ."*

The requirements of 327 IAC 19-12-4(e) states:

> *"In addition to subsection (d), all concrete manure storage facilities must be constructed according to either of the following design standards:*
>
> *(3) MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005*.*
>
> (4) *TR-9: Circular Concrete Manure Tans, March 1998*.*
>
> *All concrete structures must be constructed according to the Indiana NRCS Construction Specification, Concrete Construction, October 2005, . . ."*

Natural Resource Conservation Service Construction Specification, Concrete Construction, October 2005:

The Confined Feeding Operation Approval application package includes an adapted version of the Natural Resource Conservation Service Construction Specification, Concrete Construction, October 2005 to address project specific details and incorporate changes to the Natural Resource Conservation Service Construction Specification, Concrete Construction approved and released August 2014 and May 2015 by the Indiana Natural Resources Conservation Service.

The Natural Resource Conservation Service, Construction Specification, Concrete Construction, October 2005 (Specification) was written specifically for concrete construction projects that are completed under the direct supervision of the Natural Resource Conservation Service (NRCS). The Specification includes direct references to NRCS, the NRCS Engineer, and the designated representative [by NRCS] that require the involvement of NRCS in concrete construction projects that are constructed according to the Specification. Direct involvement of NRCS in the construction of the proposed below-building concrete manure storage structure is not NRCS's intent and is not required for this confined feeding operation construction project.

The Specifications states that "Placement of concrete on plastic, mud, dried earth, or uncompacted fill or frozen subgrade will not be permitted." The Specification has been updated to state, "Placement of concrete on mud, dried earth, or uncompacted fill or frozen subgrade will not be permitted." An exception is added to allow the use of plastic sheets when necessary and with prior approval to protect the integrity and stability of the subgrade due to precipitation. Placement of concrete on plastic is not allowed except where plastic sheeting is required to maintain subgrade integrity. Refer to Section 2B. "Subgrade Stabilization". This limited exception and Section 2B. have been added allowing the use of plastic sheets to protect a properly prepared subgrade to include prior approval and specific requirements for the limited use of plastic sheets beneath concrete.

Indiana NRCS has recently revised and released a new version of the Indiana "Natural Resources Conservation Service Construction Specification, Concrete Construction". The revised Natural Resource Conservation Service Construction Specification, Concrete Construction was released August 2014 and

updated and released again May 2015. The revised Specification includes newly adopted changes to clarify the use of admixtures. Changes were made to Section 4-Concrete Mix, Section 5-Mixing and Placing Concrete, Section 9-Concreting in Cold Weather, and Section 10-Concreting in Hot Weather. To allow for the use of the admixtures included in the "Natural Resources Conservation Service Construction Specification, Concrete Construction, May 2015", the Specification has been updated to include the changes included in the current NRCS Concrete Construction Specification. These updates include the use of plasticizing or plasticizing and retarding admixtures, the used of water-reducing and/or retarding admixtures when concreting in hot weather, and specific ASTM specification references for air entraining admixtures, plasticizing admixtures, accelerating or water reducing and accelerating admixtures when concreting in cold weather, and water-reducing and/or retarding admixtures when concreting in hot weather.

The Specification has specific requirements regarding "Concreting in Cold Weather" outlined in Section 9 of the Specification. Specifically, Section 9.c. states "*Accelerators such as calcium chloride may not be used to speed the hardening of concrete.*" This specification as stated prohibits the use of accelerators when concreting in cold weather to speed the hardening of concrete. The use of non-chloride, water-reducing accelerators is an acceptable concreting in cold weather practice according to the American Concrete Institute (ACI). The prohibition of the use of accelerators when concreting in cold weather limits the available time for concreting during winter months and can cause unnecessary delays in the construction of concrete manure storage structures. A specific reference to chloride accelerators and non-chloride accelerators is added to clearly state the allowable accelerators and water-reducing and accelerator admixtures.

Section 9 of the Specification refers to "facilities" in describing the required practices associated with concreting in cold weather. The term "facilities" refers to "something (such as a building or large piece of equipment) that is built for a specific purpose [Merriam-Webster]." In many situations, it is not necessary to build something for the purpose of concreting in cold weather. Successful concreting in cold weather more specifically relies on "alternate concrete mixing and placement practices' and "concrete mixing and placement practices" rather than "facilities". The term "facilities" has been replaced.

Section 11of the Specification has specific requirements regarding "Backfilling New Concrete Walls." Specifically, Section 11 states that heavy equipment may not be operated and compaction is to be by means of hand-tamping or small hand-held tamping or vibrating equipment within three (3) feet of the wall. This specification conflicts with the design criteria that no vehicle traffic is allowed or will occur within five (5) feet of the concrete walls. The required separation distance from concrete walls for operating heavy equipment and the required distance from the concrete walls for allowable compaction methods should be consistent with the design criteria.

To more clearly specify the project specific specifications necessary for construction of the concrete manure storage structure, the Specification has been adapted. The direct references to NRCS, the NRCS engineer, and the designated representative have been changed in the Specification to refer to the Engineer and designated representative. In the context of the Specification the reference to the designated representative is interpreted to be the designated representative of the Engineer. The Specification has been adapted to include this change in three places as outlined below.

- 2. PREPARATION OF THE FORMS AND SUBGRADE, paragraph 1: "NRCS Engineer" changed to "Engineer"
- 2. PREPARATION OF THE FORMS AND SUBGRADE, paragraph 2: "NRCS Engineer" changed to "Engineer"
- 9. CONCRETING IN COLD WEATHER, d.: "NRCS " changed to "the Engineer or designated representative" and the subsection reference was changed from "d" to "e".

A new Section 2B. "Subgrade Stabilization" was added to provide specific requirements for the limited use of plastic sheets for protecting and maintaining the stability of a properly prepared subgrade prior to concrete placement. This section specifies the procedures, methods, and practices to be followed when plastic sheets are used.

In support of the use of plastic sheets for the protection of a properly prepared subgrade, vapor retarders and vapor barriers are commonly used in applications where moisture vapor migration through a concrete slab is a problem. The Portland Cement Association (PCA) discusses moisture control and the use of vapor retarders in "Design and Control of Concrete Mixtures-The guide to applications, methods, and materials", 15th edition, Chapter 14 Placing and Finishing Concrete. It is acknowledged and recognized that a suitable subgrade for the placement of concrete is firm and moist. It is recognized that a suitable subgrade should not be wet, soft, muddy, or contain puddles. The stability and integrity of a properly prepared subgrade can be impacted by precipitation events after subgrade preparation and prior concrete placement if appropriate protective measures are not implemented. A compromised subgrade can impair the structural integrity of the concrete slab and delay construction progress.

The use of plastic beneath concrete is not recommended by the NRCS Concrete Construction specification but does provide a practical alternative and preventative control option to protect a properly prepared subgrade and the structural integrity of a concrete slab on grade consistent with the objectives of the Specification. The specification takes into consideration the concreting practices necessary to maintain the concrete integrity and not negatively impact the quality of the cured concrete. The use of plastic sheets (a vapor retarder) provides a positive barrier between the subgrade and accumulation of precipitation to protect and preserve the integrity of the subgrade. It is recognized that a vapor retarder is not a vapor barrier and does not stop 100% of moisture migration consistent with the objective to allow moisture to escape the concrete mix during the curing period. Installation specifications for plastic sheets provide for protection from precipitation events and includes practices to allow for moisture migration during curing and includes provisions that limit the lap between plastic sheets, does not allow for seams to be sealed, and requires that the sheets be perforated or sliced to allow for free water movement from beneath the concrete.

The specification requires that at least 1% perforated area be provided. This is a minimum standard that ensures that sufficient opening is distributed across the surface area to allow water to migrate away from the concrete. In support of this minimum standard, a 12" x 12" square plastic sheet has a surface area of 144 in^2 requiring at least 1.44 in^2 of opening per square foot of surface area. This is a:

- 2.0 inch diameter hole every 17.75 inches,
- 1.35 inch diameter hole every 12 inches,
- 1.0 inch diameter hole approximately every 8.75 inches,
- 0.5 inch diameter hole approximately every 4.5 inches, or
- One 0.25 inch diameter hole approximately every 2.25 inches

Based on this illustration, free water from the concrete during curing must travel a maximum of 18" to reach a 2.0 inch diameter hole and 2.25 inches to reach a 0.25 inch diameter hole. Sufficient opening in addition to the seams between the plastic sheets is available to allow free water to migrate away from the concrete during curing.

The use of a vapor retarder may increase the time needed for excess mix water to escape to the surface, increase the time before final finishing can be conducted due to longer water bleed times, and require that the water-to-cement ratio be reduced to 0.45 to control excess mix water that needs to escape during the curing period. The specifications include provisions that minimize the amount of free water on the surface of the plastic prior to concrete placement, reduce the allowable water-to-cement ratio to control excess concrete mix water that may be released from the surface of the concrete, and adjusts the finishing time to allow for moisture migration from the concrete. These methods are addressed in the construction methods outlined in the Concrete Construction specification to promote and maintain proper concreting practices and structural integrity. The specifications include many concreting practices designed to minimize the amount of free water that migrates from the concrete when a plastic vapor retarder is used and the additional perforations in the plastic provide sufficient opening for water to move away from the concrete and migrate into the soil foundation. All of these practices are included and required to maintain the integrity and quality of the concrete.

The term "facilities" in Section 9 of the Specification was changed to "alternate concrete mixing and placement practices in the first paragraph. Similarly, in the second paragraph of Section 9 "Facilities" was changed to "Concrete mixing and placement practices".

Indiana NRCS has confirmed that the intent of Section 9.c. is to prohibit the use of chloride accelerators when concreting in cold weather. To more clearly state the intent of this requirement Section 9.c has been changed to state, "Chloride accelerators such as calcium chloride shall not be used to speed the hardening of concrete." In addition to provide a specification for the use of non-chloride accelerators when concreting in cold weather, Section 9.d. was added stating, "Non-chloride, water reducing accelerators such as calcium nitrate and sodium thiocyanate based products, or comparable, may be used to speed the hardening of concrete."

Section 9.d. in the original Specification was changed to Section 9.f.

The Natural Resource Conservation Service Construction Specification, Concrete Construction was revised by the Indiana NRCS and the most current version is May 2015. The updates included clarification of which admixtures can be used in concreting and added specific ASTM Specification references regarding the use of admixtures. Updates were added to Section 4-Concrete Mix, Section 5-Mixing and Placing Concrete, Section 9-Concreting in Cold Weather, and Section 10-Concreting in Hot Weather.

To be consistent with the concrete wall design criteria, *"within 3 feet of the new concrete wall"* and *"within 3 feet of the wall"* was changed to "within five (5) feet of the new concrete wall" and "within five (5) feet of the wall".

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

Prepared for:

Pumps Hogs LLC

5200 S 500 W

Bringhurst, Indiana 46913

ALTERNATE DESIGN OR COMPLIANCE APPROACH INNOVATIVE TECHNOLOGY

SUMMARY OF FACTS

ALTERNATE DESIGN OR COMPLIANCE APPROACH JUSTIFICATION

DEMONSTRATION OF COMPLIANCE

327 IAC 19-5-1 "Alternate design or compliance approach; innovative technology"

327 IAC 19-3-1 "Performance Standards"

Prepared by:

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2016 Confined Feeding Operation Approval Application
Alternate Design or Compliance Approach (327 IAC 19-5)
for

Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

Introduction:
This construction attachment includes alternate design or compliance approach requests and supporting information. Approval of each of the alternate design or compliance approaches is requested. The following information is provided in support of approval of each alternate design or compliance approach.

Facts:

Reinforced Concrete Column Design

A reinforced concrete column design utilizing the design equations from Appendix C, MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005 and Building Code Requirements for Structural Concrete (ACI 318-11) is presented as part of the alternate design or compliance approach section of this attachment. Based on the design analysis a 12" x 12" x 7'-2" reinforced concrete column with 4-#5 vertical rebar tied every 12" with #3 rebar or 4-#4 vertical rebar tied every 12" with #3 rebar is proposed. The reinforced concrete column design demonstrates compliance with the structural integrity and design standards presented in MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005 and Building Code Requirements for Structural Concrete (ACI 318-11).

Concrete Masonry Column Design

The masonry column design section and design table have been removed from MWPS-36: Rectangular Concrete Manure Storage, Second Edition, 2005. The reason stated in MWPS-36 for this change is based on the assumption that masonry columns are rarely used and are susceptible to poor construction. The use of masonry columns is a practical and structurally sound construction method for concrete manure storages. A modified masonry column construction practices is typically used that includes placing #4 or #5 rebar in each core of the masonry block and filling the cores with concrete. A masonry column design utilizing the design equations from Appendix C, MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005 and Building Code Requirements for Structural Concrete (ACI 318-11) is presented as part of the alternate design or compliance approach section of this attachment. In accordance with the requirements of 327 IAC 19-12-4(h) the concrete masonry column design is submitted to the department for approval.

Based on the design analysis a 12" x 16" x 7'-2" concrete masonry column with the cores filled and one #5 rebar or #4 rebar placed in each core design demonstrates compliance with the structural integrity and design standards presented in MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005.

Continuous Column Footer Design

Continuous column footers are an alternative to the plain concrete square footer designs presented in MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005. A design table for plain (unreinforced) continuous column footers for reinforced concrete columns and concrete masonry columns was not found in MWPS-36. Since a design table was not identified during the design, a project specific design based on the design equations and standards presented in ACI 318-11 "Building Code Requirements for Structural Concrete" was conducted.

A continuous column footer design utilizing the design equations from Building Code Requirements for Structural Concrete (ACI 318-11) is presented as part of the alternate design or compliance approach section of this attachment. Based on the design analysis a 30" wide x 9" thick footer can be used with 12"

x 16" concrete masonry columns. Based on the design analysis a 30" wide x 10" thick footer can be used with 12" x 12" reinforced concrete columns. The continuous footer designs presented in the alternate design or compliance approach section demonstrate compliance with the structural integrity and design standards presented in MWPS-36, Rectangular Concrete Manure Storages, Second Edition, 2005 and Building Code Requirements for Structural Concrete (ACI 318-11).

Natural Resources Conservation Service Construction Specification, Concrete Construction

The Natural Resource Conservation Service Construction Specification, Concrete Construction, October 2005 was adapted to remove unnecessary or unintentional references, to include specifications and restrictions to address project specific details, and to incorporate new specifications from the recently revised Natural Resource Conservation Service Construction Specification, Concrete Construction, May 2015. A principle change to the concrete construction specification more clearly describes the use of allowable admixtures in concrete mixtures to include air entraining admixtures, plasticizing admixtures, and accelerating or water reducing accelerator admixtures. Other changes include clarification of concreting practices during cold weather concreting, allowable distance from concrete walls for operating heavy equipment, and allowable compaction methods. A limited exception allowing the use of plastic has been added to protect and maintain subgrade integrity due to precipitation events. Section "2B. SUBGRADE STABILIZATION (PRECIPITATION PROTECTION)" is added to provide specific construction requirements when plastic sheets are used to cover a prepared subgrade, protect the subgrade, and prevent wet, soft, muddy areas in the subgrade.

None of the changes included in the concrete construction specification alter the structural integrity of the concrete manure storages referenced in the specification. The explanation of the specification changes demonstrates compliance with the structural integrity and design standards.

Justification:

Design Details

A valid design is presented to support the concrete construction plans that include the following building components and options.

- 12" x 12" x 7'-2" reinforced concrete column. This design is completed in accordance with the design information and design equations presented in MWPS-36: Rectangular Concrete Manure Storage, Second Edition, 2005 and Building Code Requirements for Structural Concrete (ACI 318-11).
- 12" x 16" x 7'-2" concrete masonry column. This design is completed in accordance with the design information and design equations presented in MWPS-36: Rectangular Concrete Manure Storage, Second Edition, 2005 and Building Code Requirements for Structural Concrete (ACI 318-11).
- 30" wide x 10" thick continuous concrete footer for use with a 12" x 12" reinforced concrete column. This design is completed in accordance with the design information and design equations in Building Code Requirements for Structural Concrete (ACI 318-11).
- 30" wide x 9" thick continuous concrete footer for use with a 12" x 16" masonry column. This design is completed in accordance with the design information and design equations in Building Code Requirements for Structural Concrete (ACI 318-11).

An adapted concrete construction specification is presented to more clearly identify project specific requirements and details. The adapted specification was prepared in accordance with:

- the design criteria identified in MWPS-36: Rectangular Concrete Manure Storages – Second Edition, 2005 and American Concrete Institute approved concreting practices,
- the approved concreting practices described in Portland Cement Association's, "Design and Control of Concrete Mixtures-The guide to applications, methods, and materials", 15th edition.

- the installation and utilization of a vapor retardant (10 mil to 15 mil plastic sheets) beneath concrete floor slabs and concreting methods described Chapter 14 Placing and Finishing Concrete in Portland Cement Association's, "Design and Control of Concrete Mixtures-The guide to applications, methods, and materials", 15th edition.

So that the concrete construction plans can be approved as presented Pumps Hogs LLC requests that the alternate design or compliance approaches based on the design equations presented in Appendix C of MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005 and Building Code Requirements for Structural Concrete (ACI 318-11) be approved in place of design information presented in Design Table included in MWPS-36: Rectangular Concrete Manure Storages – Second Edition, 2005 and in place of design information that is not included in MWPS-36: Rectangular Concrete Manure Storages – Second Edition, 2005.

So that the Construction Specification, Concrete Construction adapted from the Natural Resource Conservation Service Construction Specification, Concrete Construction – October 2005 (adapted June 26, 2015) can be approved as presented Pumps Hogs LLC requests that the alternate Construction Specification, Concrete Construction Specification be approved in accordance with 327 IAC 19-5-1 Alternate design or compliance approach; innovative technology in place of the Natural Resource Conservation Service Construction Specification, Concrete Construction, October 2005.

Demonstration of Compliance with Alternate Design or Compliance Approach

The requirements of 327 IAC 19-5-1 outline the details associated with an alternate design or compliance approach; innovative technology and the criteria to be considered in approving an alternate compliance approach. The following information is provided in support of the request for approval of each alternate design or compliance approach request.

5-1(a) The use of alternate compliance approaches has been proposed by Pumps Hogs LLC as part of the Confined Feeding Operation approval application

5-1(a)(1) Performance Standards 327 IAC 19-3-1

(a) Pumps Hogs LLC's confined feeding operation will be managed to avoid any unpermitted discharges into the waters of the state. The alternate design of the columns and column footers were completed in accordance with the design information and design equations presented in MWPS-36: Rectangular Concrete Manure Storage, Second Edition, 2005 and Building Code Requirements for Structural Concrete (ACI 318-11). The concrete construction specifications were adapted to incorporate updates published by the Indiana Natural Resources Conservation Service and project specific details in accordance with industry standards and construction methods. Approval of the alternative design and compliance approach request does not change Pumps Hogs LLC's ability or commitment to managing the modified existing CFO to avoid any unpermitted discharge into the waters of the state.

(b) The proposed production buildings and manure storages at Pumps Hogs LLC's AFO have been designed and will be constructed in accordance with the applicable standards specified in the Confined Feeding Rule 327 IAC 19 including Indiana NRCS Conservation Practice Standard Code 313: Waste Storage Facility, September 2005; Midwest Plan Service MWPS-36: Rectangular Concrete Manure Storages, Second Edition, 2005; and Indiana NRCS Construction Specifications, Concrete Construction, October 2005. In addition to these standards, the design standards for reinforced concrete presented in ACI 318-11: Building Code Requirements for Structural Concrete, American Concrete Institute (ACI) are used where the design standards referenced in 327 IAC 19 do not include specific design information. The proposed manure storage has been designed and will be constructed to minimize nonpoint source pollution entering waters of the state. Approval of this alternate

design and compliance approach request does not change Pumps Hogs LLC's commitment or ability to comply with this requirement.

(c) Pumps Hogs LLC's AFO will be operated and managed to prevent manure releases, spills or the discharge of manure in violation of the approval or 327 IAC 19, including seepage and leakage. Pumps Hogs LLC has taken all reasonable steps to prevent manure releases, spills or the discharge of manure in violation of the approval or 327 IAC 19, including seepage and leakage. Approval of this alternate design and compliance approach request will not change Pumps Hogs LLC's commitment to maintain compliance with the approval, 327 IAC 19, and this performance standard.

(d) All proposed waste management systems located at Pumps Hogs LLC's AFO have been designed, will be constructed, and will be maintained to minimize leaks and seepage and prevent manure releases or spills, as well as ensure compliance with the water quality standards in 327 IAC 2. Approval of this alternate design and compliance approach request does not change Pumps Hogs LLC's commitment or ability to comply with this requirement.

(e) No manure staging is conducted at Pumps Hogs LLC's confined feeding operation. Therefore, Pumps Hogs LLC are in compliance with this performance standard.

(f) Land application of manure from Pumps Hogs LLC's operation will be conducted in a manner as to not threaten or enter waters of the state, not pond for more than twenty-four (24) hours, result in a manure release, result in a spill, and meet the agronomic rate of application and minimize nutrient leaching beyond the root zone. Approval of this alternate design and compliance approach request does not change Pumps Hogs LLC's commitment or ability to comply with this requirement.

5-1(a)(2) Incorporated into approval

In accordance with the requirements of 327 IAC 19-5-1(a)(2), Pumps Hogs LLC requests that it be acknowledged and incorporated into the approval that the following alternate design or compliance approaches have been submitted and approved.

- Reinforced concrete column with 4 - #5 vertical rebar or 4 - #4 vertical rebar
- Masonry concrete column, 12" x 16"
- 30"wide x 10" thick continuous concrete footer for 12" x 12" reinforced concrete columns
- 30"wide x 9" thick continuous concrete footer for 12" x 16" masonry columns
- Concrete Construction Specifications

5-1(b) Commissioner's determination

5-1(b)(1) The requested alternate concrete column and footer designs demonstrate that the designs meet or exceed the requirements necessary to maintain the structural integrity of the concrete manure storage structure and the components of the structures associated with the columns and footers. The adapted Concrete Construction Specifications are based on site specific details and concrete construction industry standards such that the construction standards meet or exceed the requirements necessary to maintain structural integrity. Approval of this alternate design or compliance approach request does not alter or impact the structural integrity of the concrete manure storages.

5-1(b)(2) Pumps Hogs LLC's confined feeding operation will be managed to avoid unpermitted discharges into waters of the state. The proposed manure storage structures will be constructed to minimize nonpoint pollution entering waters of the state. The manure storages have been designed, will be constructed, and will be maintained to minimize any leaks and seepage and prevent manure releases or spills. The columns and column footers have been designed in accordance with the design standards. Pumps Hogs LLC will take all reasonable steps to prevent manure releases, spills or discharges of manure by regularly inspecting manure storages and production areas, land applying manure at agronomic rates, and conducting regular preventive maintenance on all manure storage structures and handling equipment.

Approval of this alternate design or compliance approach request does not alter or impact the management of the confined feeding operation and the implementation of management and protective measures to reduce the potential for manure releases and spills.

5-1(b)(3) Pumps Hogs LLC's production building and manure storage has been located to protect surface water features. The planned construction is located greater than 300 feet from any off-site water wells. The planned construction is located greater than 100 feet from the proposed on-site water well. A wetland surface water feature is located within 300 feet of the production building and manure storage. An earthen drainage diversion berm and swale located between the proposed building and concrete manure storage is proposed to establish at 300 foot drainage flow path between the production area and wetland surface water feature. The earthen drainage diversion will be installed to direct surface drainage away from the wetland surface water feature and establish a surface gradient barrier to comply with the 300 foot setback from surface water requirement of 327 IAC 19-12-3(c). The proposed production building and manure storage meet the protection requirements outlined by the Indiana Department of Environmental Management. Approval of this alternate design or compliance approach request does not alter or change the practices and measures to be installed providing protection of surface water features in close proximity to the concrete manure storage structure.

5-1(b)(4) Pumps Hogs LLC will utilize operational practices to minimize and prevent releases or spills of manure from the confined feeding operation. Some practices include regular inspections to identify potential issues, regular preventive maintenance of manure storage structures and handling equipment for proper and uninterrupted operation, and regular soil and manure sampling and testing to determine the agronomic rate of application to meet the crop nutrient requirements, prevent runoff, and minimize leaching below the root zone. Approval of this alternate design or compliance approach does not change the commitment and implementation of operational practices that provide protection of water resources.

5-1(b)(5) The confined feeding operation operated by Pumps Hogs LLC does not present a threat of adverse impact to water quality or other sensitive areas. Grading around the buildings is maintained to divert clean storm water drainage away from the buildings and diversions are maintained to direct flow from the buildings away from surface water and other features of concern. The buildings and manure storages have been located to establish adequate separation distance between the buildings and surface water and other features of concern to manage manure and process wastewater to prevent any negative impacts. Land application methods take into consideration soil test, manure test, crop rotation, and agronomic rate of application to prevent any adverse impact to water resources.

5-1(b)(6) Pumps Hogs LLC are not aware of any other requirements or criteria that are required to protect the environment or human health.

Conclusion:

Pumps Hogs LLC has demonstrated as part of this alternate design or compliance approach request that the performance standards of 327 IAC 19-3-1 have been met and the criteria for consideration outlined in 327 IAC 19-5-1 have been addressed such that the request for an alternate design or compliance approach to use the alternate design for columns and column footers and an updated concrete construction specification are approvable. Pumps Hogs LLC has also demonstrated that no impact or threat to the environment or human health has occurred or will occur as a result of the requested alternate designs or compliance approaches.

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

Prepared for:

Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

SEASONAL WATER TABLE MANAGEMENT

SEASONAL WATER TABLE DETERMINATION
DESIGN SUMMARY

PERIMETER TILE, SUMP, AND ROCK DISTRIBUTOR

ON-SITE SOIL INVESTIGATION
Lewi Flohr

Prepared by:
LIVESTOCK ENGINEERING SOLUTIONS, INC.

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2016 Confined Feeding Operation Approval Application
Seasonal Water Table Management
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

Seasonal Water Table Determination

The requirements of 327 IAC 19-7-1(c)(6) state "*The number of test holes must be sufficient to adequately characterize the seasonal water table and soil.*" The requirements of NRCS Conservation Standard 313 states that "*A geological exploration shall be conducted for all manure storage facilities. The exploration shall be intensive enough to adequately characterize the site. A minimum of two holes shall be explored.*" Standard 313 also states that "*Soil sampling shall follow guidance in the National Engineering Manual (NEM) IN531-2.*" The National Engineering Manual (NEM) IN531-2 requires that a soil investigation be conducted to document the engineering properties of the soil and identify the depth of the seasonal water table.

An on-site soil investigation was completed by Lewis Flohr on April 29, 2016. Four soil borings within the area of the proposed buildings were completed to determine the soil characteristics and presence or absence of a seasonal water table. The on-site soil investigation report identifies the soil profile from the ground surface to the bottom of the excavation using the USDA texture classification method. An equivalent unified soil classification system (USCS) designation is provided. The soil classifications identified in the soil investigation report for the four borings include silt loam (SIL, ML), silty clay loam (SICL, ML-CL), clay loam (CL, CL), and loam (Loam, CL). The on-site soil investigation demonstrated that a seasonal water table exists within the footprint of the proposed concrete manure storage structures.

Referring to the on-site soil investigation the soil profile log indicates the following.

North Building, 1P
Boring #1 (north building):

Depth	Texture
0"-8"	silt loam (SiL, ML)
8"-12"	silt loam (SiL, ML)
12"-24"	silty clay loam (SiCL, ML-CL)
24"-38"	silty clay loam (SiCL, ML-CL)
38"-51"	silty clay loam (SiCL, ML-CL)
51"-64"	clay loam (CL, CL)
64"-70"	loam (Loam, ML)
70"-96"	loam (Loam, ML)

Seasonal water table – 12" below surface

Boring #2 (north building):

Depth	Texture
0"-8"	silt loam (SiL, ML)
8"-12"	silt loam (SiL, ML)
12"-20"	silty clay loam (SiCL, ML-CL)
20"-38"	silty clay loam (SiCL, ML-CL)
38"-49"	silty clay loam (SiCL, ML-CL)
49"-68"	silty clay loam (SiCL, ML-CL)
68"-82"	clay loam (CL, CL)
82"-96"	loam (Loam, ML)

Seasonal water table – 8" below surface

South Building, 2P

Boring #1 (south building):

Depth	Texture
0"-9"	silt loam (SiL, ML)
9"-17"	silty clay loam (SiCL, ML-CL)
17"-26"	clay loam (CL, CL)
26"-38"	clay loam (CL, CL)
38"-45"	loam (Loam, ML)
45"-96"	loam (Loam, ML)

Seasonal water table – 17" below surface

Boring #2 (south building):

Depth	Texture
0"-8"	silt loam (SiL, ML)
8"-13"	silt loam (SiL, ML)
13"-24"	silty clay loam (SiCL, ML-CL)
24"-38"	silty clay loam (SiCL, ML-CL)
38"-54"	silty clay loam (SiCL, ML-CL)
54"-72"	clay loam (CL, CL)
72"-96"	loam (Loam, ML)

Seasonal water table – 8" below surface

According to the USDA-NRCS Web Soil Survey of Carroll County, one (1) predominant soil type exists in the area of the footprint of the proposed buildings. The predominant soil type is Fincastle-Starks silt loam, 0 to 2 percent slopes (FaA). Soil textures within the Fincastle-Starks silt loam soil type (FaA) include silt loam, silty clay loam, clay loam, and loam. The seasonal water table for the Fincastle-Starks silt loam soil type (FaA) is approximately 6 to 24 inches.

Referring to the USDA-NRCS Web Soil Survey for Carroll County the soil profile log indicates the following.

Fincastle-Starks silt loam, 0 to 2 percent slopes (FaA)

Depth	Texture
0"-10"	silt loam
10"-13"	silt loam
13"-27"	silty clay loam
27"-50"	clay loam
50"-59"	loam
59"-79"	loam

Seasonal water table – 6"-24" below surface

The information provided by the on-site soil investigation and USDA-NRCS Web Soil Survey for Carroll County, Indiana indicates that the soil properties are uniform and that a seasonal water table exists within the footprint of the proposed below-building concrete manure storages.

The depth of the foundation and floor will be located approximately 48" – 60" below the existing ground surface. A perimeter tile drainage system with a tile riser observation point and a collection sump are planned to manage any potential seasonal water table at or below the concrete below-building manure storage tank.

Design Summary

A perforated perimeter tile drainage system with tile riser observation points located at the southeast corner of building 1P and at the northeast corner of building 2P to collect and direct groundwater away from the building foundation. Groundwater from the proposed building tile riser observation sump will be pumped to a surface rock distributor located at least 50 feet east and to the middle of the proposed buildings.

The following details pertain to the seasonal water table management system plans for the below-ground concrete storage structures.

The following details pertain to the seasonal water table management system plans for the below-ground concrete storage structures.

1. Perimeter subsurface drainage tile. A perforated 4"diameter drainage tile is to be placed around the foundation of the concrete manure storage tank.
2. The drainage tile will be installed approximately 72 inches from the side of the concrete manure storage side wall when a 5'-4" x 4'-8" O.D. manure pump out annex is used and approximately 40 inches from the end of the concrete manure storage tank end wall.
3. The drainage tile will be installed approximately 96 inches from the side of the concrete manure storage side wall when a 5'-4" x 6'-8" O.D. manure pump out annex is used and approximately 40 inches from the end of the concrete manure storage tank end wall.
4. The beginning of the perimeter tile will be located approximately 17" below the floor elevation. The perimeter tile slopes 0.25% to the collection sump. The perimeter tile will be installed to drain the seasonal water table to a common collection point. Each segment of the drainage tile will be installed to begin at the opposite corner of the building from the collection sump.
5. An alternate perimeter tile drainage location is approximately 12 inches from the sidewall and end wall of the building adjacent to the floor foundation footer. The drainage tile will be placed to follow the contour of the building and manure pump out annex footers.
6. When the perimeter tile is located approximately 12 inches from the edge of the sidewall and end wall of the building the bottom elevation of the perimeter tile will begin approximately 12" below (99'-0", relative elevation) the top of floor elevation of the manure storage floor slab elevation (100'-0" relative elevation). The perimeter tile slopes 0.25% to the collection sump. The perimeter tile will be installed to drain the seasonal water table to a common collection point. Each segment of the drainage tile will be installed to begin at the opposite corner of the building from the collection sump.
7. The perimeter drainage tile will be backfilled with gravel granular backfill per the plans.
8. The subsurface perimeter tile system is connected to the collection/observation sump.
9. Water collect in the collection/observation sump will be pumped to a rock distributor using a submersible pump.
10. A submersible pump capable of pumping the collected water from the collection sump will be used. A float activated switch will control the pump when water accumulates in the collection sump. A pump capable of pumping at least 75 - 100 gpm will be installed in the collection sump.
11. The submersible pump will be used as a shut-off to control water flow from the perimeter tile system and collection/observation sump, as applicable. The pump will be shut off or power disconnected to provide a shut-off in place of a closure or shut-off valve.
12. Electric service to the pump will be provided at the collection sump with a service disconnect or electrical outlet box. Electric service will be directed from the production building.
13. The collection sump and pump will be inspected regularly as part of the site inspections. Pump functionality will be noted as part of the inspection. An inoperable pump will be replaced as needed. A replacement pump will be maintained on-site, as needed, to allow for pump maintenance and/or replacement.
14. The production site includes a back-up generator and power supply. In the case of a power outage, the sump pump power supply will be maintained by the back-up power supply for the production site.
15. Water from the rock distributor is allowed to flow over the surface into a grassed vegetative infiltration area and join the existing drainage patterns.
16. See plans for details.

START OF 4"ø PERIMETER TILE 3'-4" FROM OUTSIDE WALLS AT A BOTTOM ELEV. 98'-7"

START OF 4"ø PERIMETER TILE 6' FROM OUTSIDE WALLS AT A BOTTOM ELEV. 98'-7" RELATIVE TO THE TOP OF PIT FLOOR ELEV. 100'-0"

4"ø PERIMETER TILE(PERFORATED) SLOPE 0.25% TO OUTLET

TILE BOTTOM ELEV. 97'-6.5"

6"

82'-4" FOOTER O.D.

81'-4" PIT O.D.

A 1D

6"

TILE BOTTOM ELEV. 98'-4.5"

B 1D

4"ø PERIMETER TILE(PERFORATED) SLOPE 0.25% TO OUTLET

36"ø PERIMETER TILE RISER OBSERVATION POINT WITH CLOSURE VALVE OR COMPARABLE. WATER TO BE PUMPED TO A ROCK OUTLET SOUTH OF PROPOSED BUILDING.

20'x25' VEGETATIVE INFILTRATION AREA

6"

413' PIT O.D.

414' FOOTER O.D.

TILE INLET ELEV. 97'-3.5" BOTTOM OF TILE

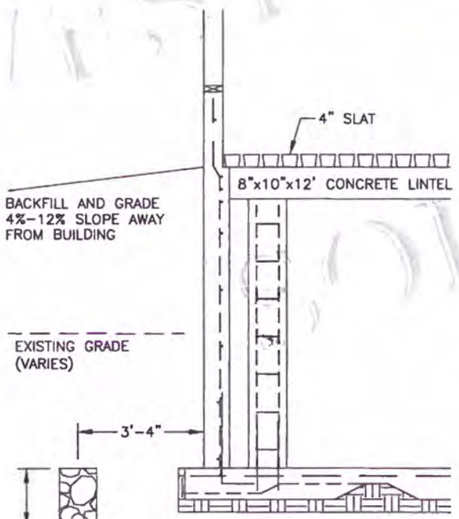
4"ø SOLID PIPE

5'x20' ROCK OUTLET DISTRIBUTOR

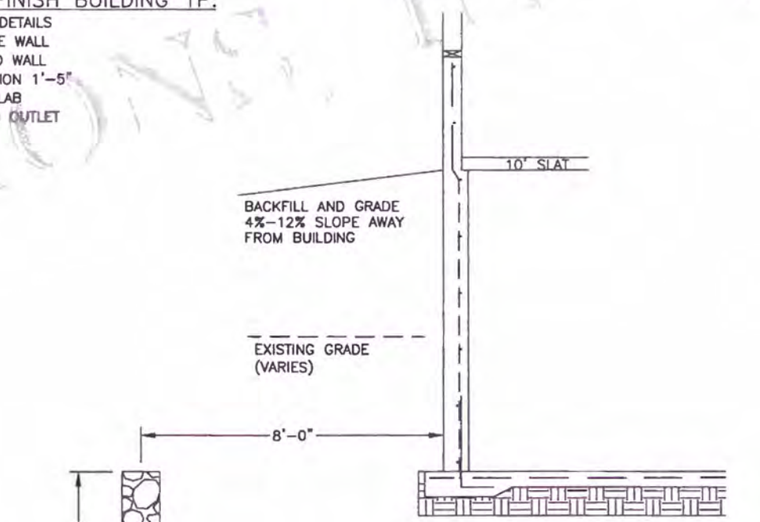
4"ø SOLID PIPE FROM PROPOSED BUILDING 2P.

WEAN-TO-FINISH BUILDING 1P.

PERIMETER TILE DETAILS
8'-0" FROM SIDE WALL
3'-4" FROM END WALL
STARTING ELEVATION 1'-5" BELOW FLOOR SLAB
SLOPE 0.25% TO OUTLET



A 1D END WALL DETAIL
CROSS-SECTION A



B 1D SIDE WALL DETAIL
CROSS-SECTION B

RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

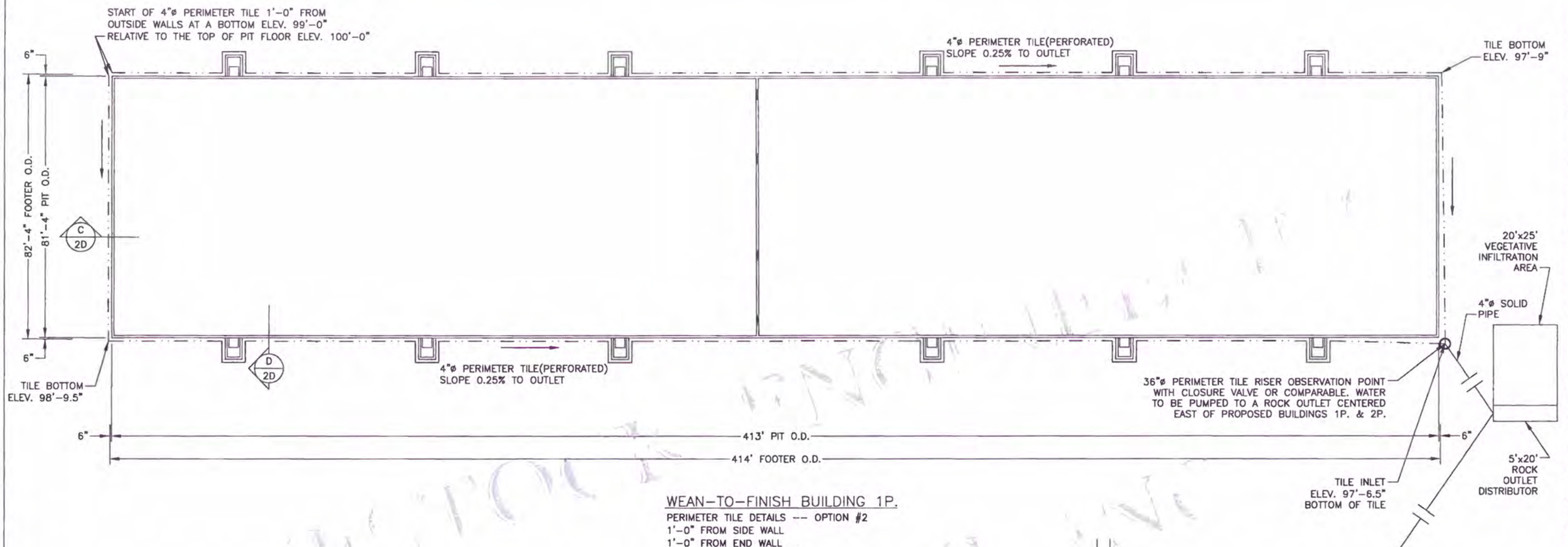
N

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

CONCRETE MANURE STORAGE
FOUNDATION PLAN
PERIMETER TILE LAYOUT
(BUILDING 1P. SHOWN)

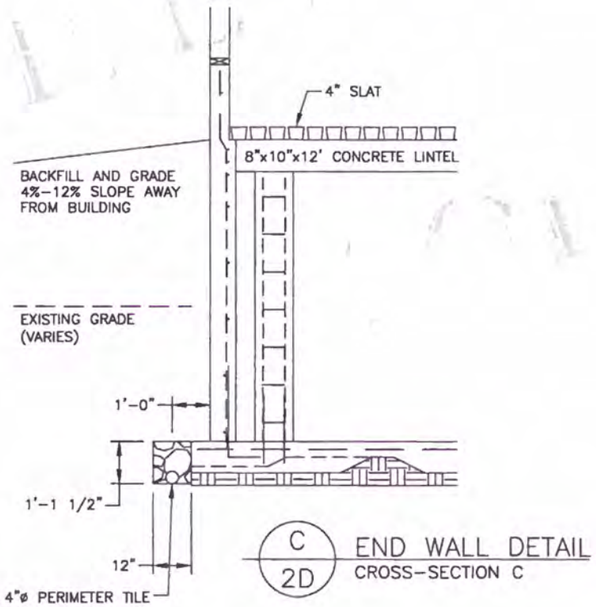
DATE: 05/05/16 | DRAWN BY: DL | SHEET: 1D of 7D | DRAWING NO: PHL0116- 01D

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

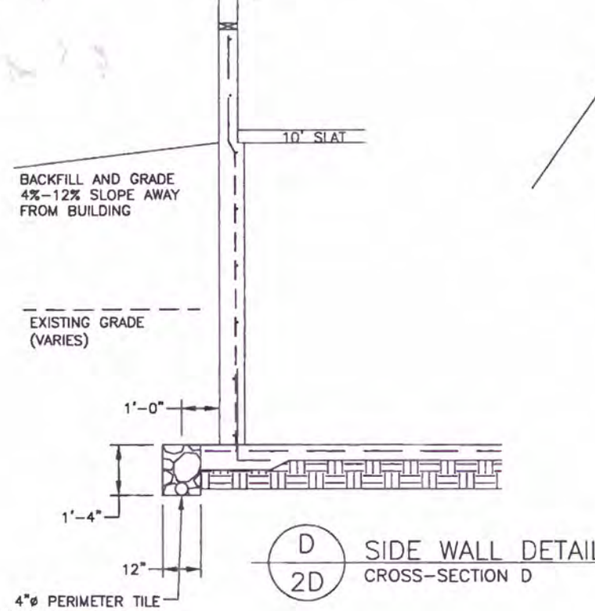


WEAN-TO-FINISH BUILDING 1P.

PERIMETER TILE DETAILS -- OPTION #2
1'-0" FROM SIDE WALL
1'-0" FROM END WALL
STARTING ELEVATION 1'-0" BELOW FLOOR SLAB
SLOPE 0.25% TO OUTLET



C 2D END WALL DETAIL
CROSS-SECTION C



D 2D SIDE WALL DETAIL
CROSS-SECTION D

N

SHEET: 2D of 7D | DRAWING NO: PHL0116- 02D

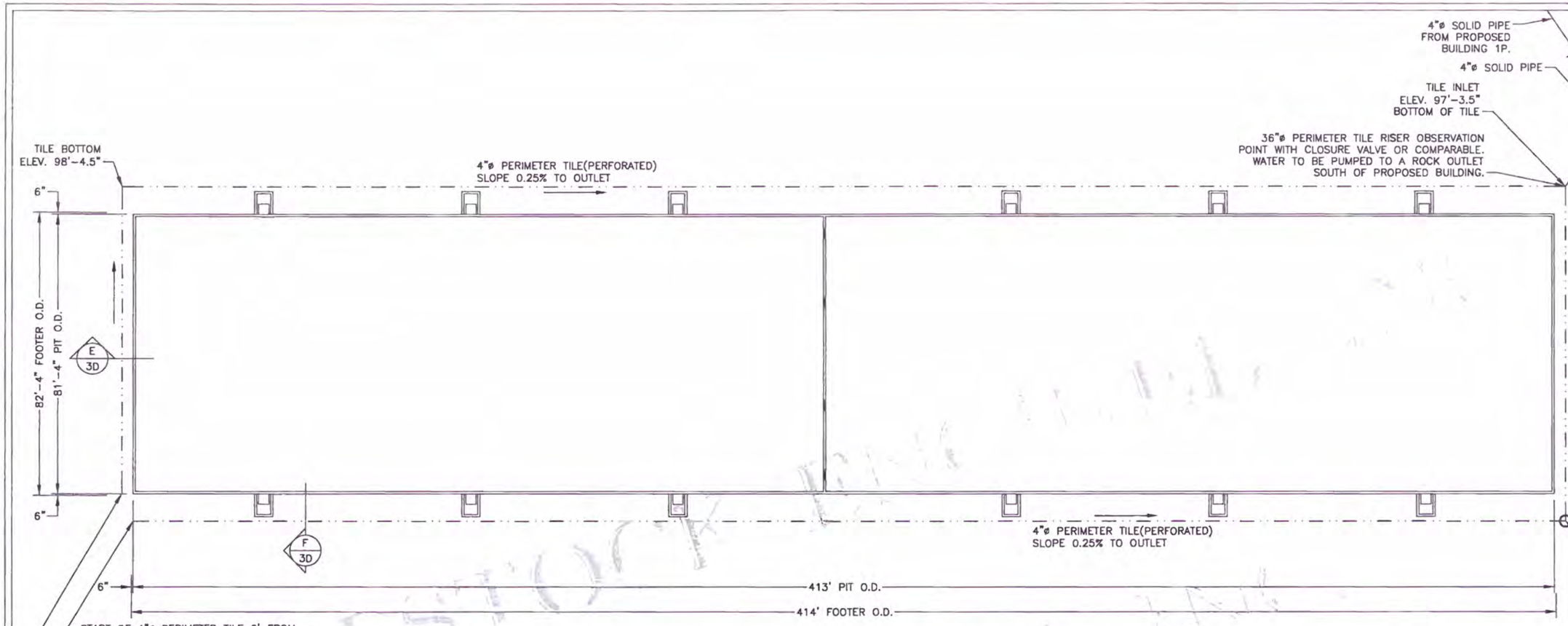
DRAWN BY: DL

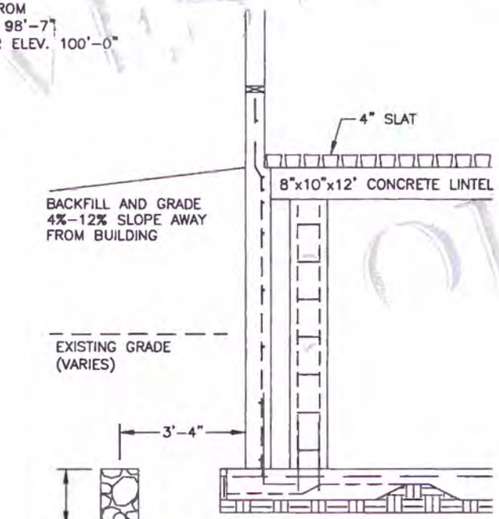
DATE: 05/05/16

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

CONCRETE MANURE STORAGE
FOUNDATION PLAN
PERIMETER TILE LAYOUT
(BUILDING 1P.)

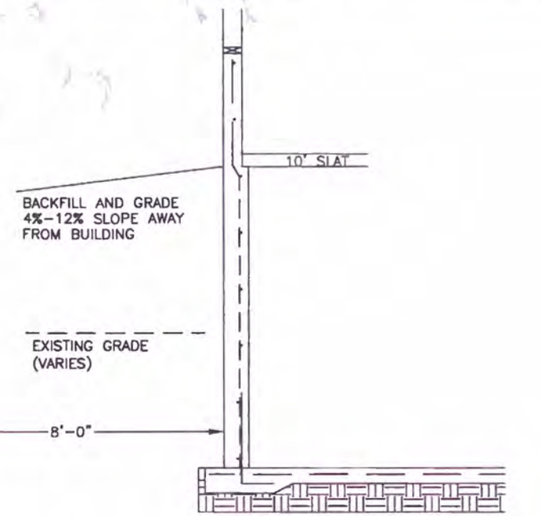
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL





E 3D END WALL DETAIL
CROSS-SECTION E

WEAN-TO-FINISH BUILDING
PERIMETER TILE DETAILS
8'-0" FROM SIDE WALL
3'-4" FROM END WALL
STARTING ELEVATION 1'-5" BELOW FLOOR SLAB
SLOPE 0.25% TO OUTLET



F 3D SIDE WALL DETAIL
CROSS-SECTION F

N

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 3D of 7D | DRAWING NO: PHL0116-03D

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

CONCRETE MANURE STORAGE
FOUNDATION PLAN
PERIMETER TILE LAYOUT
(BUILDING 2P. SHOWN)

PUMPS HOGS LLC
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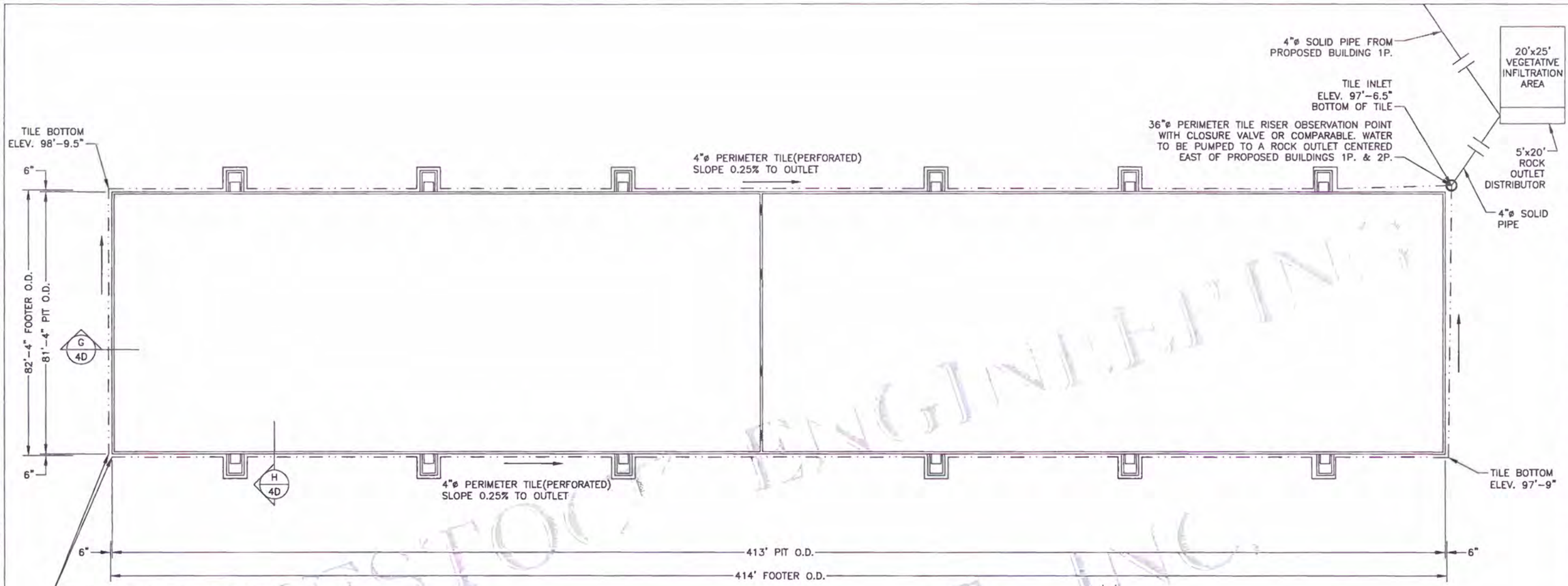
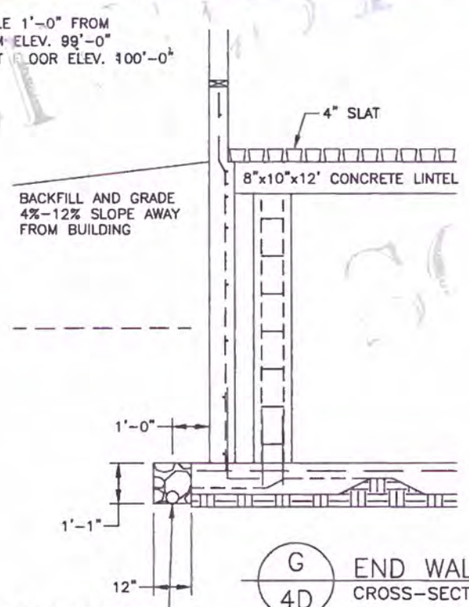
2016 CFO APPROVAL

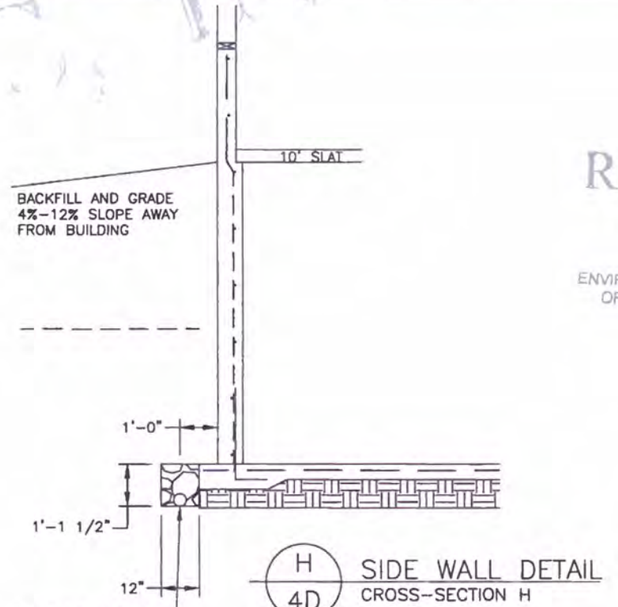


WEAN-TO-FINISH BUILDING

PERIMETER TILE DETAILS -- OPTION #2
1'-0" FROM SIDE WALL
1'-0" FROM END WALL
STARTING ELEVATION 1'-0" BELOW FLOOR SLAB
SLOPE 0.25% TO OUTLET



G 4D END WALL DETAIL
CROSS-SECTION G



H 4D SIDE WALL DETAIL
CROSS-SECTION H

N

DRAWING NO: PHL0116-04D | SHEET: 4D of 7D

DATE: 05/05/16 | DRAWN BY: DL

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

CONCRETE MANURE STORAGE
FOUNDATION PLAN
PERIMETER TILE LAYOUT

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

SOURCE:
LEWIS FLOHR
SOIL INVESTIGATION 04/29/16

SEASONAL WATER TABLE DETERMINATION

NOTES: TILE 8'–0" FROM SIDEWALLS AND 3'–4" FROM ENDWALL

1. A 4" DIAMETER PLASTIC PERFORATED CORRUGATED DRAINAGE TILE SHALL BE PLACED AROUND THE FOUNDATION OF THE CONCRETE MANURE STORAGE TANK.
2. PLACE TILE 8'–0" FROM THE SIDEWALL AND 3'–4" FROM THE ENDWALL.
3. START TILE AT 17" BELOW THE TOP OF PIT FLOOR ELEVATION AND ENTER THE OBSERVATION SUMP AT 32.5" BELOW THE TOP OF PIT FLOOR.
4. BED OR PLACE WASHED GRANULAR FILL IN A 12" WIDE TRENCH. PLACE AT LEAST 4" OF GRANULAR FILL ON EACH SIDE OF THE TILE AND AT LEAST 6" OF GRANULAR FILL ABOVE THE TILE. FILL THE TRENCH WITH GRANULAR FILL TO THE TOP OF THE PIT FLOOR.
5. SLOPE THE DRAINAGE TILE 0.25% TO THE TILE OBSERVATION SUMP.
6. OUTLET FROM THE TILE OBSERVATION SUMP TO A ROCK OUTLET DISTRIBUTOR AND VEGETATIVE INFILTRATION AREA.
7. WATER FROM TILE OBSERVATION SUMP PUMPED TO ROCK OUTLET DISTRIBUTOR
8. LOCATE THE ROCK OUTLET DISTRIBUTOR AT LEAST 50'–0" FROM THE CONCRETE MANURE STORAGE FOUNDATION.
9. LOCATE THE ROCK OUTLET DISTRIBUTOR AT LEAST 50' FROM NEAREST PROPERTY BOUNDARY.

NOTES: TILE 1'–0" FROM THE SIDEWALLS AND ENDWALLS

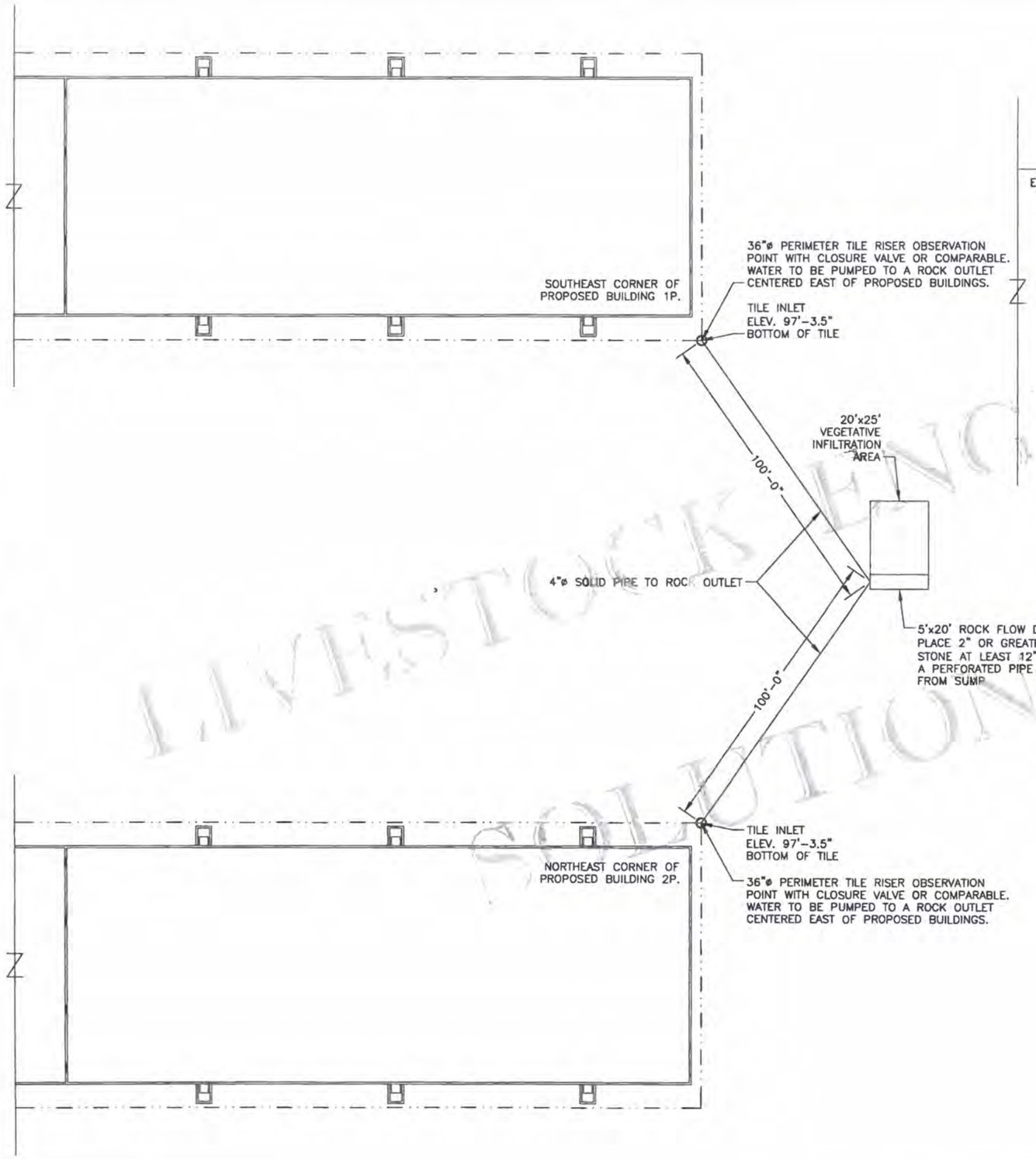
1. A 4" DIAMETER PLASTIC PERFORATED CORRUGATED DRAINAGE TILE SHALL BE PLACED AROUND THE FOUNDATION OF THE CONCRETE MANURE STORAGE TANK.
2. PLACE TILE 1'–0" FROM THE SIDEWALL AND 1'–0" FROM THE ENDWALL.
3. START TILE AT 12" BELOW THE TOP OF PIT FLOOR ELEVATION AND ENTER THE OBSERVATION SUMP AT 29.5" BELOW THE TOP OF PIT FLOOR.
4. BED OR PLACE WASHED GRANULAR FILL IN A 12" WIDE TRENCH. PLACE AT LEAST 4" OF GRANULAR FILL ON EACH SIDE OF THE TILE AND AT LEAST 6" OF GRANULAR FILL ABOVE THE TILE. FILL THE TRENCH WITH GRANULAR FILL TO THE TOP OF THE PIT FLOOR.
5. SLOPE THE DRAINAGE TILE 0.25% TO THE TILE OBSERVATION SUMP.
6. OUTLET FROM THE TILE OBSERVATION SUMP TO A ROCK OUTLET DISTRIBUTOR AND VEGETATIVE INFILTRATION AREA.
7. WATER FROM TILE OBSERVATION SUMP PUMPED TO ROCK OUTLET DISTRIBUTOR
8. LOCATE THE ROCK OUTLET DISTRIBUTOR AT LEAST 50'–0" FROM THE CONCRETE MANURE STORAGE FOUNDATION.
9. LOCATE THE ROCK OUTLET DISTRIBUTOR AT LEAST 50' FROM NEAREST PROPERTY BOUNDARY.

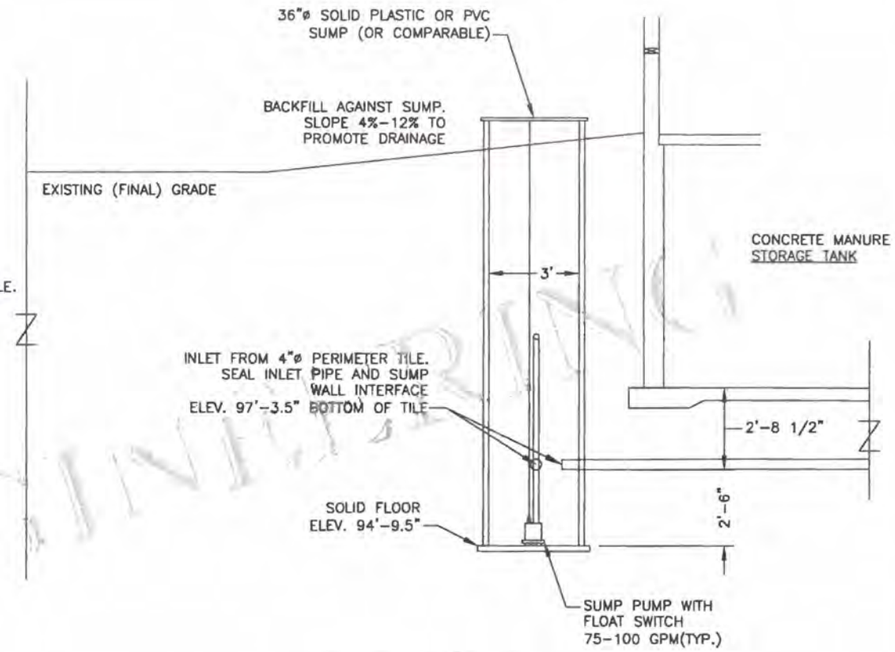
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

PERIMETER TILE DETAILS
WATER TABLE MANAGEMENT

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 5D of 7D | DRAWING NO: PHL0116–05D

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143





PERIMETER DRAIN DETAIL
CROSS-SECTION(8'-0" DEEP PIT SHOWN)
VENTED SUMP COVER

NOTE:
1. PROVIDE SUMP PUMP WITH FLOAT SWITCH 75-100 GPM (TYPICAL)
2. ELECTRICAL SERVICE PROVIDED FROM BUILDING SERVICE TO SUMP PUMP
3. BACK-UP GENERATOR LOCATED ON-SITE IN CASE OF POWER OUTAGE
4. PROVIDE PUMP ELECTRICAL SERVICE DISCONNECT, RECOMMENDED
5. PROVIDE BACK-UP PUMP HOUSED ON-SITE

PERIMETER TILE/SUMP LAYOUT
VEGETATIVE FILTER AREA

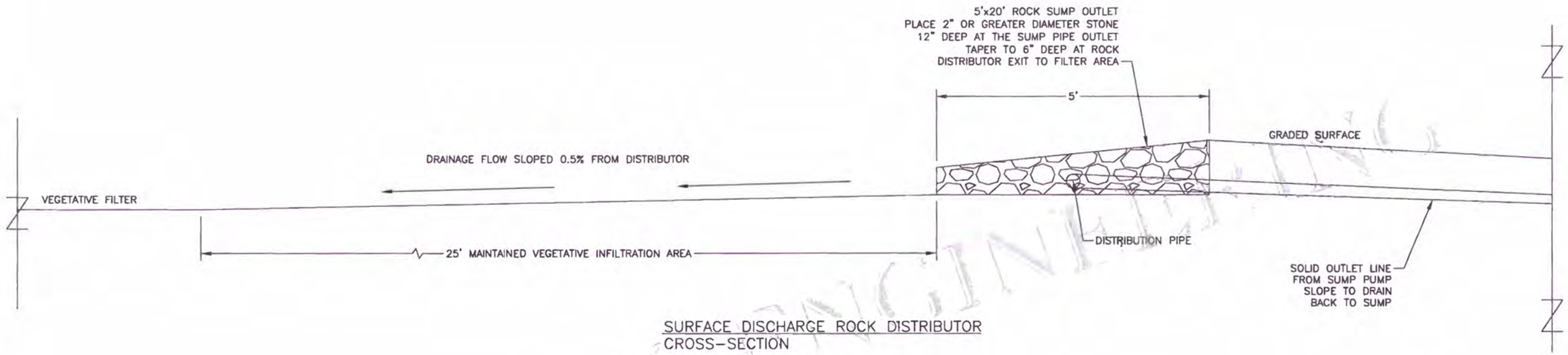
N

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 6D of 7D | DRAWING NO: PHL0116-06D

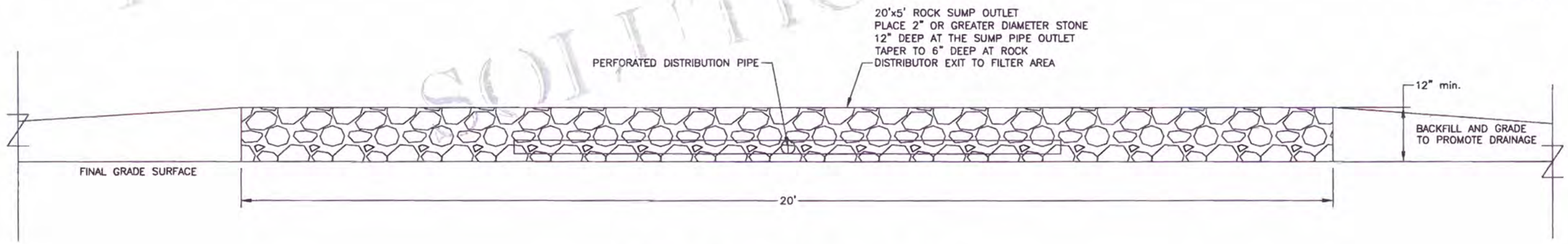
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

SEASONAL WATER TABLE MANAGEMENT
SUMP AND WATER DISTRIBUTOR

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL



SURFACE DISCHARGE ROCK DISTRIBUTOR
CROSS-SECTION



SURFACE DISCHARGE ROCK DISTRIBUTOR
SIDE ELEVATION

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

SEASONAL WATER TABLE MANAGEMENT
ROCK DISRTIBUTOR AND VEGETATIVE INFILTRATION AREA

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 7D of 7D | DRAWING NO: PHL0116-07D

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

On Site Soil Investigation

Conducted by:
Lewis Flohr
629 E. SR 26
Frankfort, IN 46041
1-800-368-3235

County: CARROLL **Date:** 04/29/16

Requesting Report

Name: LIVESTOCK ENGINEERING SOLUTIONS
Address: 2967 SOUTH HONEYCREEK RD.
City/State/Zip: GREENWOOD, IN. 46143

Property Owner

Name: JAMES TEMPLIN
Phone: 317-508-1526

Location of Property **Soil Atlas #** 60

Township: CLAY NW1/4 **Section:** 3 | T | 23 | N | R | 2 | W

Directions to Site:
EAST OF ST RD 39 ON CR 500 SOUTH PAST 1ST SET OF BLDGS ON SOUTH SIDE OF RD. NORTH BLDG

Property Classification

Residential		Preliminary Investigation		New System		*Water Source* Well	
Commercial				Repair/Replacement		City Water	
Other				Subdivision		Shared Well	
		Septic Installer Consulted?		Duplex			
# of Bedrooms:				Other		Septic area identified	

Name of People at Site:

Special Notes:

Site Sketch

Not to Scale - for location of soil boring sites only

See map

Soil Boring #1 **Requestor:** TEMPLIN NORTH **Lot Number**

Depth	Matrix Color	Mottles	Other	Texture	Structure		Consistancy	Parent Material	EFF	Horizon
0-8	10 YR X 4/3	10 YR		SIL	STR MOD X WK	GRN	friable	loess	N	AP
8-12	10 YR X 4/4	10 YR		SIL	STR X MOD WK	GRN	friable	loess	N	A1
12-24	10 YR X 4/4	10 YR X 5/2,4/3		SICL	STR X MOD WK	SBK	firm	loess	N	B1T
24-38	10 YR X 4/4	10 YR X 5/2 5/3,4/6,5/6		SICL	STR MOD X WK	SBK	firm	loess	N	B2,1T
38-51	10 YR X 5/6	10 YR X 5/2,5/3,5/6,5/8		SICL	STR MOD X WK	SBK	firm	loess	N	B2,2T
51-64	10 YR X 5/6	10 YR X 5/1,5/4,5/8		CL	STR MOD WK X	SBK	firm	glacial till	N	2B2,3
64-70	10 YR X 5/4	10 YR X 5/1 5/3, 5/8		LOAM	STR MOD WK X	SBK	firm	glacial till	Y	2BC
70-96	10 YR X 5/4	10 YR X 5/6		LOAM	STR MOD WK	massive	V. FIRM	glacial till	Y	2C

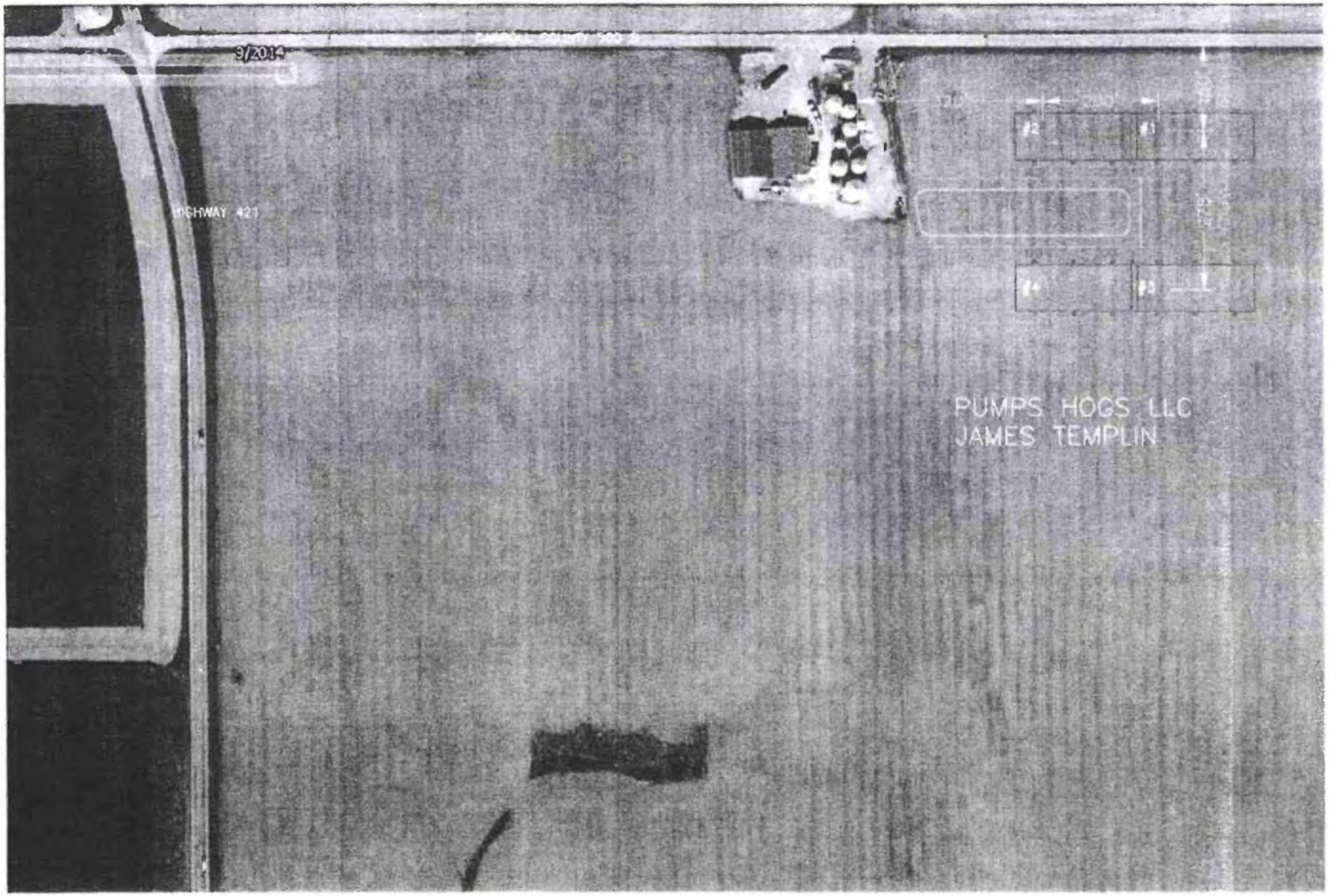
Seasonal H20	12	Map Unit	FAA	Shape of Slope	CONVEX	Other:	
Compact Till	70-96	Land Use	FIELD	Direction of Slope			
Fill	NO	Flood Plain	NO	% Slope	0-1%		

Soil Boring #2

Depth	Matrix Color	Mottles	Other	Texture	Structure		Consistancy	Parent Material	EFF	Horizon
0-8	10 YR X 3/3	10 YR		SIL	STR MOD X WK	GRN	friable	loess	N	AP
8-12	10 YR X 3/3	10 YR X 4/2,5/3		SIL	STR X MOD WK	GRN	friable	loess	N	A1
12-20	10 YR X 4/2	10 YR X 5/1 4/6		SICL	STR X MOD WK	SBK	firm	loess	N	B1T
20-38	10 YR X 5/1	10 YR X 5/2,4/2,4/6 5/6		SICL	STR MOD X WK	SBK	firm	loess	N	B2,1T
38-49	10 YR X 6/2	10 YR X 5/1 5/2,5/6 7.5 YR X 4/6 5/6		SICL	STR MOD X WK	SBK	firm	loess	N	B2,2T
49-68	10 YR 7.5 YR 2.5 Y X 5/1	10 YR 7.5 YR 2.5 Y X 4/1,5/2,5/6		SICL	STR MOD WK X	SBK	firm	loess	N	B2,3T
68-82	10 YR 7.5 YR 2.5 Y X 5/3	10 YR 7.5 YR 2.5 Y X 5/1,5/2,5/6		CL	STR WK X	SBK	firm	glacial till	N	2B3 2B3
82-96	10 YR X 5/4	10 YR X 5/1,5/3,5/8		LOAM	STR MOD WK X	SBK	firm	glacial till	Y	2BC

Seasonal H20	8	Map Unit	FAA	Shape of Slope	CONVEX	Other:	
Compact Till	>96	Land Use	FIELD	Direction of Slope			
Fill	NO	Flood Plain	NO	% Slope	0-1%		

Soil Boring # **Soil Boring #**



On Site Soil Investigation

Conducted by:
Lewis Flohr
629 E. SR 26
Frankfort, IN 46041
1-800-368-3235

County: CARROLL **Date:** 04/29/16

Requesting Report

Name: LIVESTOCK ENGINEERING SOLUTIONS
Address: 2967 SOUTH HONEYCREEK RD.
City/State/Zip: GREENWOOD, IN. 46143

Property Owner

Name: JAMES TEMPLIN
Phone:

Location of Property

Soil Atlas # 60

Township: CLAY NW1/4 **Section:** 3 | T | 23 | N | R | 2 | W

Directions to Site:

EAST OF ST RD 39 ON CR 500 SOUTH PAST 1ST SET OF BLDGS ON SOUTH SIDE OF RD. SOUTH BLDG

Property Classification

Residential		Preliminary Investigation		New System		*Water Source* Well	
Commercial				Repair/Replacement		City Water	
Other				Subdivision		Shared Well	
		Septic Installer Consulted?		Duplex		Septic area identified	
# of Bedrooms:				Other			

Name of People at Site:

Special Notes:

Site Sketch

Not to Scale - for location of soil boring sites only

See map

Soil Boring #1 **Requestor:** TEMPLIN SOUTH **Lot Number**

Depth	Matrix Color		Mottles		Other	Texture	Structure		Consistancy	Parent Material	EFF.	Horizon
0-9	7.5 YR X	4/3				SIL	MOD X	GRN	friable	loess	N	AP
9-17	7.5 YR X	4/6	7.5 YR X	5/3,5/6		SICL	STR X	SBK	firm	glacial till	N	A1
17-26	10 YR X	4/6	10 YR X	5/2,5/3,4/3,4/6		CL	MOD X	SBK	firm	glacial till	N	2B1
26-38	10 YR X	4/6	10 YR X	5/2 5/3,5/4 5/6		CL	WK X	SBK	firm	glacial till	N	2B2
38-45	10 YR X	5/4	10 YR X	5/2 5/3,5/6		LOAM	WK X	SBK	firm	glacial till	Y	2BC
45-96	10 YR X	5/4	10 YR X	5/1,5/6		LOAM		massive	v. firm	glacial till	Y	2C

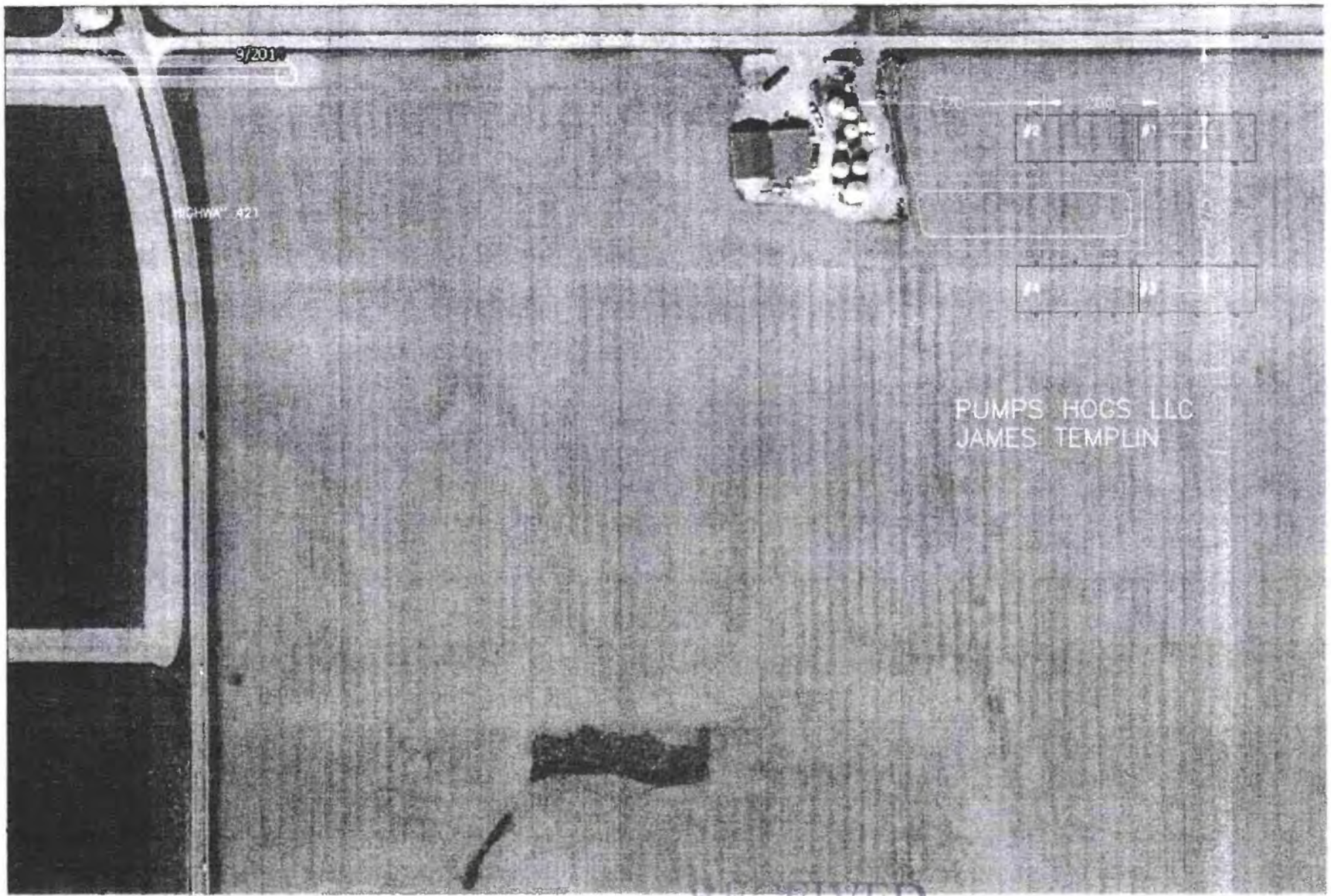
Seasonal H20: 17 | Compact Till: 45-96 | Fill: NO | Map Unit: FAA | Land Use: FIELD | Flood Plain: NO | Shape of Slope: CONVEX | Direction of Slope: | % Slope: 0-1% | Other:

Soil Boring #2

Depth	Matrix Color		Mottles		Other	Texture	Structure		Consistancy	Parent Material	EFF.	Horizon
0-8	10 YR X	3/3				SIL	MOD X	GRN	friable	loess	N	AP
8-13	10 YR X	3/3	10 YR X	4/2 5/2		SIL	STR X	GRN	friable	loess	N	A1
13-24	10 YR X	4/4	10 YR X	4/2 5/2,4/6		SICL	STR X	SBK	firm	loess	N	B1T
24-38	10 YR X	5/2	10 YR X	4/2 5/3,4/6,5/6		SICL	STR X	SBK	firm	loess	N	B2,1T
38-54	10 YR X	6/2	10 YR X	6/4 5/6		SICL	MOD X	SBK	firm	loess	N	B2,2T
54-72	10 YR X	5/2	10 YR X	5/1,5/3,6/3,5/6		CL	WK X	SBK	firm	glacial till	N	2B3
72-96	10 YR X	5/3	10 YR X	5/1,5/2,6/2 5/6		LOAM	WK X	SBK	firm	glacial till	Y	2BC 2BC

Seasonal H20: 8 | Compact Till: >96 | Fill: NO | Map Unit: FAA | Land Use: FIELD | Flood Plain: NO | Shape of Slope: CONVEX | Direction of Slope: | % Slope: 0-1% | Other:

Soil Boring # **Soil Boring #**



CFO / CAFO APPLICATION PACKET
Manure Management Plan (MMP)

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: The below required information supplements the general information and plot maps attachments for a complete CFO Approval Renewal application or construction application. CFO Approval Renewal applications and construction applications for expansions at currently regulated operations may also utilize the Marketing and Distribution of Manure attachment if appropriate. Complete all portions of the form below. This form is required and supersedes all previous versions. IDEM will not accept substitutes, altered, or previously supplied forms.

I. MANURE MANAGEMENT PLAN

A. Manure Testing

Consult Purdue University Cooperative Extension Service Publications AY-277, ID-101, ID-205 "Swine Manure Management Planning", ID-206 "Poultry Manure Management Planning", ID-208 "Dairy Manure Management Planning" for guidance on procedures for manure testing.

1. Manure Sample Collection Procedures:

   See attached

2. Nutrient Assessment:
   - ☒ Private laboratory does a nutrient analysis of sample(s).
   - ☒ Other *(explain)*: See attached

3. Sampling Frequency:
   - ☐ Annual sampling required for CAFOs with a NPDES permit.
   - ☒ Minimum of once every year for CFOs.

B. Soil Testing

You can consult Purdue University, Cooperative Extension Service Publication AY-281 for guidance on procedures for soil testing. A soil test must provide sufficient information about soil fertility to allow for nutrient recommendations for existing or planned crops. Soil tests may not represent more than twenty (20) acres per sample.

1. Do, or will, you perform soil testing for this operation?
   - ☒ Yes, all or a portion of manure is, or will be, applied to land controlled by the operator (complete 2-4 below).
   - ☐ No, 100 % of manure is, or will be, either marketed or distributed (2-4 below do not need to be completed).

2. Sample Collection Method:
   - ☒ Management unit (field level)
   - ☐ Grid method
   - ☐ By soil type
   - ☒ Other *(explain)*: See attached

3. Nutrient Assessment:
   - ☒ Private laboratory does nutrient analysis.
   - ☒ Other *(explain)*: See attached

4. Sampling Frequency:
   - ☒ Minimum of once every four (4) years for CFOs and CAFOs.

II. SPRAY IRRIGATION

A. Does the operation currently, or propose to, apply manure by spray irrigation?

☐ Yes ☒ No

B. If yes, is the spray irrigation in a flood plain?

☐ Yes ☐ No

C. CAFOs with NPDES permits must conduct spray irrigation in a flood plain in accordance with the NPDES CAFO individual permit rule for the operation, as applicable.

D. CFOs may only conduct spray irrigation in a flood plain in accordance with a spray irrigation plan approved by IDEM. (327 IAC 19-14-5(d))

III. SURFACE APPLICATION OF MANURE TO FROZEN OR SNOW-COVERED GROUND

A. CFOs which are not large CAFO-sized farms and have 120 days or less of approved storage capacity may request approval to surface apply manure to frozen or snow-covered ground based on a case-by-case authorization from the commissioner per 327 IAC 19-14-4(i).

Have you included additional information to obtain or renew a commissioner's authorization?

☐ Yes ☒ No

B. CAFOs with a NPDES permit and CFOs (not CAFO-sized) with 180 days of approved storage can request approval for surface application of manure to frozen or snow-covered ground under the provisions of 327 IAC 19-5-1 as an Alternate Design or Compliance Approach which meets the performance standards of 327 IAC 19-3-1.

Does the operation plan to submit a request for approval of an Alternate Design or Compliance Approach?

☐ Yes ☒ No

C. CFOs which are not large CAFO-sized farms may request approval to surface apply manure to frozen or snow-covered ground resulting from an unforeseen emergency condition per 327 IAC 19-14-4(g-h). Improper design or management of manure storage facilities will not qualify as an emergency condition.

IV. CFO APPROVAL RENEWAL INFORMATION

(THIS SECTION IS ONLY FOR CFO APPROVAL RENEWAL APPLICATIONS.)

A. Farm ID Number: _____

B. Total number of approved confinement barns currently present at operation: _____

C. Total number of open confinement lots (earthen or concrete) currently present at operation: _____

D. Total **approved** capacity of animals which can be confined at operation: _____

E. Are earthen lagoon(s) or pit(s) currently present at operation? ☐ Yes ☐ No

F. Separate from confinement barn(s), are any concrete or metal tanks currently present at operation? ☐ Yes ☐ No

G. Separate from confinement barn(s), are any solid manure storage building (litterstack, barn, etc.) currently present at operation? ☐ Yes ☐ No

H. Since the last renewal, have any confinement barns been closed? If yes, detail in J. below which barn(s) and the animal number(s) housed within. ☐ Yes ☐ No

I. Since the last renewal, have any lagoon(s), pit(s), or tank(s) been closed? If yes, detail in J. below which structure(s). ☐ Yes ☐ No

J. Detail any changes in manure storage capacity or animal capacity (number/species/type) at the operation that have been made since the time of the last CFO approval/renewal.

- If the changes increase manure production, you must also request an amendment to your CFO Approval.
- If the changes do not increase manure production, you must also submit a CFO Facility Change Notification (SF 50209).
- If a structure has been closed and has not been inspected by IDEM CFO Compliance staff, you must also submit a CFO Closure Certification (SF 55054).

2016 Confined Feeding Operation Approval Application
Manure Management Plan Attachment
for
Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

A. Manure Testing

Consult Purdue University, Cooperative Extension Service Publications AY-277, ID-101, ID-205 "Swine Manure Management Planning," ID-206 "Poultry Manure Management Planning," ID-208 "Dairy Manure Management Planning" for guidance on procedures for manure testing.

1. Manure Sample Collection Procedures:

A representative sample of manure and process wastewater will be collected and analyzed prior to the first land application event. A representative sample from each type of manure will be collected (i.e. animal type and size, phase of production, storage structure, and treatment structure).

To obtain the most representative sample a composite sample using a method appropriate to represent the manure and process wastewater being land applied will be collected. A composite sample will be obtained by collecting multiple (5-10) samples from the concrete manure storages. Typically, to get the most representative sample, a core sampling device will be used prior to land application or sampling will be conducted at the time of agitation and land application. The sample will be placed in a plastic bucket or container to create a mixed sample. A mixed sample will be drawn and placed in a sample bottle. The sample bottle will be sent to a private analytical laboratory for analysis.

When animal type and size in multiple buildings are similar it is expected that the manure generation and characteristics in each building will be the same or similar. When animal type and size are similar one manure storage may be sampled each year to represent the manure nutrient concentration for that building type or phase of production. Once the first sample is collected prior to land application, future land application decisions may be made based on previous and historical analysis results.

2. Nutrient Assessment:

☒ Private Laboratory does a nutrient analysis of sample(s)
☒ Other (explain) _____

A private analytical laboratory qualified to analyze manure and wastewater will analyze the composite sample. Specific testing protocols will be determined by the analytical laboratory. At a minimum, manure and wastewater samples will be analyzed for available Nitrogen, Phosphorus, Potassium, and Moisture Content.

3. Sampling Frequency:

☐ Annual sampling required for CAFOs with a NPDES permit
☒ Minimum of once every year for CFOs.

The expected sampling frequency is at least once every year.

B. Soil Testing

You can consult Purdue University, Cooperative Extension Service Publication AY-281 for guidance on procedures for soil testing. A soil test must provide sufficient information about soil fertility to allow for nutrient recommendations for existing or planned crops. Soil test may not represent more than twenty (20) acres) per sample.

1. Do, or will, you perform soil testing for this operation

☒ Yes, all or a portion of manure is, or will be, applied to land controlled by the operator (complete 2-4 below)

☐ No, 100% of manure is, or will be, either marketed or distributed (2-4 below do not need to be completed).

2. Sample Collection Method:

☒ Management unit (field level)

☐ Grid method

☐ By soil type

☒ Other (explain) _____

Fields used for manure application will be soil sampled by management unit. Soil samples from each field used for manure application will be collected and analyzed. Multiple composite soil samples are collected from each land application field depending on the size of the land application field. Multiple soil cores from the top 0" to 8" of the soil profile will be collected and combined. Typically, a composite soil sample is taken from multiple soil samples from within a land area of up to 20 acres. The composite samples collected and prepared from each land application field will be sent to a private analytical laboratory for analysis.

3. Nutrient Assessment:

☒ Private laboratory does nutrient analysis.

☒ Other (explain) _____

Soil samples will be collected and composited. The composite sample will be analyzed by a private analytical laboratory qualified to analyze soil nutrient content and soil properties. Specific testing protocols will be determined by the analytical laboratory. At a minimum, soil samples will be analyzed for Phosphorus.

4. Sampling Frequency:

☒ Minimum of once every four (4) years for CFOs and CAFOs.

The expected sampling frequency is at least once every four years.

CFO / CAFO APPLICATION PACKET
Plot Maps

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: *Plot maps must be submitted with applications as directed in the "Application Types and Requirements Worksheet." The specific plot maps which must be submitted for each application type are detailed in Section I. and Section V. The submitted plots must conform with the application requirements noted in Section II., Section III., and Section IV. This form is required and supersedes all previous versions. IDEM will not accept substitutes, altered, or previously supplied forms.*

I. PLOT MAPS

Listed below are plot maps required to be submitted with CFO and CAFO applications. Please note each plot map type is labeled (A, B, and C). Based on the application type previously determined in the "Application Type and Requirements Worksheet" and noted on the "General Information" form, locate the application type in Section V. below. The columns to the right of each listed application type note the required plot maps, as labeled here. As directed in Section I. above, based on the application type determined in the "Application Type and Requirements Worksheet" and noted on the "General Information" form, locate the application type below. The columns to the right of each listed application type note the required plot maps, as labeled in Section I., which are required to be submitted.

A. USDA NRCS Soil Survey Map – The boundaries of all manure application areas.
B. USDA NRCS Soil Survey Map – The location of the waste management system, boundaries of the confined feeding operation, and boundaries of livestock and poultry production areas.
C. USGS Topographic Map – The location of the waste management system, the boundaries of the confined feeding operation, boundaries of livestock and poultry production areas, identify any public water supply wells and public water supply surface intake structures within one thousand (1,000) feet of the manure storage structures, and boundaries of all manure application areas.

II. TOTAL AVAILABLE ACREAGE FOR LAND APPLICATION

A. Considering setbacks, which must be subtracted from the total acres, and any and all other limitations, what is total acreage available for land application? 485.846 Acres

B. On all plot maps submitted showing the boundaries of land application areas, note the total available acreage for land application in each separate area considering the applicable setbacks considering land application method and slope.

III. MARKETING AND DISTRIBUTION

For operations utilizing marketing and distribution of manure, refer to the "Marketing and Distribution of Manure" form contained within this application packet. Review the directions on the form carefully for information regarding when a marketing and distribution waiver may be used.

IV. LAND USE AGREEMENTS

Any acreage identified as part of the minimum required acreage for the application of manure that is not owned by the owner of operation must be document in the operating record via land use agreements.

A. Copies of all land use agreements must accompany construction applications (application types A-D, H-K, and L).
B. The land use agreements must be signed by the property owners on whose property the manure will be applied.
C. Plot maps accompanying construction applications must have the property owner clearly labeled for each land application area submitted.

V. APPLICATION TYPE AND REQUIRED PLOT MAPS

As directed in Section I. above, based on the application type determined in the "Application Type and Requirements Worksheet" and noted on the "General Information" form, locate the application type below. The columns to the right of each listed application type note the required plot maps, as labeled in Section I., which are required to be submitted.

V. APPLICATION TYPE AND REQUIRED PLOT MAPS *(Continued)*

Application Type		Required Plot Maps *(as Labeled in Section I.)*		
		A	B	C
CFO Approval – Construction and/or Operation (Including Renewals)				
A.	Completely New Operation (Currently Undeveloped Site)	Yes	Yes	Yes
B.	Existing Operation Without Existing CFO Approval			
C.	Existing Operation with Expired CFO Approval			
D.	Expansion of Operation with Current CFO Approval			
E.	Amendment of Existing CFO Approval – Permit Condition		No	No
F.	Amendment of Existing CFO Approval – Change in the type or number of animals that increases manure production			
G.	CFO Approval Renewal/Manure Management Plan		Yes	
NPDES CAFO Individual Permit – Construction and Permit Coverage				
H.	Completely New Operation (Currently Undeveloped Site)	Yes	Yes	Yes
I.	Existing Operation without Current CFO Approval or NPDES Permit			
J.	Existing Operation with Current CFO Approval			
K.	Current NPDES CAFO Individual Permit Holder Proposing Construction			
NPDES CAFO Individual Permit - Permit Modification				
L.	Construction or Expansion of Storage or Animals – No Permit Extension	Yes	Yes	Yes
M.	No Construction or Expansion of Storage or Animals – No Permit Extension			No
NPDES CAFO Individual Permit – Renewal				
N.	Renewal Coverage for Operation with Current NPDES CAFO Individual Permit	Yes	Yes	No

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

PLOT MAPS ATTACHMENTS

Prepared for:

Pumps Hogs LLC

5200 S 500 W

Bringhurst, Indiana 46913

SITE PLANS AND MAPS

KARST DETERMINATION: 327 IAC 19-12-2(a)(1)
FLOOD PLAIN DETERMINATION: 327 IAC 19-12-2(a)(2) & (3)
WETLAND DETERMINATION
PROXIMITY TO MINES: 327 IAC 19-12-2(a)(4)
WATER WELL DETERMINATION: 327 IAC 19-12-3(a)(2)(D)

MAPS

SITE MAP IDENTIFYING SITE FEATURES AND DETAILS (IGS INDIANAMAP)
PROXIMITY TO FLOOD HAZARD ZONE (FEMA – FIRM MAP)
WETLAND DETERMINATION MAP (NWI MAP)
DNR WATER WELL RECORDS MAP
IDNR RECORD OF WATER WELL – TWO WELLS
USDA-NRCS SOIL SURVEY MAPS
USGS TOPOGRAPHIC MAPS

LAND APPLICATION AGREEMENTS

Prepared by:

LIVESTOCK ENGINEERING SOLUTIONS, INC.

Michael A. Veenhuizen, Ph. D.
2967 S. Honey Creek Road · Greenwood, IN 46143 · (317) 535-1829

KARST TERRAIN DETERMINATION
327 IAC 19-12-2(a)(1)

A review of information provided by the Indiana Geological Survey (IGS) IndianaMAP indicates that karst terrain is located in the west central and southern counties of Indiana. This determination is based on the following information. The IGS Sinkhole Areas and Sinking-Stream Basins (1997) map and the following layers from the IGS IndianaMAP were reviewed: Karst Cave Density; Karst Dye Line; Karst Dye Points; Karst Sinkhole Density 2011; Karst Sinkhole Inventory 2011; and Karst Springs were reviewed. This investigation confirms that karst terrain may be located in the following counties.

Bartholomew	Brown	Clark	Clay
Crawford	Daviess	Dearborn	Decatur
Dubois	Floyd	Franklin	Gibson
Greene	Harrison	Jackson	Jefferson
Jennings	Knox	Lawrence	Martin
Monroe	Morgan	Ohio	Orange
Owen	Perry	Pike	Putnam
Ripley	Scott	Shelby	Spencer
Sullivan	Switzerland	Warrick	Washington

The confined feeding operation is located in Carroll County. Carroll County is located in east-central Indiana and is not one of the counties identified with the potential for karst terrain.

A review of the Indiana Department of Environmental Management "Karst Areas of Indiana where Confined Feeding Operations are restricted" map confirms that the existing confined feeding operation is not located in an area of Indiana that has the potential for karst terrain. Carroll County is not shown on this map, therefore a copy of the "Karst Areas of Indiana where Confined Feeding Operations are restricted" is not included as part of the Confined Feeding Operation Approval Application package.

Information from the Indiana Geological Survey-IndianaMAP identifying the location of sinkholes, karst springs, sinkhole areas, sinking-stream basins, karst dye lines, and karst dye lines is included with this application. This information indicates that the proposed site is not located in a karst terrain area. Therefore the confined feeding operation and proposed manure and process wastewater treatment and control structures are not located in close proximity to karst terrain and are not subject to site restrictions outlined in 327 IAC 19-12-2(b).

FLOOD PLAIN DETERMINATION
327 IAC 19-12-2(a)(2) & (3)

A review of information provided by the Indiana Geological Survey (IGS) IndianaMAP, FEMA Flood Insurance Rate Map (FIRM), and Indiana Department of Natural Resources Indiana Floodplain Information Portal indicates that the proposed confined feeding operation and proposed manure storages are not located within the 100-year flood plain or floodway. An aerial map (IGS Indiana Maps) and FEMA Flood Insurance Rate Map (FIRM) of the area surrounding the confined feeding operation are included depicting the mapped flood plain confirming this determination.

WETLAND DETERMINATION

A review of information provided by the Indiana Geological Survey (IGS) IndianaMAP and U.S. Fish & Wildlife Service National Wetland Inventory confirms that the proposed confined feeding operation and proposed manure storages are not located within 300 feet of a wetland area. An aerial map (IGS Indiana Maps) and National Wetland Inventory map of the area surrounding the confined feeding operation is included depicting the mapped wetland areas confirming this determination.

PROXIMITY TO MINES
327 IAC 19-12-2(a)(4)

A review of information provided by the Indiana Department of Natural Resources – Division of Reclamation: Coal Mine Information System (CMIS) and the Indiana Geological Survey (IGS) IndianaMAP indicates that mines are located in the west central and southwestern counties of Indiana. This determination is based on the following information. The Indiana Coal Mine Information System map and the following layers from the IGS IndianaMAP were reviewed: Coal Mines Entries; Coal Mines Surface; and Coal Mines Underground were reviewed. This investigation confirms that mines may be located in the following counties.

Clay	Daviess	Dubois
Fountain	Gibson	Greene
Knox	Martin	Monroe
Owen	Parke	Perry
Pike	Posey	Spencer
Sullivan	Vanderburgh	Vermillion
Vigo	Warren	Warrick

The confined feeding operation is located in Carroll County. Carroll County is not one of the counties identified with the potential for mines. Information provided by the Indiana Geological Survey (IGS) IndianaMAP identifying the location of surface and underground mines and mine entries is included with this application. This information confirms that the proposed confined feeding operation is not located near a reclaimed surface mine area or over an underground mine. Therefore the confined feeding operation and proposed manure and process wastewater treatment and control structures are not located in close proximity to mines and is in compliance with 327 IAC 19-12-2(a)(4) prohibiting the location of confined feeding operation over mines.

WATER WELL DETERMINATION
327 IAC 19-12-3(a)(2)(D)

On-site water wells: Currently, there are no on-site wells. At least one on-site well is proposed to be located at least 100 feet from the concrete manure storage structures. The anticipated location of the proposed on-site well is east of the concrete manure storage structures. The location of the on-site water well is depicted on the farmstead plan.

Off-site water wells: An on-site investigation confirms that there is one off-site well located approximately 420 feet west of the proposed below-building concrete manure storages. This well is located on the north side and adjacent to two storage buildings located on the property adjacent to the confined feeding operation.

A review of the Indiana Geological Survey (IGS) IndianaMAP and the Indiana Department of Natural Resources (IDNR) Record of Water Well map identifies two (2) water wells within approximately 375 feet of the proposed below-building concrete manure storages. One (1) of the existing water wells is identified by a blue circle and one (1) of the existing wells is identified by a green triangle. The well designated by a blue circle indicates that the aquifer is an unconsolidated aquifer and the location of the well is actual or known. The well designated by a green triangle indicate that the aquifer is unknown and the location of the wells is estimated or unknown.

The existing water well ID, symbol, aquifer type, location determination, and map symbol distance to storage are summarized below. The location of Well ID#124428 is actual or known confirming that the well is not located within 300 feet of the proposed concrete manure storage. The location of Well ID# 52731 is estimated. To confirm that the well is not within 300 feet of the proposed concrete manure storages in accordance with the setback requirements of 327 IAC 19-12-3 or within 500 feet of the proposed concrete manure storage in accordance with the farmstead plan requirements of 327 IAC 19-7-3, the IDNR Record of Water Well Reports were reviewed.

The Water Well Report for Well ID#52731 indicates the well is a home use well. The symbol on the IDNR Record of Water Well map is approximately 250 feet from the proposed confined feeding operation building. The directions to the well are unclear making it difficult to confirm the actual location of the well from the Water Well Report. This well is classified as a home use well. The area around the confined feeding operation is tillable cropland and there are no homes within 500 feet of the proposed confined feeding operation. Therefore it is concluded that the well is not located within 500 feet of the proposed concrete manure storage structures. An on-site investigation was conducted to locate this well within 500 feet of the confined feeding operation. The on-site investigation confirmed that the well (Well ID#52731) is not located in close proximity to the proposed manure storage structures.

A copy of the IDNR Record of Water Well Report for each well is included confirming this determination.

Well Record Number	**Symbol**	**Aquifer Type**	**Location Determination**	**Map Symbol Distance to Storage**
124428	Blue circle	Unconsolidated	Actual	~ 372 ft
52731	Green triangle	Unknown	Estimated	~ 250 ft Actual location < 500'

Floodplain, Water, Wetlands, Karst & Mines

Date: 5/3/2016

Legend

Floodplains - FIRM (May 2015)

- 0.2% Risk (aka 500-year Flood Zon
- 1% Risk (aka 100-yr Flood Zone)
- Floodway
- Streams (NHD)
- Streams (Local-Resolution NHD)
- Stream Features
- Rivers (NHD)
- Rivers - Outstanding (NRC)
- Rivers (Local-Resolution NHD)
- Rivers - Inventory (NPS)
- Lakes (NHD)
- Lakes (Local-Resolution NHD)
- Wetlands NWI (USFWS)
- Wetlands Project Metadata NWI (US
- Karst Springs
- Sinkhole Inventory (2011)

Sinkhole Areas and Sinking-Stream B

- Sinkhole Area
- Sinking Stream Basin
- Karst Area Dye Points
- Karst Area Dye Lines
- Mines - Underground
- Mines - Surface

Mine Entries

- Hoist
- Slope
- Other
- Unknown

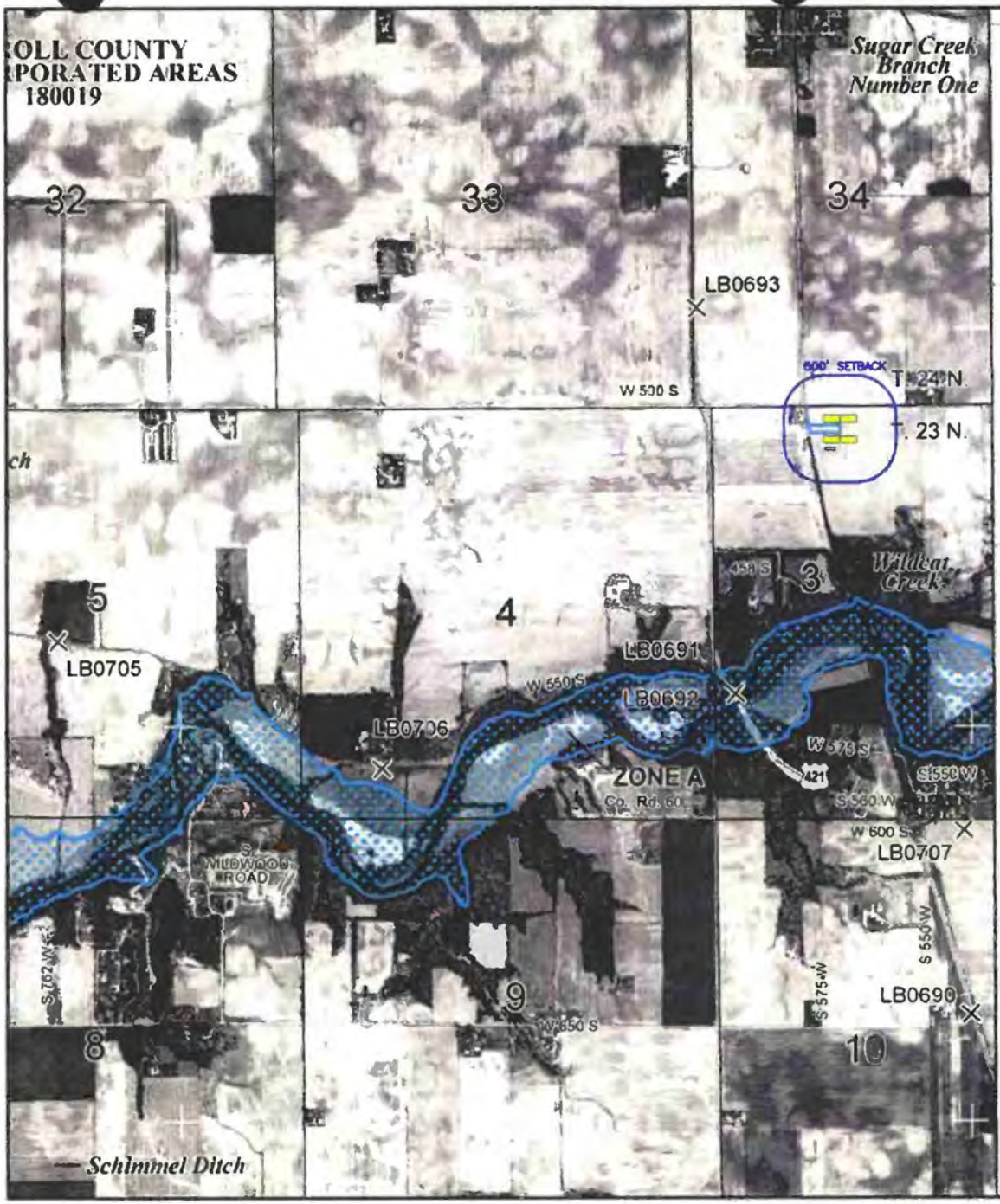
Water Wells (IDNR)

- Located
- Location Estimated
- Elevation Contours
- Landsurvey - Sections

Author: Pumps Hogs LLC

0 0.15 mi

IndianaMAP



JOINS PANEL 0280

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEE

600 0 600 1200

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0275C

FIRM

FLOOD INSURANCE RATE MAP

CARROLL COUNTY, INDIANA AND INCORPORATED AREAS

PANEL 275 OF 320

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARROLL COUNTY	180019	0275	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
18015C0275C

EFFECTIVE DATE
JANUARY 16, 2015

Federal Emergency Management Agency

U.S. Fish and Wildlife Service

National Wetlands Inventory

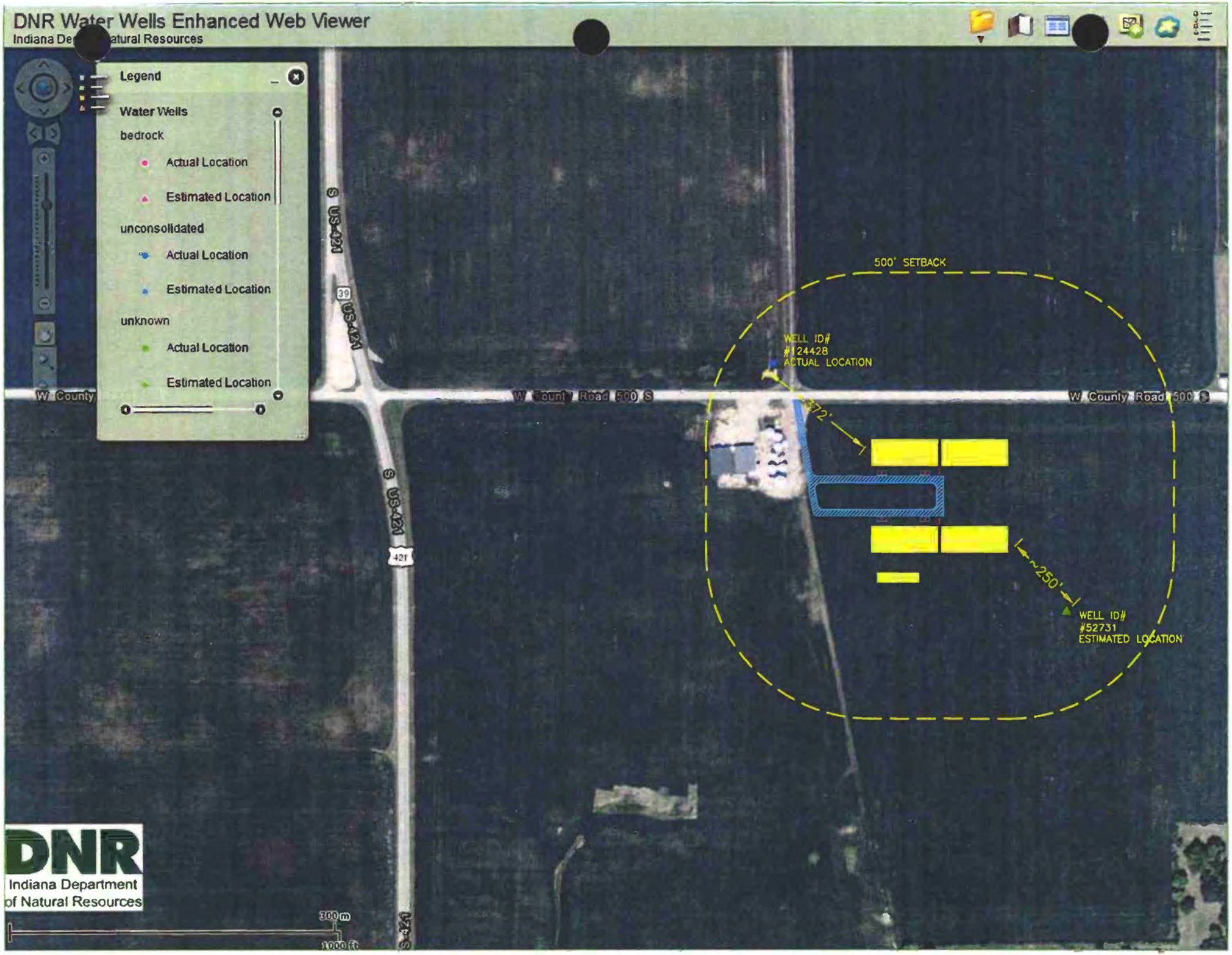
Pumps Hogs LLC

May 3, 2016

Wetlands

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

User Remarks:


DNR Water Wells Enhanced Web Viewer
Indiana Department of Natural Resources
Legend
Water Wells
bedrock
Actual Location
Estimated Location
unconsolidated
Actual Location
Estimated Location
unknown
Actual Location
Estimated Location
S US-421
39
US-421
W County Road 500 S
500' SETBACK
WELL ID#
#124428
ACTUAL LOCATION
~272'
~250'
WELL ID#
#52731
ESTIMATED LOCATION
DNR
Indiana Department
of Natural Resources
300 m
1000 ft

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
52731	00 NS CR560W ON S SIDE	Oct 04, 1993

Owner-Contractor	Name	Address	Telephone
Owner	BOB DUFF		(219) 967-3329
Driller	MOSS WELL DRILLING	201 E NORTH GALVESTON IN	(219) 699-6773
Operator	F GRAVES & J MEISTER JR	License: 71 & 72	
Company	TIM CONNER	RR4 BOX 86 DELPHI IN	(317) 564-6539

Construction Details

Well	**Use:** Home	**Drilling method:** Rotary	**Pump type:**
	Depth: 47.0	**Pump setting depth:**	**Water quality:** CLEAR
Casing	**Length:** 44.0	**Material:** PVC	**Diameter:** 5.0
Screen	**Length:** 3.0	**Material:**	**Diameter:** 3.6 **Slot size:** 0.60

Well Capacity Test **Type of test:** Air **Test rate:** 40.0 gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 10.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** BNSL **Depth:** from 35.0 to 0.0
Installation Method: PRESSURE **Number of bags used:**

Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

Administrative **County:** CARROLL **Township:** 23N **Range:** 2W
Section: NE of the NW of Section 3 **Topo map:** PYRMONT
Grant Number:
Field located by: **on:**
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** **Ft E of WL:** **Ft S of NL:**
Ground elevation: **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:**
UTM Easting: **UTM Northing:**

Well Log

Top	Bottom	Formation
0.0	13.0	BR CLAY
13.0	37.0	GRITTY GREY CLAY
37.0	47.0	MD GRAV
47.0	48.0	GREY CLAY

Comments

Record of Water Well

Indiana Department of Natural Resources

Reference Number	Driving directions to well	Date completed
124428	CHICKEN HOUSE W OF TRACK WELL LOC: NONE	May 29, 1970

Owner-Contractor	Name	Address	Telephone
Owner	MCCORMICK-YEAGER BGG CORP	RR #1 CAMDEN, IND	
Driller	ORTMAN DRILLING INC	717 S MALFALFA RD KOKOMO. IND	
Operator	JOHN W & RICHARD R	License: null	

Construction Details

Well	**Use:** Industry	**Drilling method:** Rotary	**Pump type:**
	Depth: 73.0	**Pump setting depth:**	**Water quality:**
Casing	**Length:** 70.0	**Material:**	**Diameter:** 5.0
Screen	**Length:** 3.0	**Material:**	**Diameter: Slot size:** .080 RED BR

Well Capacity Test **Type of test:** **Test rate:** 80.0 gpm for hrs. **BailTest rate:** gpm for hrs.
Drawdown: ft. **Static water level:** 28.0 ft. **Bailer Drawdown** ft.

Grouting Information **Material:** **Depth:** from to
Installation Method: **Number of bags used:**

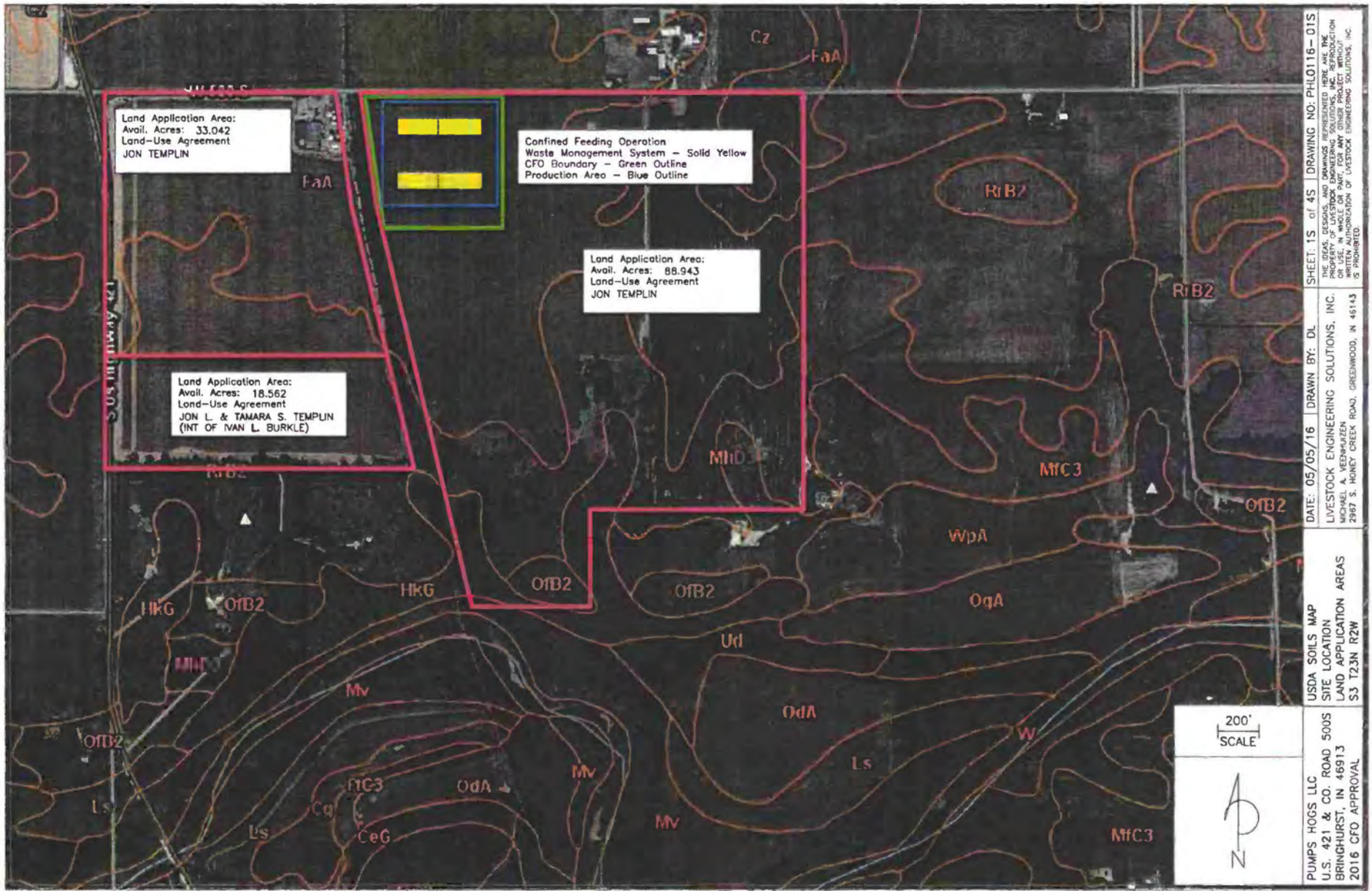
Well Abandonment **Sealing material:** **Depth:** from to
Installation Method: **Number of bags used:**

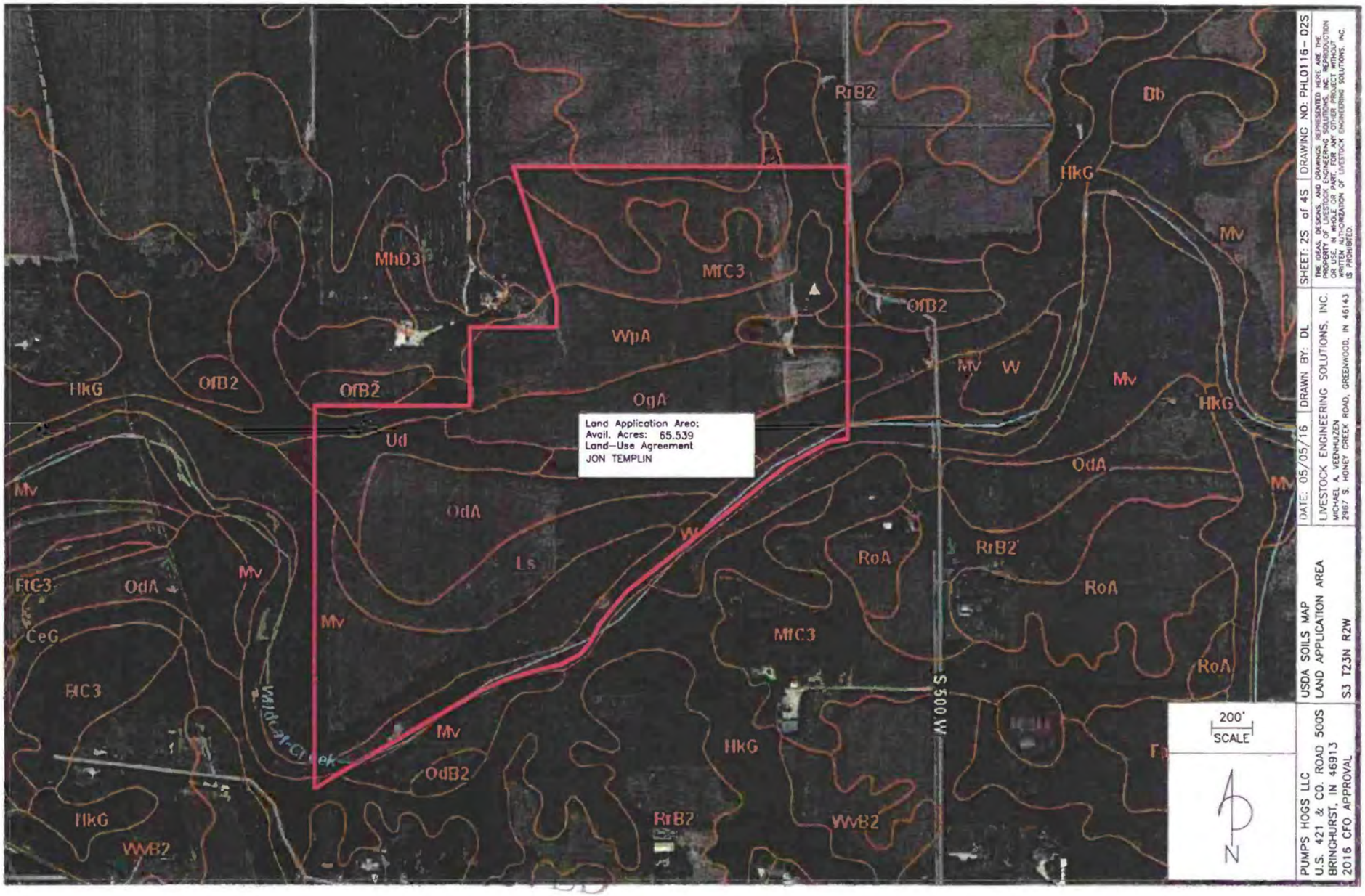
Administrative
County: CARROLL **Township:** 24N **Range:** 2W
Section: SE of the SW of the SW of Section 34 **Topo map:** PYRMONT
Grant Number:
Field located by: DT **on:** Jun 01, 1974
Courthouse location by: **on:**
Location accepted w/o verification by: **on:**
Subdivision name: **Lot number:**
Ft W of EL: **Ft N of SL:** 100.0 **Ft E of WL:** 1200.0 **Ft S of NL:**
Ground elevation: 700.0 **Depth to bedrock:** **Bedrock elevation:** **Aquifer elevation:** 627.0
UTM Easting: 531049.0 **UTM Northing:** 4480353.0

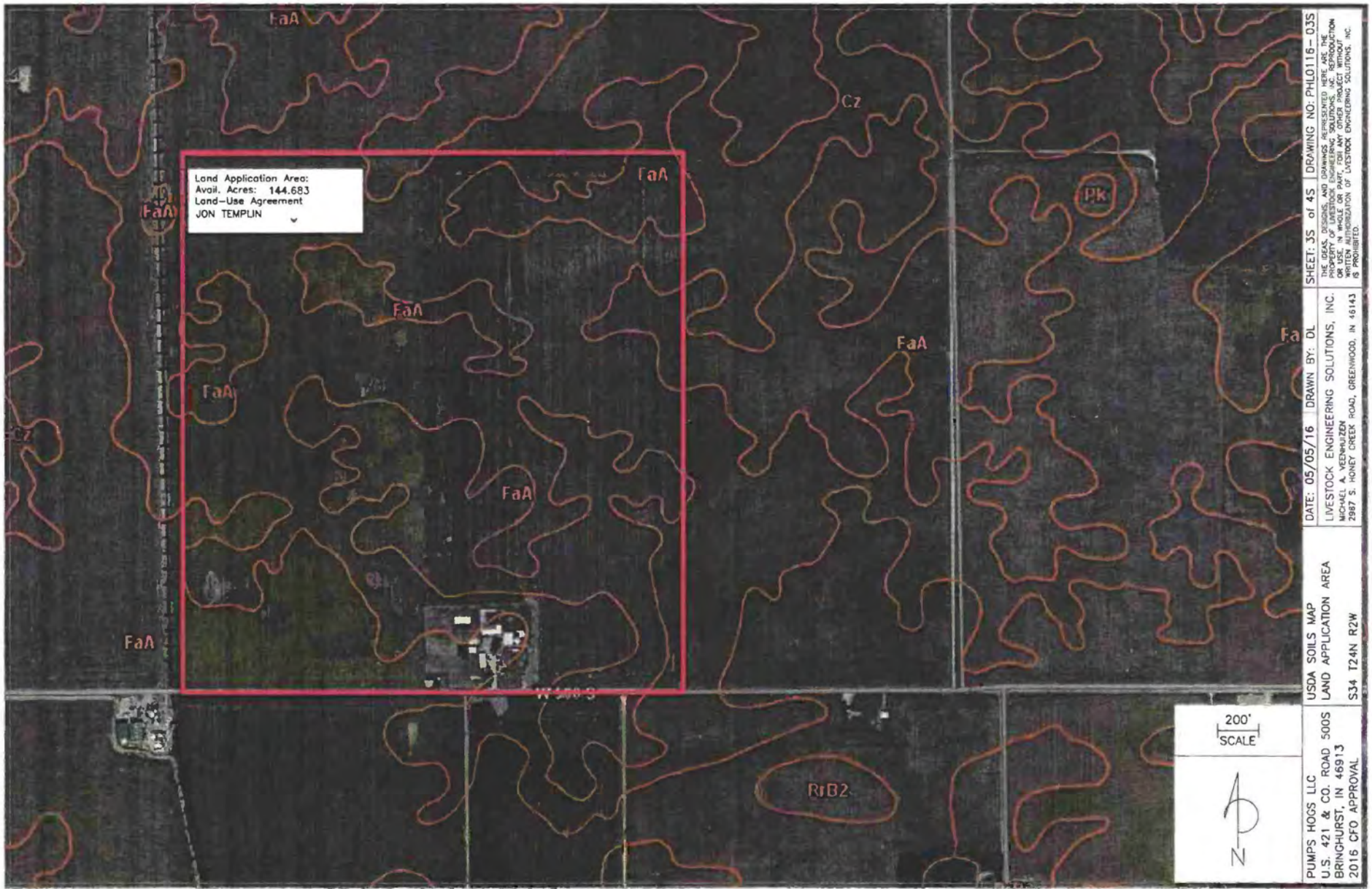
Well Log

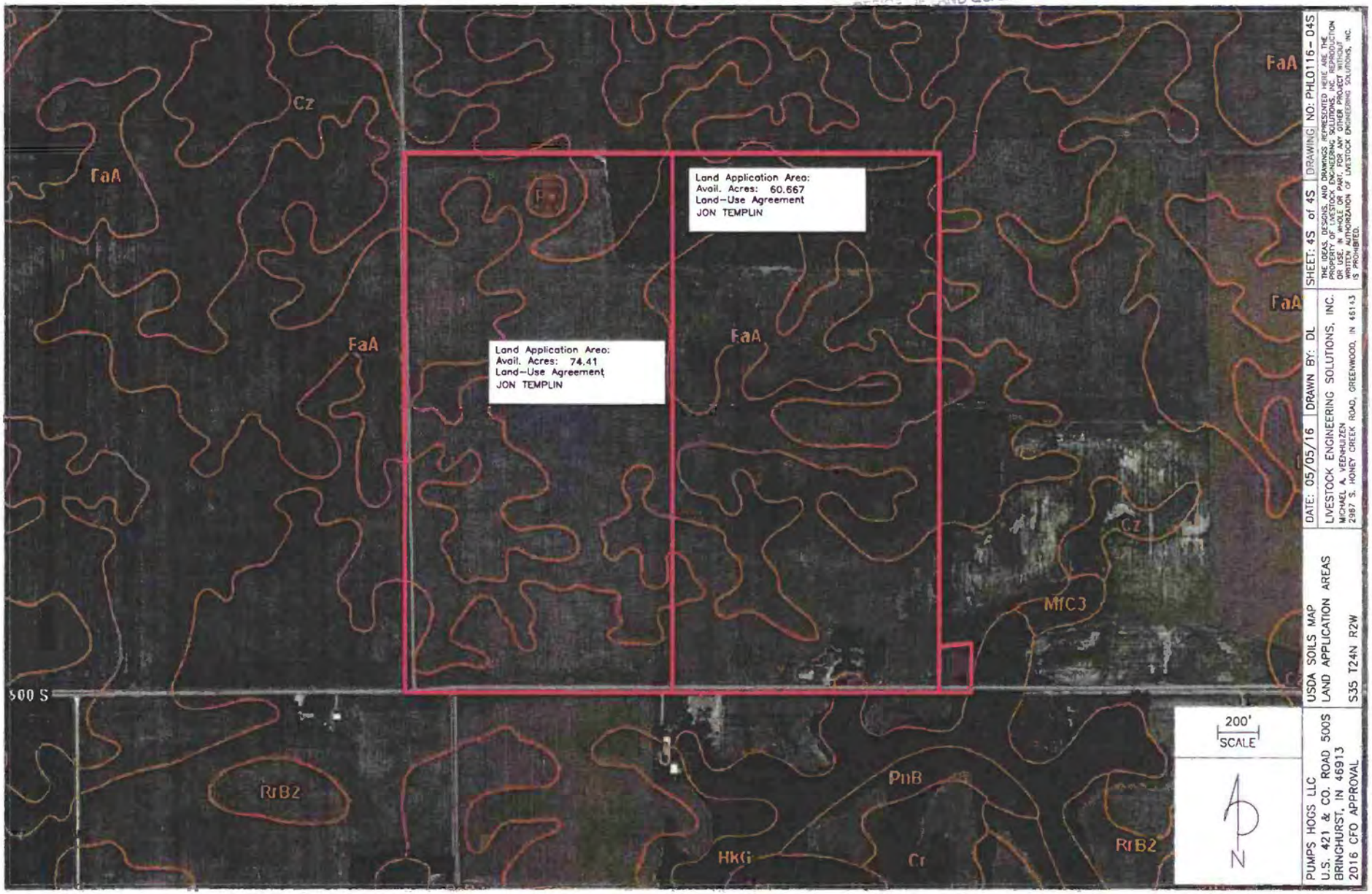
Top	Bottom	Formation
0.0	7.0	BRN CLAY
7.0	17.0	S & G
17.0	43.0	BLUE CLAY
43.0	45.0	S & G
45.0	51.0	BLUE CLAY
51.0	73.0	S & G

Comments MC 627; MC









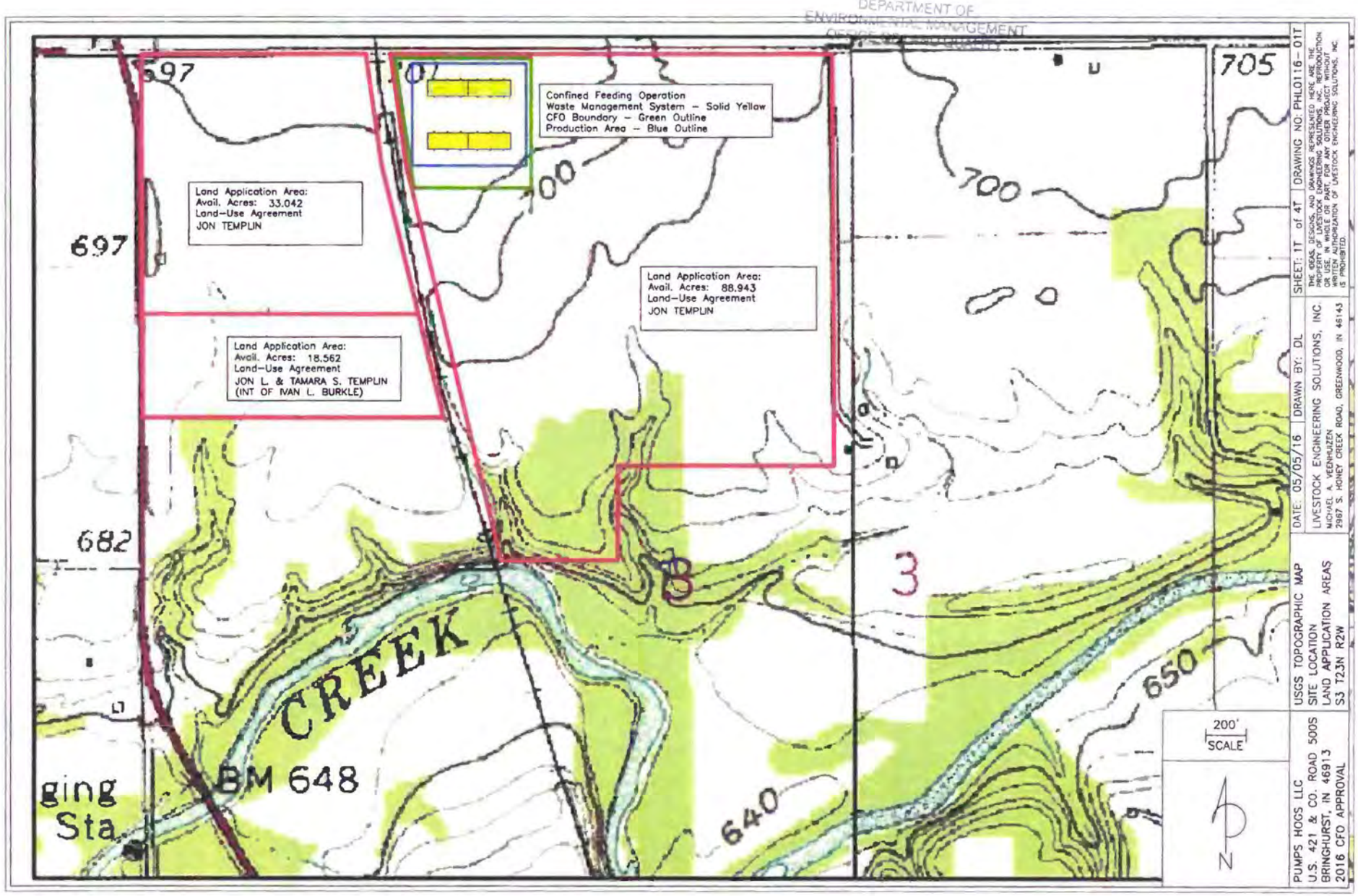
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

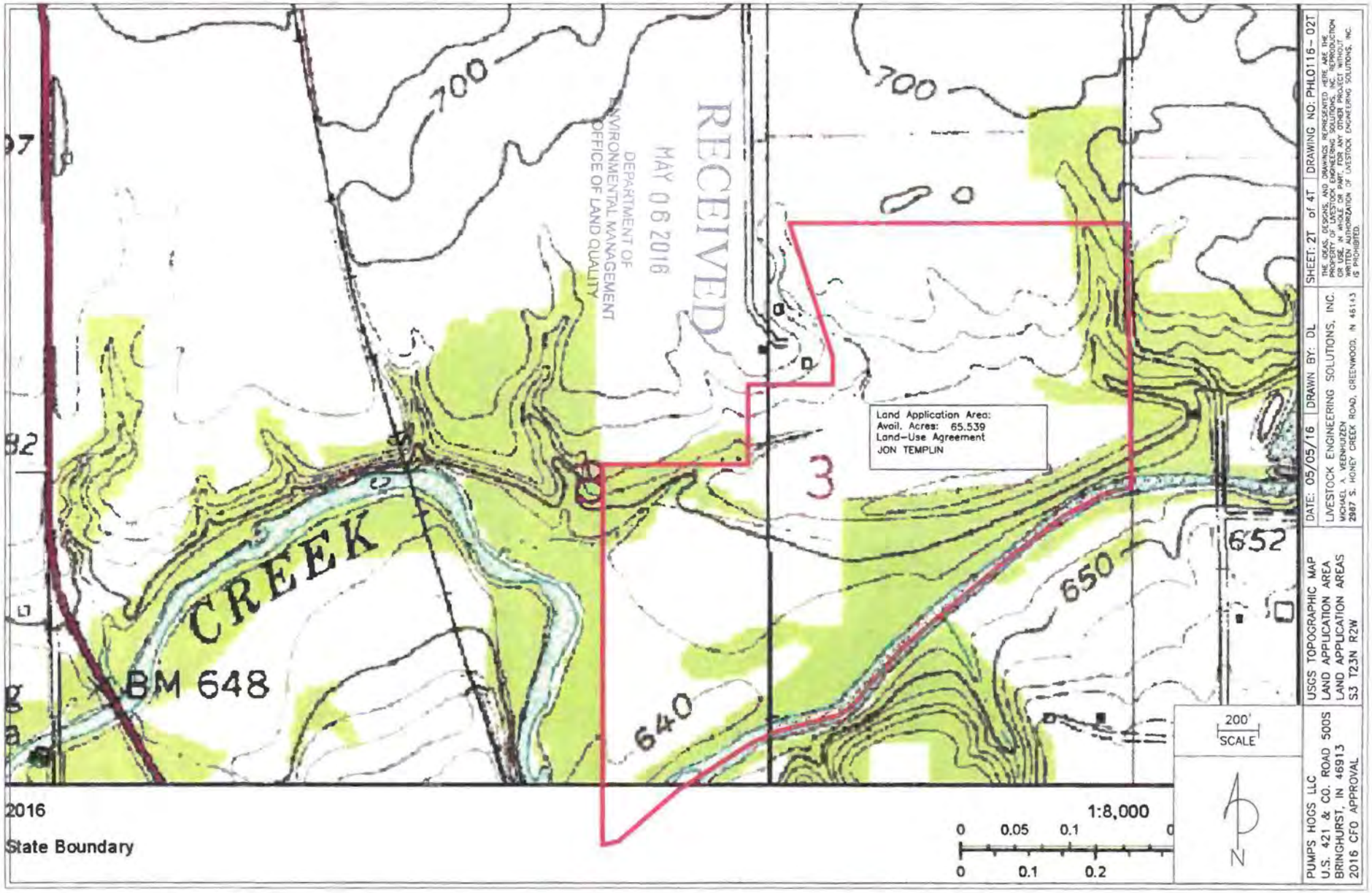
USDA SOILS MAP
LAND APPLICATION AREAS

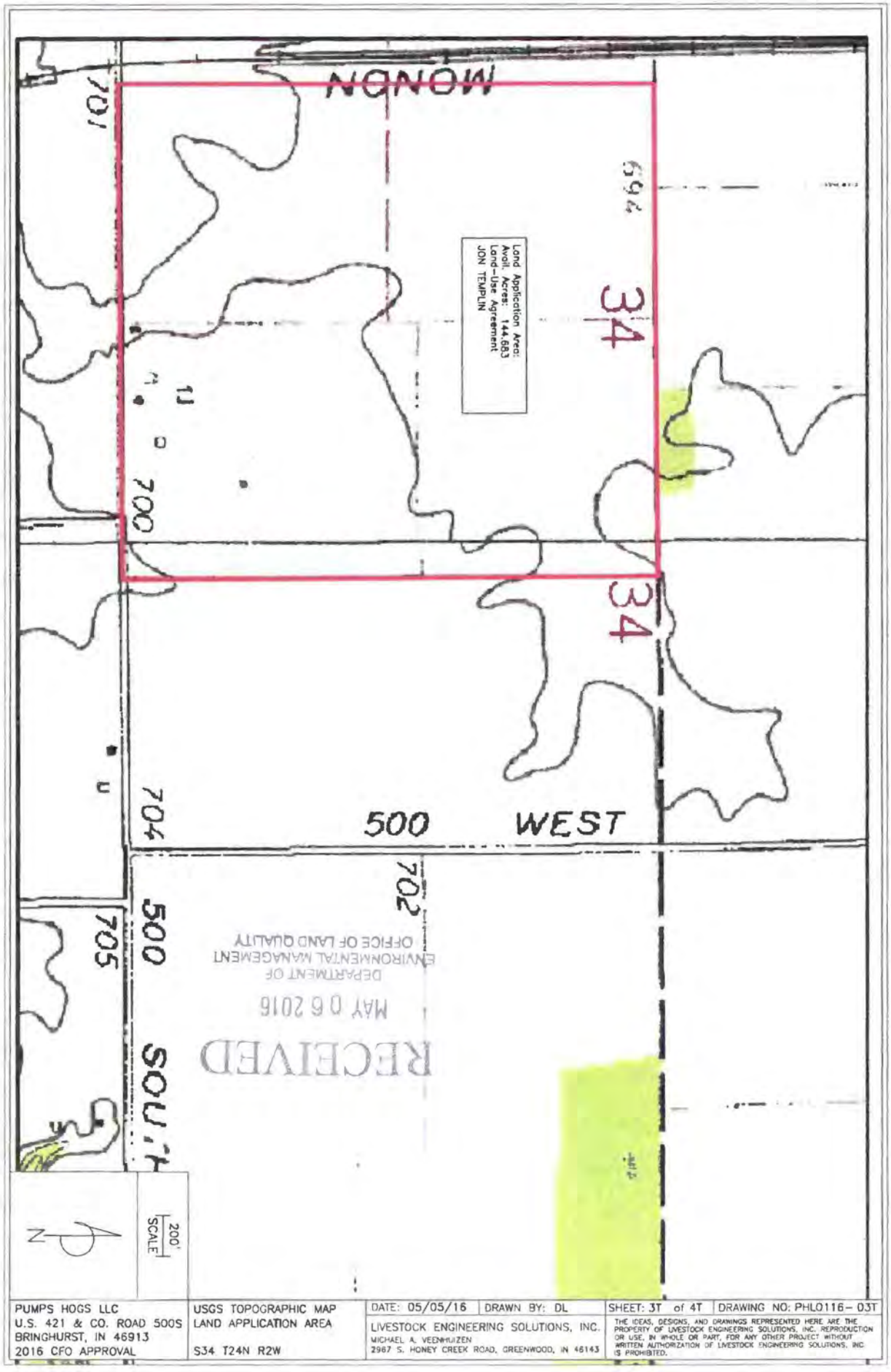
S35 T24N R2W

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 4S of 4S | DRAWING NO: PHL0116-04S

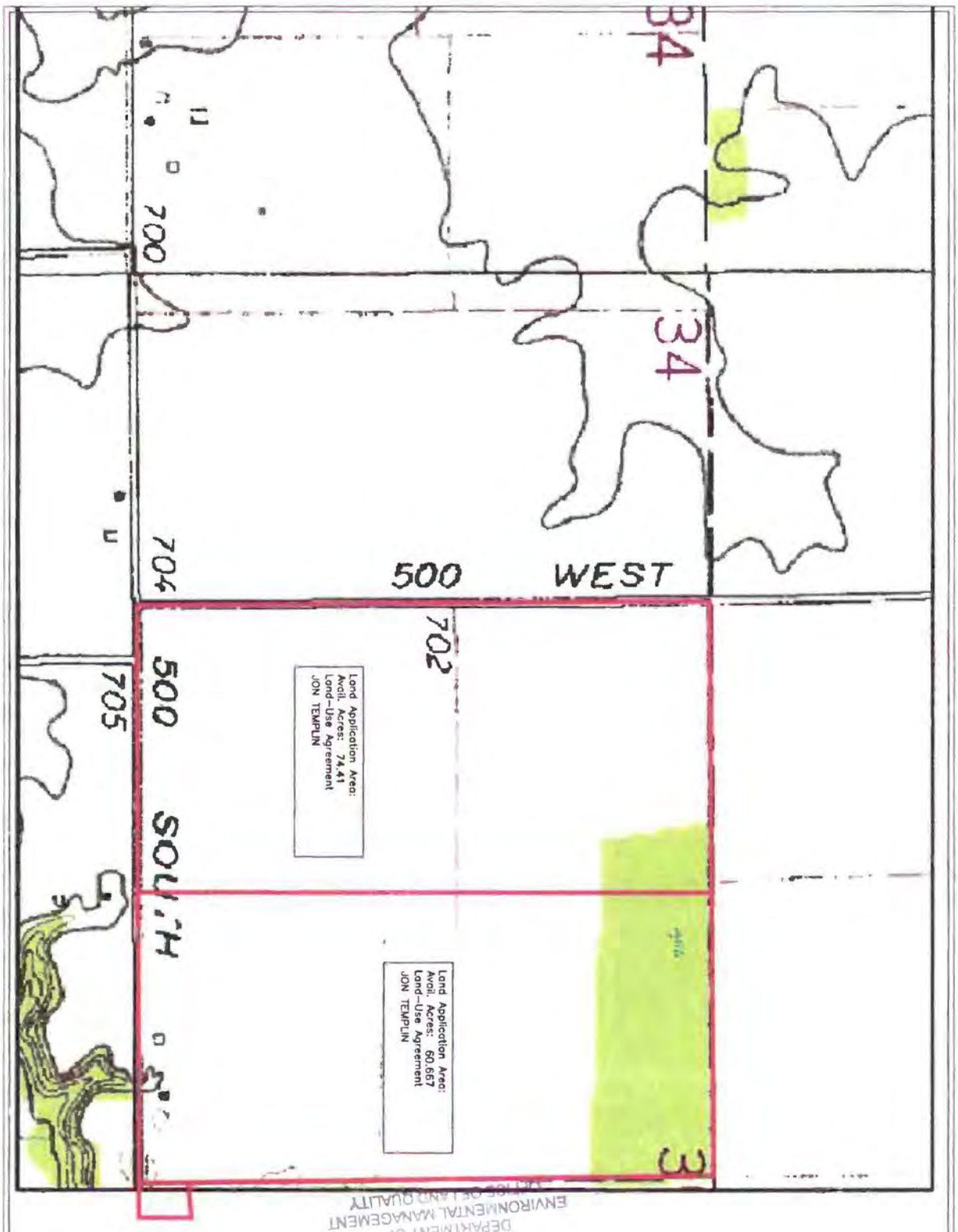
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2987 S. HONEY CREEK ROAD, GREENWOOD, IN 46143




RECEIVED
MAY 06 2016
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY
Land Application Area:
Avail. Acres: 65.539
Land-Use Agreement
JON TEMPLIN
CREEK
BM 648
700
700
650
640
652
3
2016
State Boundary
1:8,000
0 0.05 0.1
0 0.1 0.2
200'
SCALE
N
PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL
USGS TOPOGRAPHIC MAP
LAND APPLICATION AREA
LAND APPLICATION AREAS
S3 T23N R2W
DATE: 05/05/16
DRAWN BY: DL
SHEET: 2T of 4T
DRAWING NO: PHL0116-02T
LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2987 S. HONEY CREEK ROAD, GREENWOOD, IN 46143
THE IDEAS, DESIGNS, AND DRAWINGS REPRESENTED HERE ARE THE PROPERTY OF LIVESTOCK ENGINEERING SOLUTIONS, INC. REPRODUCTION OR USE, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT WRITTEN AUTHORIZATION OF LIVESTOCK ENGINEERING SOLUTIONS, INC. IS PROHIBITED.



PUMPS HOGS LLC U.S. 421 & CO. ROAD 500S BRINGHURST, IN 46913 2016 CFO APPROVAL	USGS TOPOGRAPHIC MAP LAND APPLICATION AREA S34 T24N R2W	DATE: 05/05/16	DRAWN BY: DL	SHEET: 3T of 4T	DRAWING NO: PHL0116-03T
		LIVESTOCK ENGINEERING SOLUTIONS, INC. MICHAEL A. VEENHUIZEN 2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143		THE IDEAS, DESIGNS, AND DRAWINGS REPRESENTED HERE ARE THE PROPERTY OF LIVESTOCK ENGINEERING SOLUTIONS, INC. REPRODUCTION OR USE, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT WRITTEN AUTHORIZATION OF LIVESTOCK ENGINEERING SOLUTIONS, INC IS PROHIBITED.	



PUMPS HOGS LLC U.S. 421 & CO. ROAD 500S BRINGHURST, IN 46913 2016 CFO APPROVAL	USGS TOPOGRAPHIC MAP LAND APPLICATION AREAS S35 T24N R2W	DATE: 05/05/16	DRAWN BY: DL	SHEET: 4T of 4T	DRAWING NO: PHL0116-04T
		LIVESTOCK ENGINEERING SOLUTIONS, INC. MICHAEL A. VEENHUIZEN 2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143		THE IDEAS, DESIGNS, AND DRAWINGS REPRESENTED HERE ARE THE PROPERTY OF LIVESTOCK ENGINEERING SOLUTIONS, INC. REPRODUCTION OR USE, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT WRITTEN AUTHORIZATION OF LIVESTOCK ENGINEERING SOLUTIONS, INC. IS PROHIBITED.	

LAND APPLICATION AGREEMENT

This agreement is made between **Jon Templin**, "land owner," and **Pumps Hogs LLC**, "confined feeding operation owner."

The "land owner" has given permission to the "confined feeding operation owner" to apply manure and wastewater, as a crop nutrient source, generated from the confined feeding operation and manure storage facilities on the following farm land.

----- Acres ----			USGS			
Total	**Available**	**County**	**Quadrangle**	**Section**	**Township**	**Range**
155	144.683	Carroll	Pyrmont	S34	T24N	R2W
80.554	74.41	Carroll	Pyrmont	S35	T24N	R2W
80.553	60.667	Carroll	Pyrmont	S35	T24N	R2W
34.54	33.042	Carroll	Pyrmont	S3	T23N	R2W
111.5	88.943	Carroll	Pyrmont	S3	T23N	R2W
103.43	65.539	Carroll	Pyrmont	S3	T23N	R2W

If required by "land owner" and "confined feeding operation owner", legal description attached.

This is a written agreement for a period of "life of buildings" upon commencement between the "land owner" and "confined feeding operation owner."

The "land owner" grants the "confined feeding operation owner" the right and access to the above described crop land to apply manure and wastewater.

The "confined feeding operation owner" agrees that it will not exercise its right to spread manure and wastewater in such a way as to damage growing crops, to impair the ability of the cropland to grow productive crops or operate in such a manner that is not consistent with standard management practices and local and customary farming practice.

The "confined feeding operation owner" agrees to operate consistent with Federal and State regulations and the rules and regulations put forth by the Environmental Protection Agency and the Indiana Department of Environmental Management.

This easement and agreement shall be binding and inure to the benefits of the heirs, successors, and assigns of the parties hereto.

This agreement may be assigned by the parties hereto.

The "land owner" and "confined feeding operation owner" have the opportunity to amend this agreement in writing and initialing the amendments by all parties.

The parties have here unto set their hands and fixed their signatures this 5th day of May, 2016 (month, year)

Landowner:

LANDOWNER'S NAME:

Jon Templin

Jon Templin
SIGNATURE

SIGNATURE

5-5-16
DATE

Confined Feeding Operation Owner:

FACILITY NAME:

Pumps Hogs LLC

SIGNATURE

SIGNATURE

5-5-16
DATE

****

STATE OF INDIANA COUNTY OF Carroll

Before me as a Notary Public in and for said County and State, Indiana

personally appeared and being duly sworn by me upon oath, acknowledges the execution of the forgoing document. Signed and sealed this 5th day of May, 2016

Signature: Tamara S. Templin Printed Name: Tamara S. Templin

My Commission Expires (*month, day, year*): March 9, 2024 Resident of Carroll County

****

STATE OF INDIANA COUNTY OF Carroll

Before me as a Notary Public in and for said County and State, Indiana

personally appeared and being duly sworn by me upon oath, acknowledges the execution of the forgoing document. Signed and sealed this 5th day of May, 2016

Signature: Tamara S Templin Printed Name: Tamara S. Templin

My Commission Expires (*month, day, year*): March 9, 2024 Resident of Carroll County

****

THIS INSTRUMENT PREPARED BY: MICHAEL A. VEENHUIZEN, PRESIDENT OF LIVESTOCK ENGINEERING SOLUTIONS, INC., 2967 S HONEY CREEK ROAD, GREENWOOD, IN 46143.
"I AFFIRM, UNDER THE PENALTIES FOR PERJURY, THAT I HAVE TAKEN REASONABLE CARE TO REDACT EACH SOCIAL SECURITY NUMBER IN THE DOCUMENT, UNLESS REQUIRED BY LAW. MICHAEL A. VEENHUIZEN"

LAND APPLICATION AGREEMENT

This agreement is made between **Jon L & Tamara S Templin (Int of Ivan L Burkle)**, "land owner," and **Pumps Hogs LLC**, "confined feeding operation owner."

The "land owner" has given permission to the "confined feeding operation owner" to apply manure and wastewater, as a crop nutrient source, generated from the confined feeding operation and manure storage facilities on the following farm land.

----- Acres ----			USGS			
Total	**Available**	**County**	**Quadrangle**	**Section**	**Township**	**Range**
20	18.562	Carroll	Pyrmont	S3	T23N	R2W

If required by "land owner" and "confined feeding operation owner", legal description attached.

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The parties have here unto set their hands and fixed their signatures this 5th day of May, 2016 (month, year)

Landowner:

LANDOWNER'S NAME:
Jon L & Tamara S Templin
(Int of Ivan Burkle)

Jon L Templin
SIGNATURE

SIGNATURE

5-5-16
DATE

Confined Feeding Operation Owner:

FACILITY NAME:
Pumps Hogs LLC

Jon Templin
SIGNATURE

SIGNATURE

5-5-16
DATE

RECEIVED
MAY 06 2016
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

****

STATE OF INDIANA COUNTY OF Carroll

Before me as a Notary Public in and for said County and State, Indiana,
personally appeared and being duly sworn by me upon oath, acknowledges the execution of the forgoing document. Signed and sealed this 5th day of May, 2016

Signature: Tamara S. Templin Printed Name: Tamara S. Templin

My Commission Expires (*month, day, year*): March 9, 2025 Resident of Carroll County

****

STATE OF INDIANA COUNTY OF Carroll

Before me as a Notary Public in and for said County and State, Indiana,
personally appeared and being duly sworn by me upon oath, acknowledges the execution of the forgoing document. Signed and sealed this 5th day of May, 2016

Signature: Tamara S. Templin Printed Name: Tamara S. Templin

My Commission Expires (*month, day, year*): March 9, 2024 Resident of Carroll County

****

THIS INSTRUMENT PREPARED BY: MICHAEL A. VEENHUIZEN, PRESIDENT OF LIVESTOCK ENGINEERING SOLUTIONS, INC., 2967 S HONEY CREEK ROAD, GREENWOOD, IN 46143.
"I AFFIRM, UNDER THE PENALTIES FOR PERJURY, THAT I HAVE TAKEN REASONABLE CARE TO REDACT EACH SOCIAL SECURITY NUMBER IN THE DOCUMENT, UNLESS REQUIRED BY LAW. MICHAEL A. VEENHUIZEN"

CFO / CAFO APPLICATION PACKET
Disclosure Statement

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: *Indiana's Confined Feeding Control Law requires disclosure statements regarding certain alleged material violations of environmental laws with all applications which propose construction of a confined feeding operation or expansion of a confined feeding operation that increases animal capacity or manure storage capacity, or both. (See IC 13-18-10-1.4; IC 13-18-10-2.1; IC 13-11-2-8(a); IC 13-11-2-158(b); and IC 13-11-2-191 to review the laws that apply to this form.)*

Section I of this form helps applicants identify responsible parties associated with their application.
Section II helps applicants determine whether each responsible party must submit a disclosure statement.
Section III helps each responsible party submit a complete disclosure statement.

Follow the instructions in each section of this form. IDEM will not accept substitutes, altered, or previously supplied forms.

Applicant Information:

An applicant may be an individual, a partnership, a copartnership, a firm, a company, a corporation, an association, a joint stock company, a trust, an estate, a political subdivision, a state agency, or other legal entity, or their legal representative, agent, or assigns. (See IC 13-11-2-8 and IC 13-11-2-158) The applicant(s) listed on this form must match the applicant(s) listed on the first page of the application packet.

Applicant(s):	Pumps Hogs LLC			Farm ID Number	
Contact Person:	James Templin			*(Provide Farm ID number if expanding an existing operation.)*	
Business Address:	5200 S 500 W			Telephone:	574-228-1619
City:	Bringhurst	State:	IN	ZIP Code:	46913

Section I. List of Responsible Parties:

List each responsible party associated with the application.

A disclosure statement is required for each Responsible Party, as defined under IC 13-11-2-191. The Responsible Parties includes each owner/operator defined under 327 IAC 19-2-32 and its respective officers, corporate directors, or senior management officials.

The applicant(s) may have multiple responsible parties. Attach additional sheets as necessary.

Responsible Party 1					
Name:	Pumps Hogs LLC				
Business Address:	5200 S 500 W			Telephone:	574-228-1619
City:	Bringhurst	State:	IN	ZIP Code:	46913
Relationship to Applicant:	Applicant				

Responsible Party 2					
Name:	James Templin				
Business Address:	5200 S 500 W			Telephone:	574-228-1619
City:	Bringhurst	State:	IN	ZIP Code:	46913
Relationship to Applicant:	Member, Pumps Hogs LLC				

Responsible Party 3					
Name:					
Business Address:				Telephone:	
City:		State:		ZIP Code:	
Relationship to Applicant:					

Section I. List of Responsible Parties *(Continued)*:

Responsible Party 4					
Name:					
Business Address:				Telephone:	
City:		State:		ZIP Code:	
Relationship to Applicant:					

Responsible Party 5					
Name:					
Business Address:				Telephone:	
City:		State:		ZIP Code:	
Relationship to Applicant:					

Responsible Party 6					
Name:					
Business Address:				Telephone:	
City:		State:		ZIP Code:	
Relationship to Applicant:					

Responsible Party 7					
Name:					
Business Address:				Telephone:	
City:		State:		ZIP Code:	
Relationship to Applicant:					

Responsible Party 8					
Name:					
Business Address:				Telephone:	
City:		State:		ZIP Code:	
Relationship to Applicant:					

Responsible Party 9					
Name:					
Business Address:				Telephone:	
City:		State:		ZIP Code:	
Relationship to Applicant:					

Responsible Party 10					
Name:					
Business Address:				Telephone:	
City:		State:		ZIP Code:	
Relationship to Applicant:					

Responsible Party 11					
Name:					
Business Address:				Telephone:	
City:		State:		ZIP Code:	
Relationship to Applicant:					

Section II. Determining responsible parties who must provide a disclosure statement:

Indiana's Confined Feeding Control Law requires a disclosure statement for alleged violations of environmental law that meet the criteria noted in IC 13-18-10-1.4(a) & (b). This section helps applicants determine whether the responsible parties have violations that meet these criteria.

You may group responsible parties who have identical responses to the questions in this section by listing multiple names or responsible party numbers in the space provided. Provide additional copies of this page as needed to complete this section for all responsible parties listed in Section I.

Responsible Party Name(s) or Number(s) from Section I *(type or print)*: Pumps Hogs LLC; James Templin

Note: This section applies to material violations alleged in any state of the United States and in any other country.

A. Answer both questions 1 and 2 below:

1. Have any state or federal officials at any time alleged that the responsible party or parties committed acts or omissions that constitute a material violation of state or federal environmental law?

   ☐ **Yes** ☒ **No**

2. Have foreign officials at any time alleged that the responsible party or parties committed acts or omissions that constituted a material violation of foreign environmental law, and that would have constituted a material violation of state or federal environmental law if the act or omission had occurred in the United States?

   ☐ **Yes** ☒ **No**

If the answer to both questions is "No," a disclosure statement is not required. Skip to item D below.

B. Indiana's Confined Feeding Control Law requires the responsible party or parties to submit the disclosure statement required by IC 13-18-10-1.4(c) only if the alleged acts or omissions acknowledged by a "Yes" answer to questions A1 or A2 above presented a substantial endangerment to human health or the environment.

If the alleged acts or omissions presented a substantial endangerment to human health or the environment, skip to Section III to prepare and submit the disclosure statement.

Otherwise, proceed to item C on this page.

C. If the alleged acts or omissions acknowledged by a "Yes" answer to questions A1 or A2 above ***did not*** present a substantial endangerment to human health or the environment, the responsible party or parties do not have to submit a disclosure statement in Section III. However, consistent with IDEM's authority to conduct an inquiry or investigation under IC 13-18-10-2.1(a)(2), the responsible party or parties **must** attach the following information:

1. The name and address of the government entity that alleged the acts or omissions.
2. A description of the information relied upon in determining that the alleged acts or omissions did not present a substantial endangerment to human health or the environment. Provide the name and qualifications of the person(s) who made the determination.

Proceed to item D on this page.

D. If directed here by items A or C, the responsible party or parties listed on this page are not required to complete Section III, the disclosure statement required by IC 13-18-10-1.4(c). The applicant or responsible party must attach the information required in item C if applicable, and sign and date below. Their disclosure submittal is complete.

Per IC 13-18-10-2.1(e)(1)(A), the commissioner may deny an application if a responsible party intentionally misrepresents or conceals any material fact in an application for approval under IC 13-18-10.
I affirm that all information submitted in this form and any attachments is, to the best of my knowledge and belief, true, accurate, and complete. I am aware of the penalties for submitting false information under IC 13-18-10-1.4, IC 13-30-10-1.5 and IC 35-44-2-1.

Applicant or Responsible Party Signature: x James Templin Date Signed: x 5-5-16 *(month, day, year)*

Printed Name: James Templin

Section II. Determining responsible parties who must provide a disclosure statement (*Continued*):

Have any of the responsible parties from Section I owned or operated a CFO/CAFO outside of Indiana within the last five (5) years? ☐ Yes ☒ No

If Yes, Responsible Party Name(s) or Number(s) from Section I (*type or print*)

List all states and/or any other country wherein the responsible party owned or operated a CFO/CAFO. Include the operation name(s):

Section III. Disclosure Statement - Instructions:

Responsible parties directed here from Section II must complete and submit the disclosure statement on the next page to meet the requirements of Indiana's Confined Feeding Control Law. (See IC 13-18-10-1.4(c))

Attach additional copies of the disclosure statement page as necessary. Label each attachment with the name of the responsible party.

The Confined Feeding Control Law directs IDEM to consider the following factors when reviewing disclosure statements and deciding whether to approve or deny the application (See IC 13-18-10-2.1(f)):

1. The nature and details of the acts attributed to the responsible party
2. The degree of culpability of the responsible party
3. The responsible party's cooperation with the state, federal, or foreign agencies
4. The responsible party's dissociation from any other persons or entities convicted in a criminal enforcement action
5. Prior or subsequent self-policing or internal education programs established by the responsible party to prevent acts, omissions, or violations

For items D through G on the next page, the responsible party must include information in the description of the enforcement action that is relevant to these factors for IDEM to consider in reviewing the disclosure.

Section III. Disclosure Statement:

A. Name *(type or print)*:

(Name of Responsible Party providing this Disclosure Statement)

B. Business Address: _____

City: _____ State: _____ ZIP Code: _____

C. A description of the responsible party's experience in managing the environmental aspects of the type of facility that will be managed under the permit. Include the name and business address for employers, the State Permit number for the facility, the type of work experience and the length of time employed.

☐ **Not Applicable** ☐ **Description Provided**

D. A description of all pending administrative, civil, or criminal enforcement actions filed in the United States against the responsible party alleging any acts or omissions that: constitute a material violation of state or federal environmental law; and present a substantial endangerment to human health or the environment.

☐ **Not Applicable** ☐ **Description Provided** *(Including the five (5) factors described in the instructions)*

E. A description of all pending administrative, civil, or criminal enforcement actions filed in a foreign country against the responsible party alleging any acts or omissions that: constitute a material violation of foreign environmental law; would have constituted a material violation of state or federal environmental law if the act or omission on which the action is based had occurred in the United States; and present a substantial endangerment to human health or the environment.

☐ **Not Applicable** ☐ **Description Provided** *(Including the five (5) factors described in the instructions)*

F. A description of all finally adjudicated or settled administrative, civil, or criminal enforcement actions in the United States resolved against the responsible party within the five (5) years that immediately precede the date of the application involving acts or omissions that: constitute a material violation of federal or state environmental law; and present a substantial endangerment to human health or the environment.

☐ **Not Applicable** ☐ **Description Provided** *(Including the five (5) factors described in the instructions)*

G. A description of all finally adjudicated or settled administrative, civil, or criminal enforcement actions in a foreign country resolved against the responsible party within the five (5) years that immediately precede the date of the application involving acts or omissions that: constitute a material violation of foreign environmental law; would have constituted a material violation of state or federal environmental law if the act or omission on which the action is based had occurred in the United States; and present a substantial endangerment to human health or the environment.

☐ **Not Applicable** ☐ **Description Provided** *(Including the five (5) factors described in the instructions)*

H. Identification of all state, federal, or foreign environmental permit applied for by the responsible party that were denied or previously held by the responsible party that were revoked.

☐ **Not Applicable** ☐ **Description Provided**

I. This disclosure statement must be executed under oath or affirmation and is subject to perjury under IC 35-44-2-1.

Per IC 13-18-10-2.1(e)(1)(B), the commissioner may deny an application if a responsible party intentionally misrepresents or conceals any material fact in a disclosure statement.

I affirm that all information submitted in this disclosure statement and any attachments is, to the best of my knowledge and belief, true, accurate, and complete. I am aware of the penalties for submitting false information under IC 13-18-10-1.4, IC 13-30-10-1.5 and IC 35-44-2-1.

Responsible Party Signature: _____ Date Signed: _____
(month, day, year)

Printed Name: _____

CFO / CAFO APPLICATION PACKET
Notification Requirements

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: Indiana law requires you to notify certain people of your application in some cases. Complete Section I to determine what notice requirements apply to your application if any. Complete the applicable portions of Section II and III as instructed. This form is required and supersedes all previous versions. IDEM will not accept substitutes, altered or previously supplied forms.

I. NOTIFICATION REQUIREMENTS

A. Answer all four questions below. If an action is listed to the right of your answer, complete the section(s) listed. If none of your answers require an action, then no notice is required and the form is complete. If further action is required, read Section I.B. and Section I.C. below regarding proper notice requirements, materials, and certification.

1. Does the application propose construction of a new confined feeding operation (CFO) or an expansion through construction of an existing CFO?

- ☒ Yes — **Complete** **Section II.A. County Executive / County Commissioner List**; **Section II.B. One-Half (1/2) Mile List**; **Section II.C. Adjoining Land Owner List**; **Section III. Potentially Affected Parties List**
- ☐ No

2. Is the application for an amendment to the CFO approval? For example, does the application propose a change to a permit condition or a change in the type or number of animals that does not involve construction but that will increase manure production.

- ☐ Yes — **Complete** **Section II.A. County Executive / County Commissioner List**; **Section II.C. Adjoining Land Owner List**

  Note: Send this information to IDEM. IDEM will use this information to notify county officials and adjoining land owners of the decision on the amendment. You do not have to notify county officials or adjoining land owners of your application, but you may choose to do so at your option.
- ☒ No

3. Does the operation have a current CFO approval?

- ☐ Yes — **Notification is not required if application is an Approval Renewal/MMP.**
- ☒ No — **Complete** **Section II.A. County Executive / County Commissioner List**; **Section II.B. One-Half (1/2) Mile List**; **Section II.C. Adjoining Land Owner List**; **Section III. Potentially Affected Parties List**

4. Is the application for a NPDES CAFO Individual permit coverage, construction, modification, or renewal?

- ☐ Yes — **Complete** **Section II.A. County Executive / County Commissioner List**; **Section II.C. Adjoining Land Owner List**; **Section III. Potentially Affected Parties List**
- ☒ No

B. The *Notification of Application Submittal* form provided in this packet or an equivalent letter or notice that you develop must:

1. Be provided, not more than ten (10) working days ***after*** submitting an application, to all individuals listed in Section II.A., Section II.B., and Section II.C. as directed in Section I.A. above;
2. Be sent by mail;
3. Be in writing;
4. Include the date on which the application was submitted to IDEM;
5. Include a brief description of the application, such as permit type, location, animal type(s), animal numbers, numbers and types of barns and storage structures, and methods of manure application; and
6. Be paid for by you, the applicant.

C. If notification of application submittal is required, you must certify to IDEM the notice was completed in compliance with the requirements of Section I.B. listed above. The certification must be included with your application and must contain:

1. The enclosed *Notification Affidavit* which is completed, signed, and notarized;
2. The lists generated as directed by all four answers provided in Section I.A.; and
3. A copy of the notice described Section I.B. above.

II. PARTIES NOTIFIED BY APPLICANT

A. County Executive / County Commissioner List

Required when applicable by IC 13-18-10-2(b)(1) and 327 IAC 19-8-7(a)(1)

To complete this section, list the county executive/county commissioners for the county in which the confined feeding operation is to be located or expanded. Attach additional sheets as necessary.

1.	Name	John Brown				
	Mailing address (*number and street*)	Auditor's Office, 101 W Main St.				
	City	Delphi	State	IN	ZIP code	46923
2.	Name	Bill Brown				
	Mailing address (*number and street*)	Auditor's Office, 101 W Main St.				
	City	Delphi	State	IN	ZIP code	46923
3.	Name	Patrick Clawson				
	Mailing address (*number and street*)	Auditor's Office, 101 W Main St.				
	City	Delphi	State	IN	ZIP code	46923
4.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
5.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
6.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	

B. One-Half (1/2) Mile List

Required when applicable by IC 13-18-10-2(b)(2) and 327 IAC 19-8-7(a)(2)

To complete this section, you must, to the best of your ability, list all known persons described below:

1. Each owner and each occupant of land of which any part of the boundary is one-half (1/2) mile or less from any part of the proposed footprint of either a livestock or poultry production structure, a permanent manure storage structure, or both, on the land on which the confined feeding operation is to be located; and
2. Each owner and each occupant of land of which any part of the boundary is one-half (1/2) mile or less from any part of the proposed footprint of either a livestock or poultry production structure, the expanded area of a livestock or poultry production structure, or both, on the land on which the confined feeding operation is to be expanded.

Attach additional sheets as necessary.

1.	Name	MCC Inc % John Mccormick				
	Mailing address (*number and street*)	2719 W St Rd 26				
	City	Rossville	State	IN	ZIP code	46065
2.	Name	Bruce W & Cindy J Dunk				
	Mailing address (*number and street*)	5635 W 575 S				
	City	Rossville	State	IN	ZIP code	46065

II. PARTIES NOTIFIED BY APPLICANT *(Continued)*

B. One-Half (1/2) Mile List *(Continued)*

3.	Name	Mr Mcegg Inc				
	Mailing address *(number and street)*	4456 S US 421				
	City	Delphi	State	IN	ZIP code	46923
4.	Name	Jon Templin				
	Mailing address *(number and street)*	5507 W 550 S				
	City	Bringhurst	State	IN	ZIP code	46913
5.	Name	CSX Transportation Inc % Tax Department				
	Mailing address *(number and street)*	500 Water Street (C910)				
	City	Jacksonville	State	FL	ZIP code	32202
6.	Name	Jon L & Tamara S Templin (Int Of Ivan L Burkle)				
	Mailing address *(number and street)*	5507 W 500 S				
	City	Bringhurst	State	IN	ZIP code	46913
7.	Name	John Richard Mccain				
	Mailing address *(number and street)*	PO Box 389				
	City	Rossville	State	IN	ZIP code	46065
8.	Name	J E Mc Inc				
	Mailing address *(number and street)*	4456 S US HWY 421				
	City	Bringhurst	State	IN	ZIP code	46913
9.	Name	Duane L & Wanda K Rinehart				
	Mailing address *(number and street)*	9776 N 900 W				
	City	Rossville	State	IN	ZIP code	46065
10.	Name	Michael D & Bessie I Rinehart				
	Mailing address *(number and street)*	6147 W 550 S				
	City	Delphi	State	IN	ZIP code	46923
11.	Name	Scott C & Joann Deerwester % Donna Deerwester				
	Mailing address *(number and street)*	1109 Nesheim Rd				
	City	Deerfield	State	WI	ZIP code	53531
12.	Name	Janelle Deerwester				
	Mailing address *(number and street)*	6300 W 550 S				
	City	Delphi	State	IN	ZIP code	46923
13.	Name	Stephen R & Lisa Bough				
	Mailing address *(number and street)*	5316 W 500 S				
	City	Bringhurst	State	IN	ZIP code	46913
14.	Name	Michael J & Carol A Pearson				
	Mailing address *(number and street)*	5060 W 500 S				
	City	Bringhurst	State	IN	ZIP code	46913

II. PARTIES NOTIFIED BY APPLICANT *(Continued)*

B. One-Half (1/2) Mile List *(Continued)*

15.	Name:	Timothy M & Kim P Clendenen				
	Mailing Address:	5485 S US Hwy 421				
	City:	Delphi	State:	IN	ZIP Code:	46923
16.	Name:	Ethan & Amber Beery				
	Mailing Address:	5421 S US Hwy 421				
	City:	Delphi	State:	IN	ZIP Code:	46923
17.	Name:	Mark A & Catherine A Cripe				
	Mailing Address:	5445 S US 421				
	City:	Delphi	State:	IN	ZIP Code:	46923
18.	Name:	Thomas R & Heather A St. Myer II				
	Mailing Address:	5429 S US Hwy 421				
	City:	Delphi	State:	IN	ZIP Code:	46923
19.	Name:					
	Mailing Address:					
	City:		State:		ZIP Code:	
20.	Name:					
	Mailing Address:					
	City:		State:		Zip Code:	
21.	Name:					
	Mailing Address:					
	City:		State:		Zip Code:	
22.	Name:					
	Mailing Address:					
	City:		State:		Zip Code:	
23.	Name:					
	Mailing Address:					
	City:		State:		Zip Code:	
24.	Name:					
	Mailing Address:					
	City:		State:		Zip Code:	
25.	Name:					
	Mailing Address:					
	City:		State:		Zip Code:	
26.	Name:					
	Mailing Address:					
	City:		State:		Zip Code:	

II. PARTIES NOTIFIED BY APPLICANT *(Continued)*

C. Adjoining Land Owner List
Required when applicable by 327 IAC 15-16-5(a)(4) and 327 IAC 19-7-1(c)(8)

This section may solicit individuals listed in Section II.B. above. It is not necessary to list previously listed individuals more than once. This section is for adjoining property owners to the operation that are outside of the one-half (1/2) mile distance listed above and who were not listed in Section B. To complete this section, you must, to the best of your ability, list all known persons described below if not already provided in Section B above:

1. Each person who owns land that adjoins the land on which the confined feeding operation is to be located; or
2. If a person who owns land that adjoins the land on which the confined feeding operation is to be located does not occupy the land, all occupants of the land.

Attach additional sheets as necessary.

☐ All adjoining land owners and occupants are included in the One-Half (1/2) Mile List. Therefore, this list is blank.

1.	Name	Bradley Dean & Brian Don Burton				
	Mailing address *(number and street)*	8628 W 250 S				
	City	Delphi	State	IN	ZIP code	46923
2.	Name					
	Mailing address *(number and street)*					
	City		State		ZIP code	
3.	Name					
	Mailing address *(number and street)*					
	City		State		ZIP code	
4.	Name					
	Mailing address *(number and street)*					
	City		State		ZIP code	
5.	Name					
	Mailing address *(number and street)*					
	City		State		ZIP code	
6.	Name					
	Mailing address *(number and street)*					
	City		State		ZIP code	
7.	Name					
	Mailing address *(number and street)*					
	City		State		ZIP code	
8.	Name					
	Mailing address *(number and street)*					
	City		State		ZIP code	
9.	Name					
	Mailing address *(number and street)*					
	City		State		ZIP code	
10.	Name					
	Mailing address *(number and street)*					
	City		State		ZIP code	

III. POTENTIALLY AFFECTED PARTIES

Required when applicable by 327 IAC 5-3-12, and 327 IAC 19-7-1(c)(8)

This section is for additional potentially affected parties you, the applicant, identify which are not required to be list in Section II. It is not necessary to list individuals already included in Section II. Attach additional sheets as necessary.

☒ Potentially affected parties are included in the lists in Section II. Therefore, this list is blank.

1.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
2.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
3.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
4.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
5.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
6.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
7.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
8.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
9.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	
10.	Name					
	Mailing address (*number and street*)					
	City		State		ZIP code	

CFO / CAFO APPLICATION PACKET
Notification of Application Submittal
Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

An application has been submitted to the Indiana Department of Environmental Management (IDEM) for the Confined Feeding Operation (CFO) or Concentrated Animal Feeding Operation (CAFO) that is described below. Indiana law requires an applicant for a CFO or CAFO approval to notify certain people of an application. See IC 13-18-10-2(b) and 327 IAC 19-7-1. This notice has been sent to you by the applicant to satisfy the notice requirement. Please review the information below to learn how to get more information or submit comments about this application. IDEM will notify you of the final decision on the application.

Applicant / Operation name: Pumps Hogs LLC

Date application submitted *(required)*: May 6, 2016
(month, day, year)

Operation permit type *(applicable regulations)*

☒ CFO Approval *(IC 13-18-10 and 327 IAC 19)*

☐ NPDES CAFO Individual Permit *(IC 13-18-10 and 327 IAC 15-16)*

RECEIVED
MAY 06 2016
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

Operation Location

- Nearest crossroads / address: CR 500 S & US 421
- Nearest city / town: Bringhurst
- County: Carroll
- Political township: Clay
- USGS section/Township/Range: Section 3 / Township 23N / Range 2W

Brief description of application
(should include animal type(s), animal numbers, numbers and types of barns and storage structures, and methods of manure application)

The CFO application requests approval to construct two wean-to-finish pig production buildings typically housing up to 4,400 head each. One time per year, each building may house an extra 4,400 nursery pigs. The buildings include self-contained below buildingconcrete manure storages. Manure will typically be land applied at least least one time per year usinginjection or incorporation land application methods.

Questions regarding the location or other aspects of the application should be addressed to

- Applicant's name: Pumps Hogs LLC
- Address *(number and street)*: 5200 S 500 W
- City / State / ZIP code: Bringhurst / Indiana / 46913
- Telephone number: 574-228-1619

If the application meets the requirements in IC 13-18-10, 327 IAC 15-16, and 327 IAC 19, IDEM will approve the application. You may view these laws and regulations on the iga.IN.gov website.

IDEM will accept written public comments for at least thirty-three (33) days following the date the applicant mailed this notice. You can send comments on the application to the address listed at the top of this sheet. You can contact IDEM's Confined Feeding Program staff at (800) 451-6027, extension 2-4473, or (317) 232-4473.

CFO / CAFO APPLICATION PACKET
Notification Affidavit
Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: If a notice is required as directed in Section I.A. on the Notification Requirements form, the applicant must submit an affidavit to IDEM that certifies the notice requirements listed in Section I.B. on the Notification Requirements form were completed. The certification to IDEM must contain this completed Notification Affidavit. This affidavit is required and supersedes all previous versions. IDEM will not accept substitutes, altered, or previously supplied affidavits.

James Templin, being first duly sworn under oath, deposes and says:

1. I live in Carroll County, Indiana, and being of sound mind and over twenty-one (21) years of age I am competent to give this affidavit.
2. I hold the position of Operator (*Title of Affiant*) for Pumps Hogs LLC (*Name of Applicant or Operation*).
3. I warrant that I have the authority to sign this affidavit on my own behalf, and on behalf of any entity for which I am signing in a representative capacity.
4. As required by IC 13-18-10-2(b), or 327 IAC 19-7-1 when applicable, the applicant will mail written notice to all required persons detailed on the Notification Requirements form not more than ten (10) days after submission of the accompanying application on behalf of Pumps Hogs LLC (*Name of Applicant or Operation*).
5. The written notice mailed to all required persons will include a brief description of the application, such as permit type, location, animal type(s), animal numbers, numbers and types of barns and storage structures, and methods of manure application.

Further Affiant Saith Not.

I affirm under the penalty for perjury that the representations contained in this affidavit are true, to the best of my information and belief.

RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

Applicant signature x James Templin
Date signed (*mm, dd, yy*) x 5-5-16

State of Indiana County of Carroll

Before me, the undersigned, a Notary Public in and for said County and State, personally appeared James Templin known by me to be the person who executed the foregoing instrument, signed the same and acknowledged to me that he/she did so sign the same, and that his/her free act and deed and that the statements made in the foregoing instrument are true.

IN WITNESS WHEREOF, I have set my hand and official seal this 5th day of May, 20 16.

Signature Rowana S. Templin
Printed Rowana S. Templin
My commission expires (*month, day, year*) March 9, 2024
Residence of Carroll County, Indiana.

Indiana Department of Environmental Management

2016 CONFINED FEEDING OPERATION APPROVAL APPLICATION

327 IAC 19 CONFINED FEEDING OPERATIONS

NOTIFICATION REQUIREMENTS ATTACHMENTS

Prepared for:

Pumps Hogs LLC
5200 S 500 W
Bringhurst, Indiana 46913

NOTIFICATION LETTER PACKET

APPLICANT DEVELOPED NOTIFICATION LETTER:
COUNTY OFFICIALS

APPLICATION DEVELOPED NOTIFICATION LETTER:
LAND OWNERS, RESIDENCES, & TENANTS

SITE LOCATION MAP

IDEM NOTIFICATION OF APPLICATION SUBMITTAL FORM

United States Postal Service
PS Form 3877; Certificate of Mailing

MAILING DATE: May 6, 2016

Prepared by:
LIVESTOCK ENGINEERING SOLUTIONS, INC.

Michael A. Veenhuizen, Ph. D.
2967 S. Honey Creek Road · Greenwood, IN 46143 · (317) 535-1829

Pumps Hogs LLC
James Templin
5200 S 500 W
Bringhurst, Indiana 46913
574-228-1619

May 6, 2016

Carroll County Commissioner
Auditor's Office; 101 W Main Street
Delphi, Indiana 46923

Dear Commissioner:

I am making plans to purchase property in Carroll County from my family and build and operate a wean-to-finish pig production facility. I grew up in Carroll County and making these plans to be able to remain in Carroll County, participate in my family's agricultural production business, and be a viable part of the community.

The proposed location of the farm is on the south side of County Road 500 S and east of US Highway 421 in Madison Township (Section 3, T23N, R2W). I plan to construct two (2) wean-to-finish pig production buildings. The buildings will be located approximately 120 feet south of County Road 500 S and approximately 1,320 feet east of US Highway 421. The access drive will be located on County Road 500 S. A site location map is included for your information.

The wean-to-finish pig production buildings include self-contained, below-building, concrete manure storage and mechanical ventilation. The concrete manure storage provides approximately one year of storage capacity. The Indiana Department of Environmental Management requires 180 days of storage capacity. The concrete manure storage has been sized and designed to meet all Indiana Department of Environmental Management (IDEM) and Natural Resource Conservation Service (NRCS) construction standards and specifications. These requirements were developed to assure environmentally sound production facilities.

The manure will be used as a soil amendment and fertilizer to meet the crop nutrient requirements of crops grown by my family and cooperating grain farmers in the area. Manure will be land applied at least once per year based on the crop grown, field conditions and weather conditions to utilize the manure nutrients in an agronomically sound cropping program. Manure application methods include injection or incorporation to maximize crop nutrient retention and utilization, eliminate potential runoff from land application and to minimize potential odor emissions.

This confined animal feeding operation is regulated by the Indiana Department of Environmental Management (IDEM). Prior to beginning construction of the new buildings, I am required to submit a permit application to IDEM for review and approval. The typical operating capacity of each building will be 4,400 wean-to-finish pigs per building. Typically, two groups per year will be raised in each building. It is possible that each building may house an additional group of 4,400 weaned pigs one time per year at the same time that the 4,400 wean-to-finish pigs are housed in the building. To allow for this flexibility and to remain in compliance with the Indiana Department of Environmental Management approval requirements, the Confined Feeding Operation Approval requests a maximum operating capacity of 13,200 pigs housed in two buildings.

Per the IDEM regulations I am notifying the County Commissioners, landowners, residences, and tenants located within one-half mile of the proposed construction and adjoining landowners to the farm. When IDEM completes their review they will notify you by mail of their decision.

An application was submitted to IDEM on about May 6, 2016 for review and approval to construct the proposed wean-to-finish pig production buildings. If you have any questions about the IDEM approval process, please feel free to contact IDEM (800-451-6027, extension 2-4473 or 317-232-4473). IDEM will also accept written comments until at least June 8, 2016 (Joseph E. Williams, Section Chief, Confined Feeding Program, 100 North Senate Avenue, MC 65-45 IGCN 1101, Indianapolis, Indiana 46913).

If you have any questions about my plans, please feel free to contact me (574-228-1619). I am excited about this opportunity and would welcome an opportunity to share my plans and discuss the project with you.

Sincerely,

James Templin, Pumps Hogs LLC

Enclosures

Pumps Hogs LLC
James Templin
5200 S 500 W
Bringhurst, Indiana 46913
574-228-1619

May 6, 2016

Land Owner
5200 S 500 W
Bringhurst, Indiana 46913

Dear Land Owner:

I am writing to share with you my plans to build and operate a wean-to-finish pig production facility at my family's farm located east of US 421 and south of County Road 500 S near Ockley, Indiana in Madison Township (Section 3, T23N, R2W). I grew up in Carroll County and am making these plans to be able to remain in Carroll County, participate in my family's agricultural production business, and be a viable part of the community.

I plan to construct two (2) wean-to-finish pig production buildings. The buildings will be located approximately 120 feet south of County Road 500 S and approximately 1,320 feet east of US Highway 421. The access drive will be located on County Road 500 S. A site location map is included for your information.

The wean-to-finish pig production buildings include self-contained, below-building, concrete manure storage and mechanical ventilation. The concrete manure storage provides approximately one year of storage capacity. The Indiana Department of Environmental Management requires 180 days of storage capacity. The concrete manure storage has been sized and designed to meet all Indiana Department of Environmental Management (IDEM) and Natural Resource Conservation Service (NRCS) construction standards and specifications. These requirements were developed to assure environmentally sound production facilities.

The manure will be used as a soil amendment and fertilizer to meet the crop nutrient requirements of crops grown by my family and cooperating grain farmers in the area. Manure will be land applied at least once per year based on the crop grown, field conditions and weather conditions to utilize the manure nutrients in an agronomically sound cropping program. Manure application methods include injection or incorporation to maximize crop nutrient retention and utilization, eliminate potential runoff from land application and to minimize potential odor emissions.

This confined animal feeding operation is regulated by the Indiana Department of Environmental Management (IDEM). Prior to beginning construction of the new buildings, I am required to submit a permit application to IDEM for review and approval. The typical operating capacity of each building will be 4,400 wean-to-finish pigs per building. Typically, two groups per year will be raised in each building. It is possible that each building may house an additional group of 4,400 weaned pigs one time per year at the same time that the 4,400 wean-to-finish pigs are housed in the building. To allow for this flexibility and to remain in compliance with the Indiana Department of Environmental Management approval requirements, the Confined Feeding Operation Approval requests a maximum operating capacity of 13,200 pigs housed in two buildings.

Per the IDEM regulations I am notifying the County Commissioners, landowners, residences, and tenants located within one-half mile of the proposed construction and adjoining landowners to the farm. When IDEM completes their review they will notify you by mail of their decision.

An application was submitted to IDEM on about May 6, 2016 for review and approval to construct the proposed wean-to-finish pig production buildings. If you have any questions about the IDEM approval process, please feel free to contact IDEM (800-451-6027, extension 2-4473 or 317-232-4473). IDEM will also accept written comments until at least June 8, 2016 (Joseph E. Williams, Section Chief, Confined Feeding Program, 100 North Senate Avenue, MC 65-45 IGCN 1101, Indianapolis, Indiana 46913).

If you have any questions about my plans, please feel free to contact me (574-228-1619). I am excited about this opportunity and would welcome an opportunity to share my plans and discuss the project with you.

Sincerely,

James Templin, Pumps Hogs LLC

PUMPS HOGS LLC
5200 N 500 W
BRINGHURST, INDIANA 46913
2016 CFO APPROVAL

SITE LOCATION MAP
TWO PROPOSED BUILDINGS

DATE: 05/06/16 | DRAWN BY: DL | SHEET: 1SL of 1SL | DRAWING NO: PHL0116-1SL

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

CFO / CAFO APPLICATION PACKET
Notification of Application Submittal
Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

An application has been submitted to the Indiana Department of Environmental Management (IDEM) for the Confined Feeding Operation (CFO) or Concentrated Animal Feeding Operation (CAFO) that is described below. Indiana law requires an applicant for a CFO or CAFO approval to notify certain people of an application. See IC 13-18-10-2(b) and 327 IAC 19-7-1. This notice has been sent to you by the applicant to satisfy the notice requirement. Please review the information below to learn how to get more information or submit comments about this application. IDEM will notify you of the final decision on the application.

Applicant / Operation name: Pumps Hogs LLC

Date application submitted *(required)*: May 6, 2016
(month, day, year)

Operation permit type *(applicable regulations)*

- [x] CFO Approval *(IC 13-18-10 and 327 IAC 19)*
- [ ] NPDES CAFO Individual Permit *(IC 13-18-10 and 327 IAC 15-16)*

Operation Location

- Nearest crossroads / address: CR 500 S & US 421
- Nearest city / town: Bringhurst
- County: Carroll
- Political township: Clay
- USGS section/Township/Range: Section 3 / Township 23N / Range 2W

Brief description of application
(should include animal type(s), animal numbers, numbers and types of barns and storage structures, and methods of manure application)

The CFO application requests approval to construct two wean-to-finish pig production buildings typically housing up to 4,400 head each. One time per year, each building may house an extra 4,400 nursery pigs. The buildings include self-contained below buildingconcrete manure storages. Manure will typically be land applied at least least one time per year usinginjection or incorporation land application methods.

Questions regarding the location or other aspects of the application should be addressed to

- Applicant's name: Pumps Hogs LLC
- Address *(number and street)*: 5200 S 500 W
- City / State / ZIP code: Bringhurst / Indiana / 46913
- Telephone number: 574-228-1619

If the application meets the requirements in IC 13-18-10, 327 IAC 15-16, and 327 IAC 19, IDEM will approve the application. You may view these laws and regulations on the iga.IN.gov website.

IDEM will accept written public comments for at least thirty-three (33) days following the date the applicant mailed this notice. You can send comments on the application to the address listed at the top of this sheet. You can contact IDEM's Confined Feeding Program staff at (800) 451-6027, extension 2-4473, or (317) 232-4473.

RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

Name and Address of Sender

Pumps Hogs LLC
James Templin
5200 S 500 W
Bringhurst, Indiana 46913

Check type of mail or service:

- ☐ Adult Signature Required
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail
- ☐ Recorded Delivery (International)
- ☐ COD
- ☐ Registered
- ☐ Delivery Confirmation
- ☐ Return Receipt for Merchandise
- ☐ Express Mail
- ☐ Signature Confirmation
- ☑ Certificate of Mailing
- ☐ Insured

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(If issued as a certificate of mailing or for additional copies of this bill)
Postmark and Date of Receipt

Article Number	Addressee (Name, Street, City, State, & ZIP Code™)	Postage	Fee	Handling Charge	Actual Value if Registered	Insured Value	Due Sender if COD	ASR Fee	ASRD Fee	DC Fee	SC Fee	SH Fee	RD Fee	RR Fee
1.	John Brown, Carroll County Commissioner Auditor's Office, 101 W Main Delphi, Indiana 46923													
2.	Bill Brown, Carroll County Commissioner Auditor's Office, 101 W Main Delphi, Indiana 46923													
3.	Pat Clawson, Carroll County Commissioner Auditor's Office, 101 W Main Delphi, Indiana 46923													
4.	MCC Inc % John Mccormick 2719 W St Rd 26 Rossville, IN 46065													
5.	Bradley Dean & Brian Don Burton 8628 W 250 S Delphi, IN 46923													
6.	Michael J & Carol A Pearson 5060 W 500 S Bringhurst, IN 46913													
7.	Mr Mcegg Inc 4456 S US 421 Delphi, IN 46923													
8.	CSX Transportation Inc % Tax Department 500 Water Street (C910) Jacksonville, FL 32202													

0000

U.S. POSTAGE
PAID
GREENWOOD, IN
46142
MAY 06 16
AMOUNT
$7.92
R2304M111503-04

GREENWOOD, IN
MAY - 6 2016
USPS 46142

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8	8	

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See Privacy Act Statement on Reverse

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MAY 06 2016
OFFICE OF LAND QUALITY
ENVIRONMENTAL MANAGEMENT
DEPT. OF

Name and Address of Sender

Pumps Hogs LLC
James Templin
5200 S 500 W
Bringhurst, Indiana 46913

Check type of mail or service:

- ☐ Adult Signature Required
- ☐ Certified Mail
- ☐ COD
- ☐ Delivery Confirmation
- ☐ Express Mail
- ☐ Insured
- ☐ Adult Signature Restricted Delivery
- ☐ Recorded Delivery (International)
- ☐ Registered
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation
- ☒ Certificate of Mailing

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Postmark and Date of Receipt

(2)

Article Number	Addressee (Name, Street, City, State, & ZIP Code™)	Postage	Fee	Handling Charge	Actual Value if Registered	Insured Value	Due Sender if COD	ASR Fee	ASRD Fee	DC Fee	SC Fee	SH Fee	RD Fee	RR Fee
1.	Jon Templin 5507 W 550 S Bringhurst, IN 46913													
2.	John Richard McCain PO Box 389 Rossville, IN 46065													
3.	J E Mc Inc 4456 S US HWY 421 Bringhurst, IN 46913													
4.	Duane L & Wanda K Rinehart 9776 N 900 W Rossville, IN 46065													
5.	Michael D & Bessie I Rinehart 6147 W 550 S Delphi, IN 46923													
6.	Scott C & Joann Deerwester % Donna Deerwester 1109 Nesheim Rd Deerfield, WI 53531													
7.	Janelle Deerwester 6300 W 550 S Delphi, IN 46923													
8.	Stephen R & Lisa Bough 5316 W 500 S Bringhurst, IN 46913													

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MAY - 6 2016
USPS 46142

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Postmaster, Per (Name of receiving employee)

PS Form 3877, June 2011 (Page 1 of 2)

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RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

Name and Address of Sender

Pumps Hogs LLC
James Templin
5200 S 500 W
Bringhurst, Indiana 46913

Check type of mail or service:

- ☐ Adult Signature Required
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail
- ☐ Recorded Delivery (International)
- ☐ COD
- ☐ Registered
- ☐ Delivery Confirmation
- ☐ Return Receipt for Merchandise
- ☐ Express Mail
- ☐ Signature Confirmation
- ☐ Insured
- ☑ Certificate of Mailing

Affix Stamp Here
(If issued as a certificate of mailing or for additional copies of this bill)
Postmark and Date of Receipt

(3)

Article Number	Addressee (Name, Street, City, State, & ZIP Code™)	Postage	Fee	Handling Charge	Actual Value if Registered	Insured Value	Due Sender if COD	ASR Fee	ASRD Fee	DC Fee	SC Fee	SH Fee	RD Fee	RR Fee
1.	Jon L & Tamara S Templin (Int Of Ivan L Burkle) 5507 W 500 S Bringhurst, IN 46913													
2.	Timothy M & Kim P Clendenen 5485 S US Hwy 421 Delphi, IN 46923													
3.	Ethan & Amber Beery 5421 S US Hwy 421 Delphi, IN 46923													
4.	Mark A & Catherine A Cripe 5445 S US 421 Delphi, IN 46923													
5.	Thomas R & Heather A St. Myer II 5429 S US Hwy 421 Delphi, IN 46923													
6.	Bruce W & Cindy J Dunk 5635 W 575 S Rossville, IN 46065													
7.														
8.														

GREENWOOD, IN
MAY - 6 2016
USPS 46182

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6	6	

PS Form **3877**, June 2011 *(Page 1 of 2)*

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See Privacy Act Statement on Reverse

TAB 2

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

June 29, 2016

Carol S. Comer
Commissioner

James Templin
Pumps Hogs LLC
5200 S. 500 W.
Bringhurst, Indiana 46913

Dear Mr. Templin:

Re: Approval with Construction
Pumps Hogs LLC
Carroll County
Farm ID # 6912
Animal Waste Number AW- 6584

Your confined feeding operation (CFO) application seeking approval for a new swine operation in Carroll County is approved.

The application and supporting information was determined to satisfy both the Confined Feeding Control Law (IC 13-18-10) and the Confined Feeding Operation regulation (327 IAC 19). Your CFO Approval and the other enclosures to this letter provide important information about your responsibilities as a CFO owner or operator. Please take time to review these documents before putting them in your operating record. Feel free to contact us if you have any questions.

Your CFO meets the definition of a Concentrated Animal Feeding Operation (CAFO). Please note that CAFOs have additional requirements. The requirements are explained in more detail in the CFO Approval.

The CFO Approval contains Special Conditions. Please see the Approval for details regarding the Special Conditions.

Your application contained an alternative to multiple CFO regulatory standards. Details regarding the alternatives are provided within the CFO approval.

You can view public records related to your CFO Approval on IDEM's Virtual File Cabinet (VFC) website. Go to http://vfc.idem.in.gov/Default.aspx and click on "Document Search". Select "CFO/CAFO #" from the ***Additional Fields*** dropdown menu and click on "**Add**". Type the farm ID #, **6912,** in the ***CFO/CAFO#*** field. Click the

Submit button. We post documents within approximately 5 days of when we send or receive them. Contact us if you cannot locate a particular document.

CONTACT INFORMATION

Questions concerning issuance of this approval should be directed to the Confined Feeding Program at (317) 232-3111, (800) 451-6027 Ext 2-3111 or by FAX at (317) 232-3403.

Sincerely,

Joseph E. Williams, Chief
Confined Feeding Permits Section
Office of Land Quality

Enclosures: CFO Approval
CFO Operating Record Checklist
CFO Record Book
327 IAC 19
Construction Checklist
Construction Affidavit
Professional Engineering Certification
Construction Notification

cc: Carroll County Health Department
Carroll County Board of Commissioners
Bringhurst Mayor/Town Council President
USDA-Natural Resources Conservation Service
Michael Vennhuizen – Livestock Engineering Solutions, Inc.
Jon Templin – 5507 W. 550 S. Bringhurst, Indiana 46913
Don Shockley – 101 W Main St Delphi, Indiana 46923

APPEAL PROCEDURES

If you disagree with this decision and wish to challenge it, IC 13-15-6-1 and IC 4-21.5-3-7 require that you file a petition for administrative review. If you want the permit put on hold during this administrative review ("stayed") you must also file a petition for stay. These petitions must be submitted to the Office of Environmental Adjudication (OEA) at the following address within 15 days of your receipt of this notice:

Office of Environmental Adjudication
Government Center North, Room 501
100 North Senate Avenue
Indianapolis, Indiana 46204-2241

You will need to include the following in your petitions:

1. Information identifying the decision you are appealing, including the following:
- name of the facility
- name of the applicant/owner/operator
- farm ID number
- date of this notice

2. Information showing you are either:
- the applicant
- someone "aggrieved or adversely affected" by the decision, i.e., the decision has a negative impact on you, or
- someone otherwise entitled by the law

3. Your name and address, or that of the person making the request that you represent

4. Your interest in the decision, or the interest of the person you represent

5. Identification of any persons represented by the person making the request

6. The reasons for the request, with particular detail

7. The issues involved, with particular detail

8. Identification of appropriate new approval terms and conditions that you would like to see used to replace existing ones in the approval that you feel do not comply with the laws governing this kind of approval

Deadlines and Timeframes

Please remember that you must file your petition(s) within 15 days after the date you received ("are served") this notice. IC 13-15-6-7(c) states a notice is served when either:

1. You are personally given the notice, or

2. Three days after the notice is placed into the US mail and addressed to you, i.e., the date the notice is postmarked.

In addition, if you read this notice in a newspaper, the deadline is within 15 days after the date the notice was published in the newspaper.

The date your petition(s) will be considered received by ("filed with") the OEA is based on the following:

1. If you or someone else personally brings the petition to OEA, the date you do this.

2. If you mail the petition through the regular US mail, the postmark date on the envelope containing the petition, or

3. If you send the petition to OEA through a private carrier like UPS, Federal Express, etc., the date you gave the document to the carrier, as shown by the sales receipt you receive from the carrier.

Receiving Updates on the Status of this Decision

The OEA will provide you with notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders regarding this decision if you submit a written request to the OEA. If you do not provide a written request to the OEA, you will no longer be notified of any proceedings pertaining to this decision. [IC 4-21.5-3-5(d)]

How to Obtain Additional Information

If you have procedural or scheduling questions regarding your petition, you may contact OEA by dialing (800) 451-6027, press 0 and ask for extension 2-8591 or dial (317) 232-8591.

IDEM INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

CONFINED FEEDING OPERATION (CFO) APPROVAL

Applicant:(Permittee) Pumps Hogs LLC Farm ID: 6912 AW#: 6584

Operation Name: Pumps Hogs LLC Operation County: Carroll

Property Owner: Jon Templin Manager/Operator or Contact Person: James Templin

Operation Location: County Road 500 S. & US Highway 421 Bringhurst, Indiana 46913

Effective Date: June 29, 2016

Expiration Date: June 29, 2021

Renewal Submission Deadline: May 30, 2021

Permit renewal applications must be submitted no less than 30 days prior to the permit expiration date. If the renewal submission deadline falls on a Sunday or holiday, the renewal must be submitted prior to that date.

The purpose of the CFO approval program is to protect water quality in Indiana through standards for constructing and operating CFOs and associated manure management structures.

As the owner/operator, you must:

- meet all terms and conditions of this approval, the Confined Feeding Control Law IC 13-18-10, the Confined Feeding Operation regulations 327 IAC 19, and the Spill Rule 327 IAC 2-6.1;
- allow representatives of IDEM to enter your CFO and review your records, inspect the operation, and sample or monitor the operation when needed; and
- keep a copy of this approval as part of your operating record.

In order to receive approval to operate your CFO beyond the expiration date listed above, you must submit a complete application for an approval renewal to the IDEM by the renewal submission deadline.

This CFO Approval is authorized under IC 13-18-10 and becomes effective on the date listed above.

Joseph E. Williams, Chief
Confined Feeding Permits Section

Operation Name: Pumps Hogs LLC Farm ID #: 6912

FACILITY DESCRIPTION

Your CFO meets the definition of a Concentrated Animal Feeding Operation (CAFO). [See 40 CFR 122.23(b)(2)]

The following proposed structures are approved and construction must be completed prior to the expiration of this CFO Approval.

- One confinement building labeled 1P with a self-contained concrete manure storage pit beneath slatted floors for the storage of liquid manure. The operating capacity for the building is 4,400 wean-to-finish pigs and 4,400 nursery pigs. Two (2) 4,400 wean-to-finish pig groups per year are housed in the building for approximately 25 weeks per group. One (1) 4,400 nursery pig group is housed in the building for approximately six (6) weeks at the same time as one of the wean-to-finish pig groups.

- One confinement building labeled 2P with a self-contained concrete manure storage pit beneath slatted floors for the storage of liquid manure. The operating capacity for the building is 4,400 wean-to-finish pigs and 4,400 nursery pigs. Two (2) 4,400 wean-to-finish pig groups per year are housed in the building for approximately 25 weeks per group. One (1) 4,400 nursery pig group is housed in the building for approximately six (6) weeks at the same time as one of the wean-to-finish pig groups.

Confinement building 1P or 2P may house up to 8,800 nursery pigs for 6 weeks, at any one time. The second building will house up to 4,400 grower/finishing hogs at the same time. After the 6 week production cycle is completed 4,400 of the above mentioned nursery pigs will be moved to a different building to be finished as grower/finishing hogs.

An on-site compost area is used for mortality management.

Your CFO is approved for total capacity of 13,200 swine. (8,800 wean-to-finish pigs and 4,400 nursery pigs) housed in two production buildings as detailed on the attached facility detail sheets. The manure control facilities, including the availability of acreage for manure application, meet or exceed the requirements of the Confined Feeding Operation regulations 327 IAC 19.

You may not start construction of a CFO, or expansion of a CFO that increases animal capacity and/or manure containment capacity, without obtaining prior approval from IDEM as required by 327 IAC 19-1-2(b).

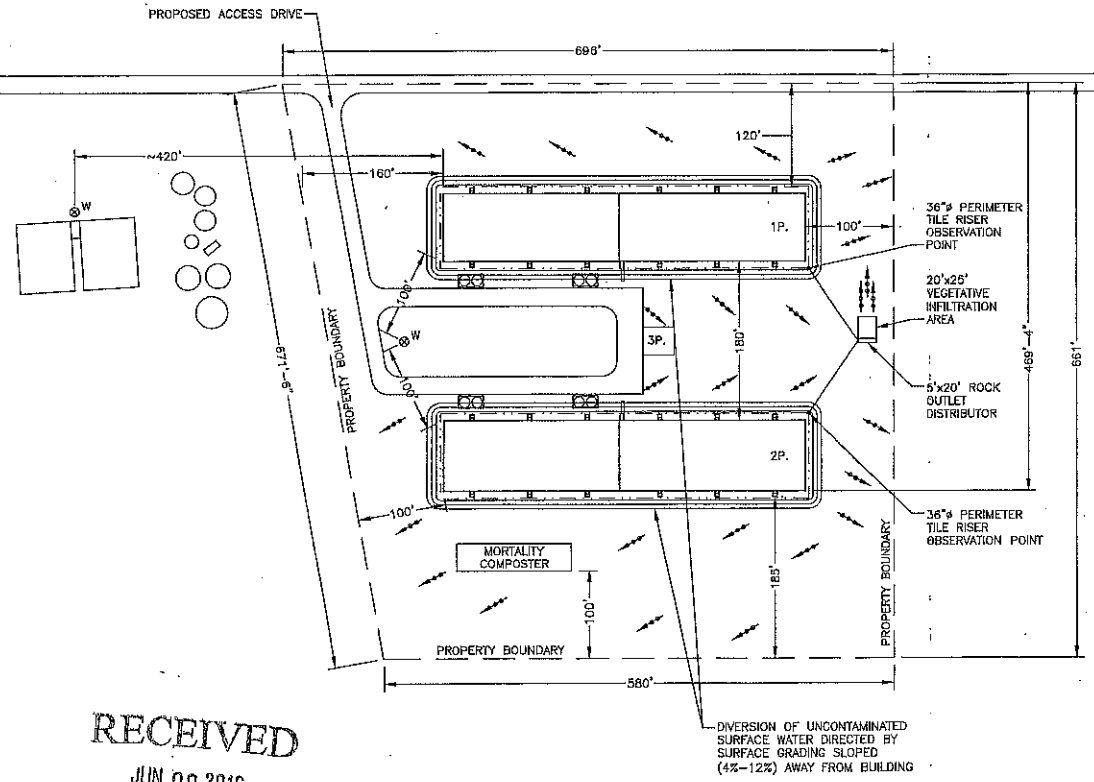
(Remainder of page intentionally left blank)

IV. FACILITY DETAIL INFORMATION

Label on Farmstead Plan	Animal Type	Number of Animals	Solid or Liquid	Date Constructed *(for existing buildings)*	Water Uses *(gallons/unit of time)*	Brief Description
1P	Wean-to-finish pigs	8,800 head (max capacity) (4,400 nursery pigs [6 weeks/year]; 4,400 wean-to-finish pigs [50-52 weeks/year]) NOTE: For manure generation and land application determination, the equivalent animal capacity is: 4,400 nursery pigs housed for 6 weeks/year; 4,400 nursery pigs, housed for 12 weeks/year AND 4,400 grow/finish pigs, housed for approximately 38 weeks/year	Liquid	Proposed	22,000 gallons 2 times per year **Total Usage:** 44,000 gallons per year	Proposed Two room wean-to-finish building Total building dimensions: 81'-4" x 413'-0" O.D. Self-contained manure storage. Not shared with another confined feeding structure. Two compartment below-building concrete manure storage: 1) 80'-0" x 199'-9" x 8'-0" deep 2) 80'-0" x 211'-3" x 8'-0" deep Total capacity: 262,169 cu ft Available capacity: 230,077 cu ft (6" freeboard and 6" residual storage) Storage capacity: 345 days **NOTE:** Building 1P is part of a two building confined feeding operation with a maximum operating capacity of 13,200-head housed in two (2) buildings. Each building will house two groups of pigs per year (25-week production cycle). The expected animal population per building is 8,800 nursery pigs for 6 weeks per year, 4,400 nursery pigs for 6 weeks per year, and 4,400 grow-to-finish pigs for 38 weeks per year (50-52 weeks). During each approximately twenty-five (25) week production cycle one of the two buildings may house up to 8,800 weaned pigs (nursery pigs; < 55 lb) for approximately six weeks. The second building will house up to 4,400 wean-to-finish pigs at the same time. This cycle is repeated two times per year.

IV. FACILITY DETAIL INFORMATION

Label on Farmstead Plan	Animal Type	Number of Animals	Solid or Liquid	Date Constructed *(for existing buildings)*	Water Uses *(gallons/unit of time)*	Brief Description
2P	Wean-to-finish pigs	8,800 head (max capacity) (4,400 nursery pigs [6 weeks/year]; 4,400 wean-to-finish pigs [50-52 weeks/year]) NOTE: For manure generation and land application determination, the equivalent animal capacity is: 4,400 nursery pigs housed for 6 weeks/year; 4,400 nursery pigs, housed for 12 weeks/year AND 4,400 grow/finish pigs, housed for approximately 38 weeks/year	Liquid	Proposed	22,000 gallons 2 times per year **Total Usage:** 44,000 gallons per year	Proposed Two room wean-to-finish building Total building dimensions: 81'-4" x 413'-0" O.D. Self-contained manure storage. Not shared with another confined feeding structure. Two compartment below-building concrete manure storage: 1) 80'-0" x 199'-9" x 8'-0" deep 2) 80'-0" x 211'-3" x 8'-0" deep Total capacity: 262,169 cu ft Available capacity: 230,077 cu ft (6" freeboard and 6" residual storage) Storage capacity: 345 days **NOTE:** Building 1P is part of a two building confined feeding operation with a maximum operating capacity of 13,200-head housed in two (2) buildings. Each building will house two groups of pigs per year (25-week production cycle). The expected animal population per building is 8,800 nursery pigs for 6 weeks per year, 4,400 nursery pigs for 6 weeks per year, and 4,400 grow-to-finish pigs for 38 weeks per year (50-52 weeks). During each approximately twenty-five (25) week production cycle one of the two buildings may house up to 8,800 weaned pigs (nursery pigs; < 55 lb) for approximately six weeks. The second building will house up to 4,400 wean-to-finish pigs at the same time. This cycle is repeated two times per year.



RECEIVED
JUN 09 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

NOTE:
(1) TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO PUBLIC WATER SUPPLY WELLS OR PUBLIC WATER SUPPLY SURFACE INTAKE STRUCTURES WITHIN 1,000 FEET OF THE PROPOSED WASTE MANAGEMENT SYSTEM (327 IAC 19-12-3(a)(1)).
(2) TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO SURFACE WATERS OF THE STATE, DRAINAGE INLETS, SINKHOLES, OR OFF-SITE WATER WELLS WITHIN 300 FEET OF THE PROPOSED WASTE MANAGEMENT SYSTEM.
(3) TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO ON-SITE WATER WELLS, PROPERTY LINES, OR PUBLIC ROADS WITHIN 100 FEET OF THE PROPOSED WASTE MANAGEMENT SYSTEM (327 IAC 19-12-3(a)(1)-(3)).
(4) TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO EXISTING OFF-SITE RESIDENTIAL OR PUBLIC BUILDINGS WITHIN 400 FEET OF THE PROPOSED WASTE MANAGEMENT SYSTEM (327 IAC 19-12-3(a)(4).
(5) TO THE BEST KNOWLEDGE OF THE APPLICANT, THE LOCATION OF THE FOLLOWING FEATURES OF CONCERN WITHIN 500 FEET OF THE PROPOSED WASTE MANAGEMENT SYSTEM ARE DEPICTED:
SURFACE WATERS OF THE STATE, PUBLIC AND PRIVATE ROADS, WATER WELL LOCATIONS, CHARACTERISTICS OF KARST TERRAIN, PRODUCTION SURFACE DRAINAGE PATTERNS, PROPERTY BOUNDARY LINES, OUTFALLS OF KNOWN SUBSURFACE DRAINAGE STRUCTURES, DRAINAGE INLETS, MORTALITY MANAGEMENT SITES, RESIDENCES, DIVERSION OF UNCONTAMINATED SURFACE WATER, AND 100-YEAR FLOOD PLAINS (327 IAC 19-7-3).
(6) EXISTING WELL LOCATIONS HAVE BEEN IDENTIFIED BASED ON THE INDIANA DNR WATER WELL RECORD DATABASE. TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO OTHER EXISTING WATER WELLS WITHIN 500' OF THE PROPOSED WASTE MANAGEMENT SYSTEM.
(7) TO THE BEST KNOWLEDGE OF THE APPLICANT, THERE ARE NO OTHER SUBSURFACE DRAINAGE TILE LOCATED WITHIN 800' OF THE PROPOSED WASTE MANAGEMENT SYSTEM. IF SUBSURFACE DRAINAGE TILE ARE LOCATED DURING CONSTRUCTION, THEY WILL BE REMOVED AND/OR REROUTED AROUND THE WASTE MANAGEMENT SYSTEM.
(8) BASED ON INFORMATION PROVIDED BY THE DEPARTMENT OF NATURAL RESOURCES, DIVISION OF RECLAMATION, MINES ARE PREDOMINATELY LOCATED IN SOUTHWEST INDIANA. CARROLL COUNTY IS LOCATED OUTSIDE OF THIS REGION. THE PROPOSED BUILDING LOCATION COMPLIES WITH 327 IAC 19-12-2(a)(4) PROHIBITING LOCATION OVER MINES.

PROPOSED STRUCTURES:

1P. WEAN-TO-FINISH BUILDING
81'-4" x 413'-0"
CAPACITY
4,400 WEAN-TO-FINISH PIGS (50-52 WKS/YR)
4,400 NURSERY PIGS (6 WEEKS/YR)
2P. WEAN-TO-FINISH BUILDING
81'-4" x 413'-0"
CAPACITY
4,400 WEAN-TO-FINISH PIGS (50-52 WKS/YR)
4,400 NURSERY PIGS (6 WEEKS/YR)
3P. GENERATOR/UTILITY BUILDING

MORTALITY MANAGEMENT

MORTALITIES WILL BE HANDLED VIA ON-SITE MORTALITY COMPOSTER.

W WELL
DRAINAGE PATTERN
PERIMETER TILE
PROPERTY BOUNDARY

100'
SCALE

N

PUMPS HOGS LLC
U.S. 421 & CO. ROAD 500S
BRINGHURST, IN 46913
2016 CFO APPROVAL

FARMSTEAD PLAN
BUILDING SITE DETAILS

DATE: 05/05/16 | DRAWN BY: DL | SHEET: 2A of 2A | DRAWING NO: PHL0116-02A

LIVESTOCK ENGINEERING SOLUTIONS, INC.
MICHAEL A. VEENHUIZEN
2967 S. HONEY CREEK ROAD, GREENWOOD, IN 46143

Operation Name: Pumps Hogs LLC Farm ID #: 6912

GENERAL APPROVAL CONDITIONS

1. An Approval Renewal application must be submitted to IDEM no less than 30 days prior to the approval expiration date to maintain a valid approval for your operation. The application must include a Manure Management Plan (MMP) which details any changes made at the operation, outline procedures for soil testing and manure testing, and include a current farmstead plan and Natural Resource Conservation Service (NRCS) soil survey maps of application ground. The soil survey maps must detail the boundaries of the field(s) and include the property owner name and available acres after setbacks are subtracted. The MMP must also contain a request for land application acreage requirement waiver if a manure distribution program is used, or contain a description of alternate methods proposed for managing the manure.

2. This approval does not authorize any injury to any person or private property; the invasion of other private rights; the infringement of federal, state, or local laws or regulations; nor does it preempt any duty to comply with other state or local requirements.

3. Your request for an approval modification, revocation and reissuance, or termination does not suspend any approval term or condition. The approval may be modified, revoked and reissued, or terminated, for causing or threatening to cause harm to the environment.

4. The conditions of this approval are separable and if any condition of the approval is determined to be invalid the application of the condition to other circumstances and the remainder of this approval will not be affected.

5. You may not start construction of a CFO, or expansion of a CFO that increases animal capacity and/or manure containment capacity, without obtaining prior approval from IDEM as required by 327 IAC 19-1-2(b).

6. You must follow the construction requirements of 327 IAC 19-12. Please find the enclosed construction checklist and forms required to be submitted to IDEM to ensure compliance with construction requirements of this approval and 327 IAC 19-12.

7. Permittees must submit to IDEM the enclosed Construction Notification Form (State Form 50210) within two (2) days prior to the commencement of construction.

8. Permittees must submit to IDEM the enclosed Construction Completion Affidavit (State Form 51255) within thirty (30) days after the date construction of an approved waste management structure is completed, and **prior** to the introduction of any animals. The affidavit must be completed, signed by the responsible party, notarized, and returned to IDEM assuring that the waste management system was constructed and will be operated in accordance with the requirements of the approval.

9. All liquid manure storage facilities must be certified upon completion by a registered professional engineer (PE) on a form provided by IDEM. The completed PE Certification Form must be submitted with the Construction Completion Affidavit for structures P1 & P2. A "Construction Completion Affidavit" and PE Certification Form will accompany the CFO approval or can be duplicated from the IDEM CFO Record Book to be used for the notification process.

10. If a permittee performs partial construction of an approved project involving multiple approved units and wishes to utilize a completed unit prior to completing construction of other approved units, multiple affidavits must be submitted.

SPECIAL APPROVAL CONDITIONS

Please note that CFOs meeting the definition of a CAFO have three requirements that differ from those for farms not defined as CAFOs. These include storm water management practices (327 19-11-1(a)), manure application rate limitations (327 IAC 19-14-3(d)) and manure application activities (327 IAC 19-14-4(e)).

The storm water management practices refer to requirements of the federal regulation for CAFOs (40 CFR 122.42(e)(2)). The CFO Guidance Manual outlines those requirements. It can be accessed using the following internet address: http://www.in.gov/idem/landquality/files/cfo_guidance_manual.pdf.

MONITORING OF PERIMTER DRAINS

1. Structures P1 & P2 will be equipped with a perimeter drain to maintain the seasonal water table below the bottom of the manure storage structures. No other drainage tile may be added to this perimeter drain. The perimeter drain will be monitored monthly, and any flow detected will be checked for presence of ammonia nitrogen, discoloration, and other potential indicators of the presence of livestock waste. The record of monitoring will be kept in the operating record. Tests evaluating the presence of ammonia nitrogen mat be conducted with a water testing field kit approved by IDEM or by laboratory analysis. If ammonia nitrogen, discoloration, or other indicators are detected during the monthly check of the perimeter drain outflow, all contaminated water will be directed back into the waste storage structure.
2. The monthly monitoring will continue for at least one year after the barn was first populated and until reviewed by the CFO Compliance Inspector during their first full compliance review. If ammonia nitrogen, discoloration, or other indicators are not detected during the first full compliance inspection (not the initial compliance assistance inspection), and the compliance inspector's concurrence that the monitoring results do not indicate a need for continued required monitoring on a regular basis, then the monthly monitoring will no longer be required. Voluntary periodic monitoring is recommended. The IDEM inspector will be sampling and monitoring the tile during all future compliance routine inspections if flow is occurring at the time of inspection.

3. If possible, the owner/operator should sample the liquid from the perimeter tile riser observation point prior to any swine being introduced to structures P1 & P2 to establish a base line test for the site.

4. If the results indicate the presence of ammonia nitrogen, discoloration, or other indicators, you will need to pump all contaminated water into the concrete manure storage pit of either structure P1 or P2. Continued monitoring will be required until the source of the contamination is identified and until the flow is free of contaminants.

ALTERNATIVE COMPLIANCE APPROACH

1. Your application contained an alternative compliance approach to the poured concrete column reinforcement design in 327 IAC 19-12-4(e). The proposed column design meets or exceeds the requirement for maintaining structural integrity. IDEM determined the proposed alternative specifications meet the performance standards in 327 IAC 19-3-1 and approve this design as an alternate compliance approach under 327 IAC 19-5-1(c).

2. Your application contained an alternative compliance approach to the concrete column footer standard design in 327 IAC 19-12-4(e). The proposed column design meets or exceeds the requirement for maintaining structural integrity. IDEM determined the proposed alternative specifications meet the performance standards in 327 IAC 19-3-1 and approve this design as an alternate compliance approach under 327 IAC 19-5-1(c).

3. Your application proposed an alternative compliance approach to the use of concrete specifications required by 327 IAC 19-12-4(e). IDEM determined the proposed alternative specifications meet the performance standards in 327 IAC 19-3-1 and have approve your alternative compliance approach under 327 IAC 19-5-1(c).

4. Your application contained an alternative compliance approach to the design of multiple structural components of the concrete manure storage tank. The design options were found to meet or exceed the requirement for maintaining structural integrity. IDEM determined the proposed alternative specifications meet the performance standards in 327 IAC 19-3-1 and approve this design as an alternate compliance approach under 327 IAC 19-5-1(c).

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

Date: June 29, 2016

To: Interested Parties

From: Joe Williams, Chief
Confined Feeding Permits Section
Office of Land Quality

Subject: Confined Feeding Operation (CFO) Permit
Farm Name – Pumps Hogs LLC
Applicant – Pumps Hogs LLC
Carroll County, Farm ID# 6912

The Indiana Department of Environmental Management (IDEM) is notifying Pumps Hogs LLC, that they have satisfied the requirements to receive coverage under a CFO Permit. The permit authorizes the construction and operation of two confinement buildings housing a maximum of 13,200 swine.

You can view the final permit and responses to comments on IDEM's Virtual File Cabinet (VFC) website. Go to http://vfc.idem.in.gov/Default.aspx and click on "Document Search". Select "CFO/CAFO #" from the Additional Fields dropdown menu and click on "Add". Type the farm ID **#6912**, in the CFO/CAFO# field. Click the Submit button.

Questions concerning issuance of this approval should be directed to the Confined Feeding Program at (317) 232-3111, (800) 451-6027 Ext 2-3111 or by FAX at (317) 232-3403.

Sincerely,

Joseph E. Williams, Chief
Confined Feeding Permits Section
Office of Land Quality

Enclosures: Responsiveness Summary

cc: Pumps Hogs LLC
Jon Templin – 5507 W 550 S Bringhurst, Indiana 46913
Michael Veenhuizen – Livestock Engineering Solutions, Inc.
Carroll County Health Department
Caroll County Board of Commissioners
Bringhurst, Indiana - Mayor/Town Council President
USDA Natural Resources Conservation Service
Don Shockley – 101 W Main St Delphi, Indiana 46923

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Michael R. Pence
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Commissioner

June 29, 2016

Response to Public Comments

Re: **Confined Feeding Operation**
Comment Letter Response Summary
Regarding:
Pumps Hogs LLC
Farm ID# 6912
Carroll County

On May 6, 2016, Pumps Hogs LLC submitted an application for a Confined Feeding Operation permit to the Indiana Department of Environmental Management (IDEM). The proposed CFO is located on the south side of County Road 500 S approximately one quarter mile east of US Highway 421 in Carroll County.

The application requests approval to construct two confinement buildings. The CFO will have a maximum operating capacity of 13,200 swine.

IDEM received public comments concerning this proposed operation throughout the time that the application was being reviewed. Due to the number of comment letters received, similar comments have been consolidated and paraphrased into one (1) Comment Letter Response Summary for efficiency purposes.

The following responses to comments have been prepared by IDEM staff.

- **Comment:** There are concerns over surface and ground water pollution resulting from this farms activity.
- **Response:** The CFO regulation provides a great deal of oversight when it comes to issues that address protecting Indiana' ground and surface water quality. This oversight begins with design and construction requirements then continues with manure handling and land application activities and concludes with self-monitoring and record keeping requirements, which are reviewed by our compliance staff during farm inspections. All of the state standards for design of waste storage structures, and the standards for land applying the manure are intended to provide a high level of water quality protection. The waste storage structures designed for this project meets the required protective design standards. Manure land application rates are based on either phosphorus or nitrogen, both of which are nutrients IDEM requires to be monitored and applied at rates based on several factors. These factors to be considered are part of the process in determining a way to minimize any loss of nutrients to runoff or leaching. This process is recommended as the best possible manner to protect water quality and recycle nutrients from the manure through producing crops which need fertilizer.

- **Comment:** Can this facility be built in a different location?
- **Response:** IDEM regulations contain setbacks specific to CFO facilities. If all IDEM setbacks and regulations are met IDEM has no discretion to deny a location based on concerns outside IDEMs jurisdiction to consider during the review process.
- **Comment:** Manure generated and land applied on this farm will end up in Wildcat Creek.
- **Response:** Manure will be land applied at agronomic rates to assure proper utilization of nutrients within the manure by field crops which minimizes the potential of nutrients leaching into groundwater and surface waters of the state. When manure application requirements are followed the chances of runoff to Wildcat Creek are very minimal. IDEM compliance inspectors visit these operations periodically and inspect their manure land application activities and records to verify the manure is handled properly.
- **Comment:** What are the restrictions for building the proposed Confined Feeding Operation where a seasonal high water table is present?
- **Response:** The base of manure storage structures, including the liner, must be completely above the seasonal high water table. The water table at this operation will be lowered with a perimeter tile to meet this requirement.
- **Comment:** What protective measures are in place regarding manure application?
- **Response:** IDEMs standards for CFO operations assure that the manure storage structures provide a method of storing manure safely until it can be applied as a crop nutrient. Both IDEM and the Office of the Indiana State Chemists have rules affecting the use of manure on farmland. Manure is considered an organic fertilizer and must be applied judiciously based on the nutrient content of the manure, the fertility levels of the field, the nutrient needs of the projected crop and applicable site use limitations (including setbacks). These standards for land applying manure are expected to provide a high level of protection of water quality.

  Protective measures in IDEM's rules include:

  A. Manure must not be applied to saturated ground.
  B. When planning land application, the owner or operator must take into account the weather forecast and the likelihood of precipitation events for the twenty-four (24) hour period prior to and after the application as well as the site soil conditions to assure that manure, litter and process wastewater are not applied prior to a rain event that, when combined with soil conditions, would likely result in runoff.
  C. Manure and soil analyses must be conducted regularly in order for the farm to manage the manure in a beneficial manner for crop production and nutrient recycling.
  D. The applicant must locate and monitor any field tile outlets under or immediately bordering the land application site. Should any evidence of manure runoff be observed immediate steps must be taken to prevent a discharge and to initiate appropriate corrective action.

- **Comment:** There are concerns over well water usage and the New Albany Shale Aquifer System. Nearby residents are concerned that this operation will consume too much water.
- **Response:** The Water Division of the Indiana Department of Natural Resources (IDNR) does have a regulatory program for water well development and usage by large volume water consumers. The IDNR has jurisdiction over groundwater usage and IDEM cannot consider this concern during or permit review process. You can contact the IDNR - Division of Water, at (317)232-4160, to learn more.

- **Comment:** The proposed operation has several neighbors that are opposed to the operation. What rights do they have?
- **Response:** IDEM reviews each application based on the specific location provided by the applicant. If the proposed site and farm design meets all state standards, IDEM must approve the permit application. In some counties land use ordinances provide citizens the opportunity to object to the county zoning or construction permit approval.

- **Comment:** Several comments expressed concern about odors, road usage, and reduced property values.

- **Response:** IDEM is given the authority through legislation and the rules to regulate CFOs based on water quality concerns. Other concerns relative to odors, road usage and property values are outside of the agencies authority to address through the permitting process.

- **Comment:** Does the proposed farm have enough acreage to land apply the swine manure that will be produced?
- **Response:** IDEM uses an animal capacity/year/acre calculation to determine the required acreage for a particular farm. This operation is proposing 13,200 swine housed in two confinement buildings with concrete pits. Based on our calculations the farm is required to have 417 acres available for land application. Pumps Hogs LLC has approximately 485.8 acres available after setbacks are calculated when using soil injection or single pass incorporation to apply the manure. They have approximately 441 acres available after setbacks are calculated when using surface application of manure methods.

  The manure will be utilized as a crop nutrient used to meet a portion of the crop nutrient requirements. A Manure Management Plan was submitted documenting that a manure sample will be collected and analyzed prior to land application and followed by an annual sampling frequency. Samples will be submitted to a private analytical laboratory qualified to analyze a manure sample for available nitrogen and phosphorous. Soil samples from each field used for manure application will be collected and analyzed. Multiple samples will be collected from each land application field depending on field size. The composite samples collected from each field will be sent to a private analytical laboratory for analysis. The expected sampling frequency is at least every four years. All or a portion of the manure will be applied to land controlled by the CFO operators. Other fields can be utilized as long as the site use requirements including soil sampling, observing setbacks and nutrient limitations are followed.

To view the specific land application areas submitted with the applications you can view public records on IDEM's Virtual File Cabinet (VFC) website. Go to http://vfc.idem.in.gov/Default.aspx and click on "Document Search". Select "CFO/CAFO #" from the Additional Fields dropdown menu and click on "Add". Type the farm ID # **6912**, in the CFO/CAFO# field.

- **Comment:** We have concerns about disease and bacteria that will be present in the liquid manure.
- **Response:** IDEM nor the United States EPA has any regulations in regard to pathogen reduction requirements for animal waste. IDEM's CFO program focuses on the obvious manure nutrient constituents and how to utilize those nutrients with producing crops. This method of nutrient recycling has proven effective to minimize the risk of surplus nutrients leaching into underlying ground water.
- **Comment:** What environmental impact do CFO's have on the soil, water and the ground where they spread the manure?
- **Response:** The manure contains valuable nutrients and organic matter that benefit the soil and the crops grown on the field where manure is applied. Historically utilized to help improve soils and crop yields, manure was the main source of plant nutrients available to farmers before commercially produced fertilizer became available. A negative environmental impact can occur when manure is applied at uncontrolled and excessive rates exceeding the soils ability to assimilate the manure.
- **Comment:** How can IDEM be certain the swine operation gets constructed like IDEM approved them?
- **Response:** A professional engineer must sign a statement upon the completion of a construction project verifying the structure was constructed as per the approved design and construction specification. IDEM also has environmental engineers that visit and inspect construction sites involving CFO construction.
- **Comment:** There is a concern regarding storm water runoff from the manure land application sites.
- **Response:** The state standards for land applying the manure are intended to provide a high level of water quality protection. These standards are imposed through IDEM for confined feeding operations and through the State Chemists Office for row crop farmers who use manure for fertilizer. Manure application rates are determined based on the nutrient content of the manure and the crop nutrient demand. Setback areas where manure is not applied are required near streams, roads, property lines and wells.
- **Comment:** What is done to prevent Pumps Hogs LLC from over application of manure?
- **Response:** IDEM has rules and regulations on manure application. Each farm is required to do a nutrient analysis of their manure at minimum once every year. Soil testing is also done every 4 years on land where manure is land applied.
  The permit contains site use restrictions that address setbacks, limits the rate of application to the land and specifies when manure cannot be applied to the land.

Applying manure in compliance with the protective restrictions of the rule will minimize the potential of any manure contaminating a surface water of the state.

- **Comment:** How is manure application setbacks measured?
- **Response:** All setbacks must be measured from the edge of the area of actual placement of the manure onto the field to the known feature listed below. Land application setbacks for manure and waste water land application are listed in the chart below.

Known Feature	Liquid Injection	Single Pass Incorporation (liquid or solid)	Liquid Incorporation (within 24 hrs.)	Surface Application To Pasture	Surface Application (solid or compost)	Liquid Surface <or = to 6% slope or residue cover	Liquid Surface > 6% Slope
Public water supply wells & public water supply surface intake structure	500	500	500	500	500	500	500
Surface water	25	25	50	50	50	100	200
Sinkholes	25	25	50	50	50	100	200
Wells	50	50	50	50	50	100	200
Drainage inlets	5	5	50	50	50	100	200
Property lines & public roads	0	0	10	10	10	50	50

- **Comment:** Will IDEM start testing the quality of water in our wells, rivers and streams if this farm is approved?
- **Response:** IDEM has a state-wide surface water quality monitoring program. The program makes adjustments to sampling plans based on information collected from previous monitoring results and any new sources that are permitted to discharge wastewater. Pumps Hogs LLC is prohibited from discharging manure or waste water from the Confined Feeding Operation and must land apply all the manure and wastewater generated.

- **Comment:** Is the drainage on the proposed site adequate?
- **Response:** All manure is collected and stored in concrete structures designed to hold manure safely until it can be land applied. A perimeter tile is proposed around both structures to lower and maintain I seasonal high ground water levels to below the base of the structure.

  Soil borings are also done on the site to document underlying soil characteristics.

- **Comment:** There is a concern over the clayey soil type in the area and the associated poor drainage and a perched water table.

- **Response:** Soil borings are completed to determine the soil characteristics and the presence or absence of a seasonal high water table at the site of the manure storage structure. The requirements 1-5 (*listed below*) apply to the soils and water table assessment:

    1. The testing must be conducted by a certified soil scientist, a certified geologist, or an engineer registered in Indiana.
    2. Soil sampling must follow guidance in the NRCS national engineering manual (NEM) IN531-2.
    3. The number of test holes varies with the type and size of the storage structure as follows:
        a. For earthen solid manure storage structures, at least 2 holes for a structure up to 1 acre in size, then an additional hole for each additional half acre.
        b. For liquid manure storage structures, at least 2 holes for a structure up to one-half acre then an additional hole for each additional half acre.
        c. For concrete solid manure storage structures, at least 2 holes regardless of size.
    4. The required depth of test holes varies as follows:
        a. At least 2 feet below the base of a concrete manure storage structure.
        b. At least 5 feet below the base of an earthen manure storage structure except in karst topography where at least one test hole must go 10 feet below the base of the storage structure or to bedrock, whichever is shallower.
    5. The applicant must submit documentation that adequately documents the soil characteristics and seasonal water table including the soil boring or test hole information required in 327 IAC 19-7-1(c)(6). A soils log identifying the soils using the Unified Soil Classification System and showing the location of the seasonal high water table must be shown on or provided with the plans for the manure storage structure. For liquid manure storage structures located within Karst areas, as identified on IDEM's Karst map or IGS map, the "Preliminary Site Evaluation of CFO in Mapped Karst Areas" investigation form (See Appendix XII) must also be completed and submitted. You may obtain site-specific information regarding the presence of karst terrain by requesting IDEM's map titled "Karst Areas of Indiana Where Confined Feeding Operations are Restricted" and the Indiana Geological Survey's (IGS) website (www.igs.indiana.edu).

- **Comment:** If the permit is approved, what is the appeal process?
- **Response:** An appeal is initiated by filing a written petition for administrative review with the Office of Environmental Adjudication (OEA) within 15 days after the mailing date of the decision. The OEA is a separate agency from IDEM and is responsible for appeal decisions. An environmental law judge in the OEA will rule on the appeal.

- **Comment:** How are deceased hogs disposed of at this operation?
- **Response:** This operation has proposed an on-site mortality composting structure. The composting structure meets IDEM's setback requirements and must meet IDEMs

operational standard of containing all byproducts of the composting activity and protecting from storm water run-on and run-off. The State Board of Animal Health have jurisdiction over the disposal of animal mortality.

- **Comment**: What about any potential ill effect on local wildlife in the North Fork of the Wildcat Creek watershed.
- **Response**: IDEM's regulations are based on water quality. The regulatory standards are recognized as minimizing any potential of negative impact to receiving streams. In addition, IDEM has never had a reported harm to non- aquatic wildlife near a manure application site.
- **Comment:** The proposed operation poses health concerns that could jeopardize my well-being.
- **Response:** The Confined Feeding Control Law gives IDEM the authority to protect the environment and human health through the adoption of regulations that protect water quality. IDEM has a general duty to protect public health, when there are specific laws and regulations that inform IDEM what those duties are. Since the proposed farm meets all of the requirements under IDEM's laws and regulations, IDEM has no discretion to deny the permit.

For more information, you can access the CFO Rule (327 IAC 19) at the following link: http://www.in.gov/legislative/iac/T03270/A00190.PDF.

If you have any questions, please contact Matthew James at (317) 234-5141 or Joe Williams at (317) 234-3540.

Sincerely,

Joseph E. Williams, Chief
Confined Feeding Permits Section
Office of Land Quality

label size 1" x 2 5/8" compatible with Avery ®5160/8160
Étiquette de format 25 mm x 67 mm compatible avec Avery ®5160/8160

65-45 larmstrong(1367)
CHARLENE AND JACK REPPERT
5940 S 560 W
ROSSVILLE IN 46065

65-45 larmstrong(1367)
MIKE ODORE
5369 W 675 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
ANDY HUFFER
5421 W 600 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
GARY SNYDER
5483 W 600 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
REBA RUNYAN
5483 W 600 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
JENNY DUNK
6122 S US HIGHWAY 421
ROSSVILLE IN 46065

65-45 larmstrong(1367)
CINDY AND BRUCE DUNK
5635 W 575 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
WAYNE REMALY
5925 S 560 W
ROSSVILLE IN 46065

65-45 larmstrong(1367)
TERRY JULIAN
4075 S 575 W
DELPHI IN 46923

65-45 larmstrong(1367)
JIM GUNTHER
4041 S 575 W
DELPHI IN 46923

65-45 larmstrong(1367)
MONICA RHINE
101S BLUFF SST
MONTICELLO IN 47960

65-45 larmstrong(1367)
RYAN AND LINDSEY RILEY
4028 S 565 W
DELPHI IN 46923

65-45 larmstrong(1367)
RICHARD HITCH
5840 W 400 S
DELPHI IN 46923

65-45 larmstrong(1367)
BRIT RESIDENCE
818 N 350 W
WEST LAFAYETTE IN 47906

65-45 larmstrong(1367)
NOLA CLAWSON
5816 W 400 S
DELPHI IN 46923

65-45 larmstrong(1367)
JOHN HART AND SUZANE DENDLE
5798 W 400 SOUTH
DELPHI IN 46923

65-45 larmstrong(1367)
KEYIA PEARSON
5686 W 400 S
DELPHI IN 46923

65-45 larmstrong(1367)
DAWN MAJORS
4078 S 565 W
DELPHI IN 46923

65-45 larmstrong(1367)
JAMES VANCE
4097 S 565 W
DELPHI IN 46923

65-45 larmstrong(1367)
RESIDENCE
4075 S 575 W
DELPHI IN 46923

65-45 larmstrong(1367)
CAROL S ELLER AND LESLIE P ELLER
5481 S 862 W
DELPHI IN 46923

65-45 larmstrong(1367)
RESIDENCE
5460 S 862 W
DELPHI IN 46923

65-45 larmstrong(1367)
KAREN L DELONG AND PETER S DELONG
5470 S 862 W
DELPHI IN 46923

65-45 larmstrong(1367)
JOHN WALKER
5402 W 575 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
RESIDENCE
5755 S US 421
ROSSVILLE IN 46065

65-45 larmstrong(1367)
SARAH DUNK
5635 W 575 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
JOSEPH DUNK AND CYRSTAL DUNK
5650 W 575 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
NICKI NICE
5930 S 560 W
ROSSVILLE IN 46065

65-45 larmstrong(1367)
JANICE ROSENBARGE
5350 W 575 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
JENNIFER NICE
5539 W 600 S
ROSSVILLE IN 46065

label size 1" x 2 5/8" compatible with Avery ®5160/8160
Étiquette de format 25 mm x 67 mm compatible avec Avery ®5160/8160

label size 1" x 2 5/8" compatible with Avery ®5160/8160
Étiquette de format 25 mm x 67 mm compatible avec Avery ®5160/8160

65-45 larmstrong(1367)
GREG GORDON
5849 S US 421
ROSSVILLE IN 46065

65-45 larmstrong(1367)
AUSTIN OLIVE
5673 W 575 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
TONY SANDIFER
5577 S 800 W
DELPHI IN 46923

65-45 larmstrong(1367)
FRED L TROSKY & GLORIA TROSKY
7386 GOLDSBERRY RD
BATTLE GROUND IN 47920

65-45 larmstrong(1367)
LINDA MILLER & GLEN MILLER
5611 S 800 W
DELPHI IN 46923

65-45 larmstrong(1367)
DAVID KESSLER & ANDREA KESSLER
7957 W 550 S
DELPHI IN 46923

65-45 larmstrong(1367)
DANIEL PATRICK
5207 S 500 W
BRINGHURST IN 46913

65-45 larmstrong(1367)
HEATHER ST. MYER
5429 S US HWY 421
DELPHI IN 46923

65-45 larmstrong(1367)
SARAH BURKLE
6972 S 450 W
ROSSVILLE IN 46065

65-45 larmstrong(1367)
MEGAN LONGENECKER
46 RAINBOW DR
ROSSVILLE IN 46065

65-45 larmstrong(1367)
RICHARD GORIS AND NAOMI L GORIS
5451 W 575 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
CASSIE PASCHAL
32 RAINBOW DR
ROSSVILLE IN 46065

65-45 larmstrong(1367)
SHELLY MILLER AND MATTHEW MILLER
5669 S 800 W
DELPHI IN 46923

65-45 larmstrong(1367)
MICHELE WOODWARD
5337 S 800 W
DELPHI IN 46923

65-45 larmstrong(1367)
JAMES TURNER
5500 W 100 N
DELPHI IN 46923

65-45 larmstrong(1367)
DOUG WOODWARD
5337 S 800 W
DELPHI IN 46923

65-45 larmstrong(1367)
AMBRE LOWERY
3605 WAUSAU CT
LAFAYETTE IN 47905

65-45 larmstrong(1367)
EDWARD BEHELER
3404 COVERTEY LN
LAFAYETTE IN 47909

65-45 larmstrong(1367)
MARK CRIPE AND CATHERINE ANN CRIPE
5445 S US HWY 421
DELPHI IN 46923

65-45 larmstrong(1367)
TYREL SLOAN
9129 E 200 N
LAFAYETTE IN 47905

65-45 larmstrong(1367)
HERB WILLIS
5935 N CAMBIA E ST
FRANKFORT IN 46041

65-45 larmstrong(1367)
RYAN ANDREWS
5266 E 500 S
CUTLER IN 46920

65-45 larmstrong(1367)
JUSTIN BLOYD
334 STATE RD 225 E
BATTLE GROUND IN 47920

65-45 larmstrong(1367)
MELISSA PEREZ
135 S 27TH ST
LAFAYETTE IN 47904

65-45 larmstrong(1367)
RESIDENCE
3966 AMELIA APT 15
LAFAYETTE IN 47905

65-45 larmstrong(1367)
NICK TAYLOR
3966 AMELIA AVE APT 15
LAFAYETTE IN 47905

65-45 larmstrong(1367)
RESIDENCE
1310 W PRAIRIE
FRANKFORT IN 46041

65-45 larmstrong(1367)
RESIDENCE
8088 N 850 W
ROSSVILLE IN 46065

65-45 larmstrong(1367)
MEGAN KARGEN
9129 E 200 N
LAFAYETTE IN 46905

65-45 larmstrong(1367)
TAMMY MELSON AND JOHN MELSON
5105 S CR 500 W
BRINGHURST IN 46913

label size 1" x 2 5/8" compatible with Avery ®5160/8160
Étiquette de format 25 mm x 67 mm compatible avec Avery ®5160/8160

label size 1" x 2 5/8" compatible with Avery ®5160/8160
Étiquette de format 25 mm x 67 mm compatible avec Avery ®5160/8160

65-45 larmstrong(1367)
BRITTANY SCHNEIDER
3440 E MICHIGANTOWN RD
FRANKFORT IN 46041

65-45 larmstrong(1367)
RESIDENCE
296 WASHINGTON ST
DAYTON IN 47941

65-45 larmstrong(1367)
SHERRI JOHNSTON
959 S FIRST ST
FRANKFORT IN 46041

65-45 larmstrong(1367)
NICK SCHNEIDER
3440 MICHIGANTOWN RD
FRANKFORT IN 46041

65-45 larmstrong(1367)
ALISHA MAISH
311 N MAUDE DR W
ROSSVILLE IN 46065

65-45 larmstrong(1367)
KRISTIN TROXELL
206 N PLANK ST
ROSSVILLE IN 46065

65-45 larmstrong(1367)
EMILY HEATER
7165 W CR 800 N
ROSSVILLE IN 46065

65-45 larmstrong(1367)
TAMMIE HAUSER
7985 W ST RD 26
ROSSVILLE IN 46065

65-45 larmstrong(1367)
MEGAN SALEM & RYAN SALEM
310 E MADISON
KIRKLIN IN 46050

65-45 larmstrong(1367)
MATT MELSON & LESLIE MELSON
3712 W CR 500 S
FRANKFORT IN 46041

65-45 larmstrong(1367)
EDITH M. DAVIDSON
350 W AUGSBURG #30
MULBERRY IN 46058

65-45 larmstrong(1367)
LETROY MILLER & DONNA MCCAIN
5292 S 500 W
BRINGHURST IN 46916

65-45 larmstrong(1367)
TERRY MILLER & MELANIE MILLER
5425 S 500 W
ROSSVILLE IN 46065

65-45 larmstrong(1367)
CHAD DENNISON & JODI DENNISON
3832 W 500 S
BRINGHURST IN 46913

65-45 larmstrong(1367)
BETH RANDALL & ROBB RANDALL
6939 N CR 100 W
FRANKFORT IN 46041

label size 1" x 2 5/8" compatible with Avery ®5160/8160
Étiquette de format 25 mm x 67 mm compatible avec Avery ®5160/8160

65-45 larmstrong(1367)
JOHN BROWN
CARROLL COUNTY COMMISSIONER
AUDITOR'S OFFICE
101 W MAIN ST
DELPHI IN 46923

65-45 larmstrong(1367)
BILL BROWN
CARROLL COUNTY COMMISSIONER
AUDITOR'S OFFICE
101 W MAIN ST
DELPHI IN 46923

65-45 larmstrong(1367)
PATRICK CLAWSON
CARROLL COUNTY COMMISSIONER
AUDITOR'S OFFICE
101 W MAIN ST
DELPHI IN 46923

65-45 larmstrong(1367)
MCC INC
% JOHN MCCORMICK
2719 W ST RD 26
ROSSVILLE IN 46065

65-45 larmstrong(1367)
BRUCE W & CINDY J DUNK
5635 W 575 S
ROSSVILLE IN 46065

65-45 larmstrong(1367)
MR MCEGG INC
4456 S US 421
DELPHI IN 46923

65-45 larmstrong(1367)
JON TEMPLLIN
5507 W 550 S
BRINGHURST IN 46913

65-45 larmstrong(1367)
CSX TRANSPORTATION INC
%TAX DEPARTMENT
500 WATER STREET C910
JACKSONVILLE FL 32202

65-45 larmstrong(1367)
JOHN L & TAMARA S TEMPLIN
INT OF IVAN L BURKLE
5507 W 500 S
BRINGHURST IN 46913

65-45 larmstrong(1367)
JOHN RICHARD MCCAIN
PO BOX 389
ROSSVILLE IN 46065

65-45 larmstrong(1367)
J E M MC INC
4456S US HWY 421
BRINGHURST IN 46913

65-45 larmstrong(1367)
DUANE L & WANDA K RINEHART
9776 N 900 W
ROSSVILLE IN 46065

65-45 larmstrong(1367)
MICHAEL D & BESSIE I RINEHART
6147 W 550 S
DELPHI IN 46923

65-45 larmstrong(1367)
SCOTT C & JOANN DEERWESTER
%DONNA DEERWESTER
11109 NESHEIM RD
DEERFIELD WI 53531

65-45 larmstrong(1367)
JANELLE DEERWESTER
6300 W 550 S
DELPHI IN 46923

65-45 larmstrong(1367)
STEPHEN R & LISA BOUGH
5316 W 500 S
BRINGHURST IN 46913

65-45 larmstrong(1367)
MICHAEL J & CAROL A PEARSON
5060 W 500 S
BRINGHURST IN 46913

65-45 larmstrong(1367)
TIMOTHY M & KIM P CLENDENEN
5485 S US HWY 421
DELPHI IN 46923

65-45 larmstrong(1367)
ETHAN & AMBER BEERY
5421 S US HWY 421
DELPHI IN 46923

65-45 larmstrong(1367)
MARK A & CATHERINE A CRIPE
5445 S US 421
DELPHI IN 46923

65-45 larmstrong(1367)
THOMAS R & HEATHER A ST MYER II
5429 S US HWY 421
DELPHI IN 46923

65-45 larmstrong(1367)
BRADLEY DEAN & BRIAN DON
BURTON
8628 W 250 S
DELPHI IN 46923

65-45 larmstrong(1367)
JOHN NELSON
5105 S CR 500 W
BRINGHURST IN 46913

65-45 larmstrong(1367)
STEVE BOUGH
5316 W 500 S
BRINGHURST IN 46913

65-45 larmstrong(1367)
CLAYTON BAILEY
2600 W 700 S
CUTLER IN 46920

65-45 larmstrong(1367)
ANITA BAILEY
6763 W 500 S
DELPHI IN 46923

65-45 larmstrong(1367)
WARREN BAILEY
6763 W 500 S
DELPHI IN 46923

65-45 larmstrong(1367)
TROY MILLER
5292 S 500 W
DELPHI IN 46923

65-45 larmstrong(1367)
DONNA MCCLAIN
5292 S 500 W
BRINGHURST IN 46913

65-45 larmstrong(1367)
TIM CLENDENEN
5485 SOUTH US HIGHWAY 421
DELPHI IN 46923

65-45 larmstrong(1367)
JENNIFER SLOAN
1804 FOXMOOR LN
LAFAYETTE IN 47905

65-45 larmstrong(1367)
ANTHONY WALL
5553 S 500 W
ROSSVILLE IN 46065

65-45 larmstrong(1367)
SUZANNE DENMARK
5798 W 400 S
DELPHI IN 46923

65-45 larmstrong(1367)
GRAHAM BOUGH
5336 SAINT LUCIA
KNOXVILLE TN 37921

65-45 larmstrong(1367)
GREG ENOCH
5822 W 415 S
OCKLEY IN 46923

65-45 larmstrong(1367)
MOLLY BIRT
818 N 350 W
WEST LAFAYETTE IN 47906

65-45 larmstrong(1367)
SKIP SLOAN
1804 FOXMOOR LANE
LAFAYETTE IN 47905

65-45 larmstrong(1367)
MEGAN KARGER
9129 E 200 N
LAFAYETTE IN 47905

65-45 larmstrong(1367)
KINSIE BAILEY
2600 W 700 S
CUTLER IN 46920

65-45 larmstrong(1367)
KIM CLENDENEN
5485 SOUTH US HIGHWAY 421
DELPHI IN 46923

65-45 larmstrong(1367)
PHYLIS CANADA
2220 E CR 380 N
FRANKFORT IN 46041

65-45 larmstrong(1367)
GORDON SKILES
3435 E 200 N
LAFAYETTE IN 47905

STAPLES
label size 1" x 2 5/8" compatible with Avery ®5160/8160
Étiquette de format 25 mm x 67 mm compatible avec Avery ®5160/8160

65-45 larmstrong(1367)
SUSIE SKILES
3435 E 200 N
LAFAYETTE IN 47905

65-45 larmstrong(1367)
SEAN BOGAERT
APT 1225
1475 BENTON BLVD
SAVANNAH GA 31407

65-45 larmstrong(1367)
KENDRA BAILEY
5553 S 500 W
ROSSVILLE IN 46065

65-45 larmstrong(1367)
HANNAH BOGAERT
APT 1225
1475 BENTON BLVD
SAVANNAH GA 31407

65-45 larmstrong(1367)
ETHAN SLOAN
8089 N 850 W
ROSSVILLE IN 46065

TAB 3

CFO / CAFO APPLICATION PACKET
Notification Affidavit
Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

INSTRUCTIONS: If a notice is required as directed in Section I.A. on the Notification Requirements form, the applicant must submit an affidavit to IDEM that certifies the notice requirements listed in Section I.B. on the Notification Requirements form were completed. The certification to IDEM must contain this completed Notification Affidavit. This affidavit is required and supersedes all previous versions. IDEM will not accept substitutes, altered, or previously supplied affidavits.

James Templin, being first duly sworn under oath, deposes and says:

1. I live in Carroll County, Indiana, and being of sound mind and over twenty-one (21) years of age I am competent to give this affidavit.
2. I hold the position of Operator (*Title of Affiant*) for Pumps Hogs LLC (*Name of Applicant or Operation*).
3. I warrant that I have the authority to sign this affidavit on my own behalf, and on behalf of any entity for which I am signing in a representative capacity.
4. As required by IC 13-18-10-2(b), or 327 IAC 19-7-1 when applicable, the applicant will mail written notice to all required persons detailed on the Notification Requirements form not more than ten (10) days after submission of the accompanying application on behalf of Pumps Hogs LLC (*Name of Applicant or Operation*).
5. The written notice mailed to all required persons will include a brief description of the application, such as permit type, location, animal type(s), animal numbers, numbers and types of barns and storage structures, and methods of manure application.

Further Affiant Saith Not.

I affirm under the penalty for perjury that the representations contained in this affidavit are true, to the best of my information and belief.

RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

Applicant signature x James Templin
Date signed (*mm, dd, yy*) x 5-5-16

State of Indiana County of Carroll

Before me, the undersigned, a Notary Public in and for said County and State, personally appeared James Templin known by me to be the person who executed the foregoing instrument, signed the same and acknowledged to me that he/she did so sign the same, and that his/her free act and deed and that the statements made in the foregoing instrument are true.

IN WITNESS WHEREOF, I have set my hand and official seal this 5th day of May, 20 16.

Signature: Romana S. Templin
Printed: Romana S. Templin
My commission expires (*month, day, year*) March 9, 2024
Residence of Carroll County, Indiana.

ATTACHMENT A

TAB 4

LAND APPLICATION AGREEMENT

This agreement is made between **Jon L & Tamara S Templin (Int of Ivan L Burkle)**, "land owner," and **Pumps Hogs LLC**, "confined feeding operation owner."

The "land owner" has given permission to the "confined feeding operation owner" to apply manure and wastewater, as a crop nutrient source, generated from the confined feeding operation and manure storage facilities on the following farm land.

----- Acres ----			USGS			
Total	**Available**	**County**	**Quadrangle**	**Section**	**Township**	**Range**
20	18.562	Carroll	Pyrmont	S3	T23N	R2W

If required by "land owner" and "confined feeding operation owner", legal description attached.

This is a written agreement for a period of "life of buildings" upon commencement between the "land owner" and "confined feeding operation owner."

The "land owner" grants the "confined feeding operation owner" the right and access to the above described crop land to apply manure and wastewater.

The "confined feeding operation owner" agrees that it will not exercise its right to spread manure and wastewater in such a way as to damage growing crops, to impair the ability of the cropland to grow productive crops or operate in such a manner that is not consistent with standard management practices and local and customary farming practice.

The "confined feeding operation owner" agrees to operate consistent with Federal and State regulations and the rules and regulations put forth by the Environmental Protection Agency and the Indiana Department of Environmental Management.

This easement and agreement shall be binding and inure to the benefits of the heirs, successors, and assigns of the parties hereto.

This agreement may be assigned by the parties hereto.

The "land owner" and "confined feeding operation owner" have the opportunity to amend this agreement in writing and initialing the amendments by all parties.

The parties have here unto set their hands and fixed their signatures this 5th day of May, 2016 (month, year)

Landowner:

LANDOWNER'S NAME:
Jon L & Tamara S Templin
(Int of Ivan Burkle)

Jon L Templin
SIGNATURE

SIGNATURE

5-5-16
DATE

Confined Feeding Operation Owner:

FACILITY NAME:
Pumps Hogs LLC

Jon Templin
SIGNATURE

SIGNATURE

5-5-16
DATE

RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF LAND QUALITY

****

STATE OF INDIANA COUNTY OF Carroll

Before me as a Notary Public in and for said County and State, Indiana,
personally appeared and being duly sworn by me upon oath, acknowledges the execution of the forgoing document. Signed and sealed this 5th day of May, 2016

Signature: Tamara S. Templin Printed Name: Tamara S. Templin

My Commission Expires (*month, day, year*): March 9, 2025 Resident of Carroll County

****

STATE OF INDIANA COUNTY OF Carroll

Before me as a Notary Public in and for said County and State, Indiana,
personally appeared and being duly sworn by me upon oath, acknowledges the execution of the forgoing document. Signed and sealed this 5th day of May, 2016

Signature: Tamara S. Templin Printed Name: Tamara S. Templin

My Commission Expires (*month, day, year*): March 9, 2024 Resident of Carroll County

****

THIS INSTRUMENT PREPARED BY: MICHAEL A. VEENHUIZEN, PRESIDENT OF LIVESTOCK ENGINEERING SOLUTIONS, INC., 2967 S HONEY CREEK ROAD, GREENWOOD, IN 46143.
"I AFFIRM, UNDER THE PENALTIES FOR PERJURY, THAT I HAVE TAKEN REASONABLE CARE TO REDACT EACH SOCIAL SECURITY NUMBER IN THE DOCUMENT, UNLESS REQUIRED BY LAW. MICHAEL A. VEENHUIZEN"

TAB 5

STATE OF INDIANA)		BEFORE THE INDIANA OFFICE OF
) SS:		ENVIRONMENTAL ADJUDICATION
COUNTY OF MARION)		
IN THE MATTER OF:	)	
	)	
OBJECTION TO ISSUANCE OF CONFINED FEEDING	)	
OPERATION CONSTRUCTION APPROVAL FARM ID	)	
#6912 / ANIMAL WASTE #AW 6584	)	
PUMPS HOGS LLC	)	
BRINGHURST, CARROLL COUNTY, INDIANA	)	
Steve and Lisa Bough, et al.	)	CAUSE NO. 16-S-J-4913
Petitioners,	)	
Pumps Hogs LLC,	)	
Permittee/Respondent,	)	
Indiana Dept. of Environmental Management,	)	
Respondent.	)	

FIRST AFFIDAVIT OF JAMES TEMPLIN

James Templin, ("Affiant"), being first duly sworn, deposes and says:

1. This affidavit is made pursuant to Indiana Rule of Trial Procedure 56(E).

2. The Affiant is owner, operator, and authorized representative of Pumps Hogs LLC, the Permittee/Respondent in the above-captioned matter.

3. The Affiant makes this affidavit based on first hand knowledge and after reasonable investigation of the matters discussed herein. The Affiant states that he is over eighteen years old and is competent to testify on the matters discussed herein.

4. Pumps Hogs LLC submitted an application for the construction and operation of a wean-to-finish pig facility in Carroll County ("Application").

5. The Application included a Notification Affidavit form, which is to be notarized.

6. A true and accurate copy of the Notification Affidavit form is attached hereto as Attachment A.

7. The Affiant certifies and affirms that he did sign the Notification Affidavit form attached hereto as Attachment A.

I AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE FOREGOING REPRESENTATIONS ARE TRUE.

Further the Affiant sayeth naught.

James Templin

STATE OF INDIANA)
) SS:
COUNTY OF ~~MARION~~ Carroll)

MIRIAM E. ROBESON
Notary Public
Carroll County, State of Indiana
Commission Expires Nov. 17, 2023

Before me, the undersigned, a Notary Public in and for said County and State, acknowledged the execution of the foregoing instrument for and on behalf of said entity.

Witness my hand and Notarial Seal this 4th day of January, ~~2016~~ 2017.

My Commission Expires: 11/17/2023 Miriam E Robeson

Miriam E Robeson, Notary Public

Residing in Carroll County, Indiana

CFO / CAFO APPLICATION PACKET RECEIVED

Notification Affidavit

Part of State Form 55051 (R2 / 6-15)
Approved by State Board of Accounts, 2015
Confined Feeding Operation (CFO)
National Pollutant Discharge Elimination System Concentrated Animal Feeding Operation (NPDES CAFO)

MAY 06 2016

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF LAND QUALITY

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Confined Feeding Section
Office of Land Quality
100 North Senate Avenue
MC 65-45, IGCN 1101
Indianapolis, Indiana 46204
(800) 451-6027 extension 2-4473

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1. I live in Carroll County, Indiana, and being of sound mind and over twenty-one (21) years of age I am competent to give this affidavit.
2. I hold the position of Operator (*Title of Affiant*) for Pumps Hogs LLC (*Name of Applicant or Operation*).
3. I warrant that I have the authority to sign this affidavit on my own behalf, and on behalf of any entity for which I am signing in a representative capacity.
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Further Affiant Saith Not.

I affirm under the penalty for perjury that the representations contained in this affidavit are true, to the best of my information and belief.

RECEIVED
MAY 06 2016
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF LAND QUALITY

Applicant signature x James Templin

Date signed (*mm, dd, yy*) x 5-5-16

State of Indiana County of Carroll

Before me, the undersigned, a Notary Public in and for said County and State, personally appeared James Templin known by me to be the person who executed the foregoing instrument, signed the same and acknowledged to me that he/she did so sign the same, and that his/her free act and deed and that the statements made in the foregoing instrument are true.

IN WITNESS WHEREOF, I have set my hand and official seal this 5th day of May,

Signature James S. Templin

Printed Joanna S. Templin

My commission expires (*month, day, year*) March 9, 2024

Residence of Carroll County, Indiana.

ATTACHMENT A

TAB 6

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

June 7, 2016

Steve Bough
5316 W. 500 S.
Bringhurst, Indiana 46913

Dear Mr. Bough:

Re: Confined Feeding Operation (CFO)
Comment Letter Regarding:
Pumps Hogs LLC.
Carroll County
Farm ID# 6912

The staff of IDEM's Confined Feeding Program would like to inform you that we received your comment letter on June 1, 2016 concerning the Confined Feeding Operation (CFO) application submitted by Pumps Hogs LLC. Farm ID # 6912, in Carroll County.

IDEM will consider your comments before making a final decision on the application. You will be notified of that decision when the permit decision is finalized.

You can view public records related to this particular CFO on IDEM's Virtual File Cabinet (VFC) website. Go to http://vfc.idem.in.gov/Default.aspx and click on "Document Search". Select "CFO/CAFO #" from the ***Additional Fields*** dropdown menu and click on "Add". Type the farm ID #, 6912, in the ***CFO/CAFO#*** field. Click the ***Submit*** button. We post documents within approximately 5 days of when we send or receive them. Contact us if you cannot locate a particular document. As a reminder, a weekly posting of pending permits is located on our agency website at: http://www.in.gov/idem/landquality/2349.htm.

For more information, you can access the CFO Rule (327 IAC 19) at the following link: http://www.in.gov/legislative/iac/T03270/A00190.PDF.

If you have any questions, please contact Matthew K. James at (317) 234-5141 or (800) 451-6027, and ask for extension 4-5141.

Sincerely,

Joseph E. Williams, Chief
Confined Feeding Permits Section
Office of Land Quality

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

June 7, 2016

Mark A. Cripe
5445 South US Highway 421
Delphi, Indiana 46923

Dear Mr. Cripe:

Re: Confined Feeding Operation (CFO)
Comment Letter Regarding:
Pumps Hogs LLC.
Carroll County
Farm ID# 6912

The staff of IDEM's Confined Feeding Program would like to inform you that we received your comment letter on June 1, 2016 concerning the Confined Feeding Operation (CFO) application submitted by Pumps Hogs LLC. Farm ID # 6912, in Carroll County.

IDEM will consider your comments before making a final decision on the application. You will be notified of that decision when the permit decision is finalized.

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Sincerely,

Joseph E. Williams, Chief
Confined Feeding Permits Section
Office of Land Quality

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

June 7, 2016

C. Ann Cripe
5445 S US Hwy 421
Delphi, Indiana 46923

Dear Ms. Cripe:

Re: Confined Feeding Operation (CFO)
Comment Letter Regarding:
Pumps Hogs LLC.
Carroll County
Farm ID# 6912

The staff of IDEM's Confined Feeding Program would like to inform you that we received your comment letter on June 1, 2016 concerning the Confined Feeding Operation (CFO) application submitted by Pumps Hogs LLC. Farm ID # 6912, in Carroll County.

IDEM will consider your comments before making a final decision on the application. You will be notified of that decision when the permit decision is finalized.

You can view public records related to this particular CFO on IDEM's Virtual File Cabinet (VFC) website. Go to http://vfc.idem.in.gov/Default.aspx and click on "Document Search". Select "CFO/CAFO #" from the ***Additional Fields*** dropdown menu and click on "Add". Type the farm ID #, 6912, in the ***CFO/CAFO#*** field. Click the ***Submit*** button. We post documents within approximately 5 days of when we send or receive them. Contact us if you cannot locate a particular document. As a reminder, a weekly posting of pending permits is located on our agency website at: http://www.in.gov/idem/landquality/2349.htm.

For more information, you can access the CFO Rule (327 IAC 19) at the following link: http://www.in.gov/legislative/iac/T03270/A00190.PDF.

If you have any questions, please contact Matthew K. James at (317) 234-5141 or (800) 451-6027, and ask for extension 4-5141.

Sincerely,

Joseph E. Williams, Chief
Confined Feeding Permits Section
Office of Land Quality

Indiana Department of Environmental Management
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Carol S. Comer
Commissioner

June 7, 2016

Lisa Bough
5316 W. 500 S.
Bringhurst, Indiana 46913

Dear Ms. Bough:

Re: Confined Feeding Operation (CFO)
Comment Letter Regarding:
Pumps Hogs LLC.
Carroll County
Farm ID# 6912

The staff of IDEM's Confined Feeding Program would like to inform you that we received your comment letter on June 1, 2016 concerning the Confined Feeding Operation (CFO) application submitted by Pumps Hogs LLC. Farm ID # 6912, in Carroll County.

IDEM will consider your comments before making a final decision on the application. You will be notified of that decision when the permit decision is finalized.

You can view public records related to this particular CFO on IDEM's Virtual File Cabinet (VFC) website. Go to http://vfc.idem.in.gov/Default.aspx and click on "Document Search". Select "CFO/CAFO #" from the ***Additional Fields*** dropdown menu and click on "Add". Type the farm ID #, 6912, in the ***CFO/CAFO#*** field. Click the ***Submit*** button. We post documents within approximately 5 days of when we send or receive them. Contact us if you cannot locate a particular document. As a reminder, a weekly posting of pending permits is located on our agency website at: http://www.in.gov/idem/landquality/2349.htm.

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If you have any questions, please contact Matthew K. James at (317) 234-5141 or (800) 451-6027, and ask for extension 4-5141.

Sincerely,

Joseph E. Williams, Chief
Confined Feeding Permits Section
Office of Land Quality

TAB 7

Indiana Department of Environmental Management
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CERTIFICATION OF RECORDS

Case: **Objection To Issuance Of Confined Feeding Operation Construction Approval Farm ID #6912 / Animal Waste #AW 6584, Pumps Hogs LLC Bringhurst, Carroll County, Indiana**

Cause No.: **16-S-J-4913**

Documents: **Multiple [See Attached Exhibit A]**

Total Number of Pages: **397**

The Virtual File Cabinet ("VFC") is the online repository for public records housed and maintained by **The Indiana Department of Environmental Management ("IDEM").** The undersigned certifies that copies of the Documents specified in the attached Exhibit A and located in the VFC at the addresses specified in Exhibit A, for which this certification is made, are true and accurate copies of the original records created and/or retained by **IDEM.** The undersigned further certifies that the records set out the office's regularly conducted and regularly recorded activities, matters observed while under a legal obligation to observe and report, or factual findings from a legally authorized investigation, and neither the source of information nor the other circumstances indicate a lack of trustworthiness.

This certification is given under Indiana Evidence Rules 803(8) and 902(4) and the Federal Rules of Evidence 803(8) and 902(4) by the custodian of the record instead of the custodian's personal appearance.

Yolonda Madison
Section Chief
IDEM Office of Records Management

12/27/16
Date

EXHIBIT A

Document	Description	VFC Content ID	Link Address	Number of Pages
Document #1	2016 Confined Feeding Operation Approval Application for Pumps Hogs LLC prepared by Livestock Engineering Solutions, Inc. sent to Office of Land Quality Confined Feeding Program, IDEM (Received May 6, 2016)	80289116	http://vfc.idem.in.gov/DocumentSearch.aspx?dDocName=80289116	197
Document #2	Approval with Construction Letter sent from Joseph E. Williams, IDEM to James Templin, Pumps Hogs LLC (June 29, 2016)	80317057	http://vfc.idem.in.gov/DocumentSearch.aspx?dDocName=80317057	27
Document #3	Confined Feeding Operation Comment Letters sent to Multiple Interested Parties from Joseph E. Williams, IDEM (June 7, 2016)	80307911	http://vfc.idem.in.gov/DocumentSearch.aspx?dDocName=80307911	37
Document #4	Multiple emails with attachments sent between Heather St. Meyer; Lisa Bough; Matthew James, IDEM; and Joseph E. Williams, IDEM (On or about May 18, 2016 to June 29, 2016) Comment Letters sent from Multiple Interested Parties to Joseph E. Williams, IDEM (On or about May 13, 2016 to May 31, 2016)	80317395	http://vfc.idem.in.gov/DocumentSearch.aspx?dDocName=80317395	136