



**PROFESSIONAL ENGINEER CERTIFICATION  
CONSTRUCTION OF CONCRETE LIQUID MANURE  
STORAGE STRUCTURES**

State Form 55053 (R2 / 10-18)  
Confined Feeding Operation

**INDIANA DEPARTMENT OF  
ENVIRONMENTAL MANAGEMENT**  
Confined Feeding Section  
Office of Land Quality  
100 North Senate Avenue, Rm 1101  
Indianapolis, Indiana 46204  
(800) 451-6027

**INSTRUCTIONS:**

1. Use this form to certify construction of a liquid manure storage structure as required in 327 IAC 19-12-4(d).
2. Fill in all information requested COMPLETELY.
3. This certification form must be completed, signed, dated, and submitted to IDEM within thirty (30) days of completing construction and prior to introduction of any animals or manure.
4. An Indiana registered professional engineer must certify this form.
5. Please submit the Completed Construction Affidavit form (State Form 52155) with this certification as required by 327 IAC 19-12-4(d).
6. Please send this form to the address listed above.
7. Please maintain a copy of these forms in your facility operating record.
8. For more information, contact IDEM's Office of Land Quality, Confined Feeding Permits Section, at (800) 451-6027 and ask for CFO Permits.

**GENERAL FACILITY INFORMATION**

Facility Name	Farm Identification Number
Date of Approval (month, day, year)	Approval Number, AW Number
Permittee Name	
Location Address (number and street)	Telephone
City	ZIP Code
County of Operation	Facility Contact E-mail
Location of Operation (nearest crossroads or mailing address)	
_____	
_____	

**GENERAL CONSTRUCTION INFORMATION**

Construction Start Date (month, day, year)	Construction Complete Date (month, day, year)
Name of Contractor (If Applicable)	Telephone Number of Contractor
Name(s) of Structure(s) (P1, P2, etc.)	

**CONSTRUCTION DETAILS:** The following aspects of the concrete structure must be reviewed on-site by the certifying engineer or an employed subordinate supervised by the certifying engineer for compliance with the approved plans and specifications, and the facility permit. The certification must include all relevant and pertinent information used to make the certification decision, including photographs. Photographs must include captions indicating activity, date the photograph was taken, and cardinal direction.

1.	SUBGRADE PREPARATION	Yes	No
a.	Was the subgrade smoothly graded and prepared as required by the plans and specifications?	<input type="checkbox"/>	<input type="checkbox"/>
b.	Was the subgrade free of chips, sawdust, debris, standing water, ice, snow, extraneous oil, mortar, or other harmful substances or coatings?	<input type="checkbox"/>	<input type="checkbox"/>
c.	Was the subgrade surface free from plastic, mud, dried ground, uncompacted fill, and frozen ground?	<input type="checkbox"/>	<input type="checkbox"/>
d.	Was the subgrade dampened prior to concrete placement?	<input type="checkbox"/>	<input type="checkbox"/>
e.	Was the subgrade inspected and approved for concrete placement?	<input type="checkbox"/>	<input type="checkbox"/>

f.	If any field tile or drainage outlets were encountered during excavation, were they cut back at least fifty (50) feet from the edge of the concrete pit and blocked or rerouted in accordance with any applicable local approval requirements?	<input type="checkbox"/>	<input type="checkbox"/>
g.	Provide additional information regarding the subgrade preparation including photographs. Please attach additional sheets/information if necessary.  _____  _____		
<b>2.</b>	<b>PERIMETER DRAIN</b>	<b>Yes</b>	<b>No</b>
a.	Was the perimeter drain system installed as specified on the approved drawings?	<input type="checkbox"/>	<input type="checkbox"/>
b.	Was the observation/standpipe installed?	<input type="checkbox"/>	<input type="checkbox"/>
c.	Was a shutoff valve installed?	<input type="checkbox"/>	<input type="checkbox"/>
d.	Was the drain pipe installed within a granular fill?	<input type="checkbox"/>	<input type="checkbox"/>
e.	Was a pump(s) installed if applicable? Verify the pump installed is the permanent pump as specified in the approved design.	<input type="checkbox"/>	<input type="checkbox"/>
f.	Is a backup pump(s) available on-site?	<input type="checkbox"/>	<input type="checkbox"/>
g.	Were pump(s) connected to an electric supply?	<input type="checkbox"/>	<input type="checkbox"/>
h.	Provide additional information on the perimeter drain system installation. Provide example photographs of the trench depth, presence of granular fill, outfall location, and sump. Please attach additional sheets/information if necessary.  _____  _____		
<b>3.</b>	<b>WALL FOOTINGS</b>	<b>Yes</b>	<b>No</b>
a.	Were the footings constructed to the approved dimensions?	<input type="checkbox"/>	<input type="checkbox"/>
b.	Was the specified reinforcing steel installed if applicable?	<input type="checkbox"/>	<input type="checkbox"/>
c.	Were the specified dowel bars installed?	<input type="checkbox"/>	<input type="checkbox"/>
d.	Was the specified waterstop installed?	<input type="checkbox"/>	<input type="checkbox"/>
e.	Provide additional information on wall footing construction. Provide example photographs of wall footing excavations (with depth measurements), dowel bars, and water stop placement. Please attach additional sheets/information if necessary.  _____  _____		

4. WALLS		Yes	No
a.	Were the walls constructed to the approved dimensions?	<input type="checkbox"/>	<input type="checkbox"/>
b.	Was the specified reinforcing steel installed?	<input type="checkbox"/>	<input type="checkbox"/>
c.	Was it located correctly within the width of the wall?	<input type="checkbox"/>	<input type="checkbox"/>
d.	Were the specified dowel bars installed?	<input type="checkbox"/>	<input type="checkbox"/>
e.	Was the specified top of wall beam reinforcement installed?	<input type="checkbox"/>	<input type="checkbox"/>
f.	Was the specified waterstop installed?	<input type="checkbox"/>	<input type="checkbox"/>
g.	Were wall joints located at the specified locations?	<input type="checkbox"/>	<input type="checkbox"/>
h.	Provide additional information on wall construction. Provide example photographs of rebar showing spacing (with distance measurements), dowels, top of wall beam reinforcement, and water stop placement. Please attach additional sheets/information if necessary.  _____  _____  _____		
5. COLUMN FOOTINGS		Yes	No
a.	Were the footings constructed to the approved dimensions?	<input type="checkbox"/>	<input type="checkbox"/>
b.	Was the specified reinforcing steel installed if applicable?	<input type="checkbox"/>	<input type="checkbox"/>
c.	Were the specified dowel bars installed?	<input type="checkbox"/>	<input type="checkbox"/>
d.	Provide additional information on column footings construction. Provide photographs of rebar showing spacing (with distance measurements), column footing excavations (with depth measurements), and dowel placement. Please attach additional sheets/information if necessary.  _____  _____  _____		
6. COLUMNS		Yes	No
a.	Were the columns constructed to the approved dimensions?	<input type="checkbox"/>	<input type="checkbox"/>
b.	Was the specified reinforcing steel installed?	<input type="checkbox"/>	<input type="checkbox"/>
c.	Was it located correctly within the column?	<input type="checkbox"/>	<input type="checkbox"/>
d.	Were the specified dowel bars installed?	<input type="checkbox"/>	<input type="checkbox"/>
e.	Provide additional information on the construction of the columns. Provide photographs of rebar showing spacing (with distance measurements) and dowel placement. Please attach additional sheets/information if necessary.  _____  _____  _____		

7.	FLOOR SLABS	Yes	No
a.	Was the floor/slab constructed to the approved dimensions?	<input type="checkbox"/>	<input type="checkbox"/>
b.	Was the specified reinforcing steel installed?	<input type="checkbox"/>	<input type="checkbox"/>
c.	Was it correctly located within the floor/slab on concrete bricks, corrosion resistant metal chairs or plastic chairs?	<input type="checkbox"/>	<input type="checkbox"/>
d.	Was the specified waterstop installed?	<input type="checkbox"/>	<input type="checkbox"/>
e.	Were the floor joints installed at the specified locations?	<input type="checkbox"/>	<input type="checkbox"/>
f.	<p>Provide additional information on floor slab construction. Provide photographs of reinforcing steel placement (showing how the rebar is elevated by chairs or concrete bricks). Provide photographs of rebar showing spacing (with distance measurements), water stop placement, and dowel placement. Please attach additional sheets/information if necessary.</p> <hr/> <hr/> <hr/>		
8.	CONCRETE	Yes	No
a.	<p>Were batch plant tickets collected, reviewed, and did they indicate the specified design mix required?</p> <p>Does the batch plant ticket indicate the time when the cement was introduced to the aggregate?</p>	<input type="checkbox"/>  <input type="checkbox"/>	<input type="checkbox"/>  <input type="checkbox"/>
b.	<p>Did the concrete mix contain an acceptable aggregate, six (6) bags of cement per cubic yard and no more than forty-six (46) pounds (5.5 gallons) of water per bag of cement used (including moisture in the aggregate) used as required by NRCS Construction Specifications-Concrete Construction or the approved concrete construction specifications?</p> <p>If “No”, were concrete compressive strength tests performed to meet 4,000 psi after twenty-eight (28) days?</p>	<input type="checkbox"/>  <input type="checkbox"/>	<input type="checkbox"/>  <input type="checkbox"/>
c.	Were air entrainment measurements between four (4) to seven (7) percent as required by NRCS Construction Specifications-Concrete Construction or the approved concrete construction specifications?	<input type="checkbox"/>	<input type="checkbox"/>
d.	Were slump measurements between three (3) to five (5) inches as required by NRCS Construction Specifications-Concrete Construction or the approved concrete construction specifications?	<input type="checkbox"/>	<input type="checkbox"/>
e.	<p>Was a super plasticizer used?</p> <p>If “Yes” above, are concrete slump measurements before and after the addition of the super plasticizer attached?</p>	<input type="checkbox"/>  <input type="checkbox"/>	<input type="checkbox"/>  <input type="checkbox"/>
f.	<p>Was the concrete discharged into the forms, vibrated and spaded within ninety (90) minutes (forty-five (45) minutes when air temperatures are above 85° F) after the cement was introduced into the aggregates?</p> <p>Was the concrete introduced into the forms in accordance with the approved concrete construction specifications?</p>	<input type="checkbox"/>  <input type="checkbox"/>	<input type="checkbox"/>  <input type="checkbox"/>
g.	Was the concrete cured as required in the approved concrete construction specifications?	<input type="checkbox"/>	<input type="checkbox"/>
h.	Were the form removal procedures followed as specified in the approved concrete construction specifications?	<input type="checkbox"/>	<input type="checkbox"/>
i.	Were the concreting in cold/hot weather procedures followed as specified in the approved concrete construction specifications?	<input type="checkbox"/>	<input type="checkbox"/>
j.	Was the use of calcium chloride prohibited as required in the approved concrete construction specification?	<input type="checkbox"/>	<input type="checkbox"/>

k.	Was backfilling against new concrete walls performed as specified in the approved concrete construction specifications and project specifications?	<input type="checkbox"/>	<input type="checkbox"/>
l.	Were any cracks or deformation of the concrete observed after twenty-eight (28) days of curing?	<input type="checkbox"/>	<input type="checkbox"/>
m.	Were repairs performed on any observed damage to the concrete (e.g., honeycomb)	<input type="checkbox"/>	<input type="checkbox"/>
n.	Provide additional information on concrete specifications, copies of batch plant tickets for each truck, percent air content, and slump testing results and test methods used. Provide photographs of the concrete floor after twenty-eight (28) days, detailing any cracks or deformations. If the concrete was repaired, explain how it was repaired. Please attach additional sheets/information if necessary.		

**9. SUMMARY**

Please provide a summary of the project. Provide an explanation for any items answered "No" in the above sections. Specify which alternative compliance approach options were used in this project if any were approved. Please submit copies of any other supporting information.

---



---



---



---



---

**10. CONSTRUCTION CHANGES (Requires Facility Change (State Form 50209))**

Any deviation from the approved plans and specifications must be submitted with a Facility Change Notification (State Form 50209). Any major changes to the design, such as additional tanks or change in size of tanks, must have received approval from IDEM prior to construction. Construction of manure structures not meeting the approved plans, specifications, and the facility permit may result in an enforcement action against the facility. Please attach additional sheets/information if necessary.

---



---



---



---

-Remainder of Page Left Intentionally Blank.-

<b>11.</b>	<b>PROFESSIONAL ENGINEER'S CERTIFICATION STATEMENT</b>
------------	--

I, \_\_\_\_\_ (*your name*), being a Registered Professional Engineer (PE) in the State of Indiana, do hereby state that, to the best of my knowledge, the responses provided in this checklist for \_\_\_\_\_ (*type of structure*), constructed at \_\_\_\_\_ (*facility name*), are true, accurate, complete, and contain all information required by the permit and appropriate regulations. I or my regularly employed and directly supervised subordinates have overseen the construction inspection activities. These activities have been documented to be in compliance with the permit/approval for the facility.

Name: _____	Date: _____ <i>(month, day, year)</i>
Signature: _____	
By signing this form, I attest that the information provided above is true and accurate pursuant to 864 IAC 1.1-7-3(a).	

License Number \_\_\_\_\_

Expiration Date (*month, day, year*) \_\_\_\_\_

**“SEAL”**