Arkansas Secretary of State
Mark Martin

State Capitol Building ♦ Little Rock, Arkansas 72201-1094 ♦ 501-682-3409

Certificate of Good Standing

I, Mark Martin, Secretary of State of the State of Arkansas, and as such, keeper of the records of domestic and foreign corporations, do hereby certify that the records of this office show

COON TREE FARM, INC.

authorized to transact business in the State of Arkansas as a For Profit Corporation, filed Articles of Incorporation in this office June 26, 2018.

Our records reflect that said entity, having complied with all statutory requirements in the State of Arkansas, is qualified to transact business in this State.

In Testimony Whereof, I have hereunto set my hand and affixed my official Seal. Done at my office in the City of Little Rock, this 18th day of July 2018.

Mark Martin

Mark Martin
Secretary of State

Online Certificate Authorization Code: 8669a2a7c0bc9f3

To verify the Authorization Code, visit sos.arkansas.gov

July 18, 2018

To: Adjacent Landowners

From: Philip Campbell
Coon Tree Farm Inc.
8530 Coon Tree RD.
Ozark AR. 72949
coontreefarminc@outlook.com

Please be aware that I am requesting an APC&EC Regulation 5 permit from the Arkansas Department of Environmental Quality to build a swine facility in Franklin County. Part of the liquid manure permit regulations require that I give notice to adjacent landowners when I apply for a permit.

The facility will be located at Latitude 35° 23' 31.21" N and Longitude -93° 44' 10.69" W in the NE ¼ of Section 2, Township 8 North, Range 26 West. This facility is designed to be a sow farrowing operation that will house a total of 10,374 pigs, sows, gilts and boars. All effluent will be stored in under house pits before land application, eliminating outside traditional settling basins and holding ponds.

Land application will be on row crop fields in Franklin and Johnson counties. You are receiving this letter because you are listed as either the owner or operator of land adjacent to these row crop fields. Spreading on this land will be seasonal, not on a day to day basis.

Please contact myself, by phone or email, if you have any questions.

Thank you,

Philip Campbell

Philip Campbell

Adjacent Landowner letters have been sent to the following individuals.

Franklin County

USA CORPS OF ENGINEERS

NEW SUBIACO ABBEY AND ACADEMY

RICHARD JOHN PLUGGE

TOMMY MCCORMICK

MARTIN A MERSHON

NICHOLAS DURNING

CHARLES E PLUGGE

LAWRENCE G PLUGGE

MICHAEL WERNER

PLUGGE BROTHERS JOINT VENTURE

ELLA MEECE

DAVID BALL

CARL E EMERICK

JANE EMERICK

Johnson County

JACKIE TRAYLOR

CLAY T BRYANT

JACQUELINE D ENGLISH

JOE W HOING

MONTANA HOING

SAVANNAH FISHER
WILLIAM B YATES

RICHARD JOHN PLUGGE

SUE DAVIS LOWE REVOCABLE LIVING TRUST

VIRGINIA A DAVIS

JAMES D STYLES

ALLISON DYKE PICKELL

ANNA BETH THOMPSON

JOHN BENTON DYKE JR

STEVEN LEE ESTEP

RICHARD JOHN PLUGGE

THOMAS B ROGERS LIVING TRUST

NEIL WALTERS

MINNIE MAURINE WALTERS TESTAMENTARY IRREVOCABLE TR

U S ARMY CORPS OF ENGINEERS

Ronald Krane

Coon Tree Farm, Inc.
HC 72 Box 2
Vendor, AR 72683

CERTIFIED MAIL®

7015 0640 0006 0325 0027

UNITED STATES POSTAGE
PITNEY BOWES
02 1P $ 007.41⁰
0004723921 JUL 20 2018
MAILED FROM ZIP CODE 72655

Arkansas Department of Environmental Quality
Office of Water Quality - Water Permits
No-Discharge Section
Regulation 5 Permit
5301 Northshore Drive
North Little Rock, AR 72118-5317

GO RazorBacks
Central AR P&DC 722
SAT 21 JUL 2018 AM

July 17, 2018

Arkansas Department of Health
Engineering Division, Slot #37
4815 West Markham Avenue
Little Rock, AR 72205

Dear Madam or Sir,

I have made an application to the Arkansas Department of Environmental Quality to construct a new swine facility located in Franklin County, Arkansas. This facility will be located at Latitude 35° 23' 31.21" N and Longitude -93° 44' 10.69" W in the NE ¼ of Section 2, Township 8 North, Range 26 West.

This will be a farrowing/replacement gilt facility that will house a total of 10,374 pigs, sows, gilts and boars. Land application sites will be row crop fields in Franklin and Johnson Counties.

Please see the attached buffered land application maps, accompanying field information table and topographical maps for all fields.

If you have any questions or concerns, please contact me at (870) 715-0754 or coontreefarminc@outlook.com

Sincerely,

Philip Campbell

Philip Campbell
Coon Tree Farm Inc.

Encl: Buffered Land Application maps
Field Information table
Topographic maps

Cc: Arkansas Department of Environmental Quality

Field Information

Field Names and/or Numbers	Owner/Operator	¼ Section	Section	Township	Range	Latitude	Longitude	County	Spreadable Acres
Nichols 2	Ricky Hurst/Ricky Hurst	NE	2	8N	26W	35°23'21.48"N	93°44'2.211"W	Franklin	12.4
Hill	Ricky Hurst/Ricky Hurst	SW	36	9N	26W	35°23'44.176"N	93°43'8.792"W	Franklin	30.3
Little	Ricky Hurst/Ricky Hurst	SE	36	9N	26W	35°23'44.241"N	93°42'57.815"W	Franklin	72.4
Round Wood	Jeri Nunn Counihan/ Ricky Hurst	SW	36	9N	26W	35°23'44.322"N	93°43'16.849"W	Franklin	46.1
Holoway	Ricky Hurst/Ricky Hurst	SE	36	9N	26W	35°23'49.084"N	93°42'37.166"W	Franklin	11.4
Riable	Michael Sommers/Ricky Hurst	SE	36	9N	26W	35°23'48.792"N	93°42'42.771"W	Franklin	12.0
Grey 2	Ricky Hurst/Ricky Hurst	NW/SW	25	9N	25W	35°24'37.087"N	93°37'4.48"W	Johnson	4.0
Grey 3	Ricky Hurst/Ricky Hurst	NW/SW	25	9N	25W	35°24'46.503"N	93°36'54.902"W	Johnson	60.3
Grey 4	Ricky Hurst/Ricky Hurst	NW	25	9N	25W	35°24'51.078"N	93°36'43.081"W	Johnson	0.6
ClarkGrey (ClkGrey1)	Clark Gray/Ricky Hurst	SW	25	9N	25W	35°24'32.203"N	93°37'10.647"W	Johnson	14.4
Ganz 1	Frederick Ganz/Ricky Hurst	NW	30	9N	24W	35°24'57.281"N	93°35'59.011"W	Johnson	28.7
Ganz 2	Frederick Ganz/Ricky Hurst	NW	30	9N	24W	35°24'45.768"N	93°35'59.201"W	Johnson	53.9
Ganz 3	Frederick Ganz/Ricky Hurst	NW	30	9N	24W	35°24'43.02"N	93°35'44.292"W	Johnson	26.4
Whittle	Ricky Hurst/Ricky Hurst	SE/SW	31/32	9N	25W	35°23'41.723"N	93°41'39.607"W	Johnson	141.1
Lee	Ricky Hurst/Ricky Hurst	NW	6	8N	25W	35°23'15.45"N	93°42'27.316"W	Johnson	43.2
Patterson	Ronald Patterson/Ricky Hurst	NW/NE	6	8N	25W	35°23'21.325"N	93°42'6.914"W	Johnson	76.0
Yates	Ricky Hurst/Ricky Hurst	NW/SW	31/30	9N	25W	35°24'18.822"N	93°42'27.633"W	Johnson	40.1
Sugar Hill 1	Lawson Hembree/Ricky Hurst	SE	25	9N	26W	35°24'41.015"N	93°42'58.554"W	Franklin	11.2
Sugar Hill 2	Lawson Hembree/Ricky Hurst	SW	25	9N	26W	35°24'40.804"	93°43'12.218"W	Franklin	21.7
Sugar Hill 3	Lawson Hembree/Ricky Hurst	SW	25	9N	26W	35°24'30.394"N	93°43'11.967"W	Franklin	33.4
Sugar Hill 5	Lawson Hembree/Ricky Hurst	SE	25	9N	26W	35°24'27.708"N	93°42'56.067"W	Franklin	28.7
Sugar Hill 9	Lawson Hembree/Ricky Hurst	NE/SE	36/25	9N	26W	35°24'11.041"N	93°42'42.177"W	Franklin	72.6
Sugar Hill 10	Lawson Hembree/Ricky Hurst	NE	36	9N	26W	35°24'13.545"N	93°42'56.179"W	Franklin	75.3
Blue Hill 1	Ricky Hurst/Ricky Hurst	NE/NW	31	9N	25W	35°24'9.51"N	93°41'54.299"W	Johnson	81.9
Blue Hill 2	Ricky Hurst/Ricky Hurst	NE	31	9N	25W	35°24'0.181"N	93°41'34.79"W	Johnson	23.3
Hoing	Ricky Hurst/Ricky Hurst	NW	31	9N	25W	35°24'9.606"N	93°42'22.339"W	Johnson	17.7

Field Information

Field Names and/or Numbers	Owner/Operator	¼ Section	Section	Township	Range	Latitude	Longitude	County	Spreadable Acres
Wilson 1	Susan Bryant/Donald Hurst	SW	36	9N	26W	35°23'45.642"N	93°43'34.078"W	Franklin	33.3
Wilson 2	Lee Clark/Donald Hurst	SE	36	9N	26W	35°23'36.701"N	93°42'42.507"W	Franklin	32.2
Blackburn	Donald Hurst/Donald Hurst	SE	31	9N	25W	35°23'47.842"N	93°41'55.06"W	Johnson	30.3
Don's	Donald Hurst/Donald Hurst	NE	31	9N	25W	35°24'14.162"N	93°41'43.914"W	Johnson	10.4
T 1879	Mark Woolsey/Ricky Hurst	NW	2	8N	26W	35°23'26.45"N	93°44'35.503"W	Franklin	34.0
T 1880	Mark Woolsey/Ricky Hurst	NE	2	8N	26W	35°23'26.102"N	93°43'46.538"W	Franklin	30.6
T 1882	Mark Woolsey/Ricky Hurst	NE	35	9N	26W	35°24'4.912"N	93°43'44.913"W	Franklin	36.4
T 1957	Mark Woolsey/Ricky Hurst	NW	36	9N	26W	35°24'17.027"N	93°43'19.589"W	Franklin	68.1
T 1955	Mark Woolsey/Ricky Hurst	SW	36	9N	26W	35°23'44.267"N	93°43'26.01"W	Franklin	39.8
Ourcut 1	Mary E Clausi/Randall Hurst	SW	35	9N	26W	35°23'51.949"N	93°44'11.017"W	Franklin	4.6
Ourcut 2	Mary E Clausi/Randall Hurst	SW/SE	35	9N	26W	35°23'38.295"N	93°44'12.551"W	Franklin	48.1
1 (Wilson 2)	Randall Hurst/Randall Hurst	SE	35	9N	26W	35°23'51.429"N	93°44'0.824"W	Franklin	32.2
2 (Wilson 2)	Randall Hurst/Randall Hurst	SE	35	9N	26W	35°23'37.929"N	93°43'58.333"W	Franklin	19.0
1 (Wilson 1)	Randall Hurst/Randall Hurst	SE	35	9N	26W	35°23'50.806"N	93°43'46.287"W	Franklin	39.5
2 (Wilson 1)	Randall Hurst/Randall Hurst	SE	35	9N	26W	35°23'38.264"N	93°43'45.779"W	Franklin	38.6
Mitchell	Johnny Mitchell/Randall Hurst	NE	3	8N	26W	35°23'25.596"N	93°44'48.052"W	Franklin	31.8
Trailer	Randall Hurst/Randall Hurst	NW	31	9N	26W	35°24'12.261"N	93°42'10.673"W	Johnson	31.7
Shine 1	Randall Hurst/Randall Hurst	NW/NE	32	9N	25W	35°24'15.801"N	93°41'5.936"W	Johnson	4.6
Shine 2	Randall Hurst/Randall Hurst	NW/NE	32	9N	25W	35°24'14.487"N	93°40'58.263"W	Johnson	22.9
Shine 3	Randall Hurst/Randall Hurst	NW/NE/SW	32	9N	25W	35°24'2.144"N	93°40'56.659"W	Johnson	80.4
Betty's	Randall Hurst/Randall Hurst	NW/NE	32/31	9N	25W	35°24'9.549"N	93°41'25.076"W	Johnson	50.7
Hayes 2	Michael Hayes/Randall Hurst	All/SW	23/24	9N	25W	35°25'20.464"N	93°37'18.875"W	Johnson	111.5
Hayes 4	Michael Hayes/Randall Hurst	SW/NW	24/25	9N	25W	35°25'2.379"N	93°37'2.192"W	Johnson	62.6

July 18, 2018

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From: Philip Campbell
Coon Tree Farm Inc.
8530 Coon Tree RD.
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coontreefarminc@outlook.com

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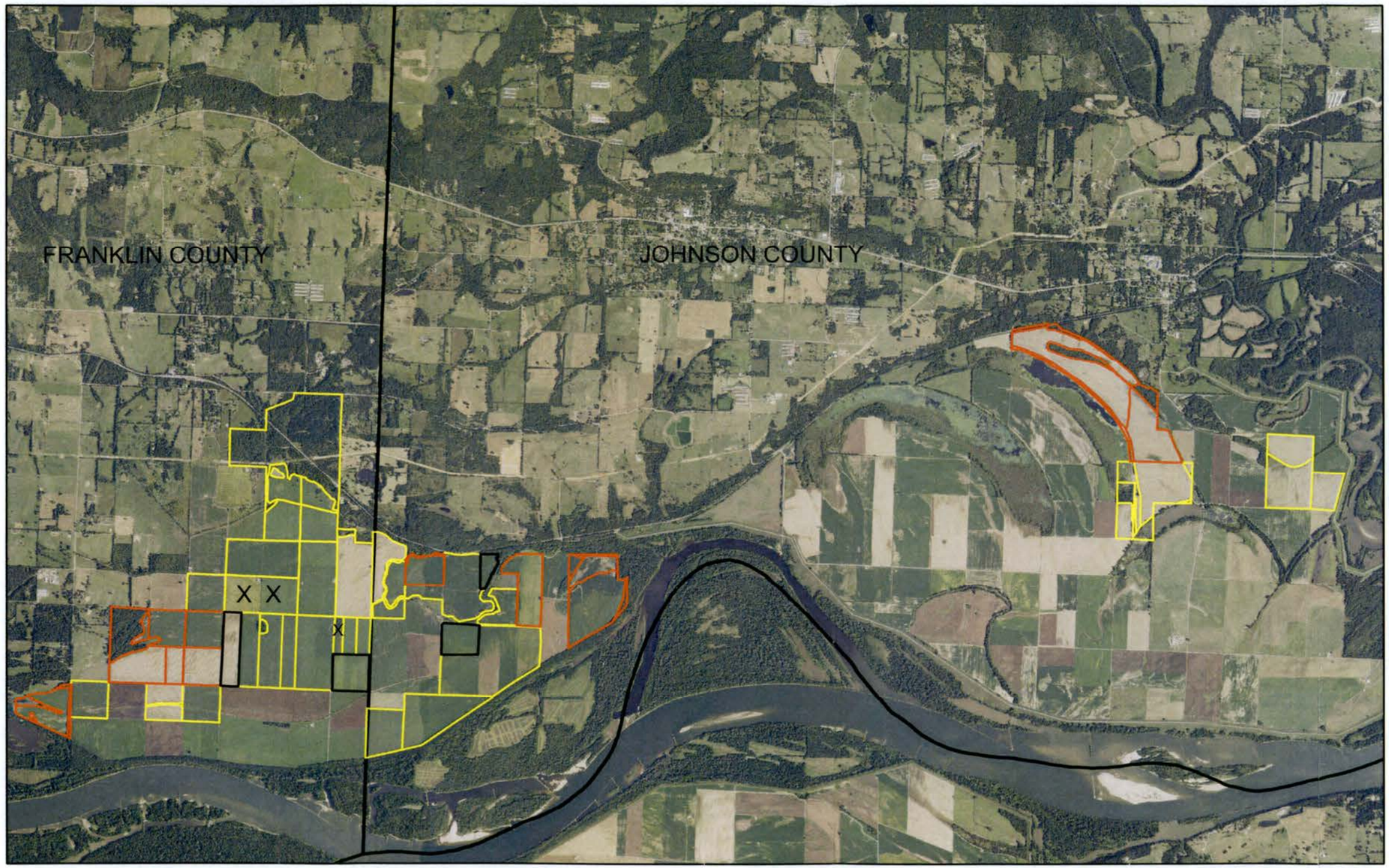
NEIL WALTERS

MINNIE MAURINE WALTERS TESTAMENTARY IRREVOCABLE TR

U S ARMY CORPS OF ENGINEERS

Ronald Krane

Overview Map



Legend

- Donald Hurst
- Randall Hurst
- Ricky Hurst
- County Line

X - Fields not included in plan

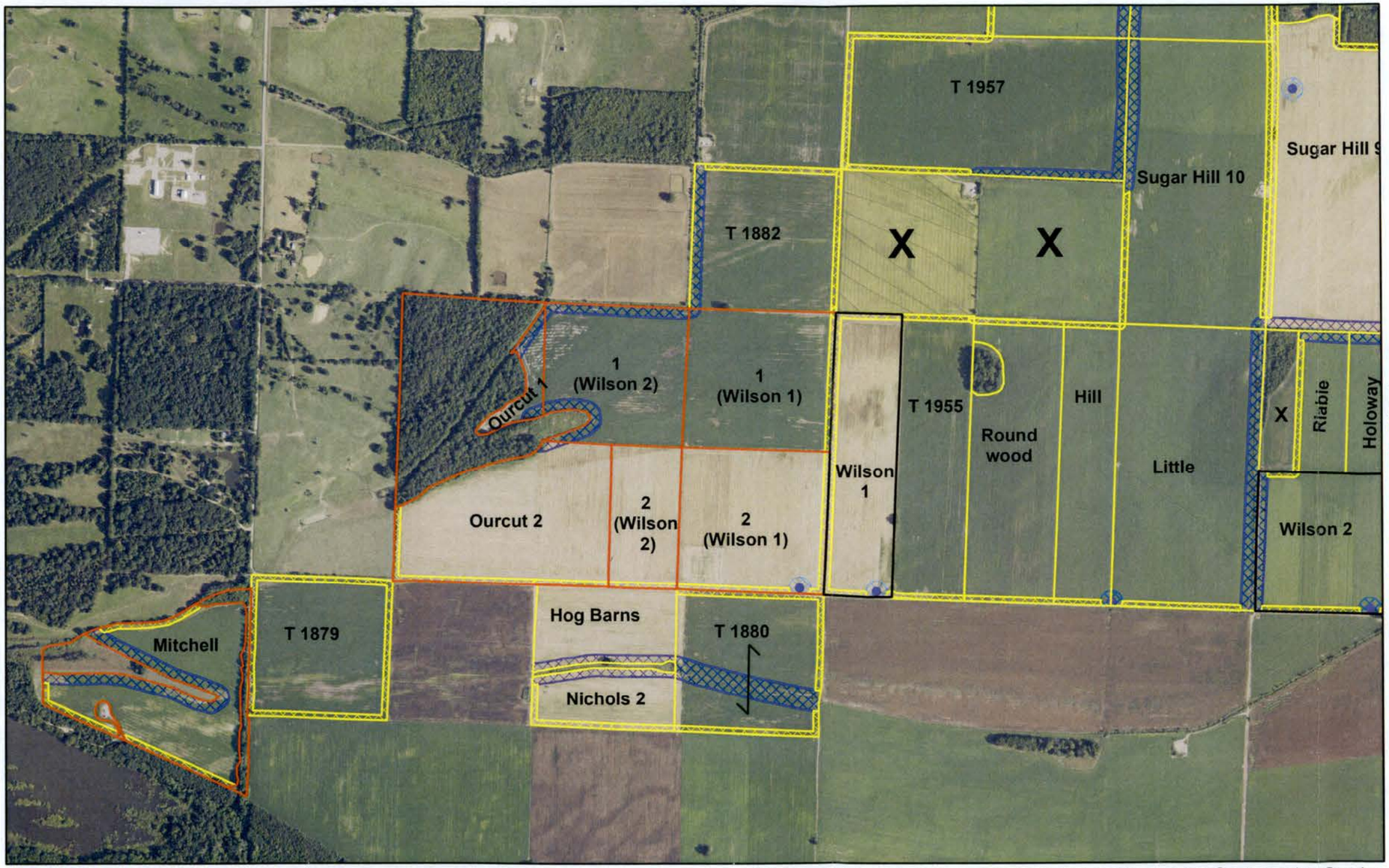
Prepared with assistance from USDA-Natural Resources Conservation Service

2,900 0 2,900 5,800 8,700 11,600
Feet

N

Buffered Farm Map

Sixmile Creek - Arkansas River Watershed
Sections 2 & 3, Township 8N, Range 26 W
Sections 35 and 36, Township 9N, Range 26W



Legend

- Donald Hurst
- Randall Hurst
- Ricky Hurst
- 50 Ft Buffer Franklin
- 100 Ft Buffer Franklin
- 50 Ft Buffer Johnson
- 100 Ft Buffer Johnson
- Agricultural Well Head
- 100 Ft Buffer Agri Well Head
- County Line

X - Fields not included in plan

Prepared with assistance from USDA-Natural Resources Conservation Service

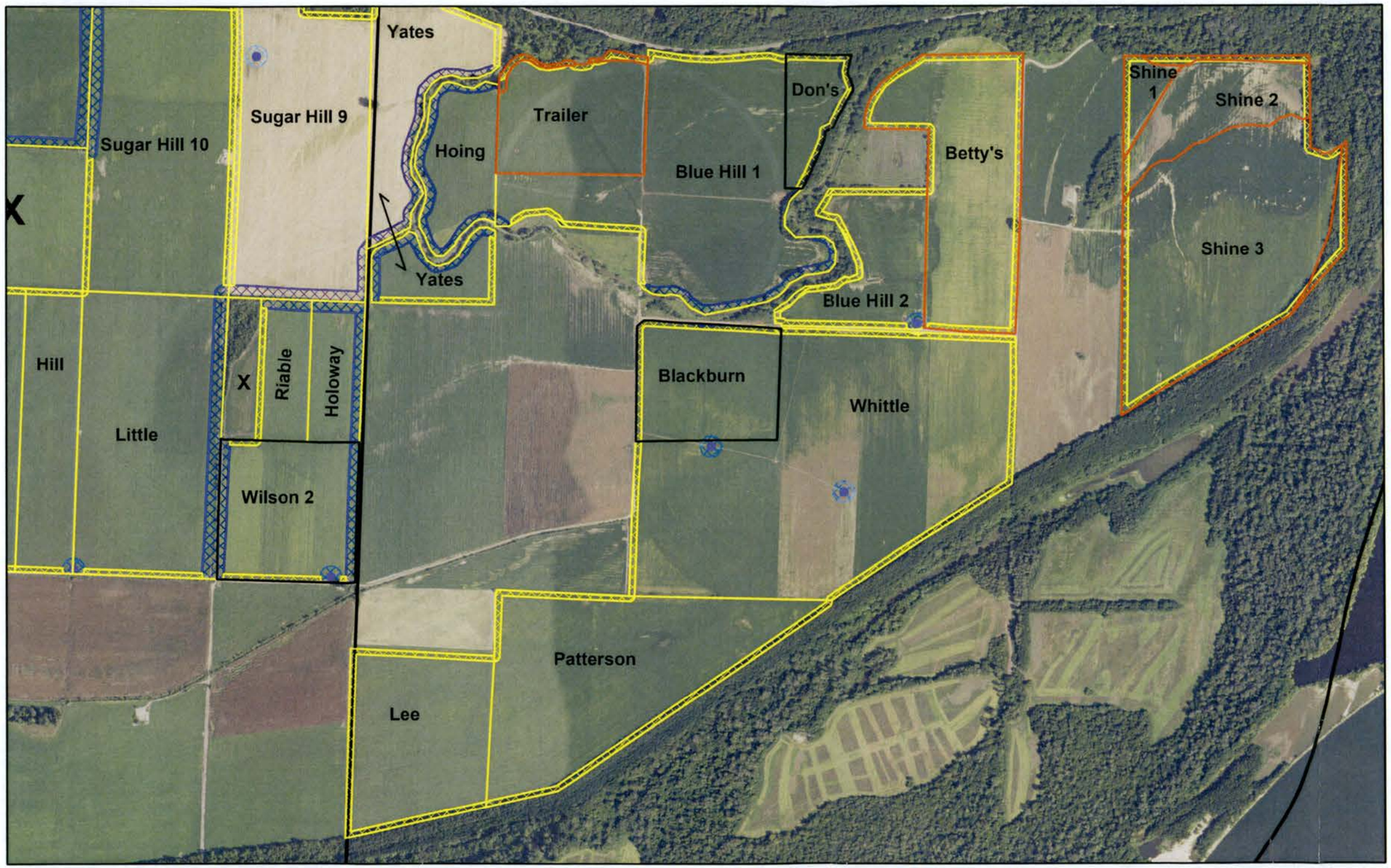
770 0 770 1,540 2,310 3,080 Feet

N

Buffered Farm Map

Sixmile Creek - Arkansas River Watershed

Sections 30, 31 & 32, Township 9N, Range 25W
Section 36, Township 9N, Range 26W
Section 6, Township 8N, Range 25W



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- 100 Ft Buffer Agri Well Head
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X - Fields not included in plan

Prepared with assistance from USDA-Natural Resources Conservation Service

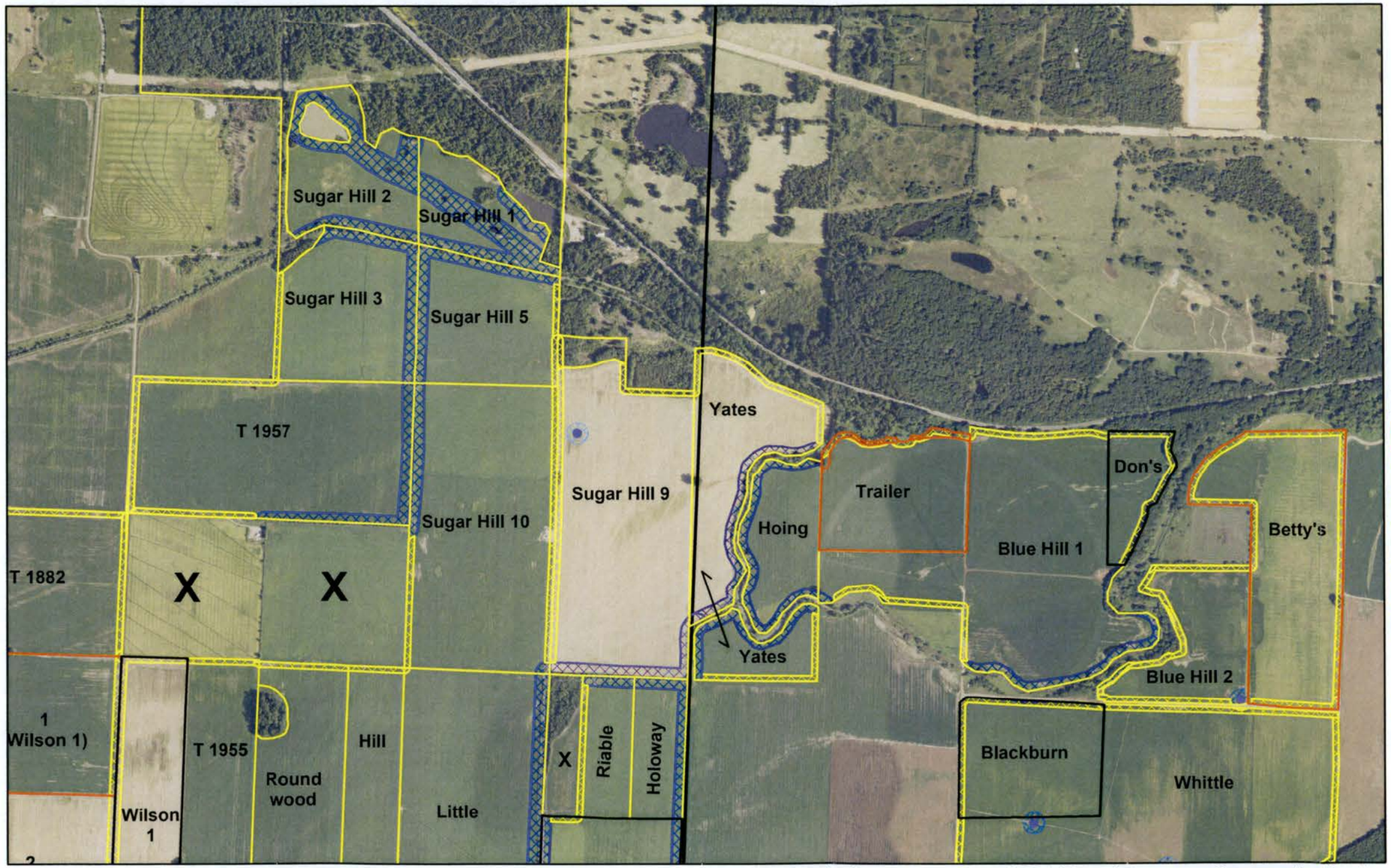
770 0 770 1,540 2,310 3,080 Feet

N

Buffered Farm Map

Sixmile Creek - Arkansas River Watershed

Sections 31 & 32, Township 9N, Range 25W
Sections 25, 35 & 36, Township 9N, Range 26W



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- 100 Ft Buffer Agri Well Head
- County Line

X - Fields not included in plan

Prepared with assistance from USDA-Natural Resources Conservation Service

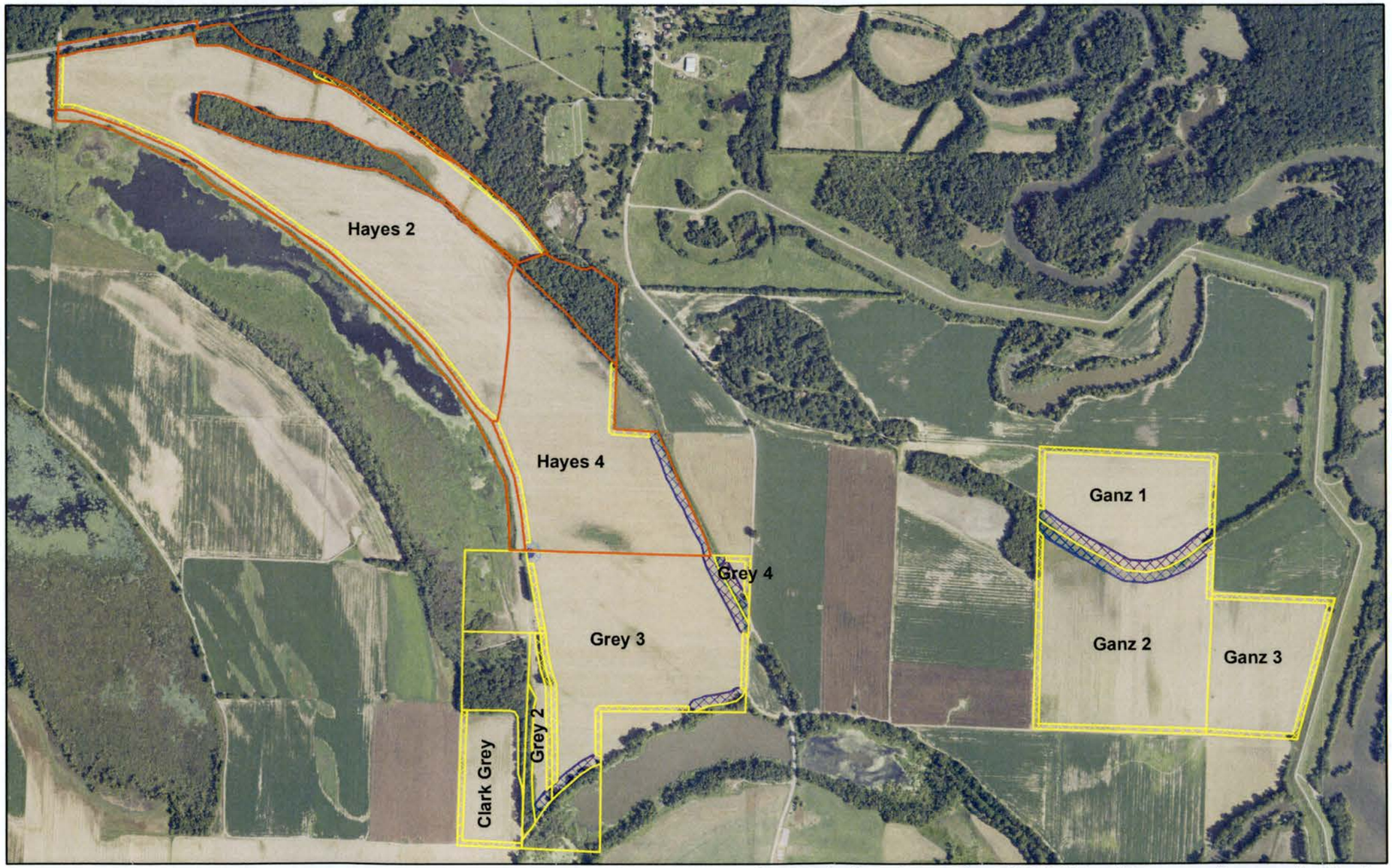
770 0 770 1,540 2,310 3,080
Feet

N

Buffered Farm Map

Hartman Lake - Arkansas River

Sections 23, 24 & 25, Township 9N, Range 25W
Section 30, Township 9N Range 24W



Legend

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- 100 Ft Buffer Agri Well Head
- County Line

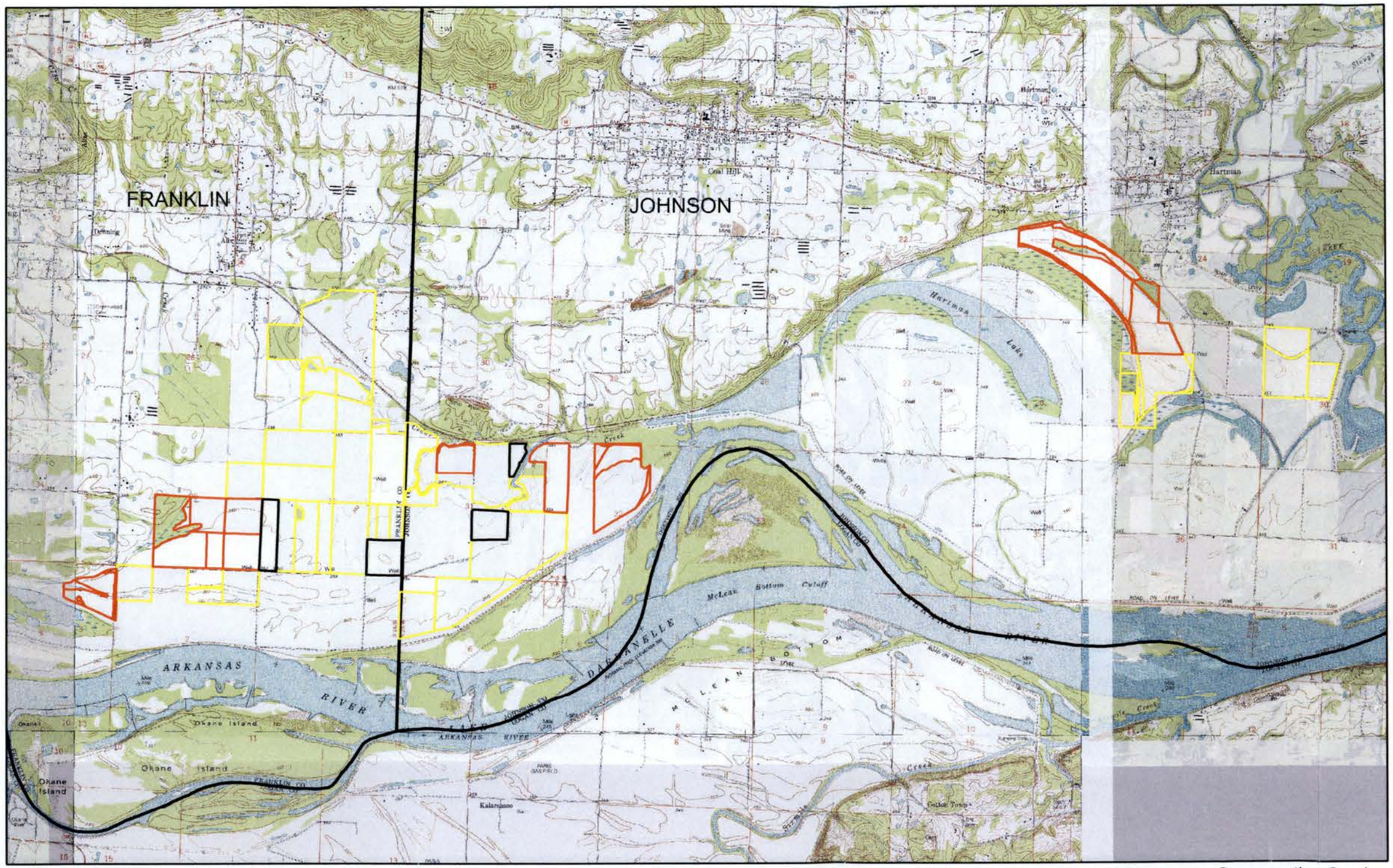
X - Fields not included in plan

Prepared with assistance from USDA-Natural Resources Conservation Service

770 0 770 1,540 2,310 3,080 Feet

N

Topo Map



Legend

- Donald Hurst
- Randall Hurst
- Ricky Hurst
- County Line

Prepared with assistance from USDA-Natural Resources Conservation Service

3,000 0 3,000 6,000 9,000 12,000 Feet

N

DGA ENGINEERING

July 19, 2018

RE: Engineering, Coon Tree Farm, Inc. Permit Application

Jamal Solaimanian, P.E.
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

Dear Jamal Solaimanian:

I have enclosed the Permit Application for Coon Tree Farm, Inc, along with the required Notice to Neighbors and Department of Health. Please let me know if you have any questions, I can be reached at 701-663-1116.

Cordially,

Nathan A. Pesta

Nathan A. Pesta, P.E.
Owner/Senior Project Engineer

DGA ENGINEERING

COON TREE FARM, INC.

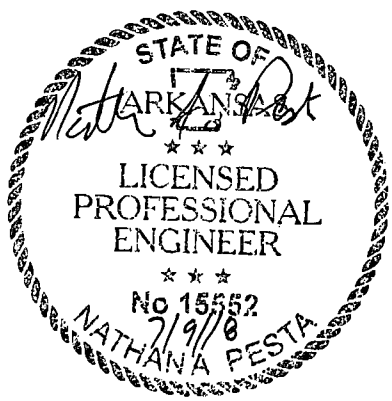
ADEQ STATE PERMIT APPLICATION

NE ¼, SECTION 2

T-8-N, R-26-W

FRANKLIN COUNTY ARKANSAS

July 9, 2018



PREPARED FOR:

Philip Campbell

HC 72 Box 2

Vendor AR, 72683

Prepared by:

DeHaan, Grabs & Associates, LLC

DEHAAN, GRABS & ASSOCIATES, LLC

4200 21ST ST SE UNIT 101 | MANDAN, ND | 58554| (701)663-1116

WWW.DGAENGINEERING.COM

Table of Contents

Section 1

Arkansas Department of Environmental Quality
No-Discharge Section Permit Application
Liquid Animal Waste Management Systems

Permit No.:	AFIN:	SIC Code: 0213	NAICS Code: 112210
(Office Use Only)	(Office Use Only)		

1. Permit Action and Type *(Please check one of the following)*:

Operator Type: ☒ Corporation (State of Incorporation: Arkansas) ☐ Limited Liability Company (State of LLC: _____)
☐ Partnership ☐ Sole Proprietorship/Private ☐ Public Entity (Type: _____)

☒ New Permit ☐ Renewal ☐ Modification of Permit, Describe: _____

☐ Cattle Feedlot ☒ Swine ☐ Dairy ☐ Poultry ☐ Other _____

2. Permittee Legal Name and Mailing Address: *(Must Match Arkansas's Secretary of State)*

Owner Name: Philip Campbell		
Address: HC 72 Box 2		Phone Number: 870 434-5004
City: Vendor	State: Arkansas	Zip Code:72683
Contact Person: *(Mr. / Mrs. / Ms.)* Philip Campbell		Email: coontreefarminc@outlook.com
Title: President	Phone Number: 870-434-5004	Cell Number:870-715-0754

3. Facility Location *(physical address is required; NO P.O. BOX)*:

Facility Name: Coon Tree Farm, Inc.			
Address *(911 Address)*: 8530 Coon Tree Rd			Phone Number: 870-715-0754
City: Ozark		State: Arkansas	Zip Code: 72949
1/4 Sec.: NE	Section: 2	Township: 8 N	Range: 26 W
Latitude: 35 Deg 23 Min 31.21 Sec.		Longitude -93 Deg 44 Min 10.69 Sec.	Source Datum: UTM83-15F
County: Franklin		Nearest Town: Alix	
Nearest Stream: Arkansas River		Distance: 2,312 (ft)	Stream Segment: 038

4. Consultant Information:

Name: Nathan A. Pesta, P.E.		Consulting Firm: DeHaan, Grabs & Associates
Email:Nate@dgaengineering.com		Phone Number: 701-663-1116
Address: 4200 21st St SE #101		Cell Number: 701-400-3950
City: Mandan	State: ND	Zip Code: 58554

Please read the following carefully and sign below.

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, which may include fines and/or imprisonment.

SIGNATORY REQUIREMENTS:

The information contained in this form must be certified by a **responsible official** as defined below:

Corporation: principal officer at least the level of vice president (must be an officer or register agent with the secretary of state)
Partnership: a general partner
Sole Proprietorship: the proprietor/owner
Municipal, state, federal, or other public facility: principal executive officer, or ranking elected official

Responsible Official: Philip Campbell Title: President

Responsible Telephone: 870-434-5004 Email: coontreefarminc@outlook.com

Responsible Signature: Philip Campbell Date: 7-18-18

Cognizant Official is an individual that is given signature authority from the Responsible Official

Cognizant Official: Jason Henson Title: Vice-President

Cognizant Telephone: 870-434-5004 Email: coontreefarmsinc@outlook.com

Cognizant Signature: Jason Henson Date: 7-18-18

PERMIT REQUIREMENT VERIFICATION (Please check the following to verify the completion of permit requirements.)

Yes	No	
☒	☐	Submittal of Complete Application Does the Organization name match the Secretary of State (Corporation or Limited Liability Company)? Does the Responsible Official match the Secretary of State?
☒	☐	Submittal of Nutrient Management Plan
☒	☐	Submittal of Disclosure Statement (completed and executed) Not required for public entity
☒	☐	Submittal of Land use Contract/Deed/Lease
☒	☐	Arkansas Department of Health notification letter (letter transmitting documents to ADH) (New permits or modified permits)
☒	☐	Adjacent Landowner Notifications
☒	☐	Provide Certificate of Good Standings with the Arkansas Secretary of State (If foreign corporation, provide Certificate of Good Standings from the state of Origin)

INSTRUCTIONS FOR DISCLOSURE STATEMENT

Arkansas Code Annotated Section 8-1-106 requires that all applicants for the issuance, or transfer of any permit, license, certification or operational authority issued by the Arkansas Department of Environmental Quality (ADEQ) file a disclosure statement with their applications. The filing of a disclosure statement is mandatory. No application can be considered complete without one.

Disclosure statement means a written statement by the applicant that contains:

- **The full name and business address of the applicant and all affiliated persons;**
- **The full name and business address of any legal entity in which the applicant holds a debt or equity interest of at least five percent (5%) or that is a parent company or subsidiary of the applicant, and a description of the ongoing organizational relationships as they may impact operations within the state;**
- **A description of the experience and credentials of the applicant, including any past or present permits, licenses, certifications, or operational authorizations relating to environmental regulation;**
- **A listing and explanation of any civil or criminal legal actions by government agencies involving environmental protection laws or regulations against the applicant and affiliated persons in the ten (10) years immediately preceding the filing of the application, including administrative enforcement actions resulting in the imposition of sanctions, permit or license revocations or denials issued by any state or federal authority, actions that have resulted in a finding or a settlement of a violation, and actions that are pending;**
- **A listing of any federal environmental agency and any other environmental agency outside this state that has or has had regulatory responsibility over the applicant; and**
- **Any other information the Director of the Arkansas Department of Environmental Quality may require that relates to the competency, reliability, or responsibility of the applicant and affiliated persons.**

Exemptions:

The following persons or entities are not required to file a disclosure statement:

- **Governmental entities, consisting only of subdivisions or agencies of the federal government, agencies of the state government, counties, municipalities, or duly authorized regional solid waste authorities as defined by § 8-6-702. (This exemption shall not extend to improvement districts or any other subdivision of government which is not specifically instituted by an act of the General Assembly.)**
- **Applicants for a general permit to be issued by the department pursuant to its authority to implement the National Pollutant Discharge Elimination System for storm water discharge.**
- **If the applicant is a publicly held company required to file periodic reports under the Securities and Exchange Act of 1934 or a wholly owned subsidiary of a publicly held company, the applicant shall not be required to submit a disclosure statement, but shall submit the most recent annual and quarterly reports required by the Securities and Exchange Commission which provide information regarding legal proceedings in which the applicant has been involved. The applicant shall submit such other information as the director may require that relates to the competency, reliability, or responsibility of the applicant and affiliated persons.**

Exemptions continued:

The following permits, licenses, certifications, and operational authorizations are also exempt from submitting a disclosure statement:

- **Hazardous Waste Treatment, Storage, and Disposal Permit Modifications (Class 1, 2, and 3), as defined in Arkansas Pollution Control and Ecology Commission (APC&EC) Regulation 23;**
- **Phase 1 Consultants, as defined in APC&EC Regulation 32;**
- **Certifications for Operators of Commercial Hazardous Waste Facilities, as defined in APC&EC Regulation 23 § 264.16(f);**
- **Regulated Storage Tank Contractor or Individual License Renewals as defined in APC&EC Regulation 12;**
- **Certifications for Persons Operating and Maintaining Underground Storage Tank Systems which Contain Regulated Substances, as defined in APC&EC Regulation 12.701, *et. seq.*;**
- **Individual Homeowners seeking coverage under General Permit ARG5500000;**
- **Wastewater Operator Licenses, as defined in APC&EC Regulation 3;**
- **Water Permit Modifications for permits issued under the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. §8-4-101, *et. seq.*);**
- **Solid Waste Permit Modifications for permits issued under APC&EC Regulation 22;**
- **Solid Waste Landfill Operator License Renewals, as defined in Regulation No. 27;**
- **Air Permit Modifications for permits issued under APC&EC Regulations 18, 19, and 26; and**
- **Asbestos Certification Renewals, as defined in Regulation 21.**

Deliberate falsification or omission of relevant information from disclosure statements shall be grounds for civil or criminal enforcement action or administrative denial of a permit, license, certification, or operational authorization.

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
DISCLOSURE STATEMENT

Instructions for the Completion of this Document:

A. Individuals, firms or other legal entities with no changes to an ADEQ Disclosure Statement, complete items 1 through 5 and 18.

B. Individuals who never submitted an ADEQ Disclosure Statement, complete items 1 through 4, 6, 7, and 16 through 18.

C. Firms or other legal entities who never submitted an ADEQ Disclosure Statement, complete 1 through 4, and 6 through 18.

If Not Submitting by ePortal, Mail Original to:
ADEQ
DISCLOSURE STATEMENT
[*List Proper Division(s)*]
5301 Northshore Drive
North Little Rock, AR 72118-5317

1. APPLICANT: (Full Name)
Coon Tree Farm, Inc.

2. MAILING ADDRESS (Number and Street, P.O.Box Or Rural Route) :
HC 72 Box 2

3. CITY, STATE, AND ZIPCODE:
Vendor, AR 72683

4a. Applicant Type:
☐ Individual ☒ Corporate or Other Entity

4b. Reason for Submission:
☒ Permit ☐ License ☐ Certification ☐ Operational Authority

☒ New Application ☐ Modification ☐ Renewal Application (If no changes from previous disclosure statement, complete number 5 and 18.)

4c. Division:
☐ Air ☒ Water ☐ Hazardous Waste ☐ Regulated Storage Tank ☐ Mining ☐ Solid Waste

5. Declaration of No Changes:
The violation history, experience and credentials, involvement in current or pending environmental lawsuits, civil and criminal, have not changed since the last Disclosure Statement that was filed with ADEQ on _____

6. Describe the experience and credentials of the Applicant, including the receipt of any past or present permits, licenses, certifications or operational authorization relating to environmental regulation. (Attach additional pages, if necessary.)

The Applicant currently operates C & H Hog Farms, Inc. which is full compliance with state and federal regulations and holds a Regulation 6 General Permit, ARG590001. The farm has been in operation for approximately six (6) years with no violations or enforcement actions. Prior to that, Richard Campbell and Philip Campbell jointly owned and operated C & C Hog Barn for twelve (12) years. C & C Hog Barn held a regulation 5 permit, 3540-WR-5.

7. List and explain all civil or criminal legal actions by government agencies involving environmental protection laws or regulations against the Applicant * in the last ten (10) years including:

1. Administrative enforcement actions resulting in the imposition of sanctions;
2. Permit or license revocations or denials issued by any state or federal authority;
3. Actions that have resulted in a finding or a settlement of a violation; and
4. Pending actions.

(Attach additional pages, if necessary.)

There have been no civil or criminal legal actions by government agencies against C & H Hog Farms, Inc. C & H Hog Farms, Inc. applied for a Regulation 5 permit in April 2016. The permit application was subsequently denied by ADEQ and is currently in the appeals process.

* Firms or other legal entities shall also include this information for all persons and legal entities identified in sections 8-16 of this Disclosure Statement.

8. List all officers of the Applicant. (Add additional pages, if necessary.)

NAME: Philip Campbell TITLE: President
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR 72683

NAME: Jason Henson TITLE: Vice-President
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor, AR 72683

NAME: Richard Campbell TITLE: Secretary
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

9. List all directors of the Applicant. (Add additional pages, if necessary.)

NAME: Philip Campbell TITLE: President
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

NAME: Jason Henson TITLE: Vice-President
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

NAME: Richard Campbell TITLE: Secretary
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

10. List all partners of the Applicant. (Add additional pages, if necessary.)

NAME: Philip Campbell TITLE: President
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

NAME: Jason Henson TITLE: Vice-President
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

NAME: Richard Campbell TITLE: Secretary
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

11. List all persons employed by the Applicant in a supervisory capacity or with authority over operations of the facility subject to this application.

NAME: Philip Campbell TITLE: President
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

NAME: Jason Henson TITLE: Vice-President
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

NAME: Richard Campbell TITLE: Secretary
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

12. List all persons or legal entities, who own or control more than five percent (5%) of the Applicant's debt or equity.

NAME: Philip Campbell TITLE: President
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

NAME: Jason Henson TITLE: Vice-President
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

NAME: Richard Campbell TITLE: Secretary
STREET: HC 72 Box 2
CITY, STATE, ZIP: Vendor AR, 72683

13. List all legal entities, in which the Applicant holds a debt or equity interest of more than five percent (5%).

NAME: _____ TITLE: _____
STREET: _____
CITY, STATE, ZIP: _____

NAME: _____ TITLE: _____
STREET: _____
CITY, STATE, ZIP: _____

NAME: _____ TITLE: _____
STREET: _____
CITY, STATE, ZIP: _____

14. List any parent company of the Applicant. Describe the parent company's ongoing organizational relationship with the Applicant.

NAME: _____
STREET: _____
CITY, STATE, ZIP: _____

Organizational Relationship:

15. List any subsidiary of the Applicant. Describe the subsidiary's ongoing organizational relationship with the Applicant.

NAME: _____
STREET: _____
CITY, STATE, ZIP: _____

Organizational Relationship:

16. List any person who is not now in compliance or has a history of noncompliance with the environmental laws or regulations of this state or any other jurisdiction and who through relationship by blood or marriage or through any other relationship could be reasonably expected to significantly influence the Applicant in a manner which could adversely affect the environment.

NAME: _____ TITLE: _____

STREET: _____

CITY, STATE, ZIP: _____

NAME: _____ TITLE: _____

STREET: _____

CITY, STATE, ZIP: _____

17. List all federal environmental agencies and any other environmental agencies outside this state that have or have had regulatory responsibility over the Applicant.

18. VERIFICATION AND ACKNOWLEDGEMENT

The Applicant agrees to provide any other information the director of the Arkansas Department of Environmental Quality may require at any time to comply with the provisions of the Disclosure Law and any regulations promulgated thereto. The Applicant further agrees to provide the Arkansas Department of Environmental Quality with any changes, modifications, deletions, additions or amendments to any part of this Disclosure Statement as they occur by filing an amended Disclosure Statement.

DELIBERATE FALSIFICATION OR OMISSION OF RELEVANT INFORMATION FROM DISCLOSURE STATEMENTS SHALL BE GROUNDS FOR CIVIL OR CRIMINAL ENFORCEMENT ACTION OR ADMINISTRATIVE DENIAL OF A PERMIT, LICENSE, CERTIFICATION OR OPERATIONAL AUTHORIZATION.

COMPLETE THIS SECTION ONLY IF SUBMITTING OTHER THAN BY EPORTAL:

I, Philip Campbell **, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violation.**

APPLICANT SIGNATURE: Philip Campbell

TITLE: President

DATE: 7-18-18

Section 2

SECTION 2: FACILITY DESIGN INFORMATION

A: NARRATIVE SUMMARY OF DESIGN

Coon Tree Farm, Inc. is located in Franklin County in Northwest Arkansas and includes land application fields located in Franklin and Johnson County in Northwest Arkansas. The farm will have one shallow pit and two deep pit confinement barns with a maximum capacity of 1,248 head of grower gilts weighing an average of 150 lbs, 4,728 head of gestation sows weighing an average of 425 lbs, 840 head of lactating sows weighing an average of 400 lbs, 576 head of nursery pigs weighing an average of 30 lbs, 2400 head of hot nursery pigs weighing an average of 12 lbs, 576 head of gilt development pigs weighing an average of 325 lbs, and 6 head of boar pigs weighing an average of 450 lbs. A total of 10,374 head of pigs, sows, gilts, and boars.

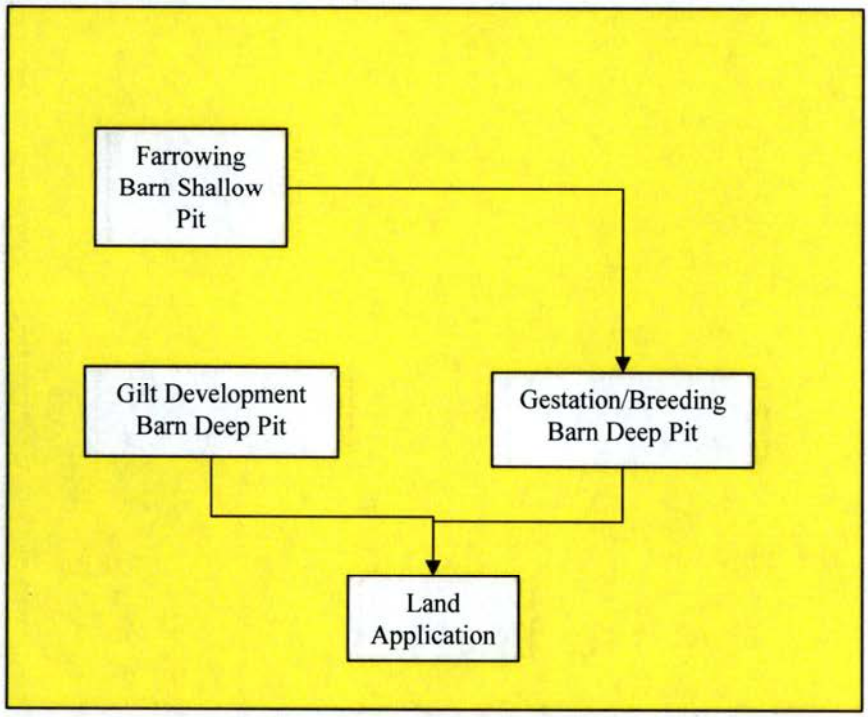
The farrowing barn is on slatted floors over 2' deep shallow pits. The gestation/breeding barn is on a slatted floor over 12' deep pits. The gilt development barn is on a slatted floor over 8' deep pits and then land applied. The farrowing barn will drain into the gestation/breeding barn's deep pit and then will be land applied. The buildings will be totally roofed and all extraneous drainage will be drained away from the site.

The farm is located approximately 4.1 miles to the south of Denning, AR. Driving directions from Denning head south on S Cherry St. for 0.5 miles, then turn left onto E Coal Rd for 0.8 miles, then head south on Coon Tree Rd for 2.0 miles and continue east on Coon Tree Rd for 0.8 miles. The facility will be located on the south side of the road. The legal location is NE ¼. Section 2, Township 8 North, Range 26 West, Franklin County, Arkansas.

The size of the storage is over 365 days of storage. The minimum ADEQ requirements are for 180 days of storage.

All animal nutrients generated by this complex will be utilized through land application. The nutrients will be recycled and utilized on the surrounding grassland and row crops. The area will be used to produce hay and row crops, thereby consuming the nutrients in a full cycle system. All land application areas will receive application at rates consistent with the nutrient management plan.

The following flow chart describes the effluent flow path and the manure handling system in a little more detail when all phases are completed.



SECTION 2.

B: DESIGN CALCULATIONS

Manure Production Calculations

A. Facility Information

1. Type of Construction: ☐existing, ☒ proposed-new, or ☐ expansion

2. Building Area: **Barn 1 Gestation Barn** (Proposed): *849* feet by *117.83* feet
Barn 2 Farrowing Barn (Proposed): *611.0* feet by *91.83* feet
Barn 3 Gilt Development Barn (Proposed): *553.83* feet by *51.2* feet

3. Animal Capacity (maximum head counts and average weights)

1,248	head of *Grower Gilts*	@ *150*	lbs,	*187,200*	lbs Total
4,728	head of *Gestation Sows*	@ *425*	lbs,	*2,009,400*	lbs Total
840	head of *Lactating Sows*	@ *400*	lbs,	*336,000*	lbs Total
576	head of *Nursery Pigs*	@ *30*	lbs,	*17,280*	lbs Total
2400	head of *Hot Nursery Pigs*	@ *12*	lbs,	*28,800*	lbs Total
576	head of *Gilt Develop.*	@ *325*	lbs,	*187,200*	lbs Total
6	head of *Boars*	@ *450*	lbs,	*2,700*	lbs Total

Total Animal Weight (TAW): ***2,768,580*** **lbs**

B. Determine Minimum Storage Requirement

The Minimum Storage Requirement is the sum of the animal waste produced (or treatment volume for an anaerobic lagoon), plus the spillage and washwater, plus the pit recharge produced in 180 days. Generally, outside or contributing drainage area runoff is to be diverted. Runoff which is not diverted must be included in the storage requirement.

The following is completed for either Liquid Manure Storage or Anaerobic Lagoon

Liquid Manure Storage

Unit Waste Production (UWP) in cubic feet per day per 1,000 pounds of animal (210-VI-AWMFH, March 2008):

Cattle	Swine	Poultry	Other
☐Dairy = 1.3	☒ Nursery Pig = 1.4	☐ Layers = 0.9	☐ Horse = 0.8
☐ Beef = 1.0	☒ Grower/Finisher/Gilt = 1.1	☐ Broiler = 1.3	☐ Sheep = 0.6
	☒ Gestating Sows = 0.41	☐ Turkey = 0.7	
	☒ Lactating Sows = 0.97		
	☒ Boar = 0.3		

(a) Grower Gilt Manure produced: (TAW x (UWP x 180 days/1,000)) = *37,066* cubic feet / 1,000 lbs
(TAW x UWP for each type calculated separately and added to find total manure produced)

(b) Gestation Sows Manure produced: (TAW x (UWP x 180 days/1,000)) = *148,294* cubic feet / 1,000 lbs
(TAW x UWP for each type calculated separately and added to find total manure produced)

(c) Lactating Sow Manure produced: (TAW x (UWP x 180 days/1,000)) = *58,666* cubic feet / 1,000 lbs
(TAW x UWP for each type calculated separately and added to find total manure produced)

(d) Nursery Pig Manure produced: (TAW x (UWP x 180 days/1,000)) = *4,355* cubic feet / 1,000 lbs
(TAW x UWP for each type calculated separately and added to find total manure produced)

(e) Hot Nursery Manure produced: (TAW x (UWP x 180 days/1,000)) = *7,258* cubic feet / 1,000 lbs
(TAW x UWP for each type calculated separately and added to find total manure produced)

(f) Gilt Development Manure produced: (TAW x (UWP x 180 days/1,000)) = *37,066* cubic feet /1,000 lbs

(g) Boar Manure produced: (TAW x (UWP x 180 days/1,000)) = *146* cubic feet /1,000 lbs

(h) Total Manure Volume Produced = *292,851* cubic feet
(TAW x UWP for each type calculated separately and added to find total manure produced)

(i) Spillage and Washwater generated in 180 days: *58,570* cubic feet
(20% of (h) is used

(j) Total Manure plus Spillage and Washwater, (h)+(i): ***351,421*** cubic feet.

Minimum Overall Storage Requirement

(k) Minimum Storage Requirement (j): ***351,421*** cubic feet

Manure Storage Calculations

A. Determine Storage Provided

Type of storage: ☐ Earthen Storage Pit ☐ Earthen Lagoon ☐ Concrete Tank
☒ Underfloor Concrete Pit ☐ Outside Concrete Pit
☐ Other (describe)

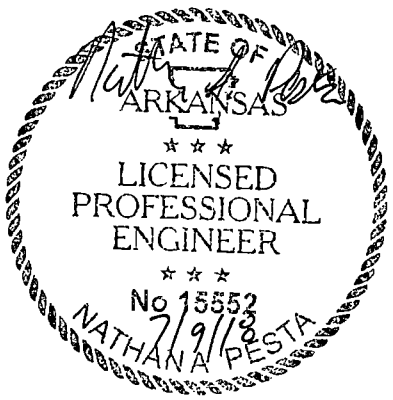
NOTE: A scale drawing, calculations and other supporting information will be included. Indicate the location of all diversions, diversion dimensions, and flow directions of surface runoff for the entire facility. Concrete pit or tank storage is assumed to be covered unless specified otherwise.

Rectangular Concrete Pit or Tank (capacity = length x width x depth)

#1)	*847.3*	feet x	*115.2*	feet x	*11*	feet =	*1,073,699* cubic feet (Gestation Pit)
#2)	*415.7*	feet x	*86.8*	feet x	*1.5*	feet =	*54,124* cubic feet (Farrowing Pit)
#3)	*439.08*	feet x	*49.5*	feet x	*7*	feet =	*152,141* cubic feet (GDU Pit #3)
#4)	*107.07*	feet x	*49.5*	feet x	*7*	feet =	*37,100* cubic feet (GDU Pit #4)
						=	***1,317,064*** **cubic feet TOTAL**

TOTAL STORAGE PROVIDED: ***1,317,064*** **cubic feet**

NOTE: The Total Storage Provided will meet or exceed the Minimum Storage Requirement (item k) from Manure Productions Calculation



Design Calculations

Concrete Requirements:

I used the design guidelines of Rectangular Concrete Manure Storages, MWPS-36, second edition as primary reference. I also used Rectangular Concrete Manure Storages, MWPS-36, first edition as a secondary reference because it deals with sizes of sections larger than what the 2nd edition has included. Finally I used StruCalc for Windows Version 8.0.113 for additional footing design analysis.

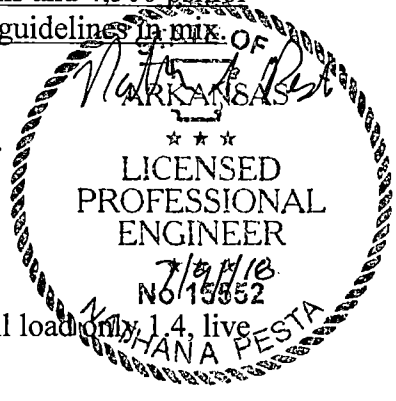
A. General Design Data

I used Table 2-1, MWPS 36 for minimum concrete requirements

1. Concrete

Recommended design strength is 3,000 psi for footings, 4,000 psi for beams, walls floors, tank tops, columns and 4,500 psi for slats. According to MWPS-36, Table A-1, 4,000 psi strength requires a minimum of 5.5 gallons per bag of cement or 0.49 lbs water per lb cement. For 4,500 psi strength requires a minimum of 5.0 gallons per bag of cement or 0.44 lbs water per lb of cement. According to MWPS-36, Table A-3, maximum slump is 3" for slabs, footings, beams and slats and 4" for columns. According to MWPS-36, Table A-4, if the maximum aggregate size is 1.5 in., then the average air entrainment should be 5.5%, if it is 1 in., then it should be 6%, if is 0.5 in then it should be 7% or if it is 0.375 in. then it should be 7.5%.

Use 4,000 psi for footings, beams, wall floors, tank tops, columns and 4,500 psi for slats. Use MPWS-36, Table A-1, Table A-3 and Table A-4 for guidelines in mix.



2. Steel

Recommended design is 60,000 yield point psi, density 500 pcf.

Use 60,000 psi, 500 pcf steel

3. Load Factors

Recommended Dead load, combination high water table and soil load only 1.4, live load 1.6

Use dead load 1.4 and live load 1.6

4. Steel cover and spacing

Recommended beams, 2", columns and walls 2", floors and footings: bars next to soil 3", exposed to earth or weather 1.5" for #3 to #5, 2" for #5 bar, not exposed to weather or in contact with ground, #3 to #11, 0.75", slats bottom bar 1.5"

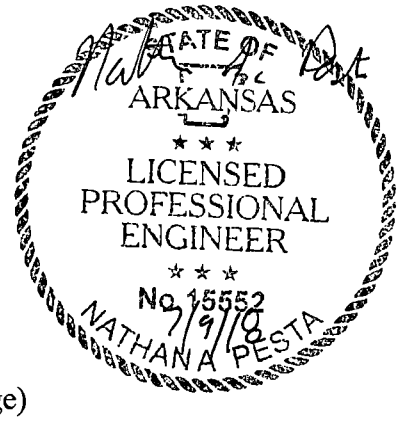
Use beams, 2", columns and walls 2", floors and footings: bars next to soil 3", exposed to earth or weather 1.5" for #3 to #5, 2" for #5 bar, not exposed to weather or in contact with ground, #3 to #11, 0.75", slats bottom bar 1.5"

B. Pit Floor – Gestation and GDU Barn

According to USDA NRCS Practice 313, the minimum floor thickness is 5". Because many pits have had NRCS funding, this has become the norm in tank design in the Midwest I have recommended the same. The design approach of this guideline is to not transfer loads into the footings and floors, which means less chance to transferring moment loads into the footings and floors and thus minimizing large cracks. The steel in the floor is to minimize cracks. The main reason a floor exists is to provide impermeable layer between liquid manure and ground floor. From MWPS-36, Table 3-12 gives the minimum depth. Based on comments, with manure pits, we need 3" ground cover for rebar and based on table, we need minimum of 0.75" of cover on top surface. If a 5-inch floor is used, Table 3-13 has a bar spacing required of #4 rebar 18.0" O.C both ways with a minimum cover of 2"

Used a 5" floor with a #4 rebar @ 18" O.C. for the main pit and #4 rebar @ 18" O.C. for the pumpout pits. Maintain 3" cover on earth side and 1.0" cover on topside of rebar.

For floor joints see plans.



C. Exterior Pit Walls - Gestation Barn

1. Wall Design

We are using 4,000 psi concrete and 60,000 psi steel

Assume a $L_L = 1.6$, $L_D = 1.4$

Loadings = soil load (hydrostatic) + vehicle load (surcharge)

From MWPS-36, Table 2-2, pg. 9 for low-plasticity silts and clays with some sand and/or gravel (50% or more fines): fine sands with silt and/or clay (less than 50% fines)

Soil load = 75 psf/ft

For low to medium plasticity silts and clays with little sand and/or gravel (50% or more fines):

Soil load = 85 psf/ft

Use Soil load = 75 psf/ft

Use 100 psf for vehicle load (as recommended by MWPS-36)

Use a 10-inch thick side wall for the pit and a 6-inch wall for the stem wall. This was a judgment call. MWPS-36 shows that an 8" wall could be used.

Vertical Steel > From MWPS-36, Table 3-1and Table 3-2

#4 rebar @ 6.0 inches for an 10" wall at a height of 12' will resist a 75 psf/ft of surcharge without vehicle loads &
#5 rebar @ 9.2 inches for an 10" wall at a height of 12' will resist a 75 psf/ft of surcharge without vehicle loads &
#4 rebar @ 4.4 inches for an 10" wall at a height of 12' will resist a 75 psf/ft of surcharge with vehicle loads &
#5 rebar @ 6.9 inches for an 10" wall at a height of 10' will resist a 75 psf/ft of surcharge with vehicle loads &

Use a single mat#5 rebar @ 8.5 inches O.C. with 2" of clear cover for the outside wall. Use a single mat #5 rebar @ 8.5 inches O.C. with 2" of clear cover for the pumpout pit wall.

Horizontal Steel > From MPWS-36, Table 3-3

For an 10" wall thickness, the recommended steel is #5rebar @ 15.3 in.

Use #5 rebar @ 15" with 2" of clear cover for both the outside wall and pumpout pit wall.

2. Wall Footings

Building Width = 117'-10"
Roof Load (psf) =
DL = 15 psf
LL = 20 psf
Roof Load on Wall (plf) (Includes ¼ of building width, due to center support wall) =
DL = 442
LL = 589
Wall load (plf) = DL = 50
Wall load (plf) =
Concrete Portion = DL = 1,675
Total Wall load (plf) = DL = 1,715

Floor load (psf) = DL = 65; LL = 65 (Table 2-4)
Slat span (ft) = DL = 10.0 LL = 10.0
Floor load on pit wall (plf) = DL = 325; LL = 325

Footing Load (plf) = DL = 442 +1715+325 = 2,482

LL = 589+325 = 914

Factor the load for safety (L_L = 1.6, D_L = 1.4)

Loading on footing (lbs/ft)
DL = 3,475 lbs/lft
LL = 1,462 lbs/lft
Total Load = 4,937 lbs/lft

According to MWPS, page 28, Table 3-14, for a 10-inch wall, an unreinforced footing 20 inches wide, 10 inches thick will support 30,850 lb/ft of wall with 3,000 psf.

StruCalc recommended size is 25-in wide and 10-in thick will support a factored load of 4,441 lbs plus a stemwall height of 144 inches with 3 #4 rebar longitudinal and #4 rebar transversely @ 10 in oc (Optional) (See Attached Calculation Sheet)

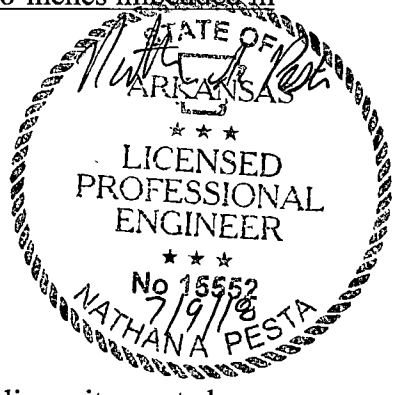
Use a 25-inch wide reinforced footing, 10-inches thick is proposed for the side and endwalls with 3 #4 rebar longitudinal and #4 rebar transversely @ 10 in oc. (The weight of the wall is figured in the dead load of the program)

3. Exterior Wall/Floor Connection

ACI standards require a minimum of a hook 12d in length (#5 – 7.5 inches) plus a 90 degree bend.

According to MWPS -36, page 30 (Figure 3-20). Dowel needs to be a minimum of 24" in length with 12" extended into floor and 12" in the wall.

Use a 30-inch dowel with 12-inches imbedded in footing and 18-inches imbedded in wall or used a continuous rebar.



E. Interior Pit Walls – Gestation

1. Wall Design

We are using 4,000 psi concrete and 60,000 psi steel

Assume a L_L = 1.6, L_D = 1.4

Loadings = liquid load (hydrostatic) (Not important as equalizer pits created through wall – so should be equal pressure.

Maximum load = 60 psf/ft

Used a 12-inch thick wall for the divide wall and a 6-inch wall for the stem wall. This was a judgment call.

Vertical Steel > From MWPS-36 (First Edition), Table 4

#4 rebar @ 6.0 inches for a 12" wall at a height of 12' will resist a 60 psf/ft of surcharge without vehicle loads. According to Table 33 (First Edition), this is equal to #5 @ 9.4 inches. Since it is a 11-2' wall instead of a 12' wall, recommend #5 @ 8.5 inches. For conservative reasons, used the following:

Use double matte #5 rebar @ 8.5 inches O.C. with 2" of clear cover for the inside wall.

Horizontal Steel > From MPWS-36 (First Edition), Table 8

For a 12" wall thickness, the recommended steel is #5 rebar @ 14.2 in. Since we used closer spacing for the vertical steel, we used the following:

Use a double matte #5 rebar @ 15." with 2" of clear cover

2. Interior Pit Wall Footings

Building Width = 117'-10"
Roof Load (psf) =
DL = 15
LL = 20
Roof Load on Wall (plf) (Includes ½ of building width, due to center support wall) =
DL = 884
LL = 1,178
Wall load (plf) = DL = 50
Wall load (plf) =
Concrete Portion - Upper Wall = DL = 300
Concrete Portion – Lower Wall = DL = 1,800
Total Wall load (plf) = DL = 2,100

Floor load (psf) = DL = 65; LL = 65
Slat span (ft) = DL = 10; LL = 10
Floor load on pit wall (plf) = DL = 650; LL = 650

Footing Load (plf) = DL = 884+2,100+650 = 3,634
LL = 1,178+ 650 = 1,828

Factored Load (plf) = DL = 5,088
LL = 2,925

Total Load = 8,013 lbs.

From Table 3-14, page 28, for a 12-in wall requires a footing 24-in wide and 12-in thick will support a load of 40,170 lb/ft. for 3,000 psf soil.

StruCalc recommended size is 41-in wide and 10-in thick will support a factored load of 7,286 lbs plus a stemwall height of 144 inches with 4 #4 rebar longitudinal and #4 rebar transversely @ 10 in oc (See Attached Calculation Sheet)

Use a 41" wide footing, 10 inches deep with 4 #4 continuous bars in the footing. (The weight of the concrete is figured in the dead load of the program).

3. Interior Wall/Floor Connection

ACI standards require a minimum of a hook 12d in length (#5 – 7.5 inches) plus a 90 degree bend.

According to MWPS -36, page 30 (Figure 3-20). Dowel needs to be a minimum of 24" in length with 12" extended into floor and 12" in the wall.

Use a continuous rebar embedded into the footing.

E. Columns – Gestation Barn

1. Column Design

The load on the columns is

Floor load (hogs on slats) (psf)
DL = 65
LL = 65
Slat span (ft) = 10
Floor load on beam (plf)
DL = 650
LL = 650
Beam dead load (10" x 10") (plf) = 104
Floor and Beam Load (plf)
DL = 754
LL = 650
Beam Span (ft) = 12'
Load on column (lbs)
DL = 9,048
LL = 7,800

Factor the load for safety (L_L = 1.6, D_L = 1.4)

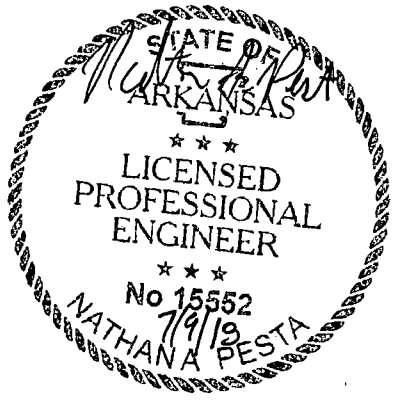
Loading on column (lbs)
DL = 12,667 lbs
LL = 12,480 lbs
Total Load = 25,147lbs (Axial Load)

From MWPS-36, Table 3-11 for a 12-inch square column, the column will support 321,130 lbs. It also has a minimum of 4-#7 rebar for the column and 2" cover.

Use a 12-in. square column, that is 11'-2" high, 4-#7 rebar with #3 rebar ties on 12-in. o.c. with 2" cover

2. Footings – Column

Determine the load on the footing from the column.



Column Weight
DL = 1,675 lbs
Total Load
DL = 10,723
LL = 7,800

Loading on column (lbs)
DL = 15,012 lbs
LL = 12,480 lbs
Total Load = 27,492 lbs (factored load)

From MWPS-36, Table 3-16, the recommended footing for a 12 x 12 column (for a column load of 20,000 lbs and a soil bearing of 3,000 psf is 39 inches x 10-inches thick with 3 - #4 bars at 17.8-in. spacing. The recommended footing for a 12 x 12 column or a column load of 30,000 lbs and a soil bearing of 3,000 psf is 45 inches x 12-inches thick with 4 - #4 bars at 18.0-in. spacing.

Using StrucCalc, a footing of 3.17 feet with a soil bearing of 2,500 psf x 10 inches thick will support a factored load of 25,348 lbs. The recommended rebar spaces is #4 @ 10 in o.c. e/w (4) min (see attached) +

Use a 38-in. footing, 10-in. thick with 4 #4 rebar spaced 10 inches o.c. e/w.

F. Exterior Pit Walls - Farrowing Barn

1. Pit Wall Design

We are using 4,000 psi concrete and 60,000 psi steel

Assume a $L_L = 1.6$, $L_D = 1.4$

Loadings = soil load (hydrostatic) + vehicle load (surcharge)

From MWPS-36, Table 2-2, pg. 9 for low-plasticity silts and clays with some sand and/or gravel (50% or more fines): fine sands with silt and/or clay (less than 50% fines)

Soil load = 75 psf/ft

For low to medium plasticity silts and clays with little sand and/or gravel (50% or more fines):

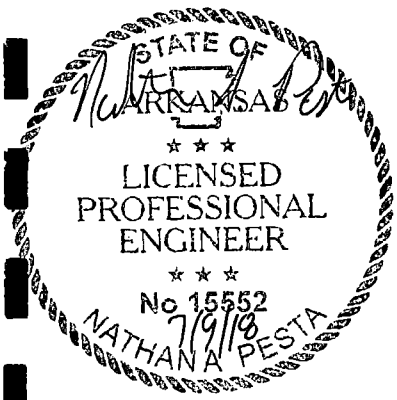
Soil load = 85 psf/ft

Use Soil load = 85 psf/ft

Use 100 psf for vehicle load (as recommended by MWPS-36)

Use a 6-inch thick side wall for the pit. This was a judgment call. MWPS-36 only shows design for 4' walls and higher. The wall is only 2'0" tall.

Vertical Steel > From MWPS-36, Table 3-1and Table 3-2 (The wall is only 2'-0" tall, however, used the design guide of 4' wall for conservative purposes



#4 rebar @ 18.0 inches for a 6" wall at a height of 4' will resist a 85 psf/ft of surcharge without vehicle loads &
#4 rebar @ 18.0 inches for a 60" wall at a height of 4' will resist a 85 psf/ft of surcharge with vehicle loads

Due to the variability in the soil and the possibility a soil load could be 85 psf/ft, and to keep things consistent in construction, the following was utilized.

Use #4 rebar @ 12 inches o.c. with 2" of clear cover for the pit wall.

Horizontal Steel > From MPWS-36, Table 3-3

For a 6" wall thickness, the recommended steel is #4 rebar @ 16 in.

Use #4 rebar @ 16" o.c. with 2" of clear cover for both the pit wall.

2. Pit Wall Footings

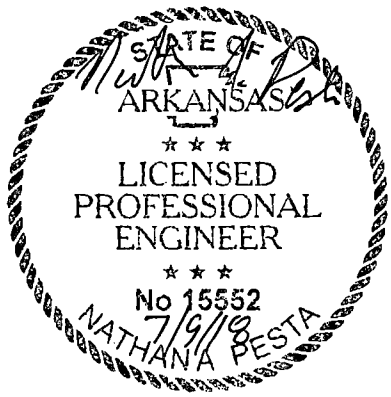
Wall load (plf) = DL = 50
Wall load (plf) =
Concrete Portion = DL = 150
Total Wall load (plf) = DL = 150

Floor load (psf) = DL = 65; LL = 65 (Table 2-4)
Slat span (ft) = DL = 10.0; LL = 10.0
Floor load on pit wall (plf) = DL = 325; LL = 325

Footing Load (plf) = DL = 325 +150 = 475
LL = 325 = 325

Factor the load for safety (L_L = 1.6, D_L = 1.4)

Loading on footing (lbs/ft)
DL = 665 lbs/lft
LL = 520 lbs/lft
Total Load = 1,185 lbs/lft



According to MWPS, Table 3-14, for a 6-inch wall, an unreinforced footing 16 inches wide, 8 inches thick will support 16,270 lb/ft of wall. This would be adequate for our facility for 3,000 psf soil.

Use a 16-inch wide reinforced footing, 10-inches thick is proposed for the pit side and endwalls with 2 #4 rebar longitudinal and #4 rebar transversely @ 10 in oc.

G. Exterior Pit Walls - GDU

1. Wall Design

We are using 4,000 psi concrete and 60,000 psi steel

Assume a L_L = 1.6, L_D = 1.4

Loadings = soil load (hydrostatic) + vehicle load (surcharge)

From MWPS-36, Table 2-2, pg. 9 for low-plasticity silts and clays with some sand and/or gravel (50% or more fines): fine sands with silt and/or clay (less than 50% fines)

Soil load = 75 psf/ft

For low to medium plasticity silts and clays with little sand and/or gravel (50% or more fines):

Soil load = 85 psf/ft

Use Soil load = 75 psf/ft

Use 100 psf for vehicle load (as recommended by MWPS-36)

Use a 10-inch thick side wall for the pit and a 6-inch wall for the stem wall. This was a judgment call. MWPS-36 shows that an 8" wall could be used.

Vertical Steel > From MWPS-36, Table 3-1and Table 3-2

#4 rebar @ 7.9 inches for an 10" wall at a height of 10' will resist a 75 psf/ft of surcharge without vehicle loads &
#5 rebar @ 12.1 inches for an 10" wall at a height of 10' will resist a 75 psf/ft of surcharge without vehicle loads &
#4 rebar @ 7.6 inches for an 10" wall at a height of 10' will resist a 75 psf/ft of surcharge with vehicle loads &
#5 rebar @ 11.4 inches for an 10" wall at a height of 10' will resist a 75 psf/ft of surcharge with vehicle loads

Use a single mat#5 rebar @ 12 inches O.C. with 2" of clear cover for the outside wall. Use a single mat #5 rebar @ 12 inches O.C. with 2" of clear cover for the pumpout pit wall.

Horizontal Steel > From MPWS-36, Table 3-3

For a 10" wall thickness, the recommended steel is #5rebar @ 15.3 in.

Use #5 rebar @ 15" with 2" of clear cover for both the outside wall and pumpout pit wall.

2. Wall Footings

Building Width = 51'-8"
Roof Load (psf) =
DL = 15 psf
LL = 20 psf
Roof Load on Wall (plf) (Includes ½ of building width) =
DL = 388
LL = 517
Wall load (plf) = DL = 50
Wall load (plf) =
Concrete Portion = DL = 1,175
Total Wall load (plf) = DL = 1,225

Floor load (psf) = DL = 65; LL = 65 (Table 2-4)

Slat span (ft) = DL = 9.7 LL = 9.7
Floor load on pit wall (plf) = DL = 315; LL = 315

Footing Load (plf) = DL = 388 +1,225+315 = 1,928
LL = 517+332 = 832

Factor the load for safety (L_L = 1.6, D_L = 1.4)

Loading on footing (lbs/ft)
DL = 2,699 lbs/lft
LL = 1,331 lbs/lft
Total Load = 4,030 lbs/lft

According to MWPS, page 28, Table 3-14, for a 10-inch wall, an unreinforced footing 20 inches wide, 10 inches thick will support 30,850 lb/ft of wall with 3,000 psf. This would be adequate for our facility.

StruCalc recommended size is 20-in wide and 10-in thick will support a factored load of 3,645 lbs plus a stemwall height of 134 inches with 2 #4 rebar longitudinal and #4 rebar transversely @ 10 in oc (Optional) (See Attached Calculation Sheet)

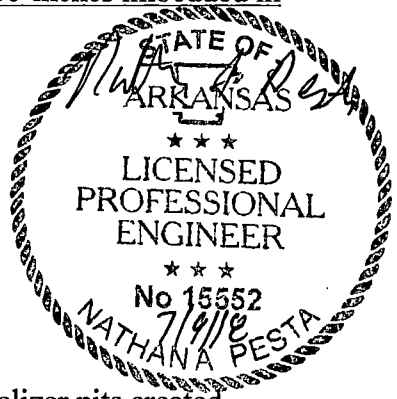
Use a 20-inch wide reinforced footing, 10-inches thick is proposed for the side and endwalls with 2 #4 rebar longitudinal and #4 rebar transversely @ 10 in oc.

3. Exterior Wall/Floor Connection

ACI standards require a minimum of a hook 12d in length (#5 – 7.5 inches) plus a 90 degree bend.

According to MWPS -36, page 30 (Figure 3-20). Dowel needs to be a minimum of 24" in length with 12" extended into floor and 12" in the wall.

Use a 30-inch dowel with 12-inches imbedded in footing and 18-inches imbedded in wall or used a continuous rebar.



H. Interior Pit Walls – GDU

1. Wall Design – West Wall

We are using 4,000 psi concrete and 60,000 psi steel

Assume a L_L = 1.6, L_D = 1.4

Loadings = liquid load (hydrostatic) (Not important as equalizer pits created through wall – so should be equal pressure.

Maximum load = 60 psf/ft

Used a 10-inch thick wall for the divide wall and a 6-inch wall for the stem wall. This was a judgment call.

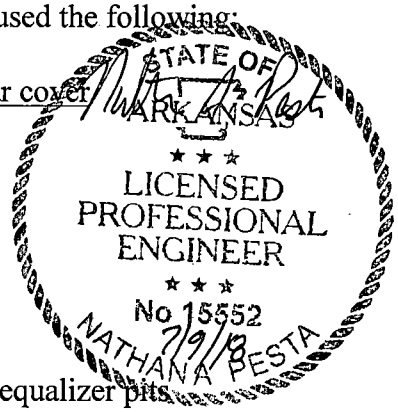
Vertical Steel > From MWPS-36 (First Edition), Table 4

#4 rebar @ 9.8 inches for a 10" wall at a height of 10' will resist a 60 psf/ft of surcharge without vehicle loads. Since it is an 8'' wall instead of a 10' wall, recommend #5 @ 15 inches. For conservative reasons, used the following:
single matt #5 rebar @ 15 inches O.C. with 2" of clear cover for the inside wall.

Horizontal Steel > From MPWS-36 (First Edition), Table 8

For a 10" wall thickness, the recommended steel is #5 rebar @ 15.3 in. Since we used closer spacing for the vertical steel, we used the following:

Use a single matt rebar #5 rebar @ 15." with 2" of clear cover.



2. Wall Design – East Wall

We are using 4,000 psi concrete and 60,000 psi steel

Assume a $L_L = 1.6$, $L_D = 1.4$

Loadings = liquid load (hydrostatic) (Not important as equalizer pits created through wall – so should be equal pressure

Maximum load = 60 psf/ft

Used a 12-inch thick wall for the divide wall and a 6-inch wall for the stem wall. This was a judgment call.

Vertical Steel > From MWPS-36 (First Edition), Table 4

#4 rebar @ 9.8 inches for a 10" wall at a height of 10' will resist a 60 psf/ft of surcharge without vehicle loads. Since it is an 8'' wall instead of a 10' wall, recommend #5 @ 15 inches. For conservative reasons, used the following:
Double matt #5 rebar @ 15 inches O.C. with 2" of clear cover for the inside wall.

Horizontal Steel > From MPWS-36 (First Edition), Table 8

For a 10" wall thickness, the recommended steel is #5 rebar @ 15.3 in. Since we used closer spacing for the vertical steel, we used the following:

Use a double matt rebar #5 rebar @ 15." with 2" of clear cover

3. Interior Pit Wall Footings – West Wall

Wall load (plf) = DL = 50
Wall load (plf) =
Concrete Portion - Upper Wall = DL = 300
Concrete Portion – Lower Wall = DL = 1,000
Total Wall load (plf) = DL = 1,300

Floor load (psf) = DL = 65; LL = 65
Slat span (ft) = DL = 9.70; LL = 9.7
Floor load on pit wall (plf) = DL = 630; LL = 630

Footing Load (plf) = DL = 1,300+630 = 1,930
LL = 630 = 1,828

Factored Load (plf) = DL = 2,700
LL = 1,008
Total Load = 3,708 lbs.

From Table 3-14, page 28, for a 10-in wall requires a footing 20-in wide and 10-in thick will support a load of 30,850 lb/ft. for 3,000 psf soil.

StruCalc recommended size is 20-in wide and 10-in thick will support a factored load of 3,324 lbs plus a stemwall height of 144 inches with 2 #4 rebar longitudinal and #4 rebar transversely @ 10 in oc (See Attached Calculation Sheet)

Use a 20" wide footing, 10 inches deep with 2 #4 continuous bars in the footing. (The weight of the concrete is figured in the dead load of the program).

4. Interior Pit Wall Footings – West Wall

Wall load (plf) = DL = 50
Wall load (plf) =
Concrete Portion - Upper Wall = DL = 300
Concrete Portion – Lower Wall = DL = 1,200
Total Wall load (plf) = DL = 1,500

Floor load (psf) = DL = 65; LL = 65
Slat span (ft) = DL = 9.70; LL = 9.7
Floor load on pit wall (plf) = DL = 630; LL = 630

Footing Load (plf) = DL = 1,500+630 = 2,130
LL = 630 = 1,828

Factored Load (plf) = DL = 2,982
LL = 1,008
Total Load = 3,990 lbs.

From Table 3-14, page 28, for a 10-in wall requires a footing 20-in wide and 12-in thick will support a load of 40,170 lb/ft. for 3,000 psf soil.

StruCalc recommended size is 20-in wide and 12-in thick will support a factored load of 3,564 lbs plus a stemwall height of 144 inches with 2 #4 rebar longitudinal and #4 rebar transversely @ 10 in oc (See Attached Calculation Sheet)

Use a 20" wide footing, 10 inches deep with 2 #4 continuous bars in the footing. (The weight of the concrete is figured in the dead load of the program).

5. Interior Wall/Floor Connection

ACI standards require a minimum of a hook 12d in length (#5 – 7.5 inches) plus a 90 degree bend.

According to MWPS -36, page 30 (Figure 3-20). Dowel needs to be a minimum of 24" in length with 12" extended into floor and 12" in the wall.

Use a continuous rebar embedded into the footing.

I. Columns – GDU

1. Column Design

The load on the columns is

Floor load (hogs on slats) (psf)
DL = 65
LL = 65
Slat span (ft) = 9.7
Floor load on beam (plf)
DL = 630
LL = 630
Beam dead load (10" x 10") (plf) = 104
Floor and Beam Load (plf)
DL = 734

LL = 630
Beam Span (ft) = 12'
Load on column (lbs)
DL = 8,808
LL = 7,560

Factor the load for safety (L_L = 1.6, D_L = 1.4)

Loading on column (lbs)
DL = 12,331 lbs
LL = 12,096 lbs
Total Load = 24,427 lbs (Axial Load)

From MWPS-36, Table 3-11 for a 12-inch square column, the column will support 321,130 lbs for 3,000 psf soil. It also has a minimum of 4-#7 rebar for the column and 2" cover.

Use a 12-in. square column, that is 7'-2" high, 4-#7 rebar with #3 rebar ties on 12-in. o.c. with 2" cover

2. Footings – Column

Determine the load on the footing from the column.

Column Weight
DL = 1,075 lbs
Total Load
DL = 9,883
LL = 7,560

Loading on column (lbs)
DL = 13,836 lbs
LL = 12,096 lbs
Total Load = 25,932 lbs (factored load)

From MWPS-36, Table 3-16, the recommended footing for a 12 x 12 column (for a column load of 20,000 lbs and a soil bearing of 3,000 psf is 39 inches x 10-inches thick with 3 - #4 bars at 17.8-in. spacing. The recommended footing for a 12 x 12 column or a column load of 30,000 lbs and a soil bearing of 3,000 psf is 45 inches x 12-inches thick with 4 - #4 bars at 18.0-in. spacing.

Using StrucCalc, a footing of 3.0 feet with a soil bearing of 2,500 psf x 10 inches thick will meet requirements for a 23,956 factored. The recommended rebar spaces is #4 @ 9.0 in o.c. e/w (4) min (see attached) +

Use a 36-in. footing, 10-in. thick with 4 #4 rebar spaced 9 inches o.c. e/w.

Section 2:

C: GENERAL MAPS

C.1. County Location Map
C.2. Site Location Map
C.3. Detailed USGS Topography Map
C.4. USDA Soil Survey Map
C.5. FEMA Flood Map

GENERAL NOTES

LEGEND

N

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

COUNTY LOCATION MAP

DATE: MAY 30, 2018	SHEET: 2C.1
SCALE: NTS	
DRAWN BY: BKT	
CHECKED BY: NAP	

GENERAL NOTES

LEGEND

N

SCALE, FEET

0 1000 2000 3000 4000

No.	Revision/Issue	Date

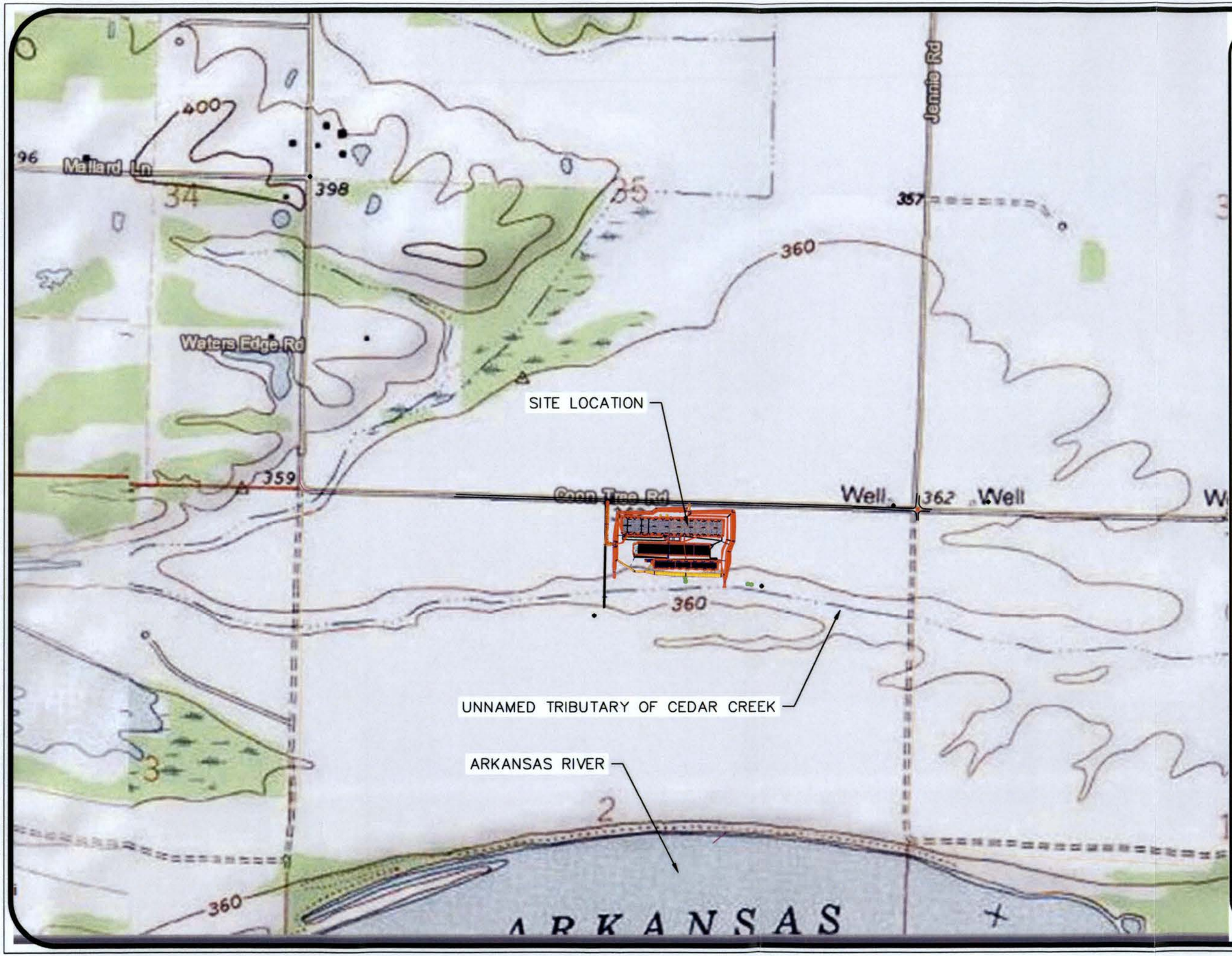
DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

SITE LOCATION MAP

DATE: MAY 30, 2018	SHEET: 2C.2
SCALE: 1"=2000'	
DRAWN BY: BKT	
CHECKED BY: NAP	



GENERAL NOTES

LEGEND

- BENCHMARK
- BUILDINGS
- FENCELINE
- PROPOSED FENCELINE
- CULVERT/PIPE
- DRAINAGE ARROW

SCALE, FEET

0 400 800 1200 1600

No.	Revision/Issue	Date

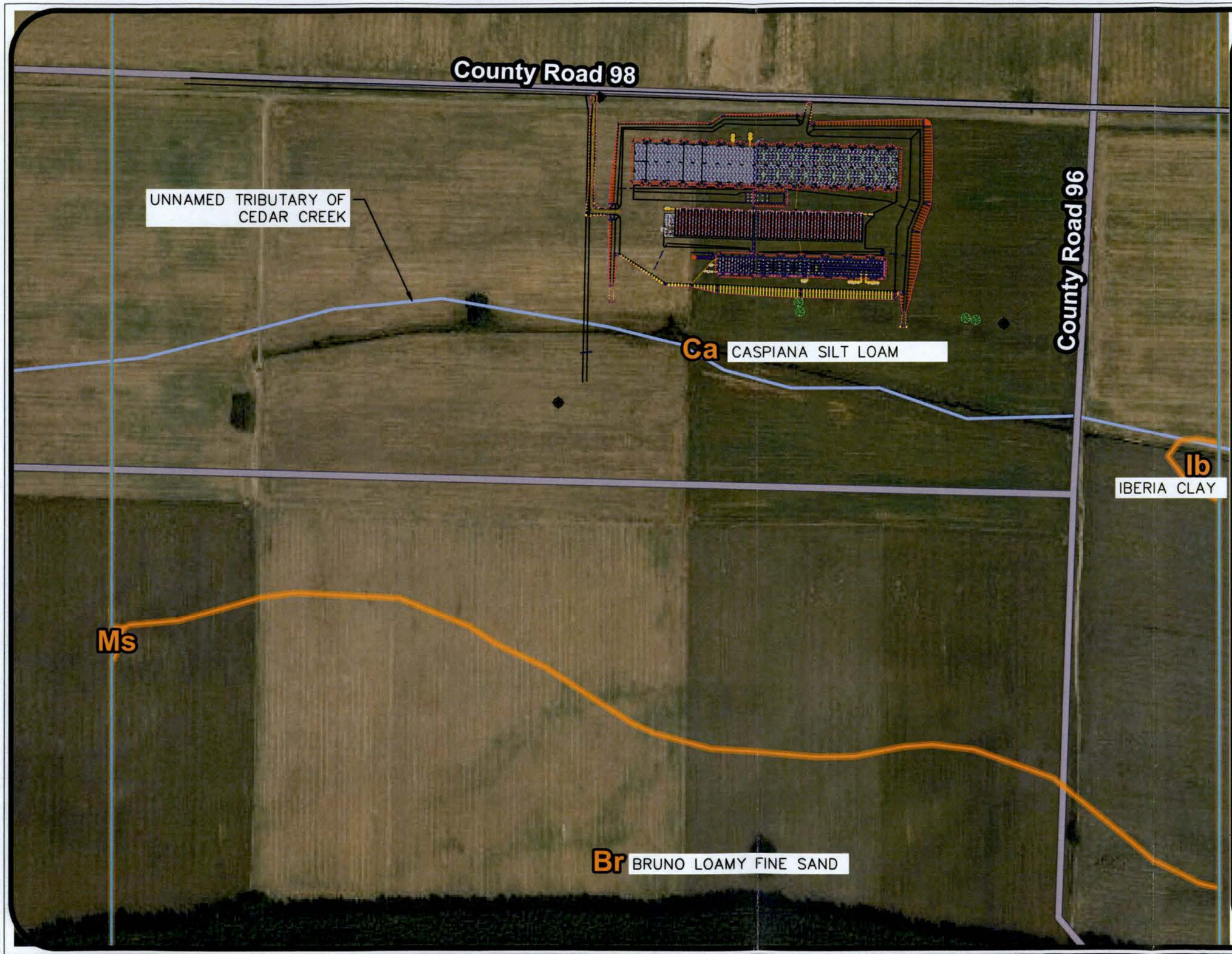
DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

USGS SITE PLAN

DATE: MAY 30, 2018	SHEET: 2C.3
SCALE: 1"=800'	
DRAWN BY: BKT	
CHECKED BY: NAP	



GENERAL NOTES

LEGEND

N

SCALE, FEET

0 150 300 450 600

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

SOIL SURVEY MAP

DATE: MAY 30, 2018	SHEET: 2C.4
SCALE: 1"=300'	
DRAWN BY: BKT	
CHECKED BY: NAP	

National Flood Hazard Layer FIRMette

FEMA

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth
- Regulatory Floodway *Zone AE, AO, AH, VE, AR*

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/1/2018 at 7:48:48 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

GENERAL NOTES

LEGEND

N

SCALE, FEET

0 225 450 675 900

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

FEMA FLOOD MAP

DATE: MAY 30, 2018	SHEET: 2C.5
SCALE: 1"=450'	
DRAWN BY: BKT	
CHECKED BY: NAP	

Section 3

SECTION 3: SITE SPECIFIC INFORMATION

A. SITE SPECIFIC INFORMATION

1: FACILITY INFORMATION

a. FACILITY:

NAME:	Coon Tree Farm
ADDRESS:	8530 Coon Tree Rd Ozark, AR 72949
PHONE NUMBER:	(870) 434-5004
PRESIDENT:	Philip Campbell

b. MANAGERS:

NAME:	Philip Campbell Richard Campbell Jason Henson
ADDRESS:	HC 72 Box 2 Vendor, AR 72683
PHONE:	(870) 434-5004
EMAIL:	coontreefarminc@outlook.com

2: LEGAL LOCATION OF FACILITY

NE ¼, Section 2, T8N, R26W, Franklin County, AR

3: APPROXIMATE LATITTUDE/LONGITUDE OF FACILITY

Latitude: 35° 23' 31.21"
Longitude: -93° 44' 10.69"

4: DRIVING DIRECTIONS:

The farm is located approximately 4.1 miles to the south of Denning, AR. Driving directions from Denning head south on S Cherry St. for 0.5 miles, then turn left onto E Coal Rd for 0.8 miles, then head south on Coon Tree Rd for 2.0 miles and continue east on Coon Tree Rd for 0.8 miles. The facility will be located on the south side of the road.

5: SOIL TYPE IN AREA OF CONTROL STRUCTURE

According to the USDA Survey, the soil in the areas of the proposed barn is a Ca-Caspiana silt loam and Br- Bruno loamy fine sand. The soil profile for Ca from 0 to 7 inches is silt loam, from 7-40 inches is silty clay loam, and from 40-72 inches is silt loam. The soil profile for Br from 0 to 7 inches is silt loam, from 7 to 40 inches is silty clay loam and from 40 to 72 inches very fine sandy loam.

6: NAME AND DISTANCE TO THE NEAREST WATERCOURSE

An unnamed tributary of Cedar Creek is located approximately 388' south of the Gilt Development barn.

7: DEPTH TO WATER TABLE AT FACILITY/CONTROL STRUCTURE

The static water level is approximately 340' above sea level based off the two registered wells located within 1 mile of the farm. The proposed bottom of the deep pits is 352' elevation which is approximately 12' above the approximate groundwater.

8: 100 YEAR FLOOD PLAIN

According to the FEMA Firm map the flood plain for the flood elevation is 361.0'. The design elevation of the lowest barn floor elevation is designed at 364.5'.

9: SEPARATION DISTANCE FROM CLOSEST RESIDENCES, BUSINESSES, CHURCHES OR SCHOOLS

The closest residence is located approximately 3,000' Northwest of the site.

B. Geologic Investigation

The USDA Soil Survey predicts that the soil in the location of the storage structures the soil in the areas of the proposed barn is a Ca-Caspiana silt loam and Br- Bruno loamy fine sand. The soil profile for Ca from 0 to 7 inches is silt loam, from 7-40 inches is silty clay loam, and from 40-72 inches is silt loam. The soil profile for Br from 0 to 7 inches is silt loam, from 7 to 40 inches is silty clay loam and from 40 to 72 inches very fine sandy loam. The site used five test holes that were excavated and evaluated where the soil was determined to be made up of sand, and sandy loam.

A detailed soils investigation was completed by GTS, Inc on April 17, 2018. Based off boring data, GTS, Inc recommends sizing the footings for a bearing capacity up to 2,500 psf for columns and 2,000 psf for wall footings.

B. Depth to Groundwater

The surrounding well logs show the static water level between 20-21' respectively. No water was encountered during the borings. It is anticipated that ground water to be about 12' below pit bottoms.

C. Holding Pond Liner Information

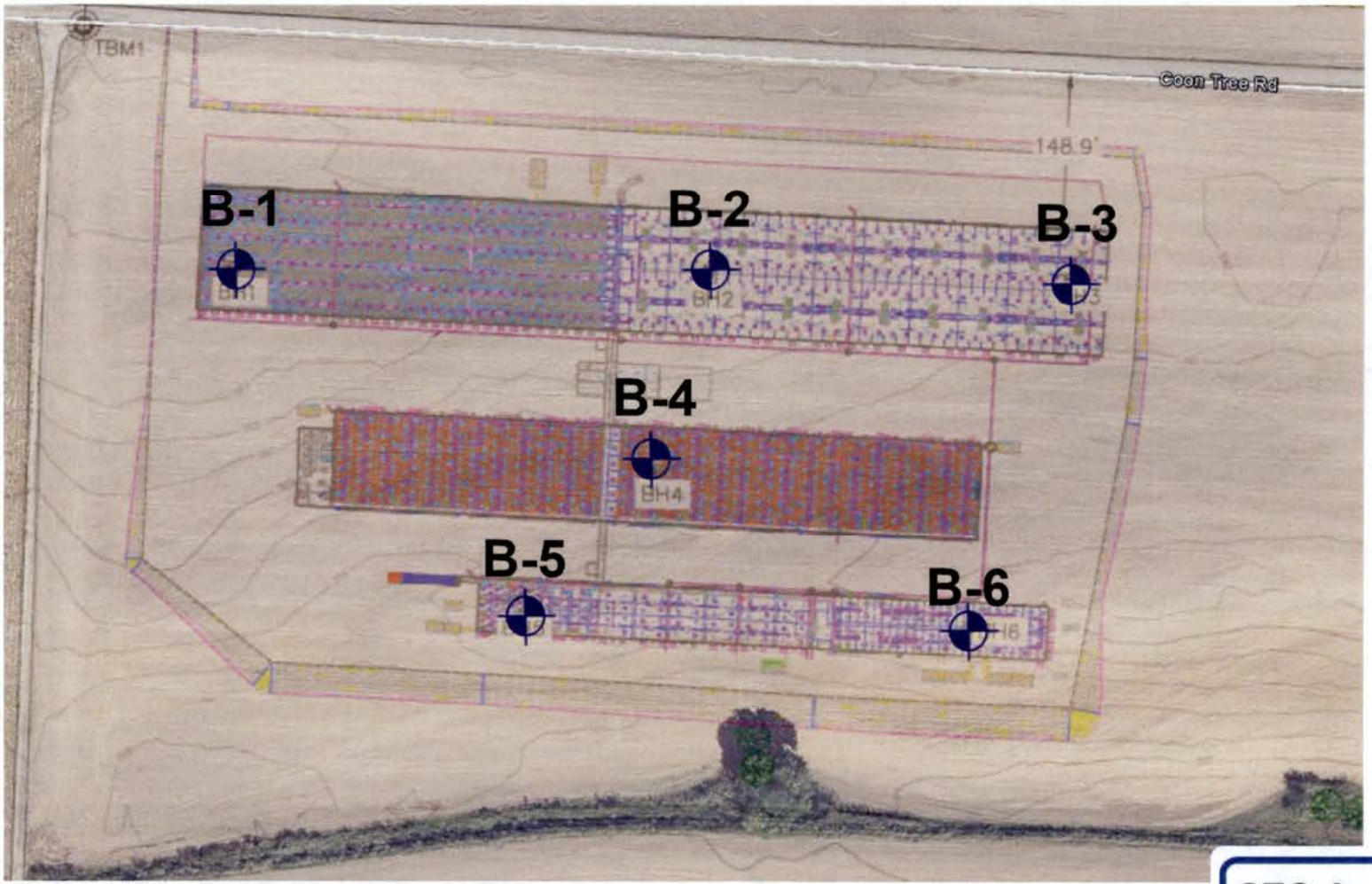
Liner Requirements

A Concrete Liner is proposed, which will meet DEQ seepage rate requirements.

Constructing Liner

See Section 4 and 5 for liner details.

DeHaan, Grabs & Associates, LLC
Planned Sow Farm
Coon Tree Road, Alix, Arkansas
GTS Project No. 18-15059



Boring Location Diagram

GTS, Inc.
Geotechnical & Testing Services

LOG OF BORING NO.B-1

Planned Hog Farm
Coon Tree Road, Alix, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 18-15059 Location: Shown on Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
					Surface Description=Bare Ground				
0			1	4	SILTY SAND very loose, brown with organics	SM CL			2
			2	18	SANDY LEAN CLAY soft, brown, moist		84		4
			3	18	LEAN CLAY, with sand firm, brown, moist				6
5			4	18	- becomes stiff below 3 feet	CL			7
			5	18					7
10			6	18	FINE SAND medium dense, tan				11
			7	16	- Cave-in at completion of drilling at 12 feet	SP			10
15			8	14					13
			9	18	SILTY SAND loose, light brown, moist	SM			6
20					BOTTOM OF BORING AT 18½ FEET				
25									
30									
35									

COMPLETION DEPTH: 18.5 ft.
DATE: 4/17/2018
RIG: Diedrich D-50, Buggy Mounted, Auto-Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-2

Planned Hog Farm
Coon Tree Road, Alix, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 18-15059 Location: Shown on Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
					Surface Description=Bare Ground				
0			1	18	SILTY SAND, with clay very loose, brown with organics	SM			4
			2	18	CLAYEY SAND loose, brown, moist	SC			7
			3	18	LEAN CLAY, with sand stiff, brown and tan, moist	CL			7
5			4	18					6
			5	18	FINE SAND variable medium dense to loose, brown and tan with trace clay	SP			8
10			6	18					5
			7	18	- becomes tan and orange below 12 feet				11
15			8	6	- Cave-in at completion of drilling at 14 feet				6
			9	18					13
20					BOTTOM OF BORING AT 18½ FEET				
25									
30									
35									

COMPLETION DEPTH: 18.5 ft.
DATE: 4/16/2018
RIG: Diedrich D-50, Buggy Mounted, Auto-Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-3

Planned Hog Farm
Coon Tree Road, Alix, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 18-15059 Location: Shown on Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4 0.8 1.2 1.6) / WATER CONTENT, % ● (PL — LL; 20 40 60 80)	BLOWS PER FT
					Surface Description=Bare Ground				
0					SILTY, CLAYEY SAND	SC-SM			
			1	18	very loose to loose, dark brown with organics, moist	SC			4
			2	18	SANDY LEAN CLAY	CL	76		6
			3	18	firm to stiff, dark brown and brown with trace rootlets, moist				8
5			4	18	LEAN CLAY, with sand stiff, brown with trace rootlets, moist	CL	69		8
					SANDY LEAN CLAY very stiff, brown and tan with fine grained sand pockets				
			5	18	FINE SAND/CLAYEY SAND				4
10					loose, dark brown and light brown, moist				
			6	18	CLAYEY SAND medium dense, fine grained, brown - Cave-in at completion of drilling at 14 feet	SC			8
15									
			7	18	FINE SAND medium dense, brown	SP			11
					BOTTOM OF BORING AT 18½ FEET				
20									
25									
30									
35									

COMPLETION DEPTH: 18.5 ft.
DATE: 4/16/2018
RIG: Diedrich D-50, Buggy Mounted, Auto-Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-4

Planned Hog Farm
Coon Tree Road, Alix, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 18-15059 Location: Shown on Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
					Surface Description=Bare Ground				
0			1	18	SILTY SAND very loose to loose, dark brown	SM			4
			2	18	SANDY LEAN CLAY firm, brown	CL			5
			3	18	LEAN CLAY, with sand stiff, brown with fat clay seams, moist	CL			7
5			4	12			85		7
			5	14	LEAN CLAY very stiff, brown with trace fine sand	CL			9
10			6	10	- fine sand pockets appear below 9 feet				8
			7	18	- Cave-in at completion of drilling at 12 feet				13
15			8	10	SANDY LEAN CLAY firm to stiff, brown and tan, moist	CL			6
			9	18	CLAYEY SAND loose, brown and tan, fine grained, wet	SC			7
20					BOTTOM OF BORING AT 18½ FEET				
25									
30									
35									

COMPLETION DEPTH: 18.5 ft.
DATE: 4/17/2018
RIG: Diedrich D-50, Buggy Mounted, Auto-Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

LOG OF BORING NO.B-5

Planned Hog Farm
Coon Tree Road, Alix, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 18-15059 Location: Shown on Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL, 20, 40, 60, 80)	BLOWS PER FT
					Surface Description=Bare Ground				
0			1	7	SILTY SAND	SM			
					very loose, brown with organics	CL			6
			2	18	LEAN CLAY, with sand stiff, brown and orange	CL	91		8
			3	18	LEAN CLAY very stiff, brown and orange with trace sand, moist				9
5			4	18					8
			5	18					12
10			6	18					13
			7	18	SANDY LEAN CLAY very stiff, brown, tan and orange - Cave-in at completion of drilling at 12 feet	CL			9
15			8	10	SILTY SAND medium dense, light brown, fine grained, wet	SM			9
			9	10					11
20					BOTTOM OF BORING AT 18½ FEET				
25									
30									
35									

COMPLETION DEPTH: 18.5 ft.
DATE: 4/17/2018
RIG: Diedrich D-50, Buggy Mounted, Auto-Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry ▽
AT COMPLETION: Dry ▽
AT 24 HOURS: Backfilled ▽

LOG OF BORING NO.B-6

Planned Hog Farm
Coon Tree Road, Alix, Arkansas

GTS, Inc.
Geotechnical & Testing Services
Fayetteville, AR

Project No.: 18-15059 Location: Shown on Boring Location Diagram

DEPTH, FT	SYMBOL	SAMPLES	SAMPLE No.	RECOVERY (in.)	DESCRIPTION OF MATERIAL	USCS	%<#200	HAND PENETROMETER, TSF ■ / LAB. COHESION, TSF ▲ (0.4, 0.8, 1.2, 1.6) / WATER CONTENT, % ● (PL — LL; 20, 40, 60, 80)	BLOWS PER FT
					Surface Description=Bare Ground				
0			1	18	SILTY SAND loose, brown	SM			4
			2	18	CLAYEY SAND loose, brown	SC			8
			3	18	SANDY LEAN CLAY/CLAYEY SAND medium dense/stiff, brown and tan,				10
5			4	18	moist CLAYEY SAND loose, brown, moist	SC			7
			5	18	FINE SAND medium dense, tan	SP			9
10			6	18					8
			7	18	- Cave-in at completion of drilling at 12 feet				10
15			8	18	- becomes light brown and wet with trace clay appearing below 14 feet				8
			9	18					9
20					BOTTOM OF BORING AT 18½ FEET				
25									
30									
35									

COMPLETION DEPTH: 18.5 ft.
DATE: 4/17/2018
RIG: Diedrich D-50, Buggy Mounted, Auto-Hammer Assisted

DEPTH TO WATER: DURING DRILLING: Dry
AT COMPLETION: Dry
AT 24 HOURS: Backfilled

GTS, Inc.
Geotechnical & Testing Services

APPENDIX B

Laboratory Data

GTS, Inc.
Geotechnical & Testing Services

1915 N. Shiloh Dr, Suite 1
Fayetteville, Arkansas 72704

Office: (479) 521-7645
Fax: (479) 521-6232

Office Locations
Fayetteville, Arkansas
Fort Smith, Arkansas
Tulsa, Oklahoma
Dallas, Texas

PROJECT: Planned Sow Farm

DATE: 4/27/2018

JOB NO: 18-15059

BORING NO.	B-1
SAMPLE NO.	S-2
DEPTH (FT)	1'6" - 3'0"
PLASTIC LIMIT	20
LIQUID LIMIT	28
PLASTICITY INDEX	8

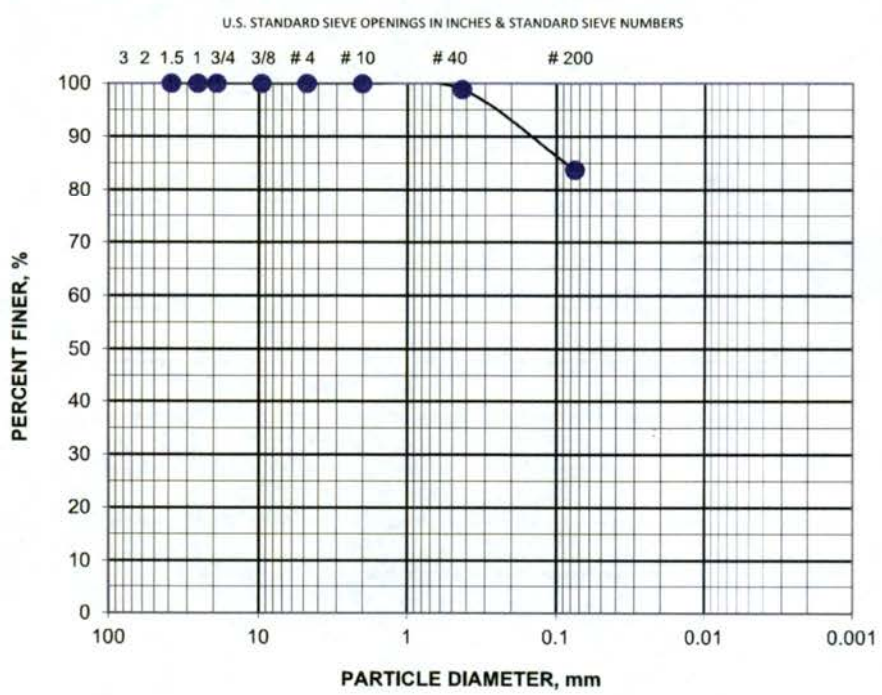
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	100.0%
No. 4	100.0%
No. 10	99.9%
No. 40	98.9%
No. 200	83.8%

MOISTURE CONTENT (%)	23.6

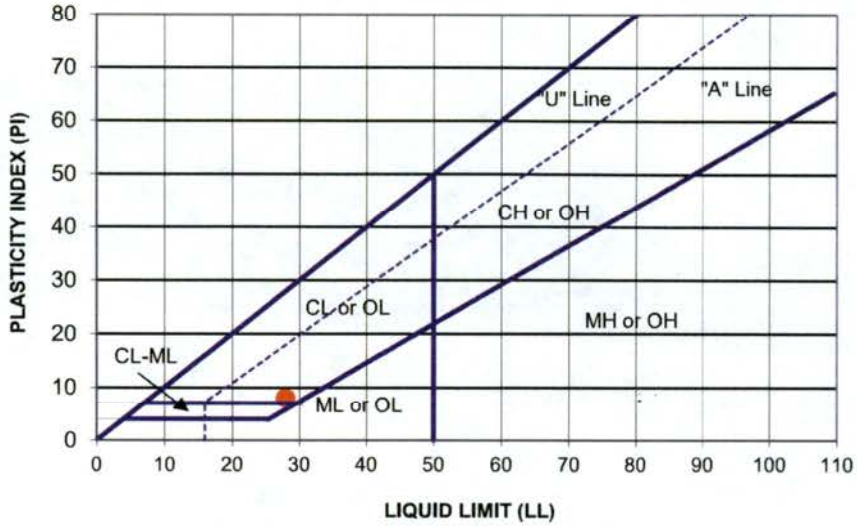
VISUAL DESCRIPTION	brown, moist

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay with Sand, CL	A-4	5

GRAIN SIZE DISTRIBUTION CURVE



PLASTICITY CHART



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Dallas, Texas

PROJECT: Planned Sow Farm

DATE: 4/27/2018

JOB NO: 18-15059

BORING NO.	B-3
SAMPLE NO.	S-2
DEPTH (FT)	1'6" - 3'0"
PLASTIC LIMIT	17
LIQUID LIMIT	30
PLASTICITY INDEX	13

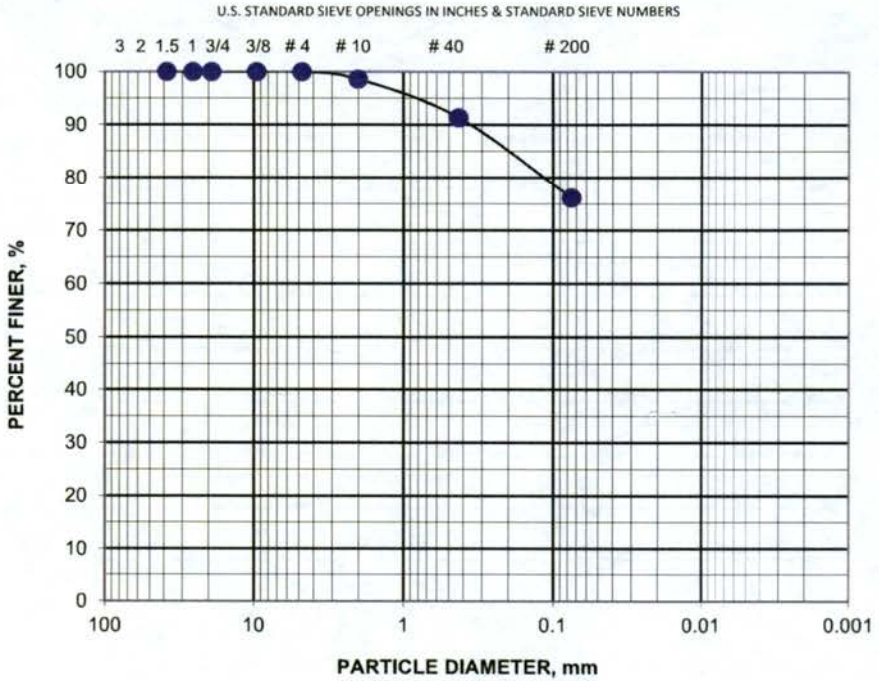
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	100.0%
No. 4	100.0%
No. 10	98.6%
No. 40	91.4%
No. 200	76.2%

MOISTURE CONTENT (%) 23.4

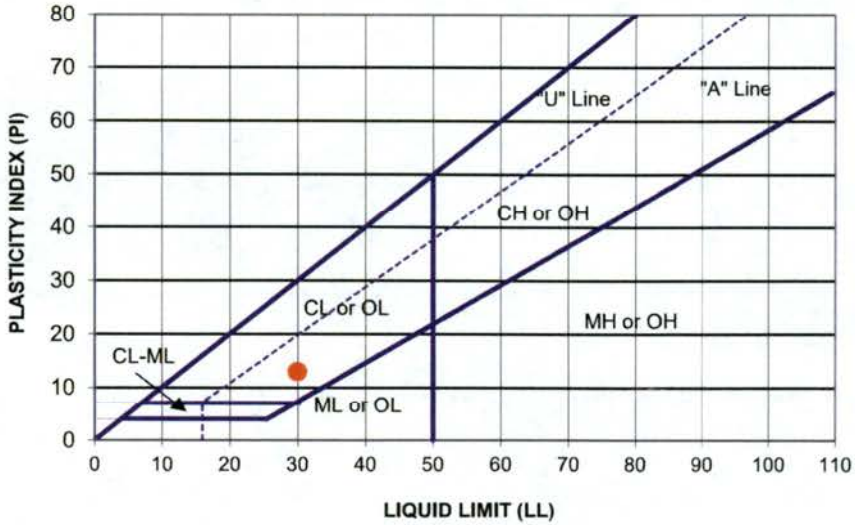
VISUAL DESCRIPTION	Dark Brown and Brown with Trace Rootlets, Moist

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay with Sand, CL	**A-6**	**8**

GRAIN SIZE DISTRIBUTION CURVE



PLASTICITY CHART



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Dallas, Texas

PROJECT: Planned Sow Farm

DATE: 4/27/2018

JOB NO: 18-15059

BORING NO.	B-3
SAMPLE NO.	S-4
DEPTH (FT)	4'6" - 6'0"
PLASTIC LIMIT	17
LIQUID LIMIT	28
PLASTICITY INDEX	11

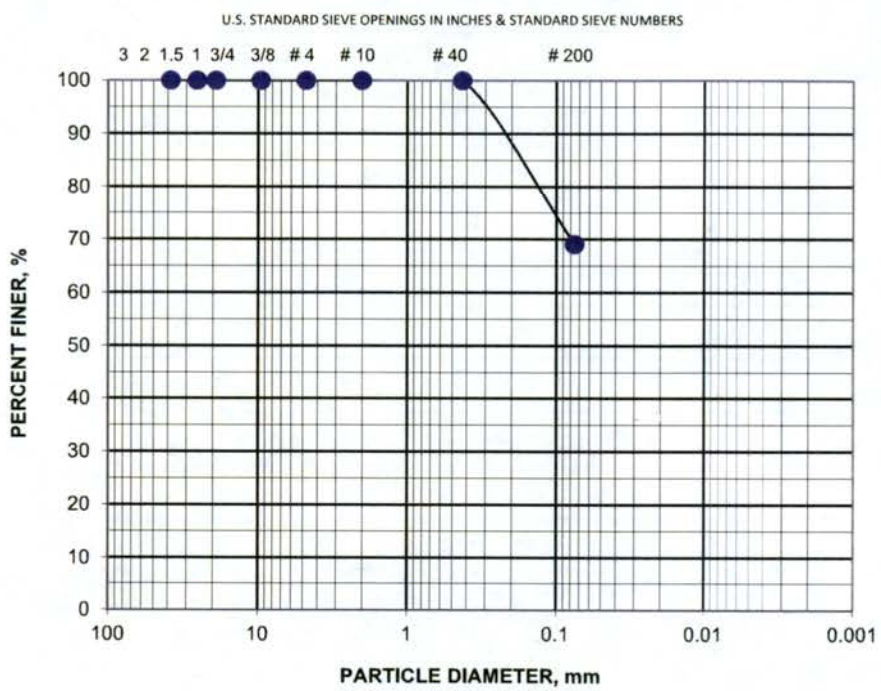
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	100.0%
No. 4	100.0%
No. 10	100.0%
No. 40	100.0%
No. 200	69.1%

MOISTURE CONTENT (%) 20.4

VISUAL DESCRIPTION	Brown and Tan

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Sandy Lean Clay, CL	A-6	5

GRAIN SIZE DISTRIBUTION CURVE



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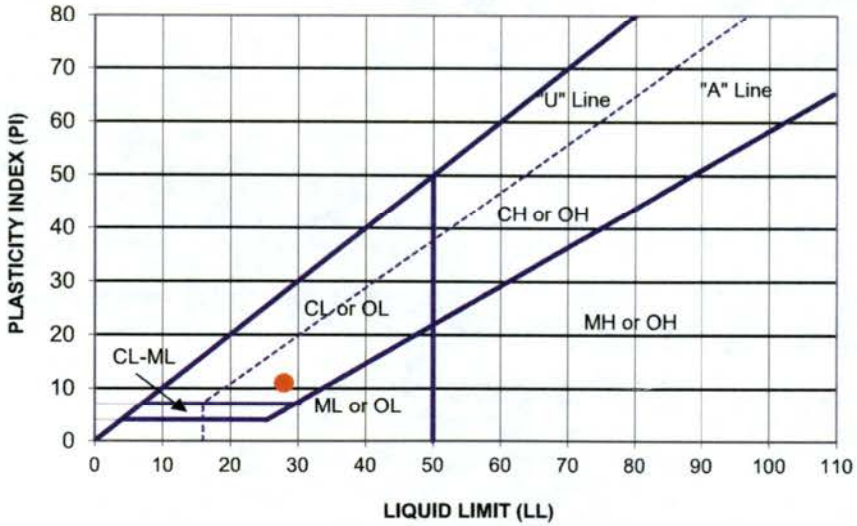

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Dallas, Texas

PROJECT: Planned Sow Farm

DATE: 4/27/2018

JOB NO: 18-15059

BORING NO.	B-4
SAMPLE NO.	S-5
DEPTH (FT)	7'0" - 8'6"
PLASTIC LIMIT	15
LIQUID LIMIT	38
PLASTICITY INDEX	23

SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	100.0%
No. 4	100.0%
No. 10	99.7%
No. 40	98.7%
No. 200	85.4%

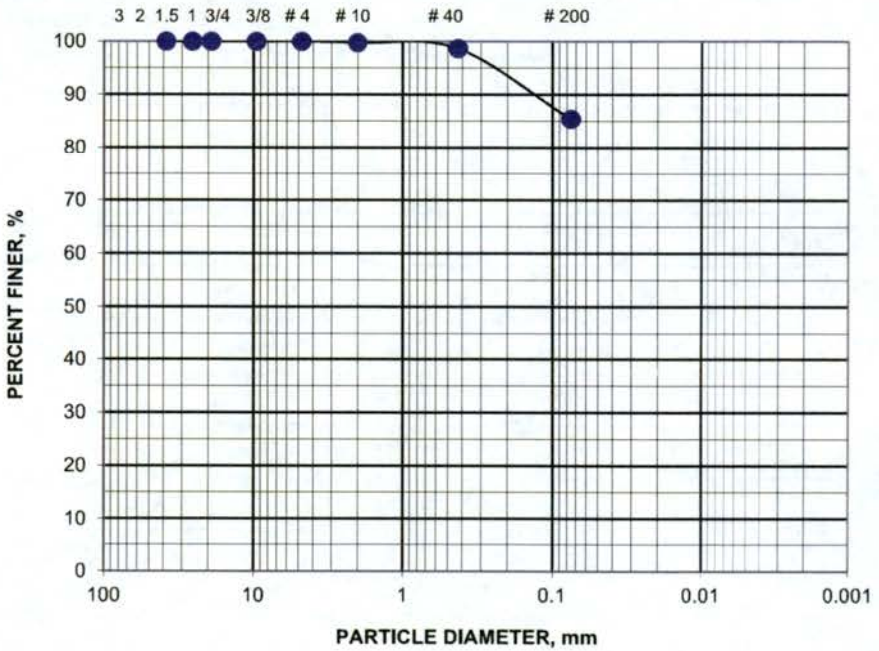
MOISTURE CONTENT (%) 21.2

VISUAL DESCRIPTION	Brown

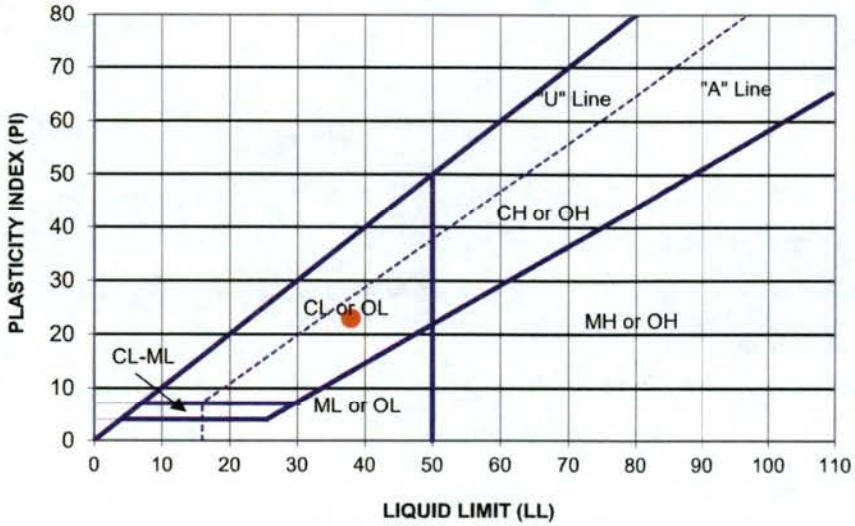
ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay, CL	**A-6**	**19**

GRAIN SIZE DISTRIBUTION CURVE

U.S. STANDARD SIEVE OPENINGS IN INCHES & STANDARD SIEVE NUMBERS



PLASTICITY CHART



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Dallas, Texas

PROJECT: Planned Sow Farm

DATE: 4/27/2018

JOB NO: 18-15059

BORING NO.	B-5
SAMPLE NO.	S-2
DEPTH (FT)	1'6" - 3'0"
PLASTIC LIMIT	18
LIQUID LIMIT	30
PLASTICITY INDEX	12

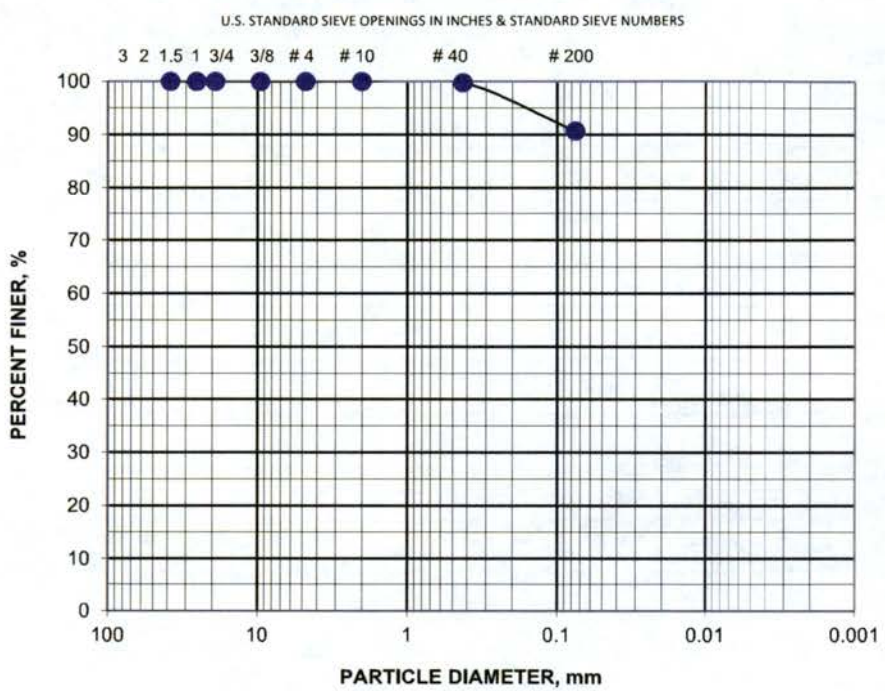
SIEVE SIZE	PERCENT PASSING
3.00"	100.0%
1.50"	100.0%
1.00"	100.0%
3/4"	100.0%
3/8"	100.0%
No. 4	100.0%
No. 10	100.0%
No. 40	99.8%
No. 200	90.7%

MOISTURE CONTENT (%) 21.4

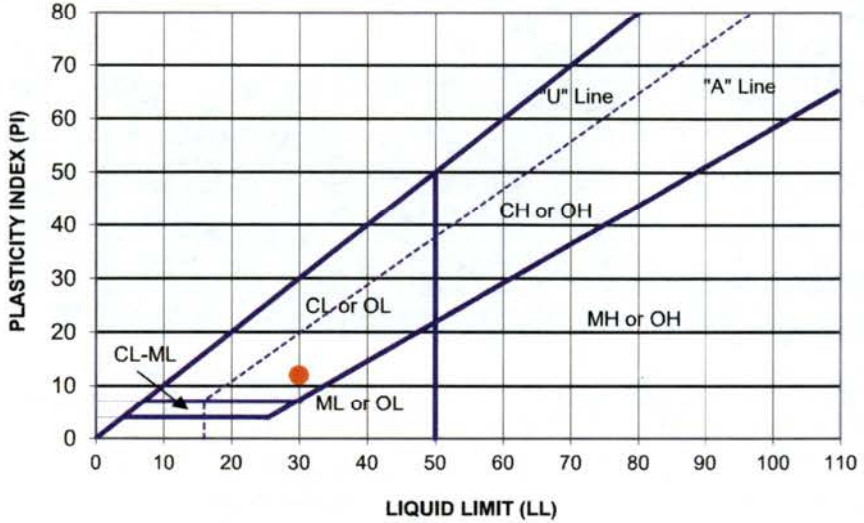
VISUAL DESCRIPTION	Brown and Orange

ASTM DESCRIPTION	AASHTO CLASSIFICATION	AASHTO GI
Lean Clay, CL	**A-6**	**10**

GRAIN SIZE DISTRIBUTION CURVE



PLASTICITY CHART



STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

MAIN MENU | RESET | SUBMIT

A

1. Contractor Name & Number: 1137 HAGGER WELL SERVICE
2. Driller Name & Number: 2151 JAMES HAGGER
3. Pump Installer Name & Number: 4371 JAMES HAGGER
4. Date Well Completed: 09/01/2011 New Well

5. COUNTY : JOHNSON (071)
6 FRACTION ¼ of ¼
7 SECTION:
8 TOWNSHIP
9 RANGE

11. LONGITUDE 93-43-41 12. LATITUDE 35-23-31

B

DESCRIPTION OF FORMATION	DEPTHS IN FEET FROM	TO	WATER BEARING	IF YES.. DEPTH
CLAY	0	6	No	0
	0	0	No	0
FINE SAND	6	13	No	0
COARSE SAND	13	45	Yes	20
ROCK	45	46	No	0

2. TOTAL DEPTH OF WELL 43
3. STATIC WATER LEVEL 20 Ft. below land surface
4. YIELD 300 gallons per MIN
5. DIAMETER OF BORE HOLE 20 IN

C PUMP REPORT

1 TYPE PUMP TURBINE
2 SETTING DEPTH 40 FEET
3 BRAND NAME AND SERIAL NUMBERS: NATIONAL
4 RATED CAPACITY 300 gallons per minute
5 TYPE LUBRICATION H20
6 DROP PIPE OR COLUMN PIPE SIZE 6
7 WIRE SIZE
8 PRESSURE TANK: SIZE: MAKE: MODEL:
9 DATE OF INSTALLATION OR REPAIR 12/31/1999
10 Is there an abandoned water well on the property?

CASING FROM 0 TO 0 W/ 0 Inner Diameter
CASING FROM 0 TO 43 W/ 12 Inner Diameter
TYPE CASING PVC

3. SCREEN
TYPE: PVC DIA 12 SLOT/GA 050
SET FROM 23 FT TO 43 FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4. GRAVEL PACK FROM: FT TO: FT
5. BACK FILLED WITH: SAND/GRAVEL
FROM: 0 FT TO: 0 FT
6. SEALED WITH: CEMENT/BENTONITE
FROM: 0 FT TO: 0 FT
7. DISINFECTED WITH:
8. USE OF WELL:
IRRIGATION
OTHER
A/C HEATPUMP TYPE WELLS

(For A/C only)Will system also be used for purposes other than Heating and Air Conditioning?
If yes, name use:
(For A/C open-loop only) Into what medium is water returned?
11. REMARKS
12. SIGNED DATE

STATE OF ARKANSAS
REPORT ON WATER WELL CONSTRUCTION & PUMP INSTALLATION

MAIN MENU | RESET | SUBMIT

A

1. Contractor Name & Number: 1137 HAGGER WELL SERVICE
2. Driller Name & Number: 2151 JAMES HAGGER
3. Pump Installer Name & Number: 4371 JAMES HAGGER
4. Date Well Completed: 07/11/2013 New Well

5. COUNTY : (71)
6 FRACTION ¼ of ¼
7 SECTION:
8 TOWNSHIP
9 RANGE

11. LONGITUDE 93-43-31 12. LATITUDE 35-23-31

B

DESCRIPTION OF FORMATION	DEPTHS IN FEET FROM	TO	WATER BEARING	IF YES.. DEPTH
CLAY	0	12	No	0
FINE SAND	12	24	Yes	21
SAND	24	30	No	0
SAND / COARSE SAND	30	47	No	0

2. TOTAL DEPTH OF WELL 47
3. STATIC WATER LEVEL 21 Ft. below land surface
4. YIELD 700 gallons per MIN
5. DIAMETER OF BORE HOLE 20 IN

C PUMP REPORT

1 TYPE PUMP
2 SETTING DEPTH 0 FEET
3 BRAND NAME AND SERIAL NUMBERS: NO PUMP
4 RATED CAPACITY 0 gallons per minute
5 TYPE LUBRICATION
6 DROP PIPE OR COLUMN PIPE SIZE
7 WIRE SIZE
8 PRESSURE TANK: SIZE: MAKE: MODEL:
9 DATE OF INSTALLATION OR REPAIR 12/31/1999
10 Is there an abandoned water well on the property?

CASING FROM 0 TO 0 W/ 0 Inner Diameter
CASING FROM 0 TO 27 W/ 12 Inner Diameter
TYPE CASING PVC

3. SCREEN
TYPE: PVC DIA 12 SLOT/GA 0.05
SET FROM 27 FT TO 47 FT
TYPE: DIA SLOT/GA
SET FROM FT TO FT

4. GRAVEL PACK FROM: FT TO: FT
5. BACK FILLED WITH: WELLPACKING
FROM: 10 FT TO: 47 FT
6. SEALED WITH: BENTONITE
FROM: 0 FT TO: 0 FT
FROM: 0 FT TO: 10 FT
7. DISINFECTED WITH:
8. USE OF WELL:
IRRIGATION
OTHER
A/C HEATPUMP TYPE WELLS

(For A/C only)Will system also be used for purposes other than Heating and Air Conditioning?
If yes, name use:
(For A/C open-loop only) Into what medium is water returned?
11. REMARKS
12. SIGNED DATE

Section 4

COON TREE FARM

GESTATION-FARROWING SWINE OPERATION

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

DATE: JULY 9, 2018

SHEET INDEX

NOTE: IT IS THE DUTY OF THE LANDOWNER IF SUBSURFACE INVESTIGATION OR CONSTRUCTION IS PROPOSED TO:
1. Notify the utility company of time, place, and type of work to be done.
2. Request that the buried utility be located and staked on the ground both horizontally and verticially by the utility owner. Dig Safe phone number is: 1–800–795–0555
3. Request that a representative of the utility company be present during excavation operations.
4. Notify the contractor of the location of the utility in relation to the job work area.

GENERAL NOTES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
7/9/18
NATHANA PESTA

No.	Revision/Issue	Date

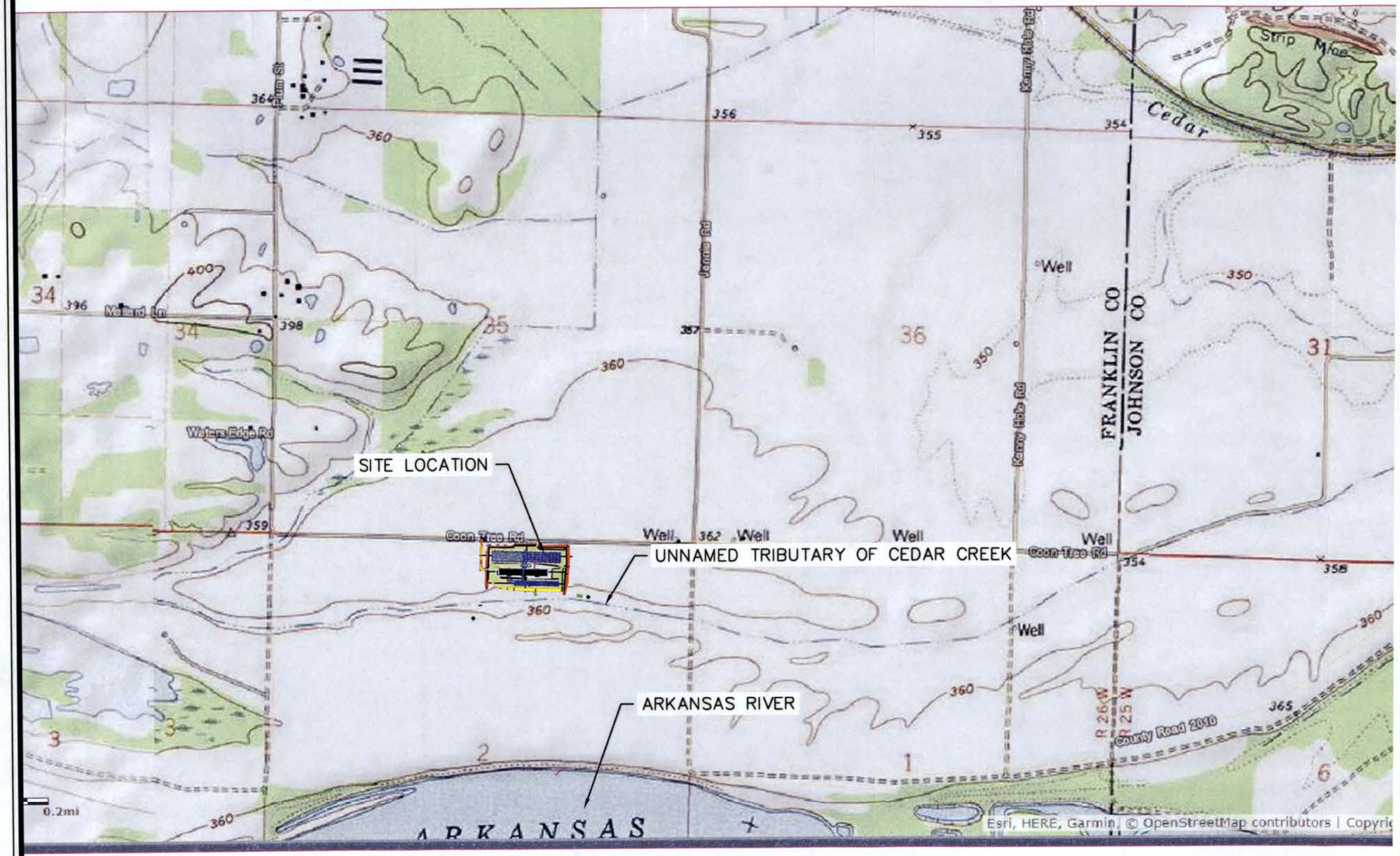
DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

COVER

DATE: JULY 9, 2018	SHEET: C
SCALE: NONE	
DRAWN BY: BKT	
CHECKED BY: NAP	



GENERAL NOTES

LEGEND

N

SCALE, FEET

0 660 1320 1980 2640

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15552
NATHAN A PESTA
7/9/18

No.	Revision/Issue	Date

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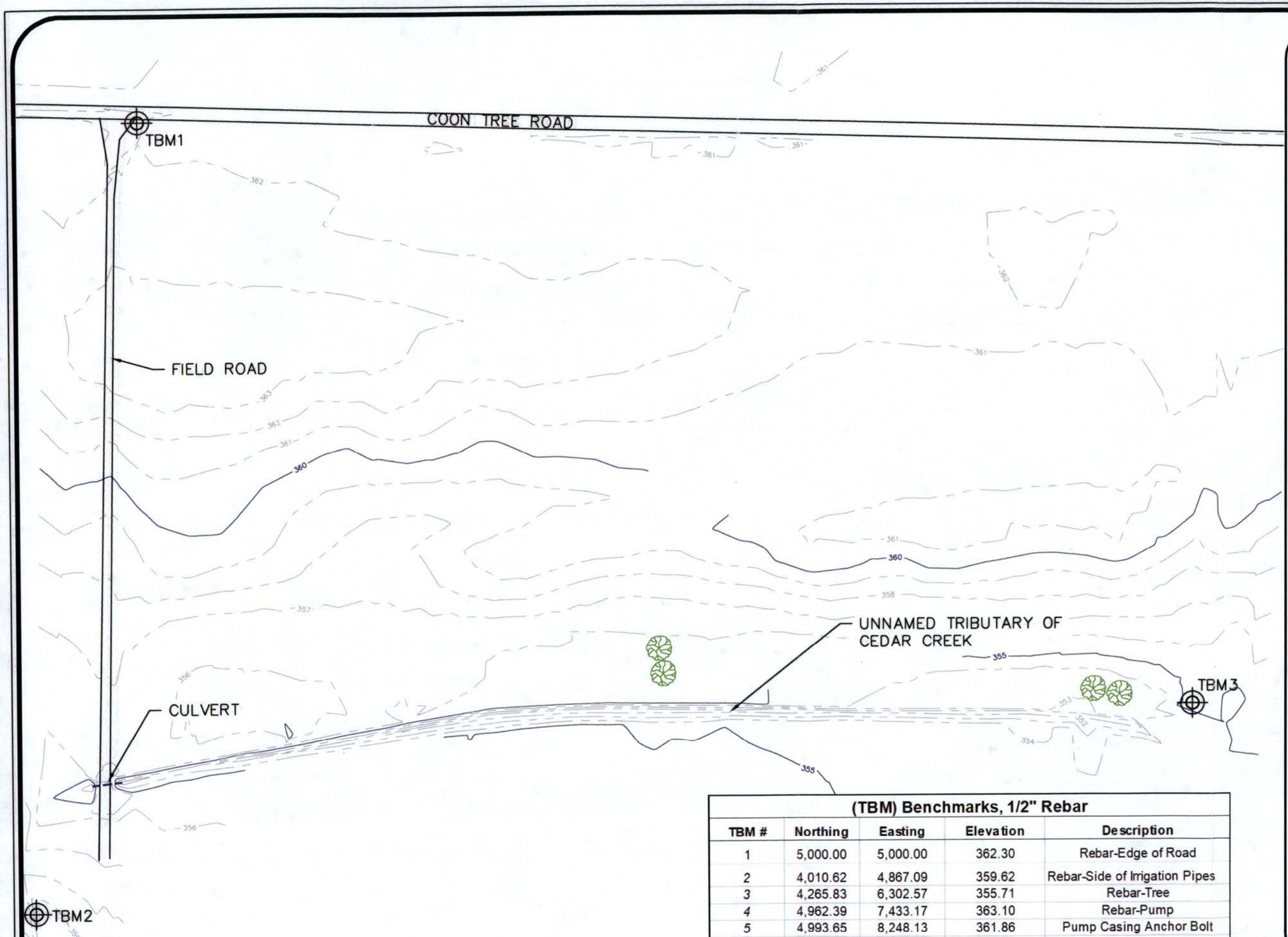
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

USGS SITE PLAN

DATE: MAR 14, 2018	SHEET: C1.1
SCALE: 1"=1320'	
DRAWN BY: NAP	
CHECKED BY: NAP	



GENERAL NOTES

LEGEND

- BENCHMARK
- BUILDINGS
- FENCELINE
- PROPOSED FENCELINE
- CULVERT/PIPE
- DRAINAGE ARROW

SCALE, FEET

0 50 100 150 200

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHAN A PESTA
3/9/18

No.	Revision/Issue	Date

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COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

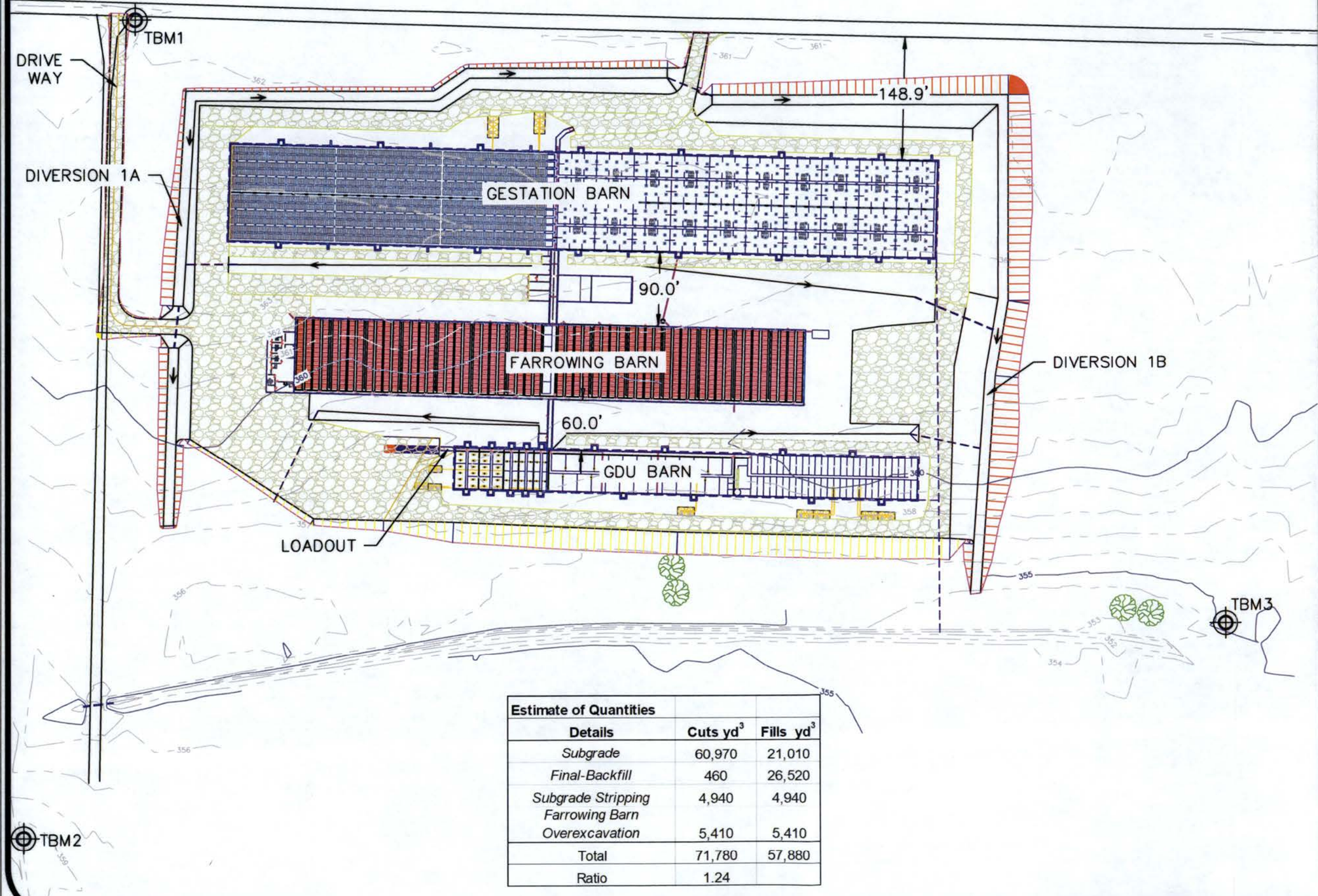
EXISTING SITE PLAN

(TBM) Benchmarks, 1/2" Rebar

TBM #	Northing	Easting	Elevation	Description
1	5,000.00	5,000.00	362.30	Rebar-Edge of Road
2	4,010.62	4,867.09	359.62	Rebar-Side of Irrigation Pipes
3	4,265.83	6,302.57	355.71	Rebar-Tree
4	4,962.39	7,433.17	363.10	Rebar-Pump
5	4,993.65	8,248.13	361.86	Pump Casing Anchor Bolt
6	7,817.52	2,419.16	396.61	Rebar-PP

DATE: MAR 14, 2018
SCALE: 1"=100'
DRAWN BY: NAP
CHECKED BY: NAP

SHEET: C2.1



Estimate of Quantities		
Details	**Cuts yd³**	**Fills yd³**
Subgrade	60,970	21,010
Final-Backfill	460	26,520
Subgrade Stripping Farrowing Barn	4,940	4,940
Overexcavation	5,410	5,410
Total	71,780	57,880
Ratio	1.24	

GENERAL NOTES

LEGEND

- BENCHMARK
- BUILDINGS
- FENCELINE
- PROPOSED FENCELINE
- CULVERT/PIPE
- DRAINAGE ARROW

SCALE, FEET

0 60 120 180 240

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHANA PESTA
7/9/18

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DGA
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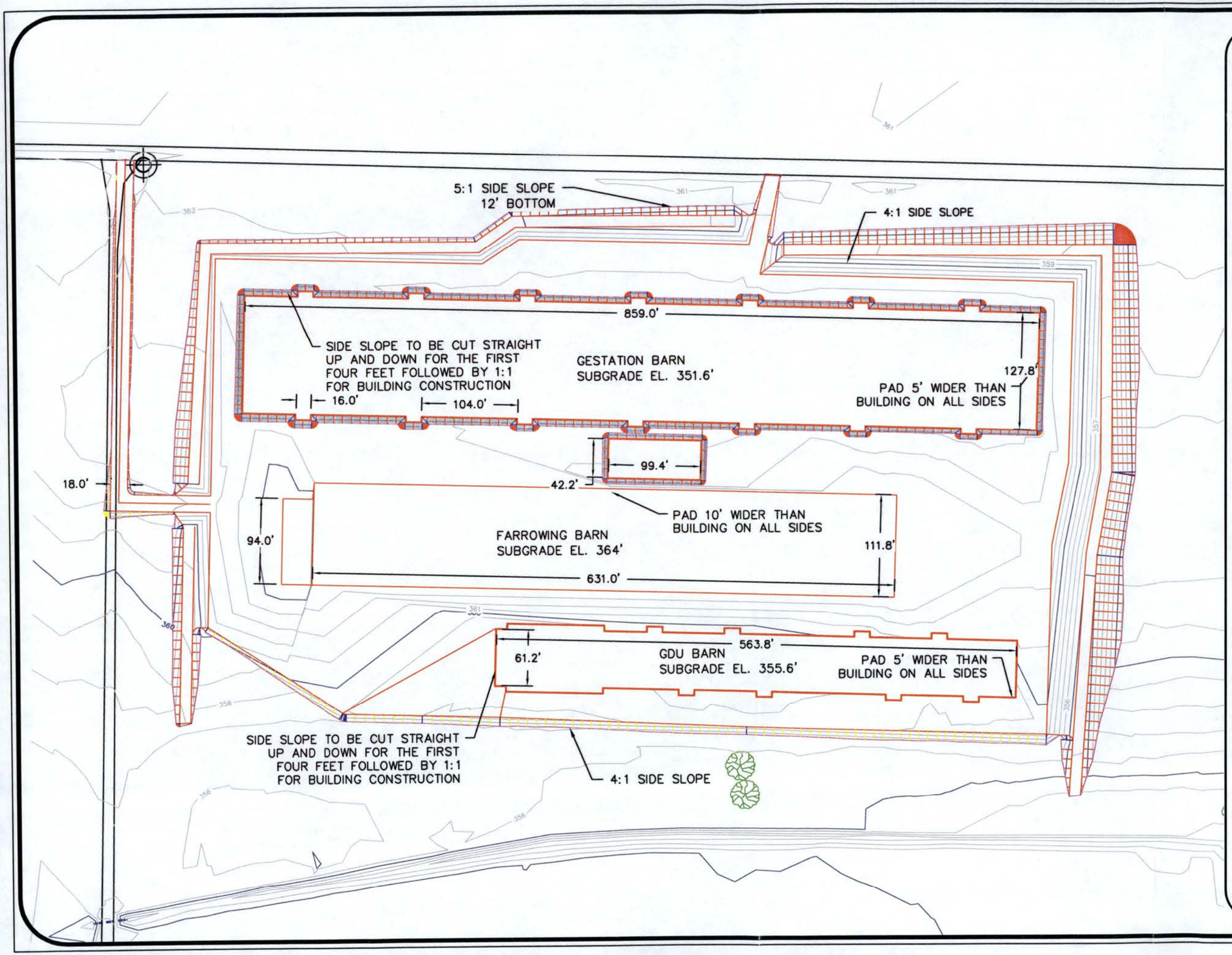
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

PROPOSED SITE PLAN

DATE: JUL 9, 2018	SHEET: C3.1
SCALE: 1"=120'	
DRAWN BY: DDR	
CHECKED BY: NAP	



GENERAL NOTES

LEGEND

- BENCHMARK
- BUILDINGS
- FENCELINE
- PROPOSED FENCELINE
- CULVERT/PIPE
- DRAINAGE ARROW

SCALE, FEET

0 50 100 150 200

STATE OF ARKANSAS
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7/9/18
NATHANA PESTA

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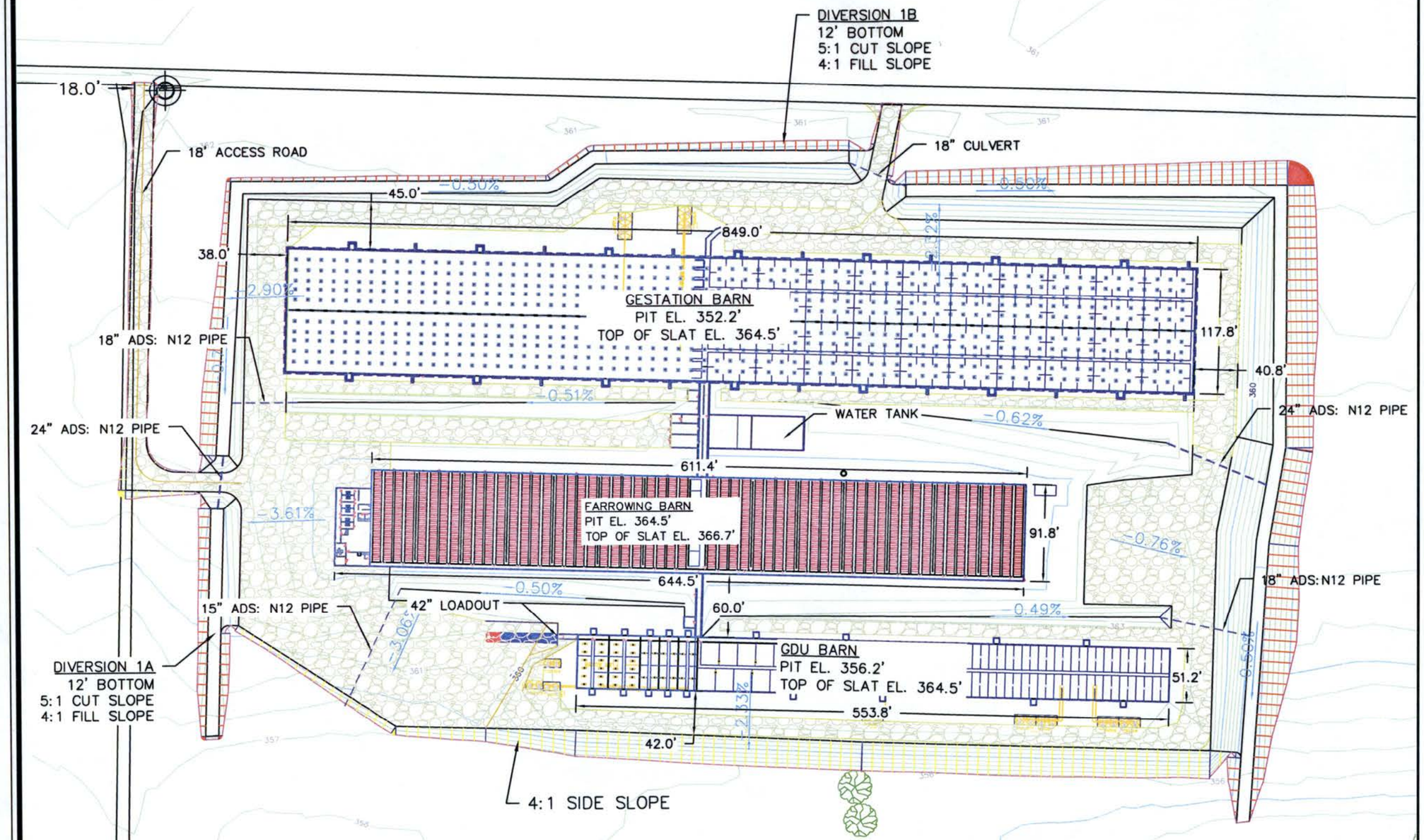
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

PROPOSED SUBGRADE SITE PLAN

DATE: JUL 9, 2018	SHEET: C3.2
SCALE: 1"= 100'	
DRAWN BY: DDR	
CHECKED BY: NAP	



GENERAL NOTES

LEGEND

- BENCHMARK
- BUILDINGS
- FENCELINE
- PROPOSED FENCELINE
- CULVERT/PIPE
- DRAINAGE ARROW

SCALE, FEET

0 50 100 150 200

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHANA PESTA
7/9/18

No.	Revision/Issue	Date

DGA
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4200 21ST ST. SE UNIT 101 MANDAN ND 58554

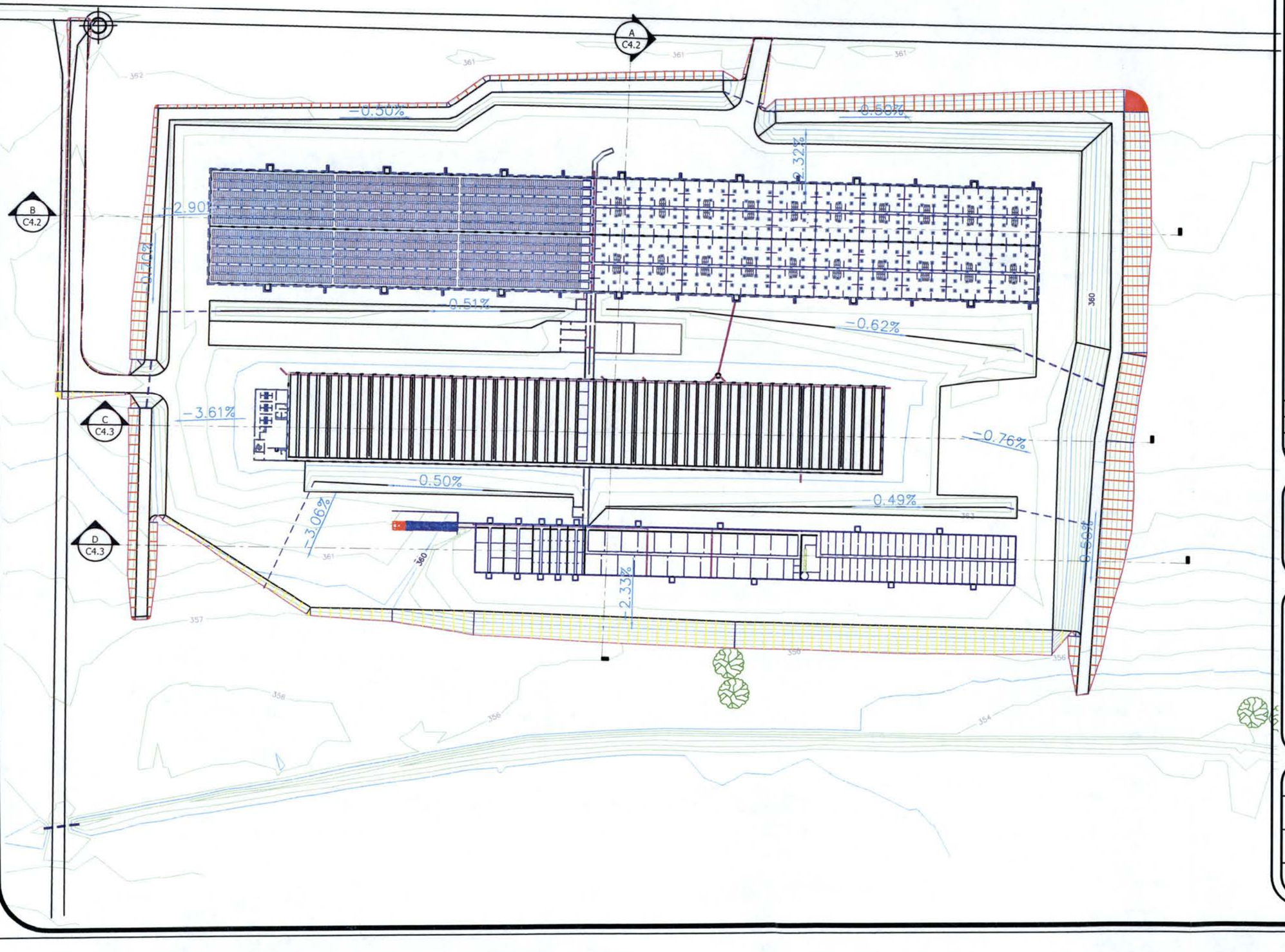
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

PROPOSED FINAL GRADE SITE PLAN

NOTE: THIS DESIGN REFLECTS A FINAL GRADE ELEVATION APPROXIMATELY (EL. 364.5') 3.5' ABOVE THE FLOOD PLAIN ELEVATION

DATE: JUL 9, 2018	SHEET: C3.3
SCALE: 1"= 100'	
DRAWN BY: DDR	
CHECKED BY: NAP	



GENERAL NOTES

LEGEND

- BENCHMARK
- BUILDINGS
- FENCELINE
- PROPOSED FENCELINE
- CULVERT/PIPE
- DRAINAGE ARROW

SCALE, FEET

0 50 100 150 200

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15552
NATHANA' PESTA
7/9/18

No.	Revision/Issue	Date

DGA
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4200 21ST ST. SE UNIT 101 MANDAN ND 58554

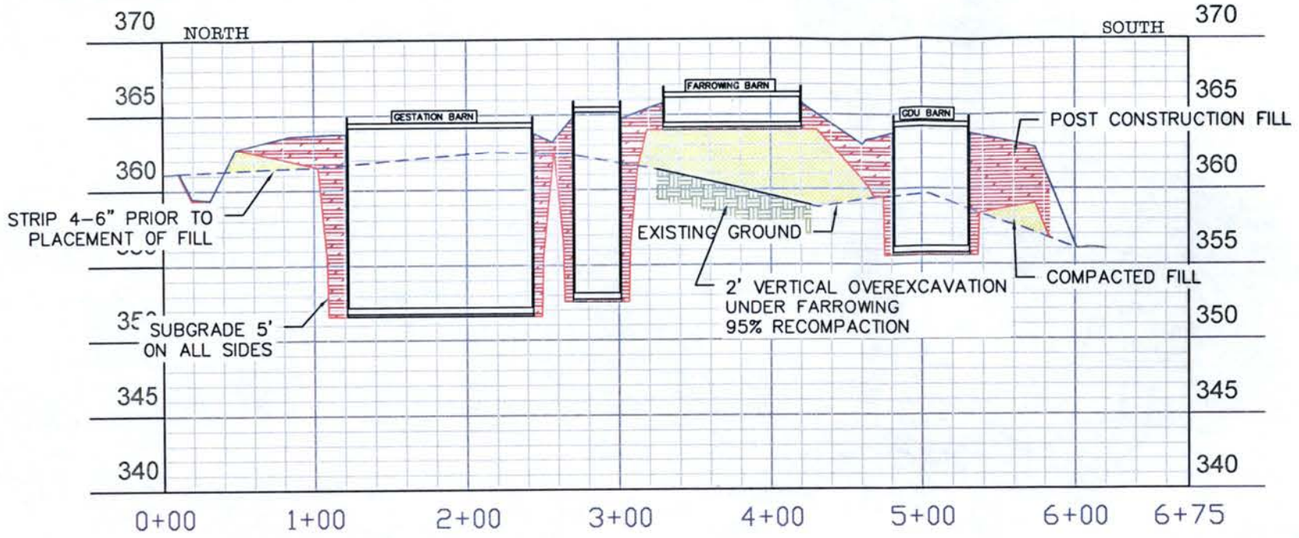
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

PROPOSED SITE CROSS SECTION VIEW

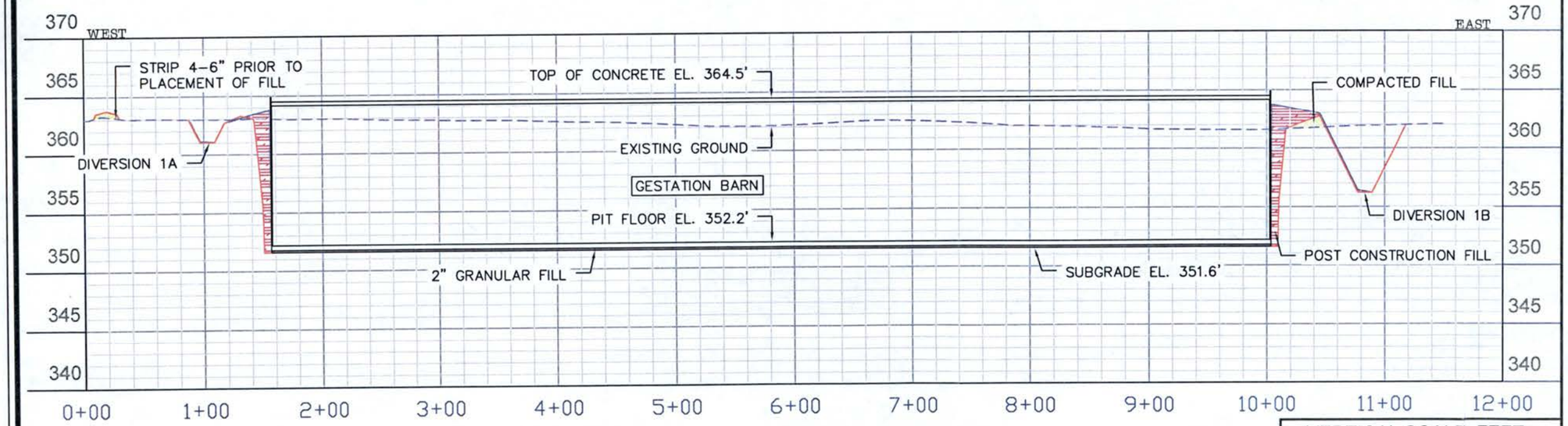
DATE: JUL 9, 2018	SHEET: C4.1
SCALE: 1"=100'	
DRAWN BY: JG/DDR	
CHECKED BY: NAP	

NOTE: FARROWING BARN TO BE OVEREXCAVATED 2' AS PER SOIL REPORT.



A-A / C4.1 BUILDING CROSS SECTION

VERTICAL SCALE, FEET
0 5 10 15 20
HORIZONTAL SCALE, FEET
0 50 100 150 200



B-B / C4.1 BUILDING CROSS SECTION

VERTICAL SCALE, FEET
0 5 10 15 20
HORIZONTAL SCALE, FEET
0 50 100 150 200

GENERAL NOTES

LEGEND

- CONCRETE
- STRIP 4–6"
- POST CONSTRUCTION FILL
- FILL
- GRAVEL
- GRANULAR FILL
- FINAL GRADE
- SUBGRADE
- EXISTING GROUND

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHANA PESTA
7/9/18

No.	Revision/Issue	Date

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4200 21ST ST. SE UNIT 101 MANDAN ND 58554

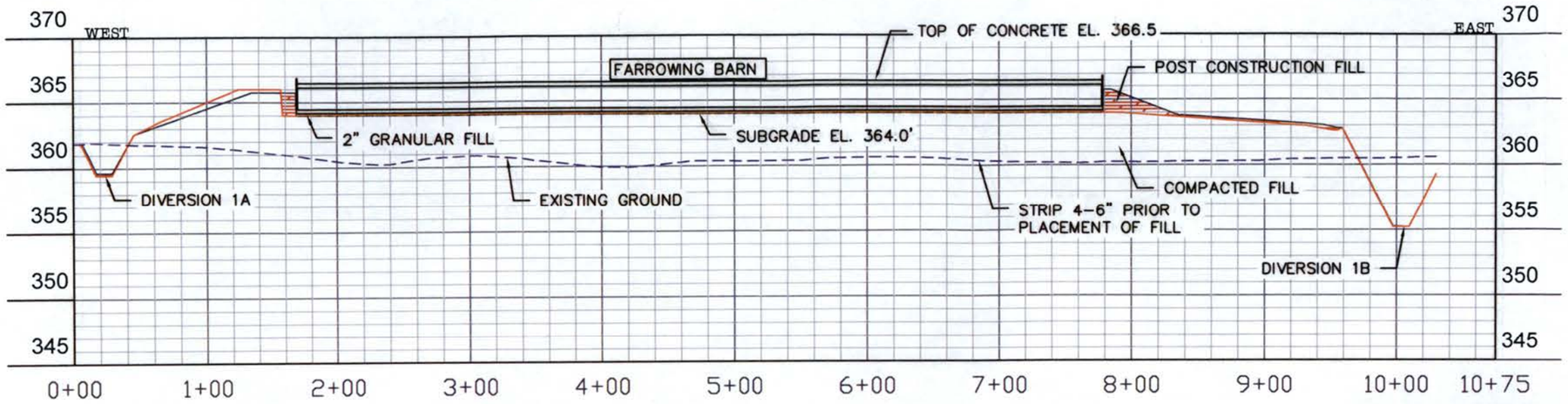
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

PROPOSED BUILDING CROSS SECTIONS

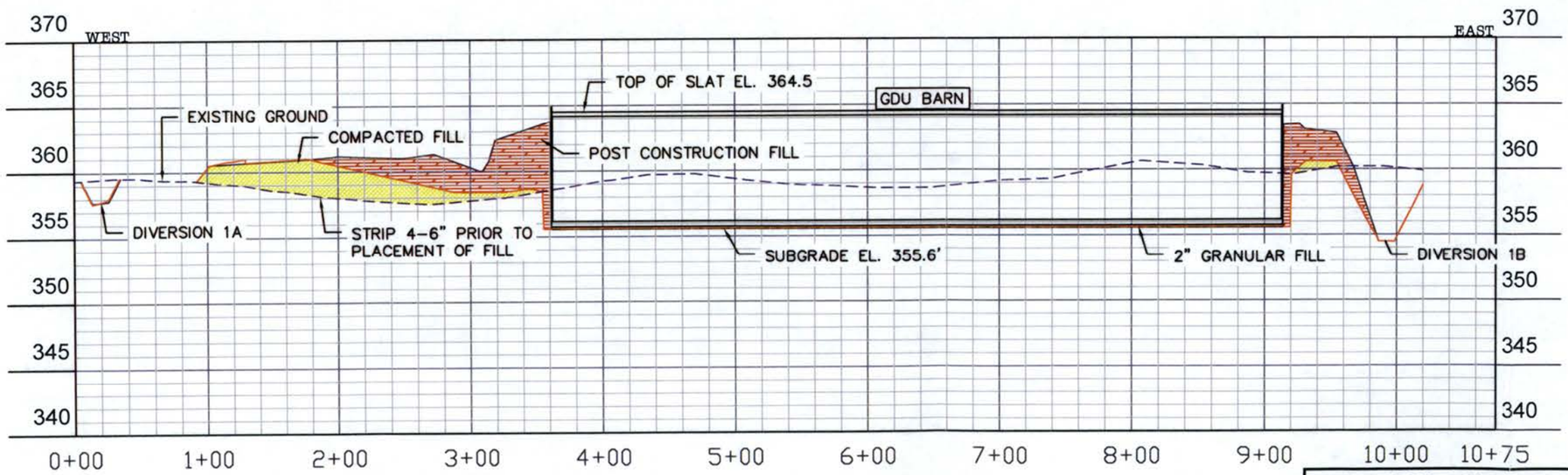
DATE: MAY 29, 2018	SHEET: C4.2
SCALE: AS SHOWN	
DRAWN BY: JG/DDR	
CHECKED BY: NAP	

NOTE: FARROWING BARN TO BE OVEREXCAVATED 2' AS PER SOIL REPORT.



C-C / C4.1 BUILDING CROSS SECTION

VERTICAL SCALE, FEET
0 5 10 15 20
HORIZONTAL SCALE, FEET
0 50 100 150 200



D-D / C4.1 BUILDING CROSS SECTION

VERTICAL SCALE, FEET
0 5 10 15 20
HORIZONTAL SCALE, FEET
0 50 100 150 200

GENERAL NOTES

LEGEND

- CONCRETE
- STRIP 4-6"
- POST CONSTRUCTION FILL
- FILL
- GRAVEL
- GRANULAR FILL
- FINAL GRADE
- SUBGRADE
- EXISTING GROUND

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHANA PESTA
7/9/18

No.	Revision/Issue	Date

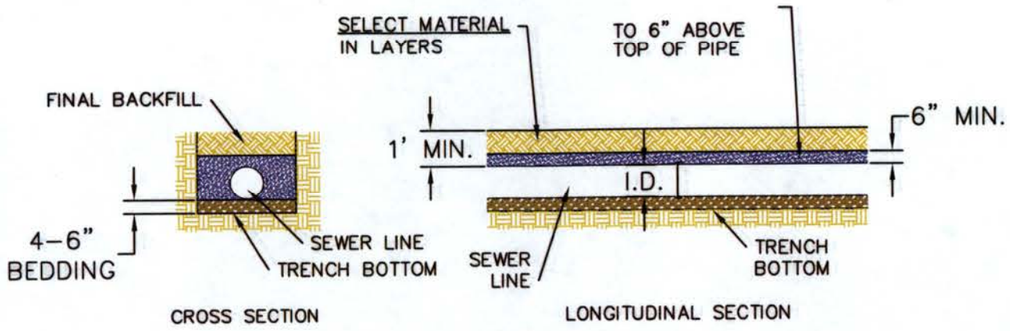
DGA CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

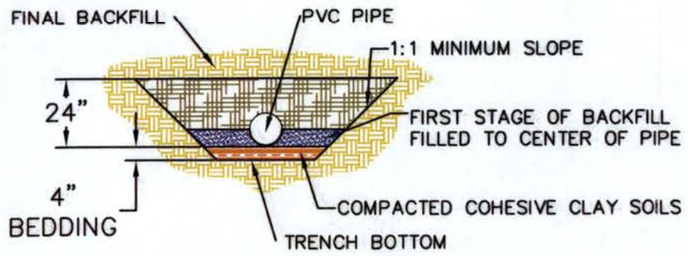
PROPOSED BUILDING CROSS SECTIONS

DATE: MAY 29, 2018	SHEET: C4.3
SCALE: 1"=100'	
DRAWN BY: JG/DDR	
CHECKED BY: NAP	



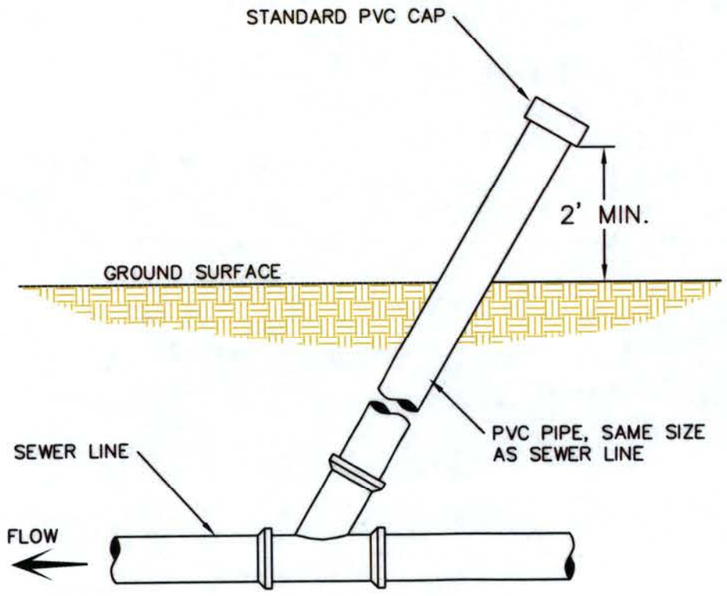
STANDARD BEDDING DETAILS FOR ADS-N12 PIPE OR EQUIVALENT

NOT TO SCALE



STANDARD BEDDING DETAILS FOR PVC PIPE OR EQUIVALENT PLACED THROUGH BERM

NOT TO SCALE



TYPICAL CLEANOUT DETAIL

ADS DUAL WALL TRENCHING & PIPELINE CONSTRUCTION NOTES

1. Select backfill shall consist of granular soil which meets the USCS soil type GM, GC, SM, or SC. Material shall have a maximum particle size of ½ inch diameter and shall be compacted in 6 inch layers (ma.) to a density not less than 85% of the Standard Proctor Density.

2. Unclassified backfill shall consist of excavated material, provided it is free from lumps of clay, stone, boulders and other debris. Material shall be wetted and compacted with available rubber tired construction equipment until approved by the Engineer.

3. In location where the trench bottom contains rocks or is unsuitable for pipe to rest on, as determined by the engineer, the pipe shall be bedded as shown.

4. In locations where the proposed pipelines cross existing utilities, the utility crossing details shall be determined in the field by the Engineer. Prior to trench excavation, existing utilities shall be located and exposed by the Contractor.

5. Select backfill shall be placed under the haunches of all pipe using the shovel slicing method or other method, approved by the Engineer.

6. All trenching excavation shall be braced and/or shored in accordance with OSHA Trench Safety Regulations.

GENERAL NOTES

LEGEND

- CONCRETE
- STRIP 4-6"
- POST CONSTRUCTION FILL
- FILL
- GRAVEL
- GRANULAR FILL
- FINAL GRADE
- SUBGRADE
- EXISTING GROUND

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
7/9/18
NATHANA PESTA

No.	Revision/Issue	Date

DGA CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

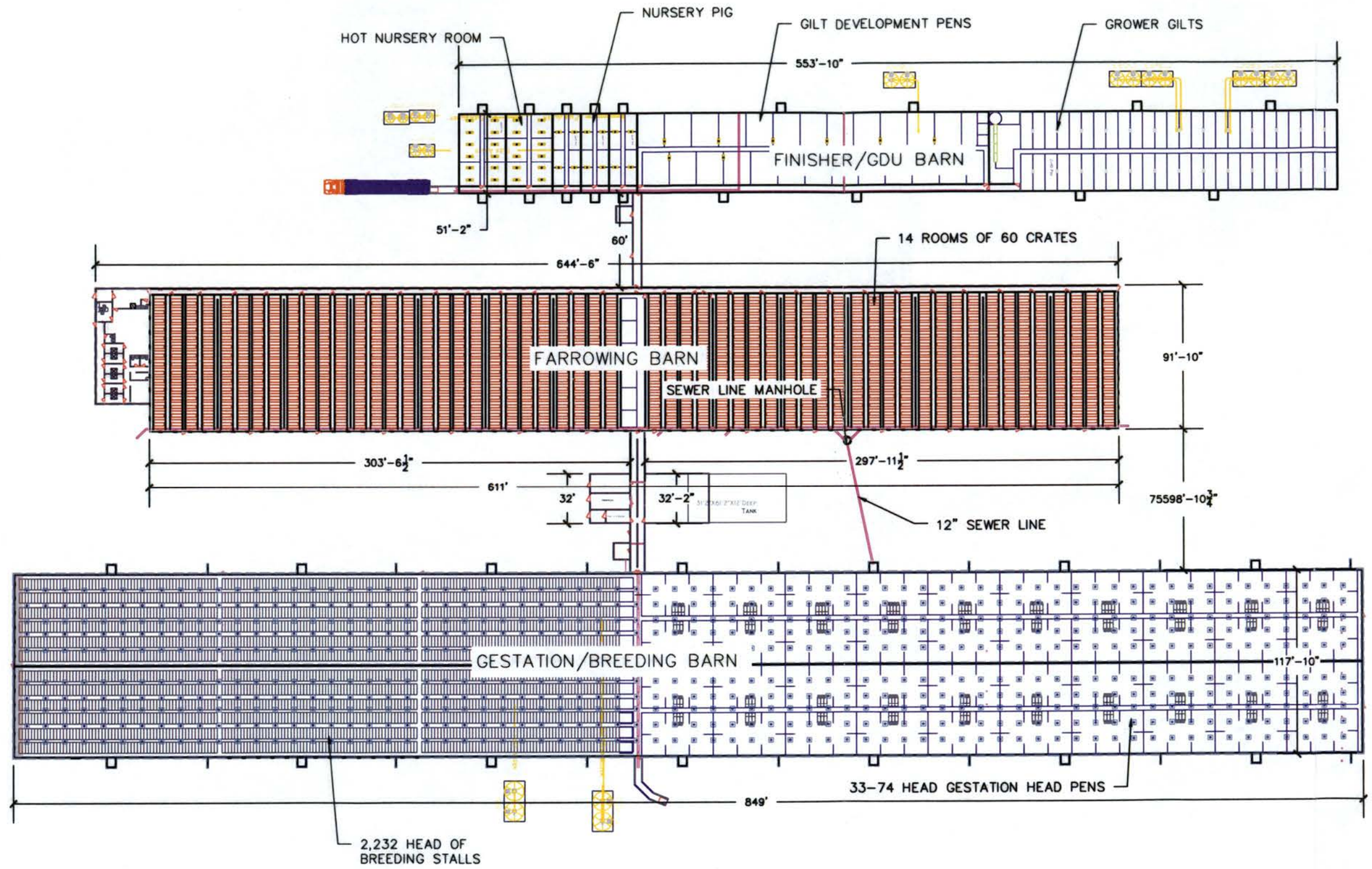
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N, R 26 W
FRANKLIN COUNTY, AR

CLEANOUT & STANDARD BEDDING DETAILS

DATE: MAY 29, 2018	SHEET: C5.1
SCALE: NOT TO SCALE	
DRAWN BY: DDR	
CHECKED BY: NAP	

NOTE: FEED BINS TO BE FIELD VERIFIED WITH BUILDER



GENERAL NOTES

LEGEND

SCALE, FEET

0 35 70 105 140

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHANA PESTA
7/9/18

No.	Revision/Issue	Date

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4200 21ST ST. SE UNIT 101 MANDAN ND 58554

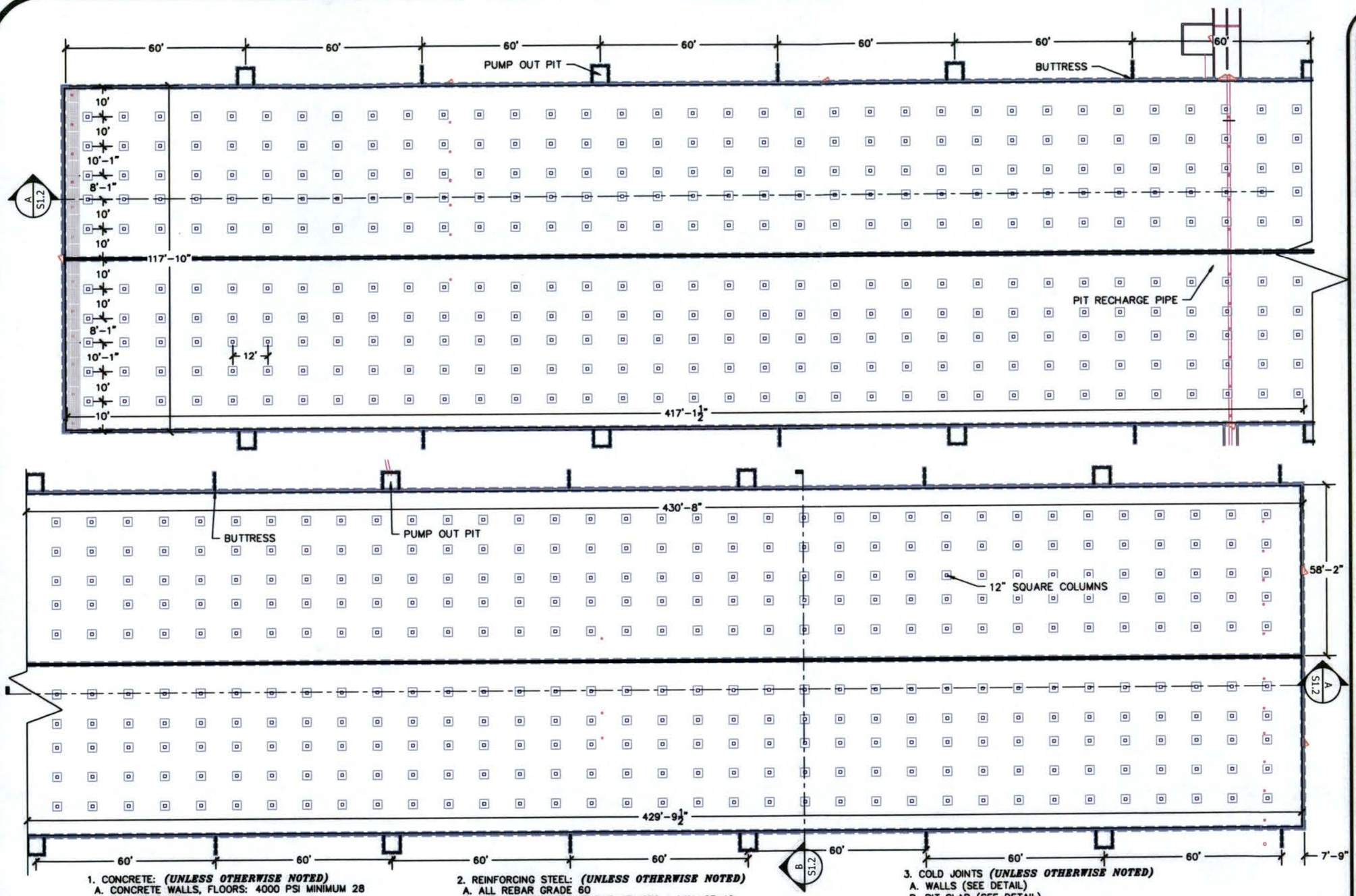
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N , R 26 W
FRANKLIN COUNTY, AR

BARN LAYOUT

DATE: JUN 21 2018	SHEET: A1.1
SCALE: 1" = 70'	
DRAWN BY: DDR	
CHECKED BY: NAP	

FILE NAME: 05 Project Files/Swine/Hanson-Coon Tree Farm/Cadd Files/Coon Tree Building.dwg



1. CONCRETE: ***(UNLESS OTHERWISE NOTED)***
   A. CONCRETE WALLS, FLOORS: 4000 PSI MINIMUM 28 DAY STRENGTH
   B. CONCRETE FOOTINGS: 4000 PSI MINIMUM 28 DAY STRENGTH
   C. ALL CONCRETE TO BE AIR ENTRAINED
   D. 3"–4" CONCRETE SLUMP ON HORIZONTAL POURS PRIOR TO ADDITIVES
   E. 5" MAXIMUM CONCRETE SLUMP ON VERTICAL POURS PRIOR TO ADDITIVES
   F. PIT WALL CONCRETE DESIGN BASED OFF OF A 11'–6" BACKFILL DEPTH AGAINST THE 12'–0" PIT WALL
   G. REFER TO ENGINEER SPECIFICATIONS FOR ADDITIONAL CONCRETE CONSTRUCTION REQUIREMENTS

2. REINFORCING STEEL: ***(UNLESS OTHERWISE NOTED)***
   A. ALL REBAR GRADE 60
   B. LAP ALL REINFORCING BAR SPLICES A MIN. OF 40 DIAMETERS
   C. PROVIDE BENT BARS AT ALL CORNERS AND WALL INTERSECTIONS TO MATCH THE HORIZONTAL REINFORCING STEEL. (SEE DETAILS)
   D. EXTERIOR WALL FOOTING: 3 RUNS OF CONTINUOUS #4 LONG. REBAR W/ #4 TRANS. REBAR @ 10" O.C.
   E. PIT FLOORS : #4 REBAR @ 18" O.C. BOTH WAYS
   F. FOUNDATION WALLS: #5 VERTICAL REBAR @ 8.5" O.C. #5 HORIZONTAL REBAR @ 15" O.C.
   G. COLUMNS: 4 – #7 VERTICAL REBAR #3 REBAR TIES @ 12" O.C.

3. COLD JOINTS ***(UNLESS OTHERWISE NOTED)***
   A. WALLS (SEE DETAIL)
   B. PIT SLAB (SEE DETAIL)

4. CONTROL JOINTS ***(UNLESS OTHERWISE NOTED)***
   A. WALLS (SEE DETAIL)
   B. PIT SLAB (SEE DETAIL)

5. MISC. ***(UNLESS OTHERWISE NOTED)***
   A. WATERSTOP TO BE USED ON ALL EXTERIOR PIT SLAB/PIT WALL JOINTS (SEE DETAILS)
   B. FIELD VERIFY LOCATION OF FRESH WATER PIPE KNOCKOUT: R.O. 6" DIA.

GENERAL NOTES

LEGEND

SCALE, FEET

0 17.5 35 52.5 70

STATE OF ARKANSAS
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NATHANA PESTA
7/9/18

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4200 21ST ST. SE UNIT 101 MANDAN ND 58554

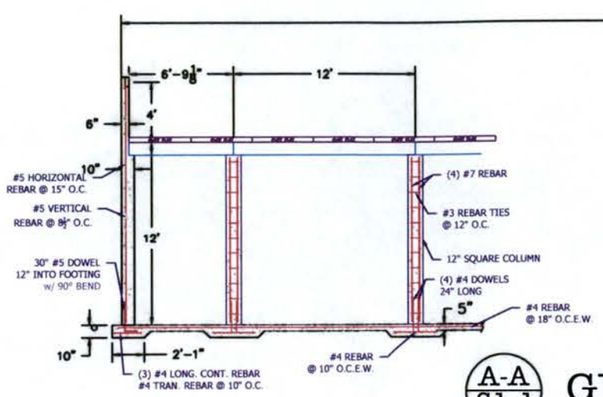
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N , R 26 W
FRANKLIN COUNTY, AR

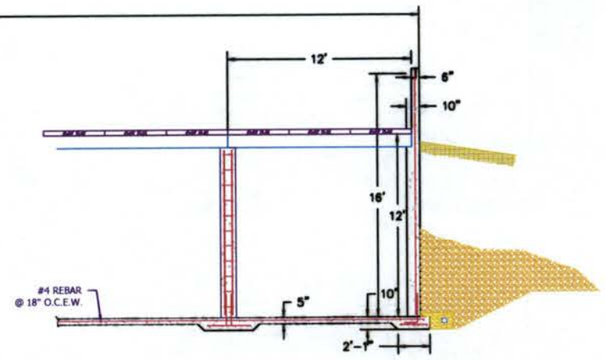
GESTATION BARN CONCRETE LAYOUT

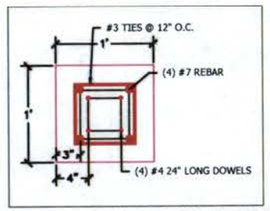
DATE: JUL 9, 2018	SHEET: S1.1
SCALE: 1" = 35'	
DRAWN BY: DDR	
CHECKED BY: NAP	

FILE NAME: 05 Project Files/Swine/Hanson–Coon Tree Farm/Cadd Files/Coon Tree Building.dwg

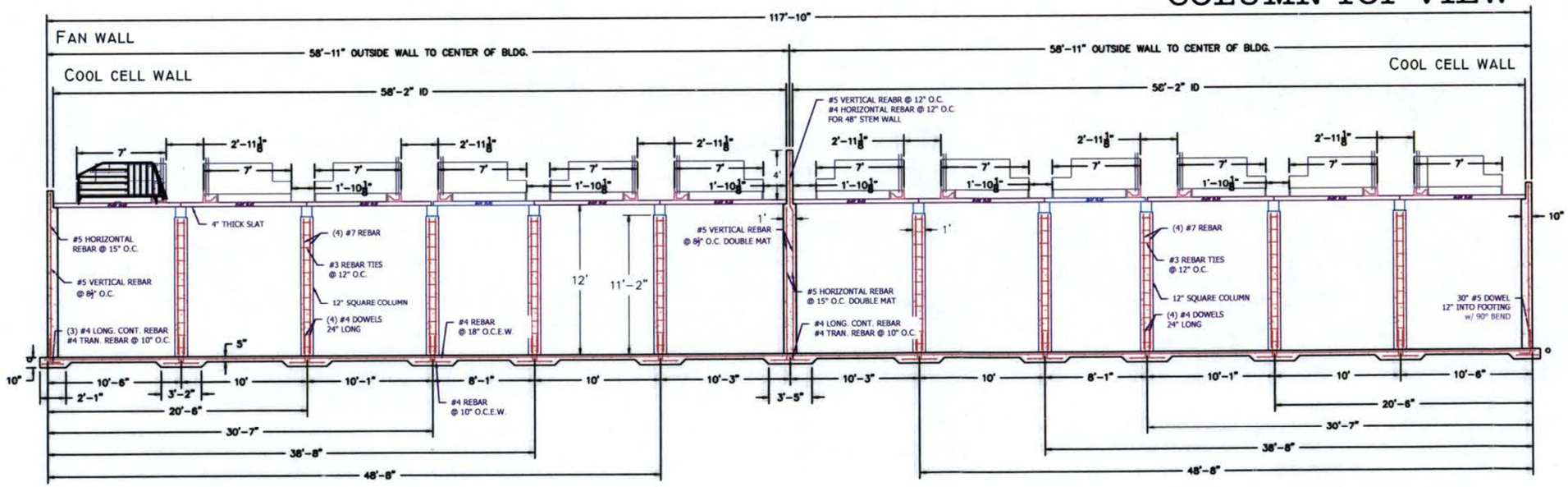


A-A / S1.1 GESTATION BARN CROSS SECTION





COLUMN TOP VIEW



B-B / S1.1 GESTATION BARN CROSS SECTION

GENERAL NOTES

SCALE, FEET
0 5 10 15 20

STATE OF ARKANSAS
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NATHANA PESTA
7/9/18

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

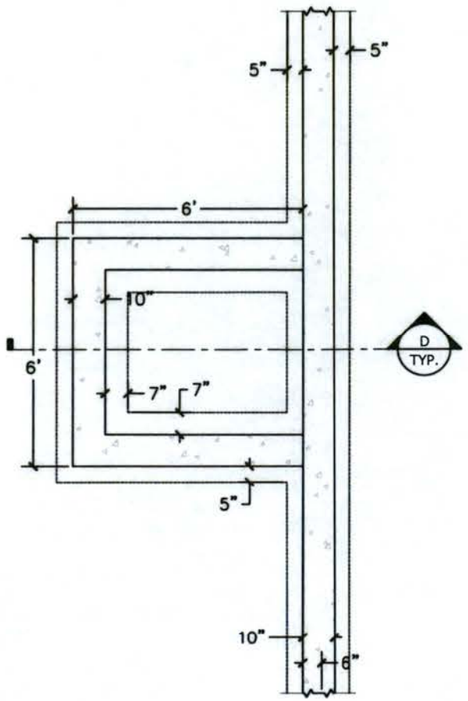
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N , R 26 W
FRANKLIN COUNTY, AR

GESTATION BARN
CROSS SECTIONS

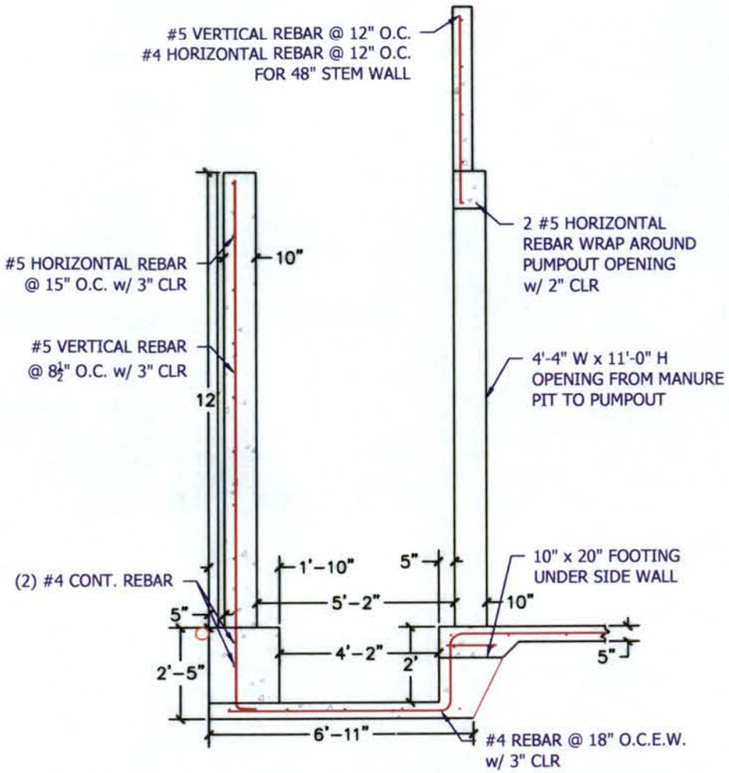
DATE: JUL 9, 2018
SCALE: 1" = 10'
DRAWN BY: DDR
CHECKED BY: NAP
SHEET: S1.2

FILE NAME: 05 Project Files/Sekins/Hanson-Coon Tree Farm/Cadd Files/Coon Tree Building.dwg



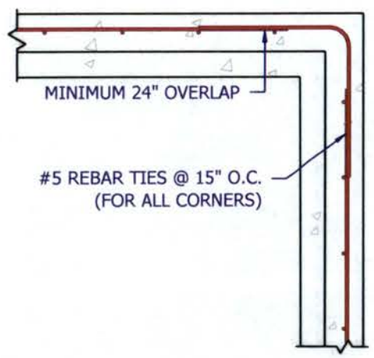
C TYP. PUMPOUT DETAIL TOP VIEW

SCALE: 1" = 4'



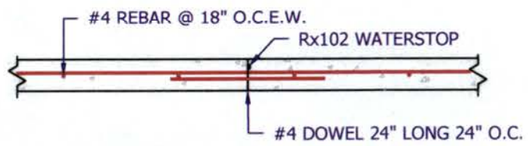
D TYP. PUMPOUT DETAIL SIDE VIEW

SCALE: 1" = 4'



E TYP. CORNER DETAIL

SCALE: 1" = 2'

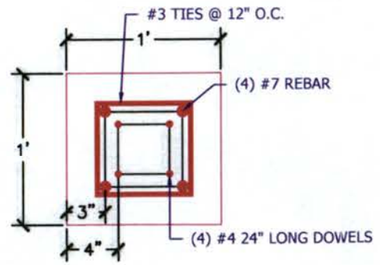


F TYP. PIT FLOOR SECTION

SCALE: 1" = 2'

NOTE 1: The details shown herein may be applicable to more than one area of the project and are not exclusive to this section alone.

NOTE 2: The details shown herein are applicable for 8' pits as well, unless otherwise noted.



G TYP. 12" SQUARE COLUMN

SCALE: 1" = 1'

GENERAL NOTES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 15552
NATHAN A PESTA
7/9/18

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

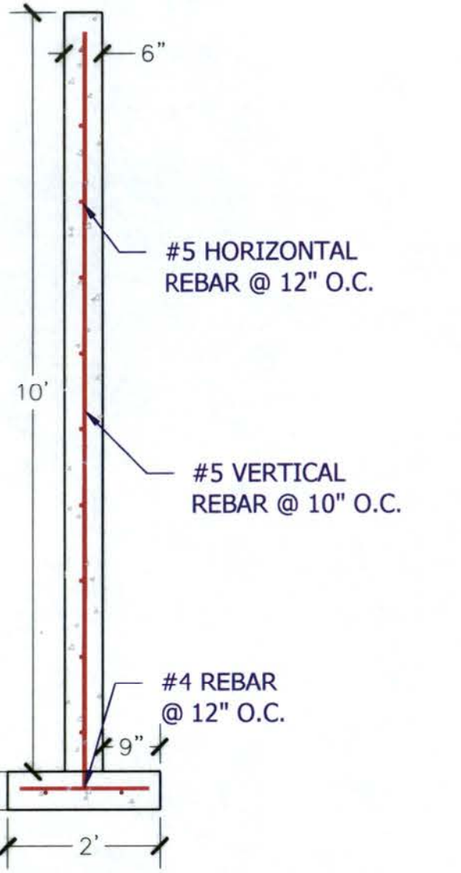
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N , R 26 W
FRANKLIN COUNTY, AR

GESTATION/GDU BARN
CONCRETE DETAILS

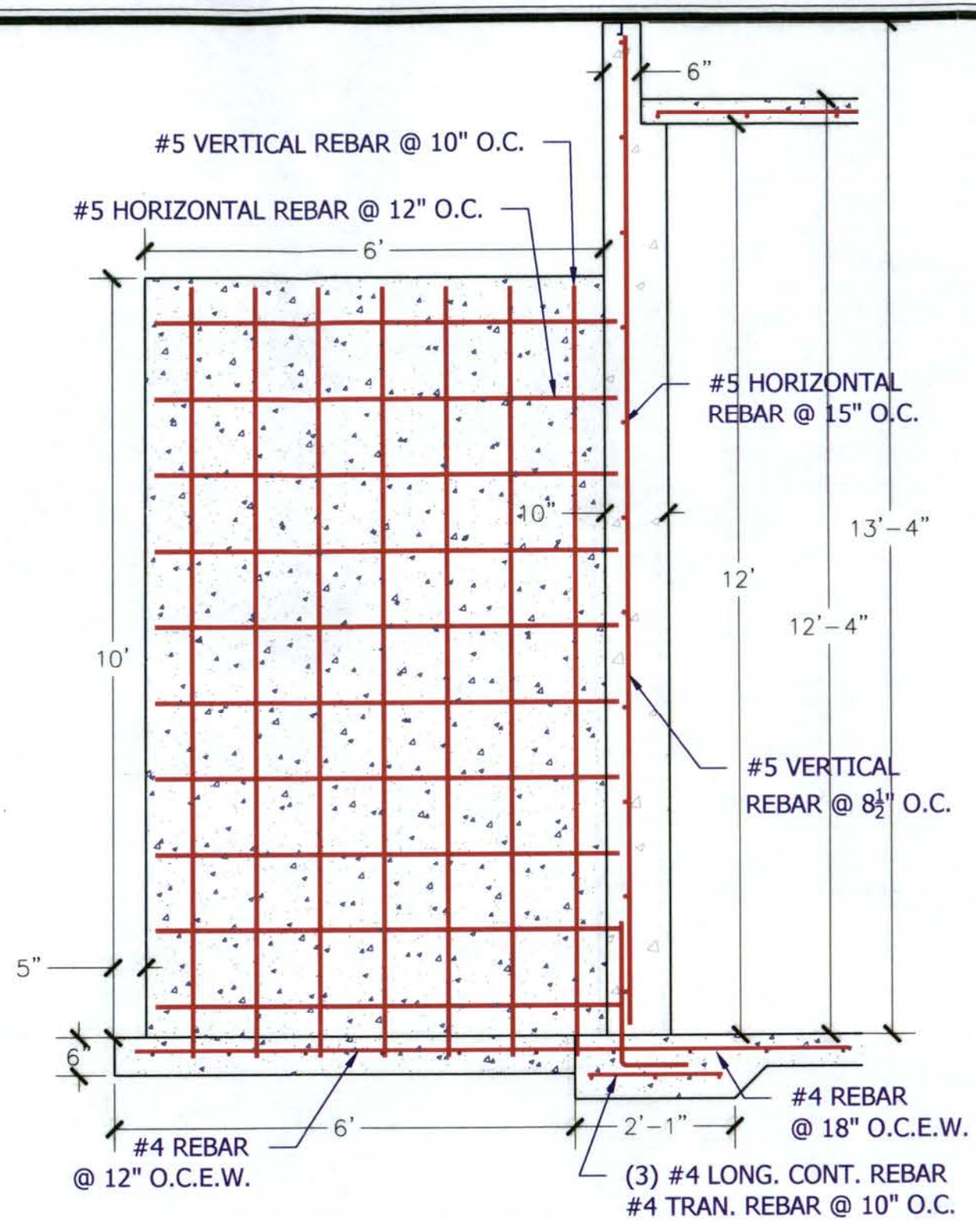
DATE: JUL 9, 2018	SHEET: S1.3
SCALE: AS SHOWN	
DRAWN BY: DDR	
CHECKED BY: NAP	

FILE NAME: 05 Project Files/Swine/Hanson-Coon Tree Farm/Cadd Files/Coon Tree Building.dwg



H TYP. BUTTRESS DETAIL FRONT VIEW

SCALE: 1" = 2'



I TYP. BUTTRESS DETAIL SIDE VIEW

SCALE: 1" = 2'

NOTE 1: The details shown herein may be applicable to more than one area of the project and are not exclusive to this section alone.

NOTE 2: The details shown herein are applicable for 8' pits as well, unless otherwise noted.

GENERAL NOTES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
7/9/18
NATHANA PESTA

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

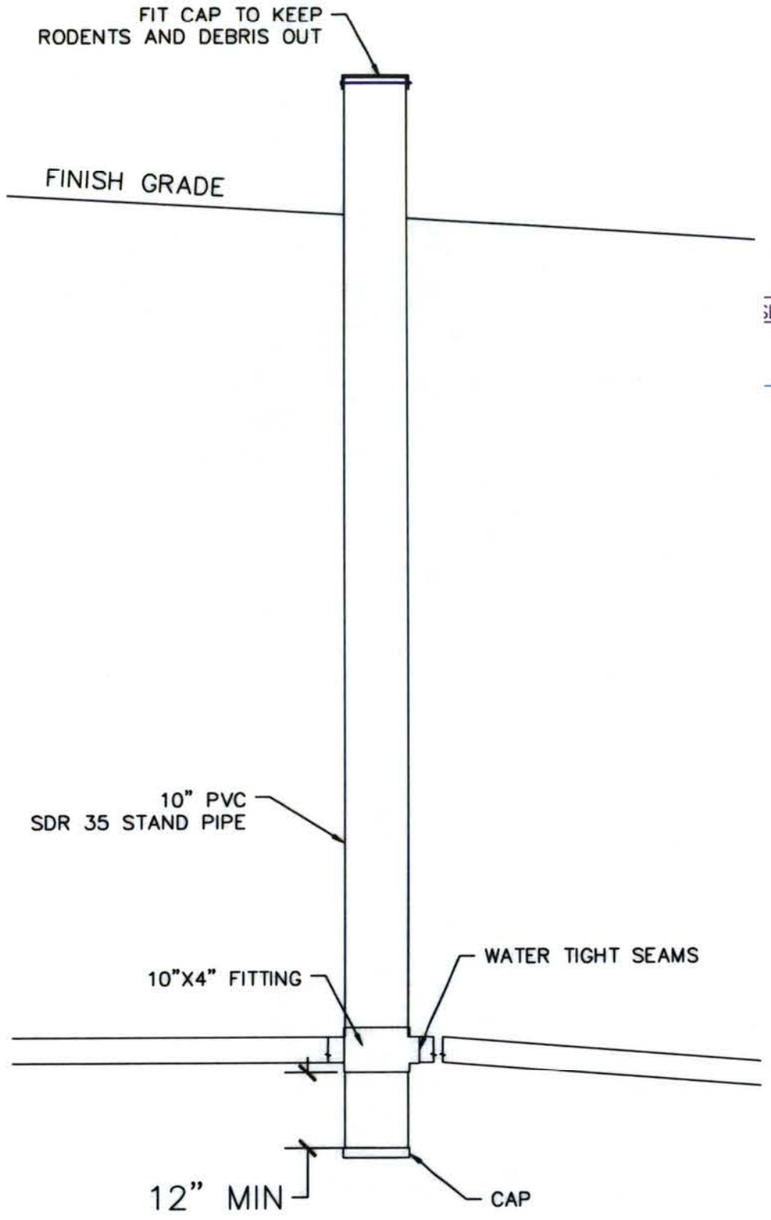
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N , R 26 W
FRANKLIN COUNTY, AR

GESTATION BARN
CONCRETE DETAILS

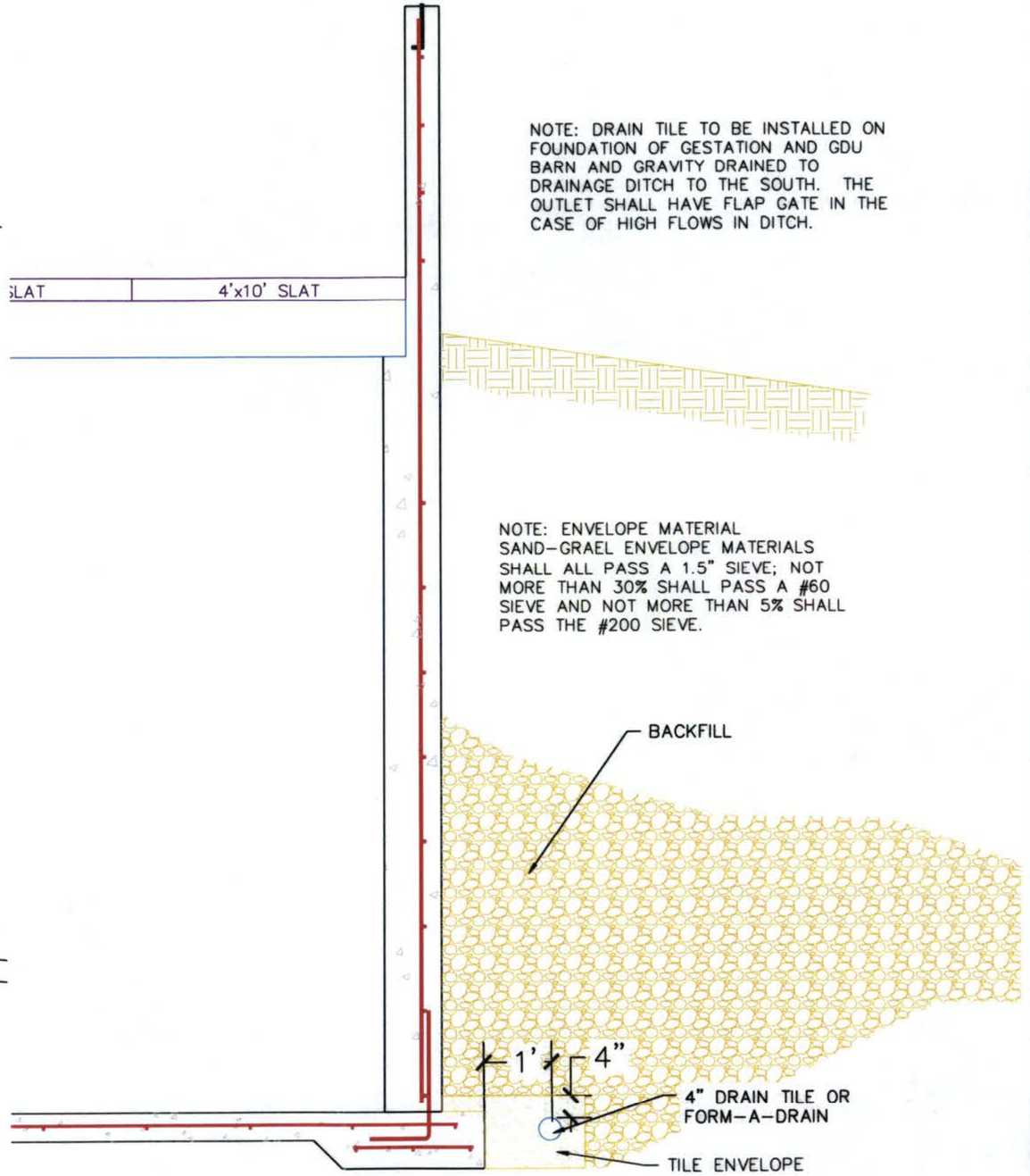
DATE: JUL 9, 2018	SHEET: S1.4
SCALE: AS SHOWN	
DRAWN BY: DDR	
CHECKED BY: NAP	

FILE NAME: 05 Project Files/Swine/Hanson-Coon Tree Farm/Cadd Files/Coon Tree Building.dwg



1 TYP. DRAIN TILE MONITORING PORT

SCALE: 1" = 2'



2 TYP. DRAIN TILE DETAIL

SCALE: 1" = 2'

NOTE: DRAIN TILE TO BE INSTALLED ON FOUNDATION OF GESTATION AND GDU BARN AND GRAVITY DRAINED TO DRAINAGE DITCH TO THE SOUTH. THE OUTLET SHALL HAVE FLAP GATE IN THE CASE OF HIGH FLOWS IN DITCH.

NOTE: ENVELOPE MATERIAL
SAND-GRAEL ENVELOPE MATERIALS SHALL ALL PASS A 1.5" SIEVE; NOT MORE THAN 30% SHALL PASS A #60 SIEVE AND NOT MORE THAN 5% SHALL PASS THE #200 SIEVE.

GENERAL NOTES

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
7/9/18
NATHANA PESTA

No.	Revision/Issue	Date

DGA CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

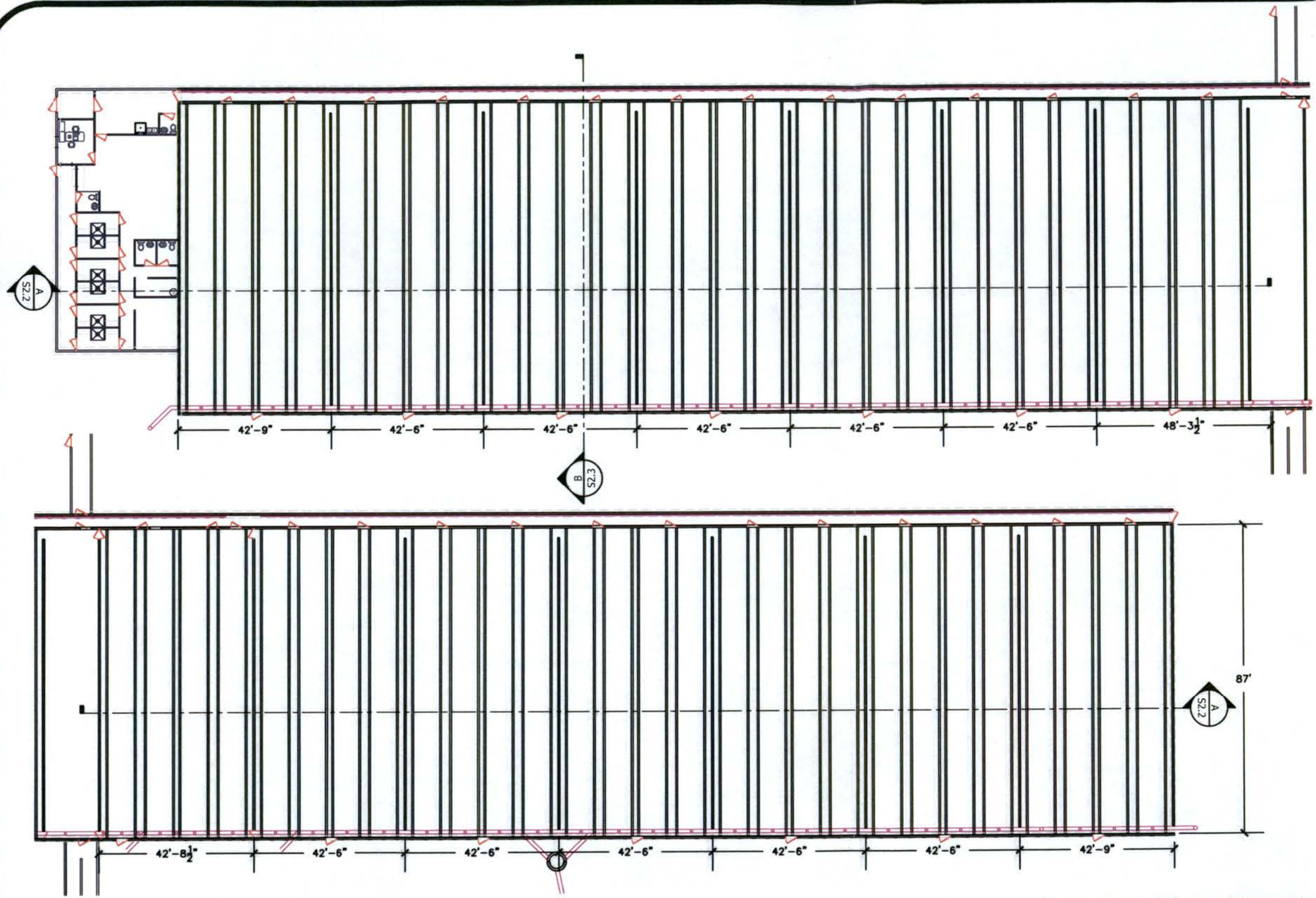
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N , R 26 W
FRANKLIN COUNTY, AR

BARN DRAIN TILE DETAILS

DATE: JUL 9, 2018	SHEET: S1.5
SCALE: AS SHOWN	
DRAWN BY: DDR	
CHECKED BY: NAP	

FILE NAME: 05 Project Files/Swine/Hanson-Coon Tree Farm/Cadd Files/Coon Tree Building.dwg



1. CONCRETE: ***(UNLESS OTHERWISE NOTED)***
   A. CONCRETE WALLS, FLOORS: 4000 PSI MINIMUM 28 DAY STRENGTH
   B. CONCRETE FOOTINGS: 4000 PSI MINIMUM 28 DAY STRENGTH
   C. ALL CONCRETE TO BE AIR ENTRAINED
   D. 3"–4" CONCRETE SLUMP ON HORIZONTAL POURS PRIOR TO ADDITIVES
   E. 5" MAXIMUM CONCRETE SLUMP ON VERTICAL POURS PRIOR TO ADDITIVES
   F. PIT WALL CONCRETE DESIGN BASED OFF OF A 2'–0" BACKFILL DEPTH AGAINST THE 2'–6" PIT WALL
   G. REFER TO ENGINEER SPECIFICATIONS FOR ADDITIONAL CONCRETE CONSTRUCTION REQUIREMENTS

2. REINFORCING STEEL: ***(UNLESS OTHERWISE NOTED)***
   A. ALL REBAR GRADE 60
   B. LAP ALL REINFORCING BAR SPLICES A MIN. OF 40 DIAMETERS
   C. PROVIDE BENT BARS AT ALL CORNERS AND WALL INTERSECTIONS TO MATCH THE HORIZONTAL REINFORCING STEEL. (SEE DETAILS)
   D. EXTERIOR WALL FOOTING: TWO RUNS OF CONTINUOUS #4 HORIZONTAL REBAR
   E. PIT FLOORS : 6" x 6" #10 WWM
   F. FOUNDATION WALLS: #4 VERTICAL REBAR @ 12" O.C.
      #4 HORIZONTAL REBAR @ 12" O.C.
   G. PIT WALLS: #4 HORIZONTAL REBAR @ 12" O.C.
      #4 VERTICAL REBAR @ 16" O.C.

3. COLD JOINTS ***(UNLESS OTHERWISE NOTED)***
   A. WALLS (SEE DETAIL)
   B. PIT SLAB (SEE DETAIL)

4. CONTROL JOINTS ***(UNLESS OTHERWISE NOTED)***
   A. WALLS (SEE DETAIL)
   B. PIT SLAB (SEE DETAIL)

5. MISC. ***(UNLESS OTHERWISE NOTED)***
   A. WATERSTOP TO BE USED ON ALL EXTERIOR PIT SLAB/PIT WALL JOINTS (SEE DETAILS)
   B. FIELD VERIFY LOCATION OF FRESH WATER PIPE KNOCKOUT: R.O. 6" DIA.

GENERAL NOTES

SCALE, FEET
0 16 32 48 64

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHAN A PESTA
7/9/18

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

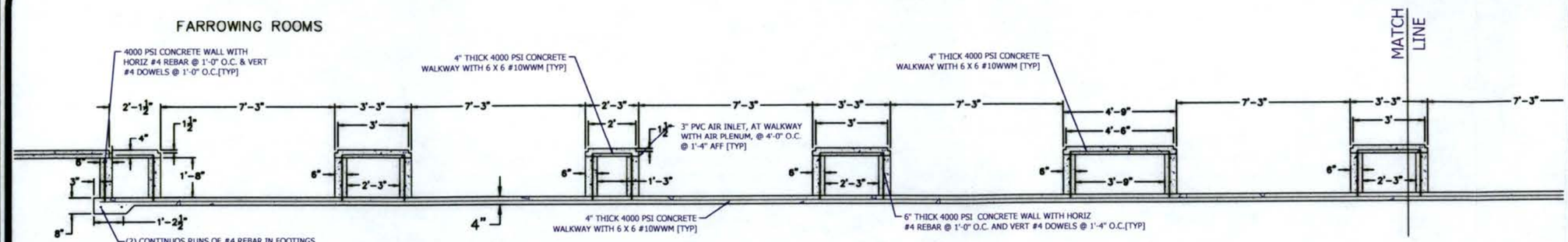
NE 1/4, SECTION 2, T 5 N , R 26 W
FRANKLIN COUNTY, AR

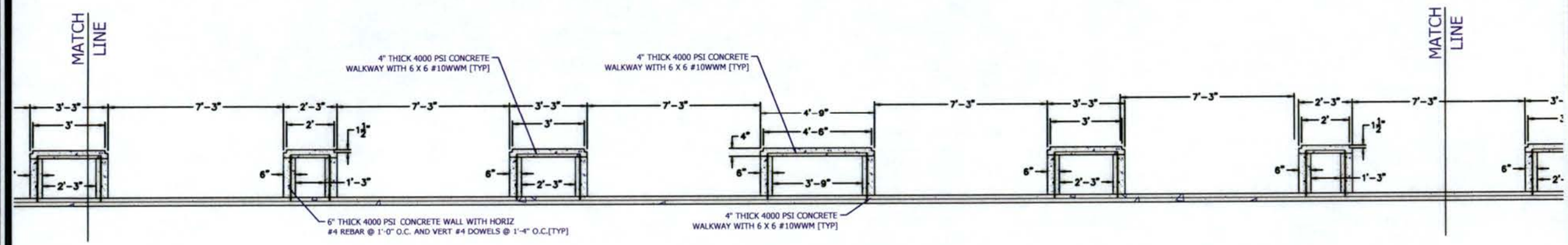
FARROWING BARN CONCRETE DETAILS

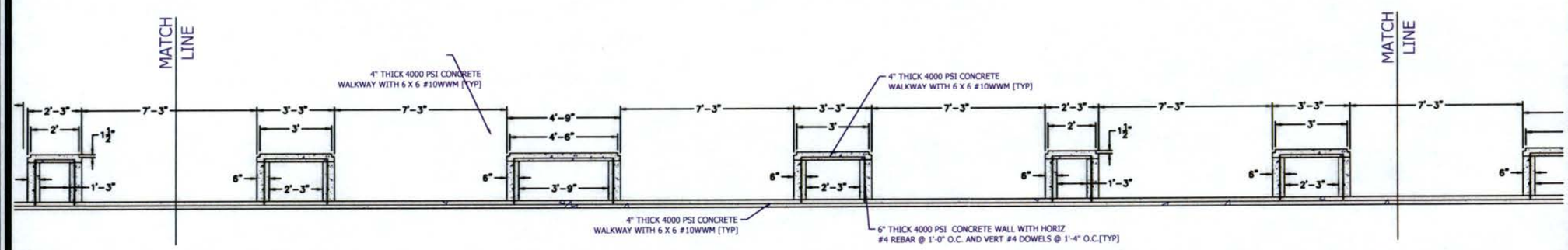
DATE: JUL 9, 2018	SHEET: S2.1
SCALE: 1" = 32'	
DRAWN BY: DDR	
CHECKED BY: NAP	

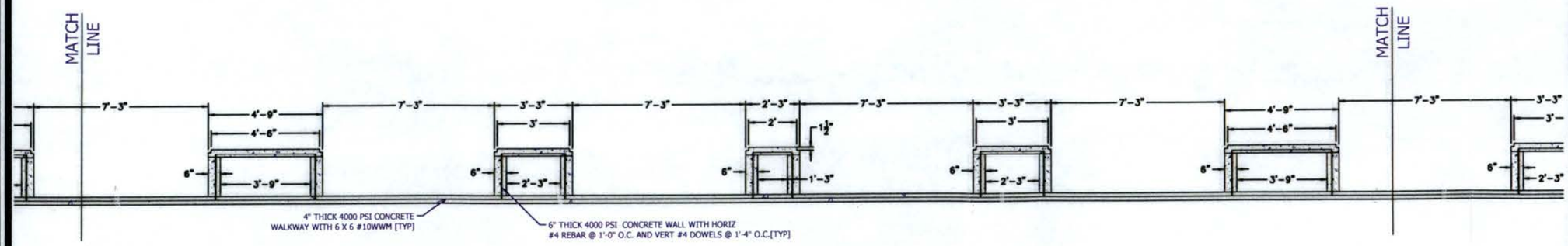
FILE NAME: 06 Project Files/Sohns/Hansen-Coon Tree Farm/Cadd Files/Coon Tree Building.dwg

FARROWING ROOMS









A-A
S2.1

FARROWING/NURSERY CROSS SECTION

GENERAL NOTES

SCALE, FEET
0 2.5 5 7.5 10

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHANA PESTA
7/9/18

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

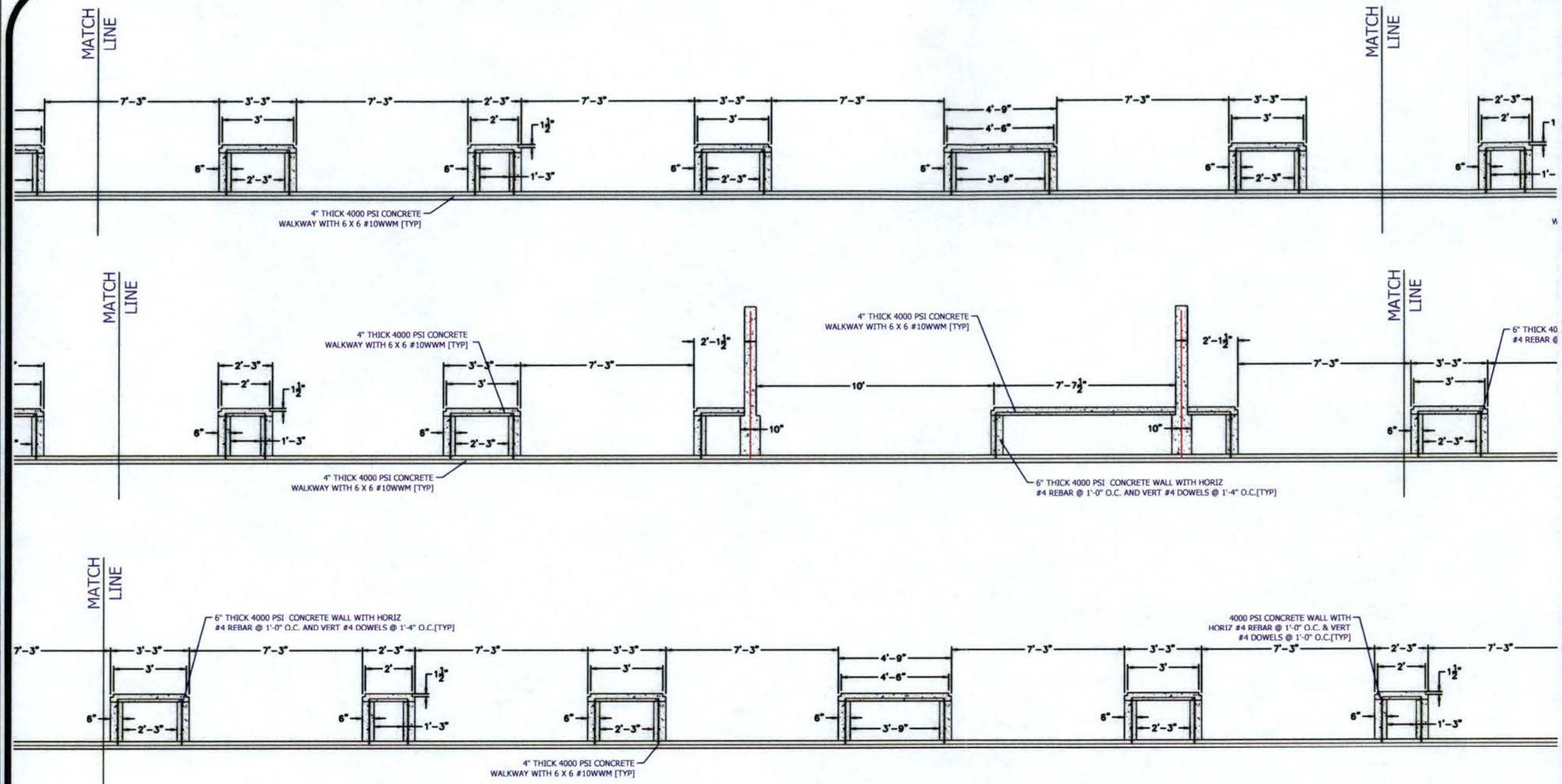
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 5 N , R 26 W
FRANKLIN COUNTY, AR

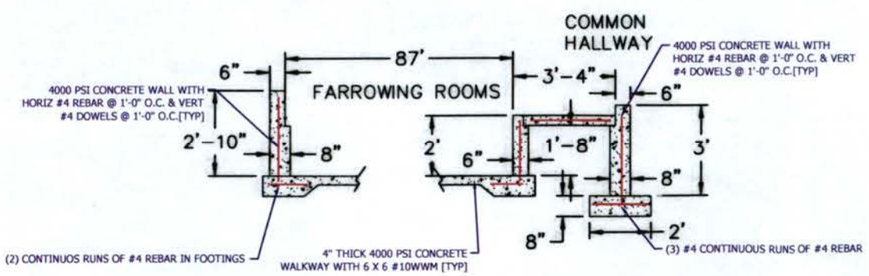
FARROWING BUILDING
CROSS SECTIONS

DATE: JUL 9, 2018	SHEET: S2.2
SCALE: 1" = 5'	
DRAWN BY: DDR	
CHECKED BY: NAP	

FILE NAME: 05 Project Files/Swine/Hanson-Coon Tree Farm/Cadd Files/Coon Tree Building.dwg



A-A S2.1 FARROWING/NURSERY CROSS SECTION



B-B S2.1 FARROWING/NURSERY CROSS SECTION

GENERAL NOTES

SCALE, FEET
0 2.5 5 7.5 10

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHANA PESTA
7/9/18

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

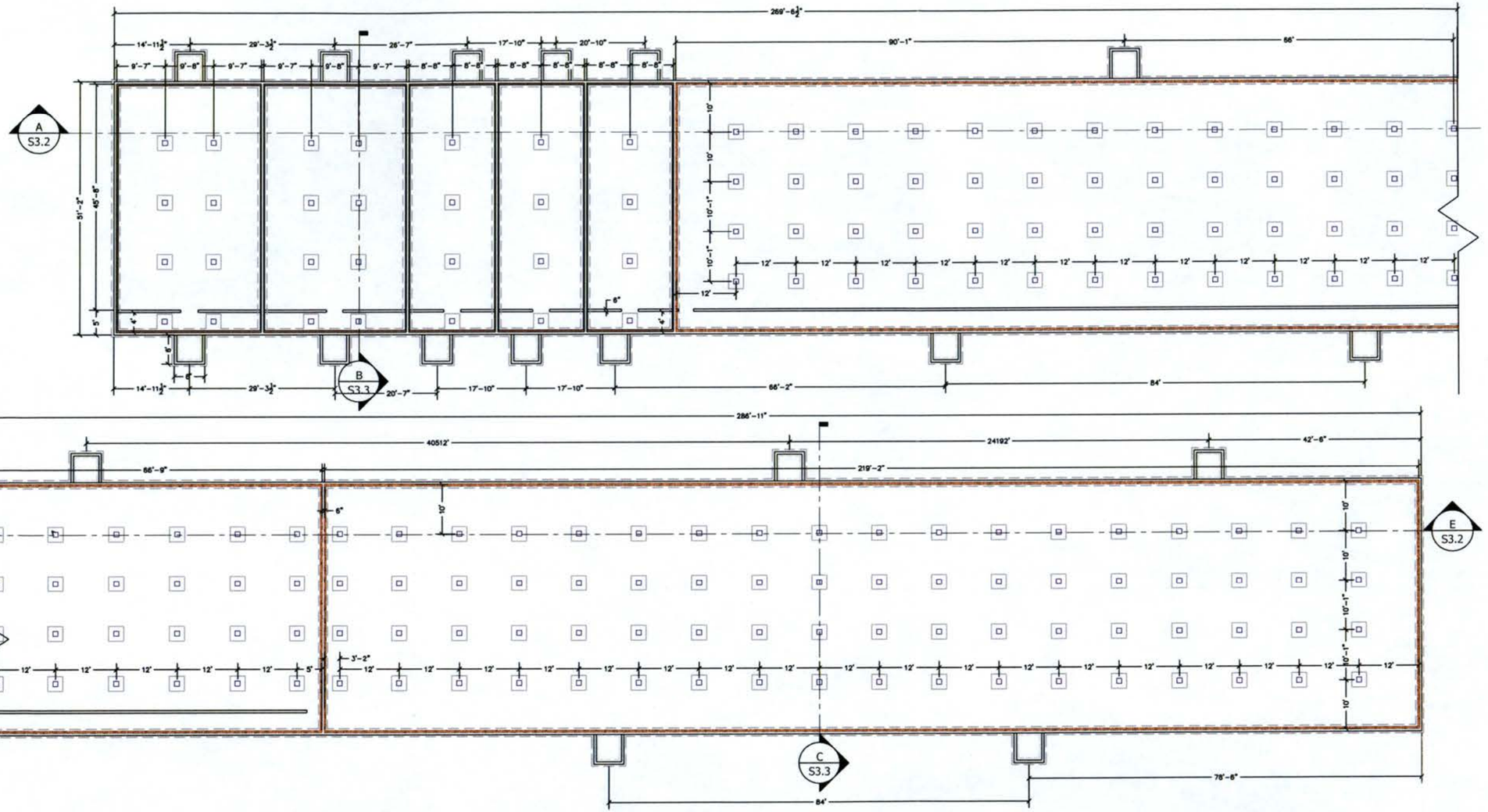
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N , R 26 W
FRANKLIN COUNTY, AR

FARROWING BUILDING CROSS SECTIONS

DATE: JUL 10, 2018	SHEET: S2.3
SCALE: 1" = 5'	
DRAWN BY: DDR	
CHECKED BY: NAP	

FILE NAME: 08 Project Files/Swine/Hanson--Coon Tree Farm/Cadd Files/Coon Tree Building.dwg



1. CONCRETE: ***(UNLESS OTHERWISE NOTED)***
   A. CONCRETE WALLS, FLOORS: 4000 PSI MINIMUM 28 DAY STRENGTH
   B. CONCRETE FOOTINGS: 4000 PSI MINIMUM 28 DAY STRENGTH
   C. ALL CONCRETE TO BE AIR ENTRAINED
   D. 3"–4" CONCRETE SLUMP ON HORIZONTAL POURS PRIOR TO ADDITIVES
   E. 5" MAXIMUM CONCRETE SLUMP ON VERTICAL POURS PRIOR TO ADDITIVES
   F. PIT WALL CONCRETE DESIGN BASED OFF OF A 7'–6" BACKFILL DEPTH AGAINST THE 8'–0" PIT WALL
   G. REFER TO ENGINEER SPECIFICATIONS FOR ADDITIONAL CONCRETE CONSTRUCTION REQUIREMENTS

2. REINFORCING STEEL: ***(UNLESS OTHERWISE NOTED)***
   A. ALL REBAR GRADE 60
   B. LAP ALL REINFORCING BAR SPLICES A MIN. OF 40 DIAMETERS
   C. PROVIDE BENT BARS AT ALL CORNERS AND WALL INTERSECTIONS TO MATCH THE HORIZONTAL REINFORCING STEEL. (SEE DETAILS)
   D. EXTERIOR WALL FOOTING: 2 RUNS OF CONTINUOUS #4 LONG. REBAR W/ #4 TRANS. REBAR @ 10" O.C.
   E. PIT FLOORS : #4 REBAR @ 18" O.C. BOTH WAYS
   F. FOUNDATION WALLS: #5 VERTICAL REBAR @ 8.5" O.C.
      #5 HORIZONTAL REBAR @ 15" O.C.
   G. COLUMNS: 4 – #7 VERTICAL REBAR
      #3 REBAR TIES @ 12" O.C.
   H. INTERIOR WALLS (WITH EQUALIZATION PORTS)
      #5 VERTICAL REBAR @ 15" O.C.
      #5 HORIZONTAL REBAR @ 15" O.C.
   I. INTERIOR WALLS (WITH NO EQUALIZATION PORTS)
      #5 VERTICAL REBAR @ 15" O.C. DOUBLE MATT
      #5 HORIZONTAL REBAR @ 15" O.C., DOUBLE MATT

3. COLD JOINTS ***(UNLESS OTHERWISE NOTED)***
   A. WALLS (SEE DETAIL)
   B. PIT SLAB (SEE DETAIL)

4. CONTROL JOINTS ***(UNLESS OTHERWISE NOTED)***
   A. WALLS (SEE DETAIL)
   B. PIT SLAB (SEE DETAIL)

5. MISC. ***(UNLESS OTHERWISE NOTED)***
   A. WATERSTOP TO BE USED ON ALL EXTERIOR PIT SLAB/PIT WALL JOINTS (SEE DETAILS)
   B. FIELD VERIFY LOCATION OF FRESH WATER PIPE KNOCKOUT: R.O. 6" DIA.

GENERAL NOTES

LEGEND

SCALE, FEET

0 12 24 36 48

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHANIA PESTA
7/9/18

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

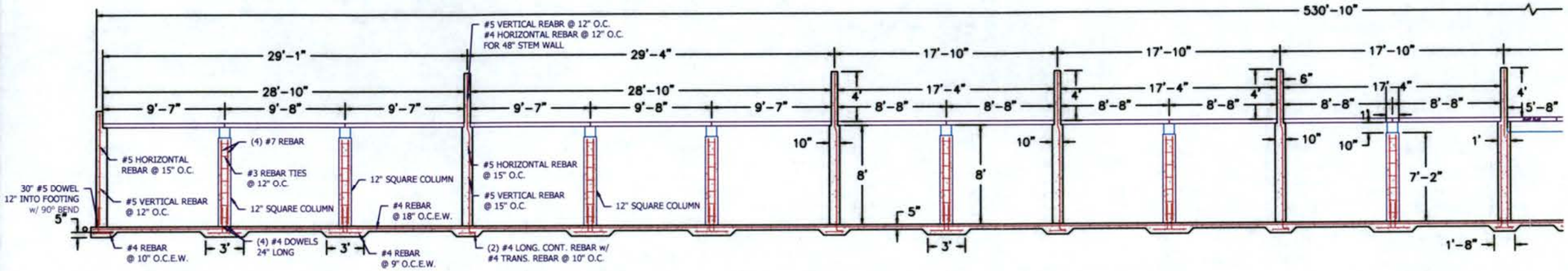
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N , R 26 W
FRANKLIN COUNTY, AR

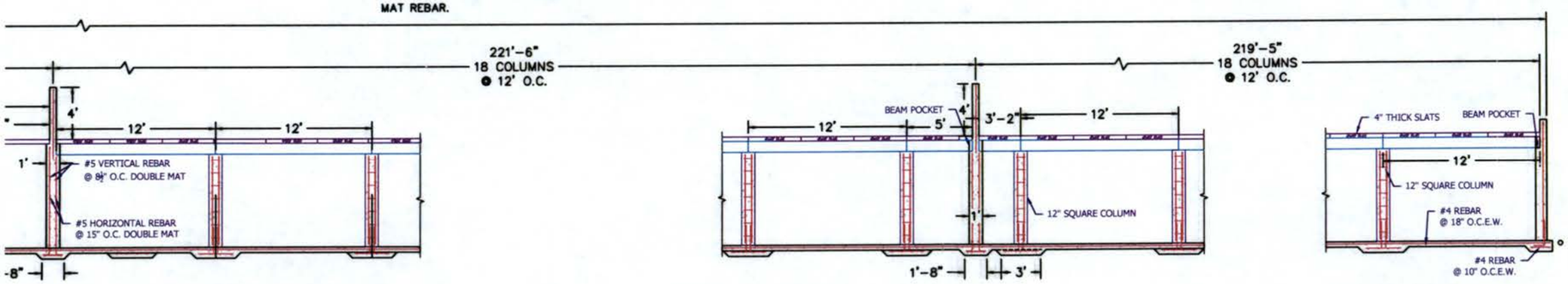
FINISHER / GDU BARN FOUNDATION PLAN

DATE: JUL 9, 2018	SHEET: S3.1
SCALE: 1" = 24'	
DRAWN BY: DDR	
CHECKED BY: NAP	

FILE NAME: OS Project Files/Sahre/Hanson–Coon Tree Farm/Cadd Files/Coon Tree Building.dwg



NOTE: PIT WALLS WITH EQUALIZATION PORTS TO HAVE SINGLE MAT REBAR, PIT DIVIDER WALLS WITHOUT PORTS TO HAVE DOUBLE MAT REBAR.



A-A / S3.1 FINISHER / GDU CROSS SECTION

GENERAL NOTES

SCALE, FEET
0 5 10 15 20

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHAN A. PESTA
7/9/18

No.	Revision/Issue	Date

DGA CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

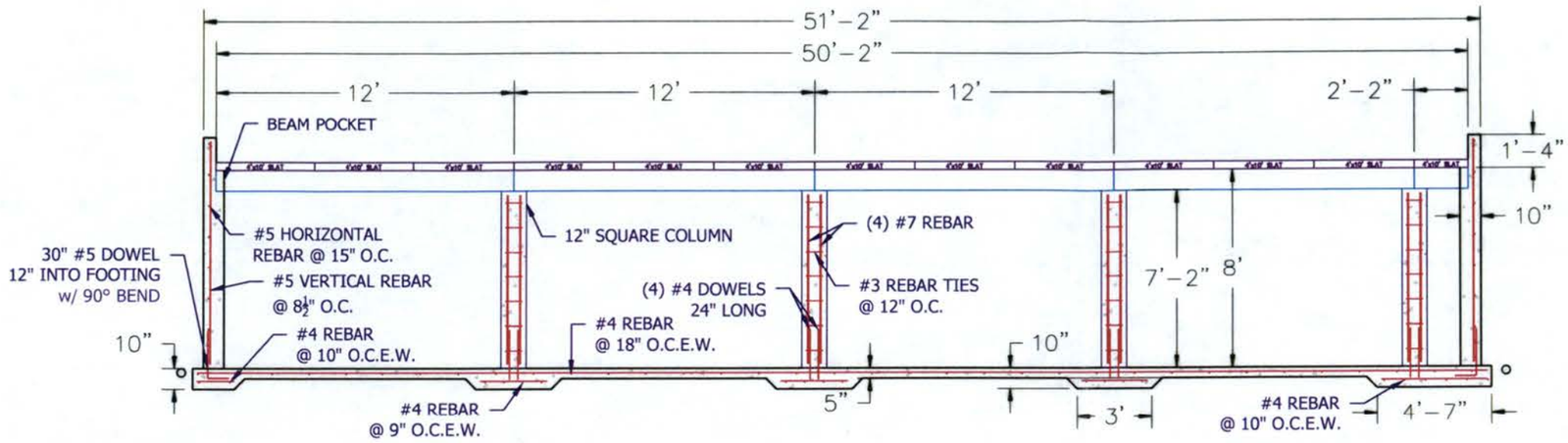
COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N , R 26 W
FRANKLIN COUNTY, AR

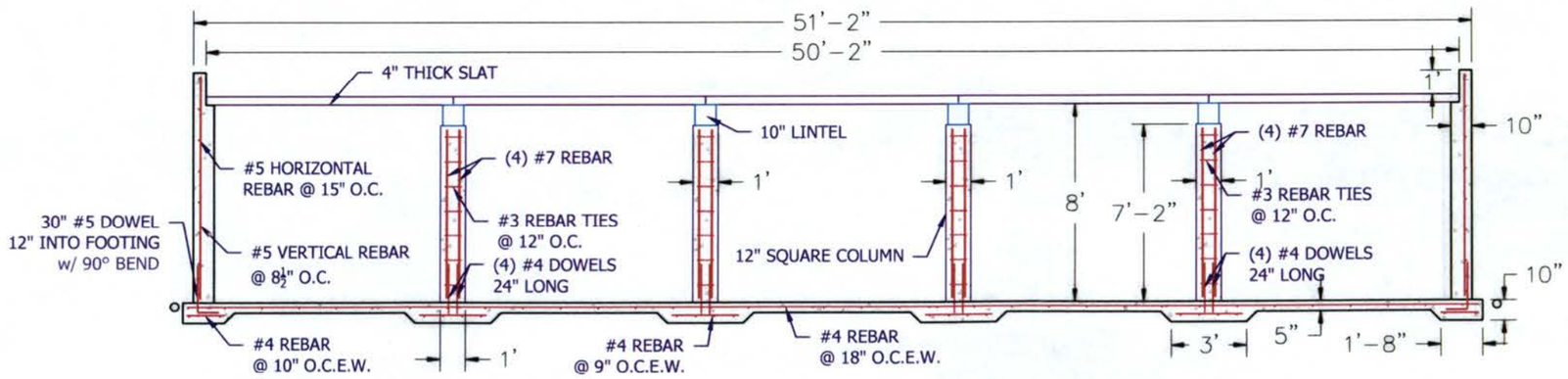
FINISHER / GDU BARN CROSS SECTIONS

DATE: JUL 9, 2018	SHEET: S3.2
SCALE: 1" = 10'	
DRAWN BY: DDR	
CHECKED BY: NAP	

FILE NAME: 05 Project Files/Swiss/Hanson-Coon Tree Farm/Cadd Files/Coon Tree Building.dwg



B-B / S3.1 FINISHER / GDU CROSS SECTION



C-C / S3.1 FINISHER / GDU CROSS SECTION

GENERAL NOTES

SCALE, FEET
0 3 6 9 12

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No 15552
NATHANA PESTA
7/9/18

No.	Revision/Issue	Date

DGA
CONSULTING ENGINEERS
4200 21ST ST. SE UNIT 101 MANDAN ND 58554

COON TREE FARM
SOW FARM

NE 1/4, SECTION 2, T 8 N , R 26 W
FRANKLIN COUNTY, AR

FINISHER / GDU BARN CROSS SECTIONS

DATE: JUL 9, 2018
SCALE: 1" = 6'
DRAWN BY: DDR
CHECKED BY: NAP
SHEET: S3.3

FILE NAME: 05 Project Files/Sehne/Hanson-Coon Tree Farm/Cadd Files/Coon Tree Building.dwg

Section 5

DGA ENGINEERING

Coon Tree Farm, Inc.

ENGINEERING TECHNICAL SPECIFICATIONS

SECTION 5

PREPARED BY:

NATHAN A. PESTA, P.E.
701.663.1116

PROFESSIONAL ENGINEER:
I HEREBY CERTIFY THAT THESE, SPECIFICATIONS, AND QUALITY ASSURANCE WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF ARKANSAS. PRINTED NAME: NATHAN A. PESTA
LICENSE #: 15552

SIGANTURE: _____

DATE: _____

DEHAAN, GRABS & ASSOCIATES, LLC
4200 21ST ST. SE UNIT 101 MANDAN ND 58554
WWW.DGAENGINEERING.COM

Table of Contents

1. EARTHEN CONTROL STRUCTURE

1.1. SAFETY

The contractor is solely responsible for being aware of and meeting all safety requirements for work on this site. These may include but are not limited to requirements set forth by OSHA, the State or the County. The contractor is also responsible for locating any underground power lines, pipelines, phone lines, etc. in the area of excavation. This shall include notifying the Arkansas One-Call System at least two days prior to the start of excavation activities.

If at any time, the contractor feels that due to site conditions, the construction techniques outlined in the Plans and Technical Specifications are not safe, he shall immediately stop work and contact the engineer, and an alternative method shall be determined.

1.2. SITE PREPARATION

The foundation and borrow area of all proposed earthwork areas shall be cleared of all old equipment, old buildings, trees, stumps, roots, brush and boulders and stripped of all sod and topsoil. All channel banks and sharp breaks shall be sloped no steeper than 1:1. All topsoil containing substantial organic matter shall be removed and stockpiled. The surface of the foundation area will be thoroughly scarified to a minimum depth of 6+ inches before placement of compacted backfill. All drainage channels crossing fill areas shall be cleaned and widened to accommodate compaction equipment. Such channels shall be backfilled with suitable material as specified for compacted earthfill. All waste material shall be buried away from the fill area.

1.3. EXCAVATION

Unless specified by the Engineer, no borrow material shall be taken from areas outside the concrete tank area or designated borrow areas except for excavation of ditches or other structures shown on the plans. All materials undesirable for fill purposes shall be stripped from the borrow areas and either stockpiled for later use as topsoil or disposed of properly. The tank area shall be excavated to the lines and grades as shown on the plans. Any borrow areas outside the impoundment area shall be graded and left in a well-drained condition.

Building subgrades shall be prepared to extend past building lines by 5 feet to allow room for concrete forms. Slope sides of excavations to comply with OSHA Rules, local codes and ordinances having jurisdiction.

Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of engineer. Unauthorized excavation, as well as remedial work directed by the engineer shall be at contractor's expense. Backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by the engineer.

When excavation has reached required subgrade elevations, notify the engineer who will make an inspection of conditions. If unsuitable materials are encountered at required subgrade

elevations, carry excavations 2 ½ feet further and replace excavated material with suitable soils. Removal of unsuitable material and its replacement as directed will be paid on basis of contract conditions relative to changes in work.

Stockpile suitable excavated materials until required for backfill or fill. Place, grade and shape stockpiles for proper drainage. Locate and retain soil materials away from edge of excavations. Topsoil shall be stockpiled in a location where placement at time of final grading is most efficient.

Protect excavation bottoms against freezing when atmospheric temperature is less than 35 degrees F (1 degree C). Do not place concrete on frozen ground.

Foundation excavations shall be free of loose material and standing water. All excavations fill, grading and embankments shall be maintained in a well-drained condition at all times. The contractor shall have pumping equipment on hand to remove water from trenches and or excavations or provisions for drainage until completion of the earthwork.

The contractor shall be responsible for the removal of excess water from any portion of the job site and all necessary equipment. In addition, the contractor is responsible for ensuring that all applicable permits have been obtained prior to any dewatering. Pumping of ponded water, if necessary during construction, shall be conducted in a timely manner to prevent saturation of large areas of the borrow pit and outletted to an acceptable drainage course as determined by the Engineer.

1.4. TANK BACKFILL

Do not backfill against concrete walls until the concrete has cured at least 7 days and all slat and slab floors and beams are in place to properly brace the walls. Exercise caution when backfilling to bring up the level uniformly on all sides of tanks and pits. Keep all heavy equipment and rollers back from the pit and tank walls a distance equal to the depth of the fill.

1.5. BUILDING PAD

Earthfill shall be placed to the lines and grades as shown on the plans on all areas for proposed building construction. Compaction shall be performed to each 8 inch loose fill lift by means of a minimum of 6 passes of a standard sheepsfoot roller so that the sheepsfoot roller walks out of each lift to ensure the area has been uniformly compacted; or the compaction shall be performed to each lift by means of controlled travel of loaded rubber-tired compaction equipment or standard sheepsfoot roller so that the fill area has been uniformly compacted to 95% Standard Proctor Density (ASTM D-698) as determined by a testing lab approved by the Engineer. Each pass of soil loading and compaction equipment should travel parallel to the length of the buildings. The moisture content at the time of compaction for cohesive soils shall be consistent with the requirements of compaction at the optimum moisture content.

Subgrade for drives shall be crowned 1/2" per foot. The side slopes of roadside ditches shall not be steeper than 3H:1V.

If Proctor Density tests are to be performed on-site, a minimum of 2 field density tests per 8 inch lift per building site shall be performed during construction to verify compaction quality or as determined by the Engineer based on compaction results. The compaction tests are to be paid for by the Owner. Nuclear or other standard field density test methods are acceptable for this project. Grade tolerance on building site earthwork shall be -0.10 to +0.10 ft.

1.6. CULVERTS

The culvert structures shall be installed to the lines and grades as shown on the plans. The culverts shall be sized as according to the plans and they shall be HDPE smooth lined corrugated high-density polyethylene pipe or equivalent. Fittings and appurtenances shall be made of the same material as the pipe.

The culverts shall be bedded with a minimum of 3 inches of coarse grained material (sand, gravel or crushed rock) with a maximum diameter size of 1 inch. Initial backfill for 12 inches on both sides of the pipe and 12 inches above the top of the pipe shall consist of the same coarse-grained material as the bedding. Initial backfill shall first be worked and compacted under the haunches of the pipe to provide continuous support up to the pipe centerline in layers not more than six inches thick. The remainder of the initial backfill shall then be placed in layers not more than six inches thick. Care must be taken during initial backfill to ensure that tamping or vibratory equipment does not deform or displace the culvert. Final backfill shall consist of the remaining earthfill from the top of the initial backfill to the ground surface, including mounding for settlement. Final backfill shall be free of debris, rocks or other objects with a three-inch nominal diameter or larger.

1.7. SEWER SYSTEM

Sewer system consists of drains from the barns, cleanouts, sewer main, sewer outlet into earthen basins, level control between lagoon cells and inlet pipe to the pump station.

Gravity sewer pipe (non-pressurized) shall be PVC-SDR-35 with gasket or glued joints or dual wall polyethylene (smooth interior) pipe with gasketed connectors. The last section entering an earthen basin shall be 20' long. Sewers larger than 20" may be reinforced concrete pipe with tongue and groove ends sealed with approved mastic.

1) SEWER CLEANOUT: shall be located as shown on the plan and elsewhere at not more than 150' spacing.
2) MANHOLES:
   Manholes for sewer systems and pump stations shall be Class-II pre-cast tongue and groove concrete pipe with manhole steps. Manholes shall have pre-cast integral bottoms. All holes for pipes passing through walls and base and all joints shall be sealed water tight. Manholes shall be fitted with lockable or heavy child-proof covers.

1.8. CLEAN UP

During construction the Contractor shall keep the work site, areas adjacent to the work site and access roads in an orderly condition. Any spillage or debris resulting from the Contractor's operations shall be immediately removed. Upon completion, all debris, etc. shall be removed from the area. All access roads, other than public, shall be graded, smoothed over and left in a well-drained condition prior to equipment removal.

2. CONCRETE CONSTRUCTION SPECIFICATION

2.1. SCOPE

The work shall consist of furnishing and placing steel reinforcement for reinforced concrete or pneumatically applied mortar.

2.2. MATERIALS

Before reinforcement is placed, the surfaces of the bars and fabric and any metal supports shall be cleaned to remove any loose, flaky rust, mill scale, oil, grease or other undesirable coatings or foreign substances. Epoxy-coated steel reinforcement shall be free of surface damage. After placement, the reinforcement shall be maintained in a clean and serviceable condition until it is completely embedded within the concrete.

2.3. STRENGTH OF CONCRETE

All concrete shall have the minimum compressive strength: In place, at 28 days, minimum as follows (unless indicated otherwise by structural drawings): Footings, walls, interior slabs on grade: 4,000 psi.

Compressive strength shall be tested in conformance with Section 6 of this document.

2.4. AIR CONTENT AND CONSISTENCY

Unless otherwise specified in Section 24, the slump shall be 3 to 5 inches. If air entrainment is specified, the air content by volume shall be 5 to 8 percent of the volume of the concrete. When specified, directed or approved by the Engineer or his designated representative, a water-reducing, set-retarding or other admixture shall be used. High Range Water Reducing Agents (Superplasticizers) may be used to increase workability reduce water content and

control concrete temperature in hot weather. The maximum slump after adding high range water reducing agents shall be 7-1/2 inches.

2.5. DESIGN OF THE CONCRETE MIX

The proportions of the aggregates shall be such as to produce a concrete mixture that will work readily into the corners and angles of the forms and around reinforcement when consolidated, but will not segregate or exude free water during consolidation.

Fly ash may be used as a partial substitution for Portland cement in an amount not greater than 25 percent (by weight) of the cement in the concrete mix, unless otherwise specified.

2.6. INSPECTION AND TESTING

The Engineer or his designated representative shall have free entry to the plant and equipment furnishing concrete under the contract. Proper facilities shall be provided for the Engineer or his designated representative to inspect materials, equipment and processes and to obtain samples of the concrete. All tests and inspections will be conducted so as not to interfere unnecessarily with manufacture and delivery of the concrete. Either 6x12 or 4x8 cylinders may be used. Test cylinders shall be filled by an ACI Level-1 certified technician or Testing Lab designated by the Engineer. Initial curing of the cylinders shall take place in a protected location on-site for a minimum of 24 hours.

These ASTM methods and standards shall govern: Sampling, C-172; Compression Test Specimens, C-31, Compressive Strength, C-39. Slump and a minimum of 3 cylinders shall be taken at an interval of at least every 100 CY of concrete or once per pour, whichever is greater. One cylinder of each set shall be tested at 7 days and one at 28 days. The third shall be kept for re-testing if necessary. If both of the 28-day tests are 500 psi or more below the compressive strength specified on the construction plans a minimum of 3 concrete cores shall be taken of the area in question and tested for compressive strength at the contractor's expense. In the event that the compressive strength of the core samples fails to meet the specified minimum, the area in question shall be removed and replaced per Section 20 of this document and retested. As an alternative to removal and replacement, retrofitting options may be submitted to the engineer for approval on a case by case basis.

2.7. HANDLING AND MEASUREMENT OF MATERIALS

Materials shall be stockpiled and batched by methods that will prevent segregation or contamination of aggregates and insure accurate proportioning of the ingredients of the mix.

Except as otherwise provided in Section 8, cement and aggregates shall be measured as follows:

Cement shall be measured by weight or in bags of 94 pounds each. When cement is measured in bags, no fraction of a bag shall be used unless weighed.

Aggregates shall be measured by weight. Mix proportions shall be based on saturated, surface-dry weights. The batch weight of each aggregate shall be the required saturated, surface-dry weight plus the weight of surface moisture it contains.

Water shall be measured, by volume or by weight, to accuracy within one percent of the total quantity of water required for the batch.

Admixtures shall be measured within a limit of accuracy of three percent.

2.8. MIXERS AND MIXING

Concrete shall be uniform and thoroughly mixed when delivered to the work site. Variations in slump of more than one (l) inch within a batch will be considered evidence of inadequate mixing and shall be corrected by increasing mixing time or other acceptable alternative.

For stationary mixers, the mixing time after all cement and aggregates are in the mixer drum shall be not less than 1-1/2 minutes. When concrete is mixed in a truck mixer, the number of revolutions of the drum or blades at mixing speed shall not be less than 70 or more than l00.

No mixing water in excess of the amount called for by the job mix shall be added to the concrete during mixing or hauling or after arrival at the delivery point.

2.9. FORMS

Forms shall be of wood, plywood, steel or other approved material and shall be mortar tight. The forms and associated falsework shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and contours. Form surfaces shall be smooth and free from holes, dents, sags or other irregularities. Forms shall be coated with a non-staining form release agent before being set into place.

Metal ties or anchorages within the forms shall be equipped with cones, she-bolts or other devices that permit their removal to a depth of at least one inch without injury to the concrete. Ties designed to break off below the surface of the concrete shall not be used without cones.

All edges that will be exposed to view when the structure is completed shall be chamfered, unless finished with molding tools as specified in Section l8.

2.10. PREPARATION OF FORMS AND SUBGRADE

Prior to placement of concrete, the forms and subgrade shall be free of chips, sawdust, debris, water, ice, snow, extraneous oil, mortar, or other harmful substances or coatings and the temperature of all surfaces to be in contact with the new concrete shall be not be less than 40oF. Any oil on the reinforcing steel or other surfaces required to be bonded to the concrete shall be removed. Rock surfaces shall be cleaned by air-water cutting, wet sandblasting or wire brush scrubbing, as necessary, and shall be wetted immediately prior to placement of concrete. Placement of concrete on mud, dried earth or un-compacted fill or frozen subgrade will not be permitted. Earth surfaces shall be firm and damp. Granular subgrade material, if required, shall be graded and compacted as described in Section 24 of this specification.

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

Weepholes in walls or slabs shall be formed with nonferrous materials.

2.11. CONVEYING

Concrete shall be delivered to the site and discharged into the forms within l-1/2 hours after the introduction of the cement to the aggregates. In hot weather or under conditions contributing to quick stiffening of the concrete, the time between the introduction of the cement to the aggregates and discharge shall not exceed 45 minutes.

The Engineer or his designated representative may allow a longer time, provided the setting time of the concrete is increased a corresponding amount by the addition of an approved set-retarding admixture. In any case, concrete shall be conveyed from the mixer to the forms as rapidly as practicable by methods that will prevent segregation of the aggregates and no loss of mortar occurs.

2.12. PLACING

The Contractor shall give reasonable notice to the Engineer or his designated representative each time he intends to place concrete. Such notice shall provide sufficient time for the Engineer or his designated representative to inspect the subgrade, forms, steel reinforcement and other preparations for compliance with the specifications. "Other preparations" include but are not limited to the concrete mixing plant, delivery equipment system, placing, finishing, and curing equipment and system, schedule of work, workforce, heating or cooling facilities if applicable. Deficiencies are to be corrected before concrete is delivered for placing.

When placing the concrete, it shall be conveyed to the forms in such a manner to prevent segregation of aggregates. The concrete shall be deposited as closely as possible to its final position in the forms and shall be worked into the corners and angles of the forms and around all reinforcement and embedded items in a manner to prevent segregation of aggregates or excessive laitance. Formed concrete shall be placed in horizontal layers not more than 20 inches thick. Concrete shall not be dropped more than 10 feet vertically unless suitable equipment is used to prevent segregation. When high range water reducing agents are used, the concrete shall not be allowed to drop more than 15 feet. Hoppers and chutes, pipes or "elephant trunks" shall be used as necessary to prevent segregation and the splashing of mortar on the forms and reinforcing steel above the layer being placed.

Immediately after the concrete is placed in the forms, it shall be consolidated by spading, hand tamping or vibration as necessary to insure smooth surfaces and dense concrete. Each layer shall be consolidated to insure monolithic bond with the preceding layer. If the surface of a layer of concrete in-place sets to the degree that it will not flow and merge with the succeeding layer when spaded or vibrated, the Contractor shall discontinue placing concrete and shall make a construction joint according to the procedure specified in Section l3.

If placing is discontinued when an incomplete horizontal layer is in place, the unfinished end of the layer shall be formed by a vertical bulkhead.

2.13. CONSTRUCTION JOINTS

Construction joints shall be made at the locations shown on the drawings. If construction joints are needed which are not shown on the drawings, they shall be placed in locations approved by the Engineer or his designated representative.

Where a feather edge would be produced at a construction joint, as in the top surface of a sloping wall, an insert form shall be used so that the resulting edge thickness on either side of the joint is not less than 6-inches.

In walls and columns, as each lift is completed, the top surfaces shall be immediately and carefully protected from any condition that might adversely affect the hardening of the concrete.

Steel tying and form construction adjacent to concrete in-place shall not be started until the concrete has cured at least 12-hours. Before new concrete is deposited on or against concrete that has hardened, the forms shall be re-tightened. New concrete shall not be placed until the hardened concrete has cured at least 12-hours.

Surfaces of construction joints shall be cleaned of all unsatisfactory concrete, laitance, coatings or debris by washing and scrubbing with a wire brush or wire broom or by other means approved by the Engineer or his designated representative. The surfaces shall be kept moist for at least one hour prior to placement of the new concrete.

2.14. EXPANSION AND CONTRACTION JOINTS

Expansion and contraction joints shall be made only at locations shown on the drawings.

Exposed concrete edges at expansion and contraction joints shall be carefully tooled or chamfered, and the joints shall be free of mortar and concrete. Joint filler shall be left exposed for its full length with clean and true edges.

Preformed expansion joint filler shall be held firmly in the correct position as the concrete is placed.

When open joints are specified, they shall be constructed by the insertion and subsequent removal of a wooden strip, metal plate or other suitable template in such a manner that the corners of the concrete will not be chipped or broken. The edges of open joints shall be finished with an edging tool prior to removal of the joint strips.

2.15. WATERSTOPS

Waterstops shall be held firmly in the correct position as the concrete is placed. Joints in metal waterstops shall be soldered, brazed or welded. Joints in rubber or plastic waterstops shall be cemented, welded or vulcanized as recommended by the manufacturer. Joints shall be watertight and of a strength equivalent to that specified in Material Specification 537. Intersecting waterstop joints shall be prefabricated and supplied by the same manufacturer providing the waterstop.

2.16. REMOVAL OF FORMS

Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit the concrete to take the stresses due to its own weight uniformly and gradually.

2.17. FINISHING FORMED SURFACES

Immediately after the removal of the forms:

1) All fins and irregular projections shall be removed from exposed surfaces.

2) Unless otherwise specified in Section 24, the holes produced on all surfaces by the removal of form ties, cone-bolts, and she-bolts shall be cleaned, wetted and filled with a dry-pack mortar consisting of one part portland cement, three parts sand that will pass a No. 16 sieve, and just sufficient water to produce a consistency such that the filling is at the point of becoming rubbery when the material is solidly packed.

2.18. FINISHING UNFORMED SURFACES

All exposed surfaces of the concrete shall be accurately screeded to grade and then float finished, unless specified otherwise.

Excessive floating or troweling of surfaces while the concrete is soft will not be permitted.

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

Joints and edges on unformed surfaces that will be exposed to view shall be chamfered or finished with molding tools.

2.19. CURING

Concrete shall be prevented from drying for a curing period of at least 7 days after it is placed. Exposed surfaces shall be kept continuously moist for the entire period, or until curing compound is applied as specified below. Moisture shall be maintained by sprinkling, flooding or fog spraying or by covering with continuously moistened canvas, cloth mats, straw, sand or other approved material. Wood forms left in-place during the curing period shall be kept continuously wet. Formed surfaces shall be thoroughly wetted immediately after forms are removed and shall be kept wet until patching and repairs are completed. Water or covering shall be applied in such a way that the concrete surface is not eroded or otherwise damaged.

Concrete, except at construction joints, may be coated with the approved curing compound in lieu of continued application of moisture, except as otherwise specified in Section 24. Unless otherwise specified, the curing compound shall be white pigmented and conform to ASTM C 309, Type 2, Class A or B. Clear curing compound (Type l) or clear with fugitive dye (Type 1-D) may be used only when specified in section 25. Curing compounds shall not be used on a surface that is to receive additional concrete, paint, tile, or other coatings unless the contractor demonstrates that the membrane can be satisfactorily removed or can serve as a base for the later application. The compound shall be sprayed on the 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. The compound shall be applied at a uniform rate of not less than one gallon per 175 square feet of surface and shall form a continuous adherent membrane over the entire surface. Curing compound shall be thoroughly mixed before applying and continuously agitated during application. Curing

compound shall not be applied to surfaces requiring bond to subsequently placed concrete, such as construction joints, shear plates, reinforcing steel and other embedded items. If the membrane is damaged during the curing period, the damaged area shall be re-sprayed at the rate of application specified above. Surfaces covered by the membrane shall not be trafficked unless protected from wear.

2.20. REMOVAL AND REPLACEMENT OR REPAIR

When concrete is honeycombed, damaged or otherwise defective, the Contractor shall remove and replace the structure or structural member containing the defective concrete or, where feasible, correct or repair the defective parts. The Engineer or his designated representative will determine the required extent of removal, replacement or repair. Prior to starting repair work the Contractor shall obtain the Engineer's or his designated representative's approval of his plan for effecting the repair. The Contractor shall perform all repair work in the presence of the Engineer or his designated representative.

2.21. CONCRETING IN COLD WEATHER

Concrete shall not be mixed nor placed when the daily minimum atmospheric temperature is less than 40°F unless facilities are provided to prevent the concrete from freezing or appropriate non-chloride based accelerators are used. If accelerators or antifreeze compounds are planned to be used, the Engineer shall be notified at least 2 days prior to their use for review.

2.22. CONCRETING IN HOT WEATHER

The Contractor shall apply effective means to maintain the temperature of the concrete below 90°F during mixing, conveying and placing.

2.23. MEASUREMENT AND PAYMENT

For items of work for which specific unit prices are established in the contract, concrete will be measured to the neat lines shown on the drawings and the volume of concrete will be computed to the nearest 0.1 cubic yard. Measurement of concrete placed against the sides of an excavation without the use of intervening forms will be made only to the neat lines or pay limits shown on the drawings. No deduction in volume will be made for chamfers, rounded or beveled edges or for any void or embedded item that is less than five (5) cubic feet in volume.

Payment for each item of structure concrete will be made at the contract unit price or the contract lump sum, whichever is applicable, for that item. Such payment will constitute full compensation for all labor, materials, equipment, transportation, tools, forms, falsework, bracing and all other items necessary and incidental to the completion of the work, except items listed for payment elsewhere in the contract.

Compensation for any item of work described in the contract but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in Section 24 of this specification.

2.24. ITEMS OF WORK AND CONSTRUCTION DETAILS

Items of work to be performed in conformance with this specification and the construction details therefor are:

a) Reinforced Concrete
   1) This item shall consist of furnishing and placing concrete as shown in the plans.
   2) Cement shall be Type I, IA (air-entrained), II or IIA (air-entrained).
   3) Concrete shall be air-entrained. The air content (by volume) of the concrete at time of placement shall be 5 to 8 percent.
   4) The gradation of the coarse aggregate shall be Size No. 57 as defined in ASTM C-33.
   5) At least 30% of the total weight of aggregate shall be coarse aggregate crushed limestone.
   6) Slump shall be 3" plus or minus 1" for concrete without admixtures. If water reducing agents the maximum slump may be increased to 7.5".
   7) The temperature of the concrete at the time of placement shall not be less than 40°F nor greater than 90°F.
   8) Non-shrink grout shall be used everywhere that grouting is required. Non-shrink grout specifications will be reviewed by the engineer prior to selection and use.
   9) The contractor shall be required to have, as a minimum, two mechanical vibrators in working condition for consolidation of concrete on the site during concrete placement operations.
   10) The granular subgrade shall be fine aggregate for concrete, and shall be compacted as follows:
      a) The subgrade material shall be thoroughly wet prior to compaction.
      b) Compaction shall be accomplished while the material is wet from the above step.
      c) The subgrade shall be compacted by 2 (minimum) passes of a hand-directed, vibratory compactor over the entire surface.
   11) Payment for concrete will be made as per agreement between the Contractor and Cooperator, which may or may not be a contract lump sum price.

b) Subsidiary Item, Waterstops
   This item shall consist of furnishing and installing the waterstops as shown on the drawings. Separate payment will not be made for waterstops, as compensation will be considered in the payment for concrete.

   1) Subsidiary Item, Grouting between gang slat panels. This item shall consist of furnishing and placing grout between the gang slat panels as described on the drawings. Separate payment will not be made for grouting, as compensation will be considered in the payment for concrete.

   2) Subsidiary Item, Grouting between slats supports girders. This item shall consist of furnishing and placing grout between the slat support girders as described on the drawings. Separate payment will not be made for grouting, as compensation will be considered in the payment for concrete.

3 STEEL REINFORCEMENT FOR CONCRETE CONSTRUCTION SPECIFICATIONS

3.1 SCOPE

The work shall consist of furnishing and placing steel reinforcement for reinforced concrete or pneumatically applied mortar.

3.2 MATERIALS

Steel reinforcement shall conform to the requirements of Material Specification 539. Before reinforcement is placed, the surfaces of the bars and fabric and any metal supports shall be cleaned to remove any loose, flaky rust, mill scale, oil, grease or other undesirable coatings or foreign substances. Epoxy-coated steel reinforcement shall be free of surface damage. After placement, the reinforcement shall be maintained in a clean and serviceable condition until it is completely embedded within the concrete.

3.3 BAR SCHEDULE, LISTS AND DIAGRAMS

Any supplemental bar schedules, bar lists or bar-bending diagrams required in Section 10 of this specification to accomplish the fabrication and placement of steel reinforcement shall be provided by the Contractor. Prior to placement of reinforcement, the Contractor shall furnish four copies of any such lists or diagrams to the Engineer or his designated representative for approval. Acceptance of the reinforcement will not be based on approval of these lists or diagrams, but will be based on inspection of the steel reinforcement after it has been placed, tied, supported and ready to receive concrete.

3.4 BENDING

Reinforcement shall be cut and bent in compliance with the requirements of the American Concrete Institute Standard 315. Bars shall not be bent or straightened in a manner that will injure or weaken the material. Bars with kinks, cracks or improper bends will be rejected.

3.5 SPLICING BAR REINFORCEMENT

Locations for splices of reinforcement shall be left to the judgement of the Contractor. Splice lengths shall meet the requirements of ACI Standard 318 "Building Code Requirements for Reinforced Concrete" and are given in Section 10 of this specification. Locations where splices of reinforcement are not allowed are described in Section 10 of this specification.

3.6 SPLICING WELDED WIRE FABRIC

Unless otherwise specified, welded wire fabric shall be spliced in the following manner:

a) Adjacent sections shall be spliced end to end (longitudinal lap) by overlapping a minimum of one full mesh plus two (2) inches plus the length of the two end overhangs. The splice length is measured from the end of the longitudinal wires in one piece of fabric to the end Of the longitudinal wire in the lapped piece of fabric.
b) Adjacent sections shall be spliced side to side (transverse lap) a minimum of one full mesh plus two (2) inches. The splice length shall be measured from the centerline of the first longitudinal wire in one piece of fabric to the centerline of the first longitudinal wire in the lapped piece of fabric.

3.7 PLACING

Reinforcement shall be accurately placed and secured in position in a manner that will prevent its displacement during the placement of concrete. Tack welding of bars will not be permitted. Metal chairs, metal hangers, metal spacers and concrete chairs may be used to support the reinforcement. Metal hangers, spacers and ties shall be placed in such a manner that they will not be exposed in the finished concrete surface. The legs of metal chairs or side form spacers that may be exposed on any face of slabs, walls, beams or other concrete surfaces shall have a protective coating or finish by means of hot dip galvanizing, epoxy coating, plastic coating, or be stainless steel. Metal chairs and spacers not fully covered by a protective coating or finish shall have a minimum cover of 3/4 inch of concrete over the unprotected metal portion except for those with plastic coatings may have a minimum cover of 1/2 inch of concrete over the unprotected metal portion. Pre-cast concrete chairs shall be manufactured of the same class of concrete as specified for the structure and shall have the tie wires securely anchored in the chair or a V-shaped groove at least 3/4 inch in depth molded into the upper surface to receive the steel bar at the point of support. Pre-cast concrete chairs shall be clean and moist at the time concrete is placed.

High density or structural plastic rebar accessories, designed to insure maximum concrete bond, may be substituted for metal or concrete accessories in spacer applications as approved by the Engineer or his designated representative. Exposure of plastic rebar accessories at the finished concrete surface shall be kept to a minimum. Plastic rebar accessories, when used, shall be staggered along adjacent parallel bars and shall be placed at intervals no closer than twelve (12) inches. Plastic rebar accessories shall not be used in concrete section six (6) inches or less in thickness.

3.8 STORAGE

Steel reinforcement stored at the work site shall be placed on platforms, skids or other supports and in a manner that contact with the ground is avoided and be protected from mechanical damage and/or corrosion.

3.9 MEASUREMENT AND PAYMENT

For items of work for which specific unit prices are established in the contract, the weight of steel reinforcement placed in the concrete in accordance with the drawings will be determined to the nearest pound by computation from the placing drawings. Measurement of hooks and bends will be based on the requirements of ACI Standard 315. Computation of weights of reinforcement will be based on the unit weights established in Tables 34-1 and 34-2 of this specification. Computation of weights for welded wire fabric not shown in Table 34-2 shall be based on ACI Standard 315. The area of welded wire fabric reinforcement placed in the concrete in accordance with the drawings will be determined to the nearest square foot by computation from the placing drawings with no allowance for required laps. The weight of steel reinforcing in extra splices or extra-length splices approved for the convenience of the Contractor or the weight of supports and ties will not be included in the measurement for payment.

Payment for furnishing and placing reinforcing steel will be made at the contract unit price. Such payment will constitute full compensation for all labor, materials, equipment and all

other items necessary and incidental to the completion of the work including preparing and furnishing bar schedules, lists or diagrams; furnishing and attaching ties and supports; and furnishing, transporting, storing, cutting, bending, cleaning and securing all reinforcements.

Compensation for any item of work described in the contract, but not listed in the bid schedule, will be included in the payment for the item of work to which it is made subsidiary. Such items to which they are made subsidiary are identified in Section 10 of this specification.

TABLE 34-1. STANDARD REINFORCING BARS

Bar Size No.	Weight (lb./ft.)
3	0.376
4	0.668
5	1.043
6	1.502
7	2.044
8	2.670
9	3.400
10	4.303
11	5.313
14	7.650
18	13.600

TABLE 34-2. RECTANGULAR WELDED WIRE FABRIC
Style Designation

By Steel Wire Gauge	By W-Number	(lb./100 Sq. Ft.)
6 x 6 - 10 x 10	6 x 6 - W1.4 x W1.4	21
6 x 6 - 8 x 8	6 x 6 - W2.1 x W2.1	30
6 x 6 - 6 x 6	6 x 6 - W2.9 x W2.9	42
6 x 6 - 4 x 4	6 x 6 - W4.0 x W4.0	58
4 x 4 - 10 x 10	4 x 4 - W1.4 x W1.4	31
4 x 4 - 8 x 8	4 x 4 - W2.1 x W2.1	44
4 x 4 - 6 x 6	4 x 4 - W2.9 x W2.9	62
4 x 4 - 4 x 4	4 x 4 - W4.0 x W4.0	85
4 x 12 - 8 x 12	4 x 12 - W2.1 x W0.9*	25
4 x 12 - 7 x 11	4 x 12 - W2.5 x W1.1*	31

NOTE: Style Designation is defined in ACI Standard 315 of the American Concrete Institute.
*Welded smooth wire fabric with wires smaller than Size W1.4 is manufactured from galvanized wire.

3.10 ITEMS OF WORK AND CONSTRUCTION DETAILS

Items of work to be performed in conformance with this specification and the construction details therefore are:

a) Reinforcing Steel
   1) This item shall consist of furnishing and placing reinforcing steel as shown on the plans.
   2) All reinforcing steel (bars and wire mesh) shall be Grade 60.
   3) Splice lengths shall be 19", 25", and 31" for #3, #4, and #5 bars respectively.
   4) There shall be no splicing of the bars in the endwall beam (the heavily reinforced section of the endwall near the top) unless the splice occurs directly behind the center of the girder/endwall connection.
   5) If any shop drawings are developed, copies will be given to the Engineer for review prior to construction.
   6) Payment for reinforcing steel will be made as per agreement between the Contractor and Cooperator.
   7) All placement of rebar will be inspected by the engineer to ensure placement is within plans and specifications.

4 PLASTIC SEWER PIPE AND FITTINGS

4.1 SCOPE

The work specified under this section includes the manufacture, construction, and installation of polyvinyl chloride (PVC) pipe and fittings for gravity and pressure animal waste collection and transfer pipeline systems.

4.2 PIPELINE

a) MATERIALS: Pipe used in all mains and services shall be rigid extruded Polyvinyl Chloride (PVC) pipe. All pipe used shall conform to Commercial Standard 256-63 for Polyvinyl Chloride (PVC) Pressure pipe, and ASAE Standard S376, Design, Installation and Performance of Underground Thermoplastic Irrigation Pipelines. All pipe shall have the following minimum strengths: SDR35 for gravity drains and SDR26 for pressure lines.

b) INSTALLATION: All pipes shall be clean on the inside and free of any foreign material. If the Engineer deems it necessary, the pipe shall be cleaned by passing a swab of the proper size through the pipe before joining. Once cleaned, the pipe shall be kept clean during and after installation. A tight cap shall be placed over the open end of the installed pipeline after each workday.

c) TRENCHING AND BACKFILL: Where possible the pipe trench shall be excavated to a depth sufficient to provide a minimum cover of 24 inches above the top of the pipe for pressure lines and 12 inches for gravity lines.

d) BACKFILL: immediately adjoining the pipe to 12 inches above the pipe shall be loose soils or sand free from stone. Where possible this shall be obtained from the site, but if suitable material is not

available on site, an acceptable borrows area, as determined by the Engineer, shall be supplied by the Owner. In areas where any rock is encountered, backfill pipe to avoid damage to the pipe and eliminate the presence of potentially damaging rock. The remainder of the backfill may be placed by hand or machine. This material shall contain no rock larger than 6 inches in its longest dimension except in areas where rip rap is needed in the top 6 inches of fill. Any rock incorporated as backfill must first be approved by the Engineer. In areas where no rock is encountered, all backfill may be machine placed. All waste rock and brush caused by the installation of the waterline shall be disposed of. Backfill shall be mounded over the trench to allow for future settlement. Vegetative reseeding shall be required only on large disturbed areas such as around the manhole site.

e) PIPE LAYING: Pipe routes shall be as shown on the plans. Pipe may be strung along in advance of trenching but only as may be reasonably installed in one work day.

Trenches shall be allowed to nearly reach the temperature of the surrounding earth before attachment to fixed structures or back filling operations commence as outlined in ASAE Standard S376 for placement in extremely hot or cold weather.

f) PRESSURE SEWER LINES: All pressure sewer lines shall be installed to the lines and grades as shown on the plans. Tolerance for sewer grades shall to +0.5% in any 100 foot section. No slope reversals shall be tolerated. All sewer pipe shall be SDR 35 PVC plastic with bell and gasket joints for gravity lines and SDR 26 PVC plastic with bell and gasket joints for pressure lines. All pipe shall be installed according to the ASTM Recommended Practice for the Installation of PVC Sewer Pipe ASTM 2341. Proper safety precautions for installations in deep trenches shall be followed at all times. Earthfill over the sewer lines shall be compacted to the same density as is required in adjacent fill.

g) SEWER LINE ROUTES: Placement of fill over sewer lines shall follow procedures outlined in the waste storage pond embankment section of these specifications. Minimum 24 inch cover depths shall be obtained over all pressure sewer lines and gravity lines by placement of additional fill in areas needed. Compaction of this fill where not located under proposed buildings shall be to the same levels as specified for earthfill placed in the waste storage pond embankment. Where the sewer line is to be buried on the pond dike, adequate excess fill above design height shall be place to maintain 24 inch of cover there also. The fill required to do this shall be placed on the top of the berm and blended in with the design slopes of the berm. Adequate measures shall be taken to insure drainage paths are not obstructed by earthfill placed to insure adequate sewer line cover. Grade on fill placed over sewer line routes shall be adequate to maintain proper surface drainage.

h) THRUST BLOCKING: Thrust blocking prevents line movement and is required primarily with rubber gasket joints. Thrust blocks are required at the following locations:
1) Where the pipe changes the direction of the water (tees, elbows, crosses, etc.)
2) Where the pipe size changes (reduces)
3) At the end of the pipeline (clean outs, plugs, etc.)
4) Where there is an in line valve.

Thrust blocks shall be placed against a solid wall, usually hand excavated. Sizing and placement shall be determined as shown in the plans and ASAE S376 or a minimum of 2000 psi compressive strength at 28 days. Thrust blocking shall be provided similarly wherever needed in all suspended piping in the unit. Blocking shall provide neat, secure, and serviceable installation using suspension strapping, joint ties and other appropriate means as reviewed and approved by the Engineer.

i) INSPECTION: Each phase of construction of the lines shall be inspected and approved by the Engineer or a qualified representative of the Engineer.
The inspector shall examine and determine the adequacy of the following construction steps:
1) Trenching - minimum depth and condition of the bottom of trench.
2) Placement of bedding material (if required).
3) Installation of pipe (cleaning, joint testing, snaking, thrust blocks).
4) Supervised backfill to 12 inches over pipe.
5) Mechanical placed backfill in areas without rocks and above 12 inches over pipe.
6) Testing - (pressure check, leak repair).
7) In areas where rock is encountered, the bedding together with the first 12 inches of carefully placed fill shall be done only with the inspector present.

j) ORDER OF WORK: Work shall commence at the point of connection to the source and commence in an orderly manner so that each section of line is tied together and tested in sequence. More than one section of line may be constructed at the same time, but work shall commence toward joining together all sections to be tested in sequence. Priority of construction shall be determined by the Engineer.

k) SYSTEM TESTING. All pressure lines shall be hydrostatically tested at least 50 percent above the design operating pressure for at least 30 minutes. Leakage shall not exceed the amount given by the following formula:

$$L=NDP^{1/2}/1850.$$

Where:

L = The allowable leakage in gallons per hour
N = The number of pipe joints
D = The nominal pipe diameter in inches
P = The test pressure in psi.

Gravity sewer piping greater than 100 feet in total length (excluding pull plug barn piping within the barn) shall be water tightness. The leakage outward or inward (exfiltration or infiltration) shall not exceed 200 gallons per inch of pipe diameter per mile per day for any section of the system. The use of a television camera or other visual methods for inspection prior to placing the sewer system in service is recommended.

The inspector shall be present at times of testing and record results. The inspector shall make results of the tests available to the Owner.

All defective materials found during testing shall be removed and replaced at the Contractor's expense. No segment of the line shall be approved by the Engineer until it has been successfully tested. The contractor shall furnish all the necessary equipment for testing and make the test at his own expense.

shall furnish all the necessary equipment for testing and make the test at his own expense.

4.3 VALVE AND CLEANOUTS

a) CHECK VALVES: Where the check flow meters are shown on the final plans, the check valve shall be a 12" diameter check valve or equivalent.
b) VALVE BOXES: Valve boxes shall either be a CMP pipe sized and cut to the appropriate length for the valve installed or a typical valve box as shown on the plans. Boxes shall be of a length compatible with the depth of trench required. Boxes for all valves and cleanouts shall use 8 or 10 inch SDR 26 PVC pipe or Dual Wall Pipe. Lids shall be either a standard PVC caps or a typical valve box as shown on the plans.
c) SETTING VALVES: Valves shall be located according to the instructions of the Engineer. The valve boxes shall be set directly over the valve, plumbed and top brought level with the ground and backfilled. The backfill shall be thoroughly tamped around the box.
d) CLEANOUTS: Cleanouts shall be located on all gravity sewer lines that extend longer than 200 feet. Cleanouts shall be spaced no more than 200 feet apart and shall be located on any corners. They shall be constructed as shown on the plans. In lieu of cleanouts junction manholes can be used instead at corner locations.

5 QUALITY ASSURANCE PROGRAM

5.1 OWNER

a) Shall notify engineer, 3 days before starting construction.
b) Notify engineer, when excavation is complete.
c) Notify engineer, minimum 48 hrs before construction of concrete pours.

5.2 LINE OF AUTHORITY

a) The ENGINEER will act in the capacity of the OWNER and will ensure the project is completed according to the DRAWINGS and SPECIFICATIONS.
b) The CONTRACTOR shall keep on the work site a copy of current DRAWINGS and SPECIFICATIONS.
c) In case of conflict between the DRAWINGS and SPECIFICATIONS, the SPECIFICATIONS shall govern. Figured dimensions on DRAWINGS shall govern over general DRAWINGS.
d) Any discrepancies found between the DRAWINGS and SPECIFICATIONS and site conditions or any inconsistencies or ambiguities in the DRAWINGS or SPECIFICATIONS shall be immediately reported to the ENGINEER, who shall promptly correct such inconsistencies or ambiguities.

5.3 SPECIALIZED SKILLS OR WORK QUALIFICATIONS

a) Any testing or inspection conducted will be under the approval of the ENGINEER.
b) All sampling and testing will be conducted by an authorized representative of the ENGINEER or by a testing company approved to conduct tests as specified in the SPECIFICATIONS.

5.4 OBSERVATION AND OVERSIGHT DUTIES

a) The ENGINEER or his representative will stake out the construction of the facility.
b) The construction will be inspected by the ENGINEER or his assigned representative.
c) During the construction of the following components the ENGINEER will have a representative on site.
    1) Concrete Pits
    2) Sewer Line
    3) Prior to Backfill after completion of Concrete Pits.

d) After finished construction, the site will be measured by the ENGINEER to ensure it was constructed as planned.

5.5 TEST PROCEDURES, FREQUENCIES AND REPORTING

a) The Construction of the Site will meet the SPECIFICATIONS identified in this section.

b) The building pad fill, and berm fill will be tested at the ENGINEER's discretion to ensure it is being constructed according to the SPECIFICATIONS.

c) The sewer lines will be inspected according to the leakage tests identified in the SPECIFICATIONS.

d) The Engineer or his designated representative shall have free entry to the plant and equipment furnishing concrete under the contract. Proper facilities shall be provided for the Engineer or his designated representative to inspect materials, equipment and processes and to obtain samples of the concrete.

1) All tests and inspections will be conducted so as not to interfere unnecessarily with manufacture and delivery of the concrete. Either 6x12 or 4x8 cylinders may be used. Test cylinders shall be filled by an ACI Level-1 certified technician or Testing Lab designated by the Engineer. Initial curing of the cylinders shall take place in a protected location on-site for a minimum of 24 hours.

2) These ASTM methods and standards shall govern: Sampling, C-172; Compression Test Specimens, C-31, Compressive Strength, C-39. Slump and a minimum of 3 cylinders shall be taken at an interval of at least every 100 CY of concrete or once per pour, whichever is greater. One cylinder of each set shall be tested at 7 days and one at 28 days. The third shall be kept for re-testing if necessary. If both of the 28-day tests are 500 psi or more below the compressive strength specified on the construction plans a minimum of 3 concrete cores shall be taken of the area in question and tested for compressive strength at the contractor's expense. In the event that the compressive strength of the core samples fails to meet the specified minimum, the area in question shall be removed and replaced per Section 20 of this document and retested. As an alternative to removal and replacement, retrofitting options may be submitted to the engineer for approval on a case by case basis.

e) A final certification and report will be conducted by the ENGINEER to ensure that the facility is within + 5 % in dimensions and that the liner as well as all critical components were constructed according to the DRAWINGS and SPECIFICATIONS.

Section 6

SECTION 6: Operation and Maintenance Plan

1. All swine effluent shall be applied as specified in Nutrient Management Plan. Land application from in-house storage pits may be transported via liquid tanker trucks or an irrigation system and applied to fields included in the Nutrient Management Plan.
2. Proper calibration of spreader equipment is essential to ensure the amount of swine fertilizer applied is within the required guidelines to protect water quality. The two methods of calibration that generally can be used are 1) calibration based on equipment settings and operational conditions or 2) calibration based on gallons per load and number of loads applied.
3. Several soil cores have been taken from each field and composited into one sub-sample for each individual field. Soil samples are to be taken once every five years or when the Nutrient Management Plan is revised, whichever occurs first. It is required that a manure sample be analyzed each year and the results sent to ADEQ with the farm's annual report.
4. Travel of vehicles should be confined to designated areas to prevent concrete pit damage and reduce drainage erosion.
5. Vegetation on side slopes shall be clipped annually as a minimum. Regrade, seed and mulch any areas which become damaged immediately.
6. Maintain grades around containment structures to assure positive surface drainage away from the structures in all directions. Fill any settled areas which may collect water.
7. Repair any damage to fences, gates, marker posts and safety signs.
8. Do not allow trees to grow adjacent to concrete storage tanks, to avoid root damage to the structures.
9. The landowner/producer is responsible for back-up power and water if existing system goes down due to power outage or pump failure, etc.
10. Inspect concrete storage tank for signs of leaking or seepage, excessive settling, excessive vegetation growth or damage due to vehicles or equipment, rodents or erosion. Report any leakage as detailed above and make plans to rectify any problems as soon as possible.
11. Solids accumulation in the waste storage pits will be inspected annually. Solids will be cleaned from the pit using agitation when necessary and land applied in accordance with the current NMP.
12. Monitor and record the Deep pit concrete levels monthly. Inspect Sewer pipes to ensure they are not plugged or damaged.
13. Inspect drainage pipes and risers after major storm events for damage and debris. Remove any debris from inlet or outlet. Repair any damage immediately.
14. Maintain records of all manure applications in accordance with the Annual Animal Waste Land Application Report.

15. In the event of an unplanned release of manure or wastewater steps should be taken to minimize the spill and its impact, and documentation of the event should be made. If the nature of the release is such that it could endanger human health, or directly reach surface or ground water, the State of Arkansas should be called at (501) 682-0716.

16. Normal animal mortality is managed daily by collection of the dead animals and disposal of the carcasses in an incinerator or in-vessel composter. Other acceptable options for disposal of mortality include freezing, static bin composting, and hauling to a rendering plant. In case of catastrophic loss, the Arkansas Livestock and Poultry Commission may authorize hauling the carcasses to a rendering plant unless the mortality was caused by disease. When hauling is not feasible, or if disease caused the loss, the Livestock and Poultry Commission may require burial in designated locations with specific guidelines. In such situations, Coon Tree Farm, Inc. will contact the Livestock and Poultry Commission by phone at (501) 225-1598 to determine the proper disposal plan.

Section 7

SECTION 7: Emergency Response Plan

In Case of an Emergency Storage Facility Spill, Leak or Failure:

Implement the following first containment steps:

a) Stop all other activities to address the emergency.
b) Stop all flow into the storage structures.
c) Assess the extent of the emergency and determine how much help is needed.
d) Call for help and excavator if needed.
e) Use a dozer or tractor with a blade to contain or divert spill or leak, if possible.
f) If containment material is needed, excavate soil from the nearest available area to the storage facility.
g) If possible, begin pumping manure and spreading in the prescribed fields at the prescribed rates.
h) Complete the clean-up and repair the necessary components.

In Case of an Emergency Land Application Manure/Waste Discharge:

Implement the following first containment steps:

a) Stop all other activities to address the emergency.
b) Stop manure pumps and irrigation equipment. Close valves. Separate pipes to create air gap, if necessary, to stop the manure flow.
c) Assess the extent of the emergency and determine how much help is needed.
d) Call for help if needed.
e) If spilled on a roadway, call the sheriff's office for traffic control and clean the spill immediately from the road and roadside, if needed.
f) Contain the spill or runoff from entering streams or waterways by using hay bales, saw dust, or soil material.
g) If flow is coming from a pipe, plug immediately.
h) Prevent further runoff by incorporating the wastes.

In the event of an emergency concerning natural disaster, fire, personal injury, manure storage and handling, and land application operations contact the appropriate emergency agency official(s). Emergency shutdown procedures should be readily available for all machinery and equipment.

Emergency Contact Information:

Contact	Telephone Number
Philip Campbell	**(870) 715-0754**
Fire or Ambulance	**911**
Franklin/Johnson County Sheriff	**(479) 667-4127 / (479) 754-2200**
Arkansas Livestock & Poultry Commission	**(501) 225-1598**
ADEQ	**(501) 682-0744**
Arkansas Natural Resources Commission	**(501) 682-1611**
Franklin/Johnson County Emergency Management	**(479) 667-4909 / (479) 754-6383**
Franklin/Johnson County Health Department	**(479) 667-2555 / (479) 754-8258**
Natural Resources Conservation Service, Ozark/Clarksville Field Service Centers	**(479) 667-8600 Ext 3 / (479) 754-2800 Ext 3**

Section 8

SECTION 8: CLOSURE PLAN:

If this operation ceases to function for animal confinement and manure storage, the permittee shall obtain a closure plan written by an ADEQ recognized professional. The permittee shall submit the closure plan to ADEQ for approval, prior to commencing any closure activities.

Section 9

COON TREE FARM, INC.
Franklin County, Arkansas

SECTION 9: NUTRIENT MANAGEMENT PLAN

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COON TREE FARM, INC.
Franklin County, Arkansas
Nutrient Management Plan

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2. Land Application Site Table
    b. Field Name/Number, County, Acres, Crop, Nearest Receiving Stream and Distance
3. Land Use Contracts

Field Information

Field Names and/or Numbers	Owner/Operator	¼ Section	Section	Township	Range	Latitude	Longitude
Nichols 2	Ricky Hurst/Ricky Hurst	NE	2	8N	26W	35°23'21.48"N	93°44'2.211"W
Hill	Ricky Hurst/Ricky Hurst	SW	36	9N	26W	35°23'44.176"N	93°43'8.792"W
Little	Ricky Hurst/Ricky Hurst	SE	36	9N	26W	35°23'44.241"N	93°42'57.815"W
Round Wood	Jeri Nunn Counihan/ Ricky Hurst	SW	36	9N	26W	35°23'44.322"N	93°43'16.849"W
Holoway	Ricky Hurst/Ricky Hurst	SE	36	9N	26W	35°23'49.084"N	93°42'37.166"W
Riable	Michael Sommers/Ricky Hurst	SE	36	9N	26W	35°23'48.792"N	93°42'42.771"W
Grey 2	Ricky Hurst/Ricky Hurst	NW/SW	25	9N	25W	35°24'37.087"N	93°37'4.48"W
Grey 3	Ricky Hurst/Ricky Hurst	NW/SW	25	9N	25W	35°24'46.503"N	93°36'54.902"W
Grey 4	Ricky Hurst/Ricky Hurst	NW	25	9N	25W	35°24'51.078"N	93°36'43.081"W
ClarkGrey (ClkGrey1)	Clark Gray/Ricky Hurst	SW	25	9N	25W	35°24'32.203"N	93°37'10.647"W
Ganz 1	Frederick Ganz/Ricky Hurst	NW	30	9N	24W	35°24'57.281"N	93°35'59.011"W
Ganz 2	Frederick Ganz/Ricky Hurst	NW	30	9N	24W	35°24'45.768"N	93°35'59.201"W
Ganz 3	Frederick Ganz/Ricky Hurst	NW	30	9N	24W	35°24'43.02"N	93°35'44.292"W
Whittle	Ricky Hurst/Ricky Hurst	SE/SW	31/32	9N	25W	35°23'41.723"N	93°41'39.607"W
Lee	Ricky Hurst/Ricky Hurst	NW	6	8N	25W	35°23'15.45"N	93°42'27.316"W
Patterson	Ronald Patterson/Ricky Hurst	NW/NE	6	8N	25W	35°23'21.325"N	93°42'6.914"W
Yates	Ricky Hurst/Ricky Hurst	NW/SW	31/30	9N	25W	35°24'18.822"N	93°42'27.633"W
Sugar Hill 1	Lawson Hembree/Ricky Hurst	SE	25	9N	26W	35°24'41.015"N	93°42'58.554"W
Sugar Hill 2	Lawson Hembree/Ricky Hurst	SW	25	9N	26W	35°24'40.804"N	93°43'12.218"W
Sugar Hill 3	Lawson Hembree/Ricky Hurst	SW	25	9N	26W	35°24'30.394"N	93°43'11.967"W
Sugar Hill 5	Lawson Hembree/Ricky Hurst	SE	25	9N	26W	35°24'27.708"N	93°42'56.067"W
Sugar Hill 9	Lawson Hembree/Ricky Hurst	NE/SE	36/25	9N	26W	35°24'11.041"N	93°42'42.177"W
Sugar Hill 10	Lawson Hembree/Ricky Hurst	NE	36	9N	26W	35°24'13.545"N	93°42'56.179"W
Blue Hill 1	Ricky Hurst/Ricky Hurst	NE/NW	31	9N	25W	35°24'9.51"N	93°41'54.299"W
Blue Hill 2	Ricky Hurst/Ricky Hurst	NE	31	9N	25W	35°24'0.181"N	93°41'34.79"W
Hoing	Ricky Hurst/Ricky Hurst	NW	31	9N	25W	35°24'9.606"N	93°42'22.339"W

Field Information

Field Names and/or Numbers	Owner/Operator	¼ Section	Section	Township	Range	Latitude	Longitude
Wilson 1	Susan Bryant/Donald Hurst	SW	36	9N	26W	35°23'45.642"N	93°43'34.078"W
Wilson 2	Lee Clark/Donald Hurst	SE	36	9N	26W	35°23'36.701"N	93°42'42.507"W
Blackburn	Donald Hurst/Donald Hurst	SE	31	9N	25W	35°23'47.842"N	93°41'55.06"W
Don's	Donald Hurst/Donald Hurst	NE	31	9N	25W	35°24'14.162"N	93°41'43.914"W
T 1879	Mark Woolsey/Ricky Hurst	NW	2	8N	26W	35°23'26.45"N	93°44'35.503"W
T 1880	Mark Woolsey/Ricky Hurst	NE	2	8N	26W	35°23'26.102"N	93°43'46.538"W
T 1882	Mark Woolsey/Ricky Hurst	NE	35	9N	26W	35°24'4.912"N	93°43'44.913"W
T 1957	Mark Woolsey/Ricky Hurst	NW	36	9N	26W	35°24'17.027"N	93°43'19.589"W
T 1955	Mark Woolsey/Ricky Hurst	SW	36	9N	26W	35°23'44.267"N	93°43'26.01"W
Ourcut 1	Mary E Clausi/Randall Hurst	SW	35	9N	26W	35°23'51.949"N	93°44'11.017"W
Ourcut 2	Mary E Clausi/Randall Hurst	SW/SE	35	9N	26W	35°23'38.295"N	93°44'12.551"W
1 (Wilson 2)	Randall Hurst/Randall Hurst	SE	35	9N	26W	35°23'51.429"N	93°44'0.824"W
2 (Wilson 2)	Randall Hurst/Randall Hurst	SE	35	9N	26W	35°23'37.929"N	93°43'58.333"W
1 (Wilson 1)	Randall Hurst/Randall Hurst	SE	35	9N	26W	35°23'50.806"N	93°43'46.287"W
2 (Wilson 1)	Randall Hurst/Randall Hurst	SE	35	9N	26W	35°23'38.264"N	93°43'45.779"W
Mitchell	Johnny Mitchell/Randall Hurst	NE	3	8N	26W	35°23'25.596"N	93°44'48.052"W
Trailer	Randall Hurst/Randall Hurst	NW	31	9N	25W	35°24'12.261"N	93°42'10.673"W
Shine 1	Randall Hurst/Randall Hurst	NW/NE	32	9N	25W	35°24'15.801"N	93°41'5.936"W
Shine 2	Randall Hurst/Randall Hurst	NW/NE	32	9N	25W	35°24'14.487"N	93°40'58.263"W
Shine 3	Randall Hurst/Randall Hurst	NW/NE/SW	32	9N	25W	35°24'2.144"N	93°40'56.659"W
Betty's	Randall Hurst/Randall Hurst	NW/NE	32/31	9N	25W	35°24'9.549"N	93°41'25.076"W
Hayes 2	Michael Hayes/Randall Hurst	All/SW	23/24	9N	25W	35°25'20.464"N	93°37'18.875"W
Hayes 4	Michael Hayes/Randall Hurst	SW/NW	24/25	9N	25W	35°25'2.379"N	93°37'2.192"W

Land Application Sites

Field Names and/or Numbers	County	Open Acres	Spreadable Acres	Crop	Nearest Receiving Stream	Distance/Feet
Nichols 2	Franklin	16.5	12.4	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft
Hill	Franklin	31.7	30.3	Corn/Soybean	Unnamed Trib to Cedar Creek	1,625 Ft
Little	Franklin	81.1	72.4	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft
Round Wood	Franklin	48.0	46.1	Corn/Soybean	Unnamed Trib to Cedar Creek	1,583 Ft
Holoway	Franklin	14.8	11.4	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft
Riable	Franklin	14.8	12.0	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft
Grey 2	Johnson	6.3	4.0	Corn/Soybean	Unnamed Trib to oxbow lake	100 Ft
Grey 3	Johnson	68.5	60.3	Corn/Soybean	Unnamed Trib to oxbow lake	100 Ft
Grey 4	Johnson	2.6	0.6	Corn/Soybean	Unnamed Trib to oxbow lake	100 Ft
ClarkGrey (ClkGrey1)	Johnson	16.5	14.4	Corn/Soybean	Unnamed Trib to oxbow lake	150 Ft
Ganz 1	Johnson	36.2	28.7	Corn/Soybean	Unnamed Trib to Horsehead Creek	100 Ft
Ganz 2	Johnson	62.0	53.9	Corn/Soybean	Unnamed Trib to Horsehead Creek	100 Ft
Ganz 3	Johnson	30.1	26.4	Corn/Soybean	Unnamed Trib to Horsehead Creek	654 Ft
Whittle	Johnson	150.4	141.1	Corn/Soybean	Unnamed Trib to Cedar Creek	300 Ft
Lee	Johnson	48.2	43.2	Corn/Soybean	Unnamed Trib to Cedar Creek	607 Ft
Patterson	Johnson	82.5	76.0	Corn/Soybean	Unnamed Trib to Cedar Creek	495 Ft
Yates	Johnson	50.9	40.1	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft
Sugar Hill 1	Franklin	21.8	11.2	Corn/Soybean	Cedar Creek	100 Ft
Sugar Hill 2	Franklin	32.1	21.7	Corn/Soybean	Cedar Creek	100 Ft
Sugar Hill 3	Franklin	39.6	33.4	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft
Sugar Hill 5	Franklin	35.3	28.7	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft
Sugar Hill 9	Franklin	81.4	72.6	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft
Sugar Hill 10	Franklin	83.3	75.3	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft
Blue Hill 1	Johnson	89.3	81.9	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft
Blue Hill 2	Johnson	28.4	23.3	Corn/Soybean	Unnamed Trib to Cedar Creek	150 Ft
Hoing	Johnson	22.0	17.7	Corn/Soybean	Unnamed Trib to Cedar Creek	100 Ft

Land Application Sites

Field Names and/or Numbers	County	Open Acres	Spreadable Acres	Crop	Nearest Receiving Stream	Distance/Feet
Wilson 1	Franklin	38.0	33.3	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	1,312 Ft
Wilson 2	Franklin	39.0	32.2	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	100 Ft
Blackburn	Johnson	33.2	30.3	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	150 Ft
Don's	Johnson	12.6	10.4	Corn/Soybean Rotation	Cedar Creek	150 Ft
T 1879	Franklin	39.8	34.0	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	150 Ft
T 1880	Franklin	41.2	30.6	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	100 Ft
T 1882	Franklin	42.4	36.4	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	100 Ft
T 1957	Franklin	78.4	68.1	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	100 Ft
T 1955	Franklin	41.4	39.8	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	1,520 Ft
Ourcut 1	Franklin	5.9	4.6	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	100 Ft
Ourcut 2	Franklin	51.4	48.1	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	800 Ft
1 (Wilson 2)	Franklin	37.4	32.2	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	100 Ft
2 (Wilson 2)	Franklin	19.7	19.0	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	1,607 Ft
1 (Wilson 1)	Franklin	40.9	39.5	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	100 Ft
2 (Wilson 1)	Franklin	42.0	38.6	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	1,520 Ft
Mitchell	Franklin	42.6	31.8	Corn/Soybean Rotation	Unnamed Trib to Cedar Creek	100 Ft
Trailer	Johnson	32.2	31.7	Corn/Soybean Rotation	Cedar Creek	150 Ft
Shine 1	Johnson	5.8	4.6	Corn/Soybean Rotation	Cedar Creek	406 Ft
Shine 2	Johnson	24.1	22.9	Corn/Soybean Rotation	Cedar Creek	561 Ft
Shine 3	Johnson	85.7	80.4	Corn/Soybean Rotation	Unnamed Trib to AR River	592 Ft
Betty's	Johnson	58.1	50.7	Corn/Soybean Rotation	Cedar Creek	150 Ft
Hayes 2	Johnson	119.4	111.5	Corn/Soybean Rotation	Unnamed Trib to oxbow lake	150 Ft
Hayes 4	Johnson	67.5	62.6	Corn/Soybean Rotation	Unnamed Trib to oxbow lake	150 Ft
Total Spreadable Acres			**1932.4**			

Land Use Contract

I, Ricky D Hurst, agree to allow Coon Tree farm Inc
Name of Landowner — Name of Permittee (matches application & AR SoS)

to land apply liquid animal waste from swine facility
Type of Waste — Waste Source or Type of Waste Facility

to 126.5 acres of my property located in Franklin County.
Total Acreage Available — County of Application Site

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Nichols 2	New	2	8N	26W	35°23'21.48"N	93°44'2.211"W	12.4
Hill	New	36	9N	26W	35°23'44.176"N	93°43'8.792"W	30.3
Little	New	36	9N	26W	35°23'44.241"N	93°42'57.815"W	72.4
Holoway	New	36	9N	26W	35°23'49.084"N	93°42'37.166"W	11.4

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste in
Type of Waste

accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature
7-2-18 — Date

Ricky D Hurst — Landowner Signature
5-22-18 — Date

Ricky D Hurst — Operator Signature (If applicable)
5-22-18 — Date

Land Use Contract

I, Mike Sommers (Name of Landowner), agree to allow Coon Tree Farms Inc (Name of Permittee (matches application & AR SoS))

to land apply liquid animal (Type of Waste) waste from swine facility (Waste Source or Type of Waste Facility)

to 12.0 (Total Acreage Available) acres of my property located in Franklin (County of Application Site) County.

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Riable	New	36	9N	26W	35°23'48.792"N	93°42'42.771"W	12.0

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste (Type of Waste) in accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature — 7-2-18 — Date

X Mike Sommers — Landowner Signature — 6-10-18 — Date

Cindy D Hunt — Operator Signature (If applicable) — 5-22-18 — Date

Land Use Contract

I, Jeri Nunn Counihan, agree to allow Coon Tree farm Inc
Name of Landowner — Name of Permittee (matches application & AR SoS)

to land apply liquid animal waste from swine facility
Type of Waste — Waste Source or Type of Waste Facility

to 46.1 acres of my property located in Franklin County.
Total Acreage Available — County of Application Site

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Round Wood	New	36	9N	26W	35°23'44.322"N	93°43'16.849"W	46.1

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste in
Type of Waste

accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — 7-2-18
Permittee's Signature — Date

Jeri Nunn Counihan — 5-30-18
Landowner Signature — Date

Ricky D Hunt — 5-22-18
Operator Signature (If applicable) — Date

Land Use Contract

I, Ricky D Hurst (Name of Landowner) agree to allow Coon Tree Farm Inc (Name of Permittee (matches application & AR SoS))

to land apply liquid animal (Type of Waste) waste from swine facility (Waste Source or Type of Waste Facility)

to 64.9 (Total Acreage Available) acres of my property located in Johnson (County of Application Site) County.

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Grey 2	New	25	9N	25W	35°24'37.087"N	93°37'4.48"W	4.0
Grey 3	New	25	9N	25W	35°24'46.503"N	93°36'54.902"W	60.3
Grey 4	New	25	9N	25W	35°24'51.078"N	93°36'43.081"W	0.6

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste (Type of Waste) in accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature — 7-2-18 — Date

Ricky D Hurst — Landowner Signature — 5-22-18 — Date

Ricky D Hurst — Operator Signature (If applicable) — 5-22-18 — Date

Land Use Contract

I, Clark Grey (Name of Landowner), agree to allow Coon Tree Farm Inc (Name of Permittee (matches application & AR SoS))

to land apply liquid animal (Type of Waste) waste from swine facility (Waste Source or Type of Waste Facility)

to 14.4 (Total Acreage Available) acres of my property located in Johnson (County of Application Site) County.

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
ClkGrey 1	New	25	9N	25W	35°24'32.203"N	93°37'10.647"W	14.4

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste (Type of Waste) in accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature — 7-6-18 — Date

Clark Grey — Landowner Signature — 7/6/18 — Date

Ricky Hurst — Operator Signature (If applicable) — 7/6/18 — Date

Land Use Contract

I, Frederick W. Ganz, agree to allow Coon Tree Farm Inc
Name of Landowner — Name of Permittee (matches application & AR SoS)

to land apply liquid animal waste from swine facility
Type of Waste — Waste Source or Type of Waste Facility

to 109.0 acres of my property located in Johnson County.
Total Acreage Available — County of Application Site

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Ganz 1	New	30	9N	24W	35°24'57.281"N	93°35'59.011"W	28.7
Ganz 2	New	30	9N	24W	35°24'45.768"N	93°35'59.201"W	53.9
Ganz 3	New	30	9N	24W	35°24'43.02"N	93°35'44.292"W	26.4

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste in
Type of Waste

accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature — 7-2-18 Date

X Frederick W. Ganz — Landowner Signature — 06.14.2018 Date

Rick D Hurst — Operator Signature (If applicable) — 5-22-18 Date

Land Use Contract

I, Ricky D Hurst, agree to allow Coon Tree farm Inc
Name of Landowner — Name of Permittee (matches application & AR SoS)

to land apply liquid animal waste from swine facility
Type of Waste — Waste Source or Type of Waste Facility

to 329.6 acres of my property located in Johnson County.
Total Acreage Available — County of Application Site

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Whittle	New	31/32	9N	25W	35°23'41.723"N	93°41'39.607"W	141.1
Lee	New	6	8N	25W	35°23'15.45"N	93°42'27.316"W	43.2
Yates	New	31/30	9N	25W	35°24'18.822"N	93°42'27.633"W	40.1
Blue Hill 1	New	31	9N	25W	35°24'9.51"N	93°41'54.299"W	81.9
Blue Hill 2	New	31	9N	25W	35°24'0.181"N	93°41'34.79"W	23.3

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste in
Type of Waste

accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Josh Henson — Permittee's Signature
7-2-18 — Date

Ricky D Hurst — Landowner Signature
5-22-18 — Date

Ricky D Hurst — Operator Signature (If applicable)
5-22-18 — Date

Land Use Contract

I, Ronald Patterson (Name of Landowner), agree to allow Coon Tree Farm Inc. (Name of Permittee (matches application & AR SoS))

to land apply liquid animal (Type of Waste) waste from swine facility (Waste Source or Type of Waste Facility)

to 76.0 (Total Acreage Available) acres of my property located in Johnson (County of Application Site) County.

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Patterson	New	6	8N	25W	35°23'21.325"N	93°42'6.914"W	76.0

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste (Type of Waste) in accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature — 7-2-18 — Date

Ronald Patterson — Landowner Signature — 5-22-18 — Date

Ricky D Hurst — Operator Signature (If applicable) — 5-22-18 — Date

Land Use Contract

I, Lawson Hembree (Name of Landowner), agree to allow Coon Tree Farm Inc (Name of Permittee (matches application & AR SoS))

to land apply liquid animal (Type of Waste) waste from swine facility (Waste Source or Type of Waste Facility)

to 242.9 (Total Acreage Available) acres of my property located in Franklin (County of Application Site) County.

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Sugar Hill 1	New	25	9N	26W	35°24'41.015"N	93°42'58.554"W	11.2
Sugar Hill 2	New	25	9N	26W	35°24'40.804"N	93°43'12.218"W	21.7
Sugar Hill 3	New	25	9N	26W	35°24'30.394"N	93°43'11.967"W	33.4
Sugar Hill 5	New	25	9N	26W	35°24'27.708"N	93°42'56.067"W	28.7
Sugar Hill 9	New	36/25	9N	26W	35°24'11.041"N	93°42'42.177"W	72.6
Sugar Hill 10	New	36	9N	26W	35°24'13.545"N	93°42'56.179"W	75.3

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste (Type of Waste) in accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Hanson — Permittee's Signature — 7-2-18 Date

Lawson Hembree — Landowner Signature — 5-22-18 Date

Operator Signature (If applicable) — 5-22-18 Date

Land Use Contract

I, Ricky D Hurst, agree to allow Coon Tree Farm Inc
Name of Landowner — Name of Permittee (matches application & AR SoS)

to land apply liquid animal waste from swine facility
Type of Waste — Waste Source or Type of Waste Facility

to 17.7 acres of my property located in Johnson County.
Total Acreage Available — County of Application Site

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Hoing	New	31	9N	25W	35°24'9.606"N	93°42'22.339"W	17.7

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste in
Type of Waste

accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature
7-2-18 — Date

Ricky D Hurst — Landowner Signature
5-22-18 — Date

Ricky D Hurst — Operator Signature (If applicable)
5-22-18 — Date

Land Use Contract

I, Susan Bryant (Name of Landowner) agree to allow Coon Tree Farm Inc (Name of Permittee (matches application & AR SoS))

to land apply liquid animal (Type of Waste) waste from swine facility (Waste Source or Type of Waste Facility)

to 33.3 (Total Acreage Available) acres of my property located in Franklin (County of Application Site) County.

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Wilson I	New	36	9N	26W	35°23'45.642"N	93°43'34.078"W	33.3

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste (Type of Waste) in accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature — 7-2-18 — Date

Susan Bryant — Landowner Signature — 5-22-18 — Date

Donald R. Hunt — Operator Signature (If applicable) — 5-22-18 — Date

Land Use Contract

I, Lee Clark (Name of Landowner), agree to allow Coon Tree Farm Inc (Name of Permittee (matches application & AR SoS))

to land apply liquid animal (Type of Waste) waste from swine facility (Waste Source or Type of Waste Facility)

to 32.2 (Total Acreage Available) acres of my property located in Franklin (County of Application Site) County.

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Wilson 2	New	36	9N	26W	35°23'36.701"N	93°42'42.507"W	32.2

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste (Type of Waste) in accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature — 7-2-18 — Date

Lee Clark — Landowner Signature — 5-22-18 — Date

Donald R. Hurst — Operator Signature (If applicable) — 5-22-18 — Date

Land Use Contract

I, Donald R Hurst, agree to allow Coon Tree farm Inc
Name of Landowner — Name of Permittee (matches application & AR SoS)

to land apply liquid animal waste from swine facility
Type of Waste — Waste Source or Type of Waste Facility

to 40.7 acres of my property located in Johnson County.
Total Acreage Available — County of Application Site

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Blackburn	New	31	9N	25W	35°23'47.842"N	93°41'55.06"W	30.3
Don's	New	31	9N	25W	35°24'14.162"N	93°41'43.914"W	10.4

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste in
Type of Waste

accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature
7-2-18 — Date

Donald R. Hurst — Landowner Signature
5-22-18 — Date

Donald R. Hurst — Operator Signature (If applicable)
5-22-18 — Date

Land Use Contract

I, Mark Woolsey, agree to allow Coon Tree farm Inc
Name of Landowner — Name of Permittee (matches application & AR SoS)

to land apply liquid animal waste from swine facility
Type of Waste — Waste Source or Type of Waste Facility

to 208.9 acres of my property located in Franklin County.
Total Acreage Available — County of Application Site

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
T 1879	New	2	8N	26W	35°23'26.45"N	93°44'35.503"W	34.0
T 1880	New	2	8N	26W	35°23'26.102"N	93°43'46.538"W	30.6
T 1882	New	35	9N	26W	35°24'4.912"N	93°43'44.913"W	36.4
T 1957	New	36	9N	26W	35°24'17.027"N	93°43'19.589"W	68.1
T 1955	New	36	9N	26W	35°23'44.267"N	93°43'26.01"W	39.8

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste in
Type of Waste

accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature
7-2-18 — Date

Mark Woolsey — Landowner Signature
6-28-18 — Date

Operator Signature (If applicable)
6-28-18 — Date

Land Use Contract

I, Mary E. Clausi, agree to allow Coon Tree Farm Inc
Name of Landowner — Name of Permittee (matches application & AR SoS)

to land apply liquid animal waste from swine facility
Type of Waste — Waste Source or Type of Waste Facility

to 52.7 acres of my property located in Franklin County.
Total Acreage Available — County of Application Site

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Ourcut 1	New	35	9N	26W	35°23'51.949"N	93°44'11.017"W	4.6
Ourcut 2	New	35	9N	26W	35°23'38.295"N	93°44'12.551"W	48.1

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste in
Type of Waste

accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature
7-2-18 — Date

Mary E. Clausi — Landowner Signature
6-11-2018 — Date

Operator Signature (If applicable)
5-22-18 — Date

Johnny Mitchell

Land Use Contract

I, Johnny Mitchell, agree to allow Coon Tree Farm Inc
Name of Landowner — Name of Permittee (matches application & AR SoS)

to land apply liquid animal waste from swine facility
Type of Waste — Waste Source or Type of Waste Facility

to 31.8 acres of my property located in Franklin County.
Total Acreage Available — County of Application Site

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Mitchell	New	3	8N	26W	35°23'25.596"N	93°44'48.052"W	31.8

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste in
Type of Waste

accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature — 7-2-18 Date

Johnny Mitchell — Landowner Signature — 5-22-18 Date

Operator Signature (If applicable) — 5-22-18 Date

Land Use Contract

I, Randall Hurst (Name of Landowner), agree to allow Coon Tree Farm Inc. (Name of Permittee (matches application & AR SoS))

to land apply liquid animal (Type of Waste) waste from swine facility (Waste Source or Type of Waste Facility)

to 190.3 (Total Acreage Available) acres of my property located in Johnson (County of Application Site) County.

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Trailer	New	31	9N	25W	35°24'12.261"N	93°42'10.673"W	31.7
Shine 1	New	32	9N	25W	35°24'15.801"N	93°41'5.936"W	4.6
Shine 2	New	32	9N	25W	35°24'14.487"N	93°40'58.263"W	22.9
Shine 3	New	32	9N	25W	35°24'2.144"N	93°40'56.659"W	80.4
Betty's	New	32/31	9N	25W	35°24'9.549"N	93°41'25.076"W	50.7

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste (Type of Waste) in accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature
7-2-18 — Date

Randall Hurst — Landowner Signature
5/22/18 — Date

Randall Hurst — Operator Signature (If applicable)
5/22/18 — Date

First Name

Land Use Contract

I, Michael Hayes (Name of Landowner), agree to allow Coon Tree Farm Inc (Name of Permittee (matches application & AR SoS)) to land apply liquid animal (Type of Waste) waste from swine facility (Waste Source or Type of Waste Facility) to 174.1 (Total Acreage Available) acres of my property located in Johnson (County of Application Site) County.

Field ID	New/ Existing	Section	Township	Range	Latitude	Longitude	Available Acreage*
Hayes 2	New	23/24	9N	25W	35°25'20.464"N	93°37'18.875"W	111.5
Hayes 4	New	24/25	9N	25W	35°25'2.379"N	93°37'2.192"W	62.6

*Available acreage is the total acreage minus buffer zone areas

I am also aware that the land applicator or the owner of the operation is to apply liquid animal waste (Type of Waste) in accordance with the management plan developed and submitted to the Arkansas Department of Environmental Quality (ADEQ) as well as the requirements and conditions set forth in the permit issued by ADEQ. In addition to these guidelines, the following requirements must also be satisfied when land applying to my property:

The landowner agrees to provide or allow permittee to conduct soil analysis as required by ADEQ for each field listed in this land use contract prior to land application. Additionally, this approval may be terminated with written notice from the landowner.

Jason Henson — Permittee's Signature — 7-2-18 — Date

Michael Hayes — Landowner Signature — 6-11-18 — Date

Signature

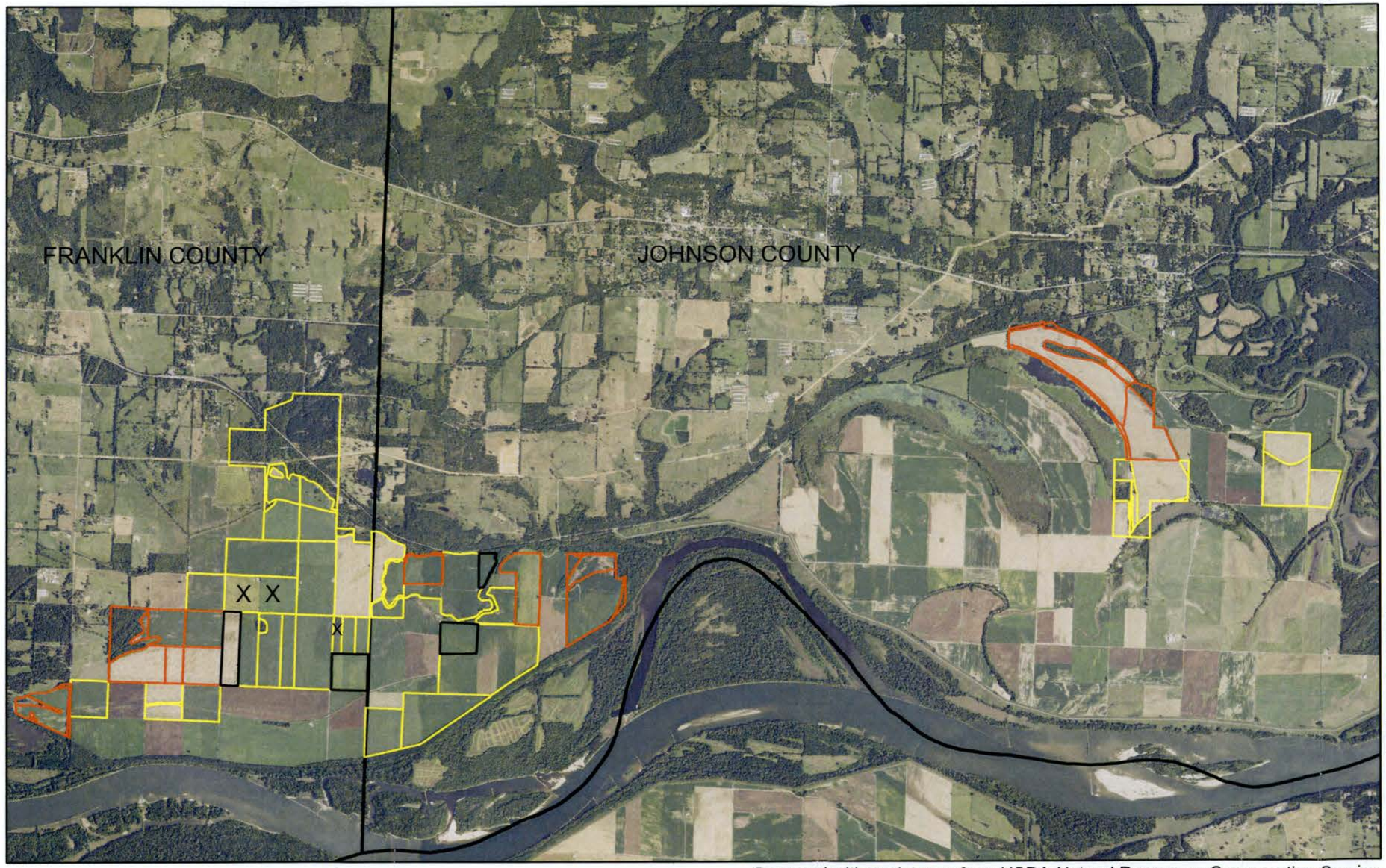
Robert Hunt — Operator Signature (If applicable) — 5-22-18 — Date

COON TREE FARM, INC.
Franklin County, Arkansas
Nutrient Management Plan

B. COLLECTED INFORMATION

1. Aerial Overview Map of Land Application Sites
2. Aerial Maps with BMP Buffers
3. Soils Overview Map
    a. Soils Map Unit Description (Brief, Generated)
6. Topographical Overview Map
7. Soil Test Results
8. Manure Analysis
9. International Plant Nutrition Institute Crop Removal Calculator Printouts

Overview Map



Legend

- Donald Hurst
- Randall Hurst
- Ricky Hurst
- County Line

X - Fields not included in plan

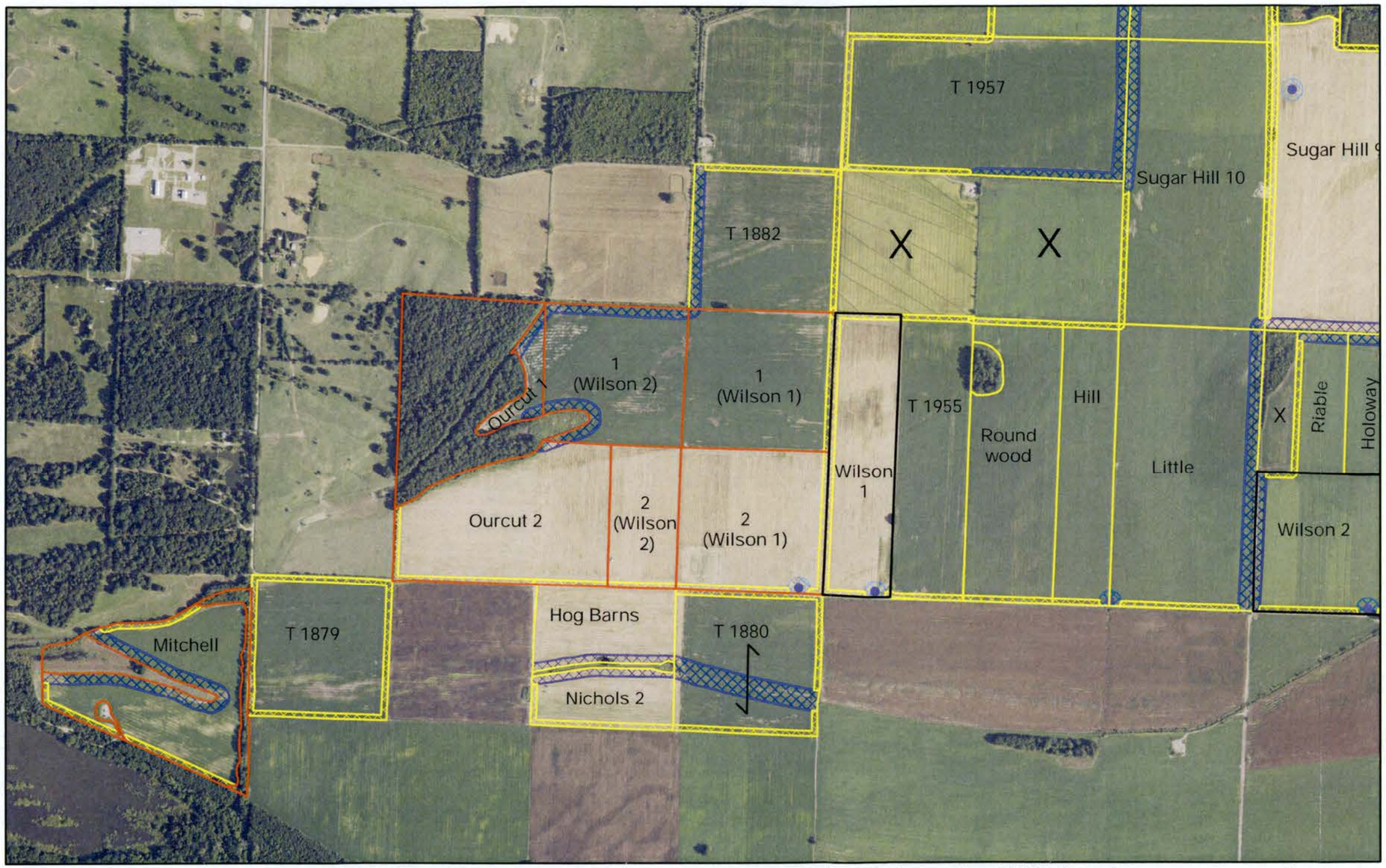
Prepared with assistance from USDA-Natural Resources Conservation Service

2,900 0 2,900 5,800 8,700 11,600
Feet

N

Buffered Farm Map

Sixmile Creek - Arkansas River Watershed
Sections 2 & 3, Township 8N, Range 26 W
Sections 35 and 36, Township 9N, Range 26W



Legend

- Donald Hurst
- Randall Hurst
- Ricky Hurst
- 50 Ft Buffer Franklin
- 100 Ft Buffer Franklin
- 50 Ft Buffer Johnson
- 100 Ft Buffer Johnson
- Agricultural Well Head
- 100 Ft Buffer Agri Well Head
- County Line

X - Fields not included in plan

Prepared with assistance from USDA-Natural Resources Conservation Service

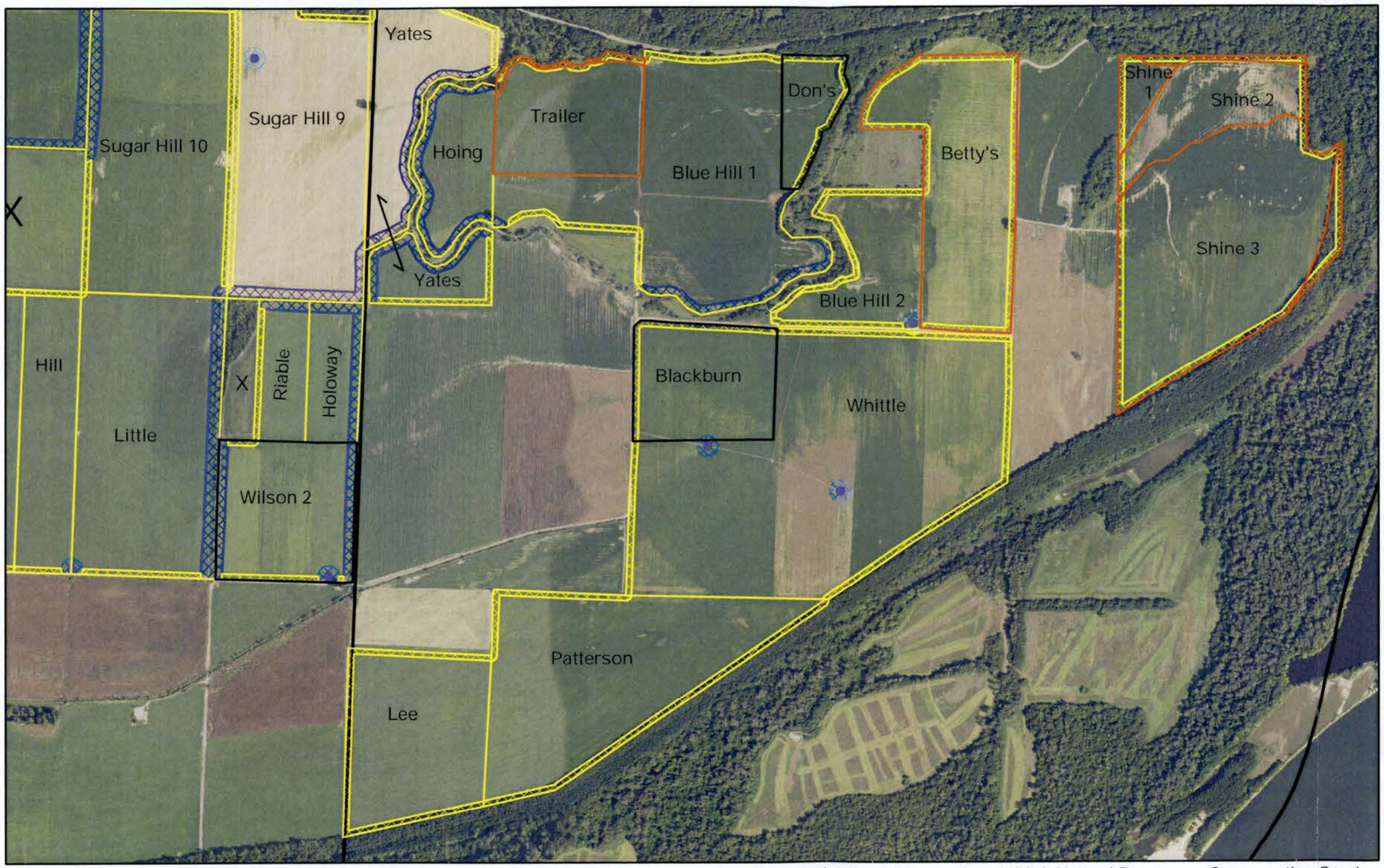
770 0 770 1,540 2,310 3,080 Feet

N

Buffered Farm Map

Sixmile Creek - Arkansas River Watershed

Sections 30, 31 & 32, Township 9N, Range 25W
Section 36, Township 9N, Range 26W
Section 6, Township 8N, Range 25W



Legend

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- 100 Ft Buffer Agri Well Head
- County Line

X - Fields not included in plan

Prepared with assistance from USDA-Natural Resources Conservation Service

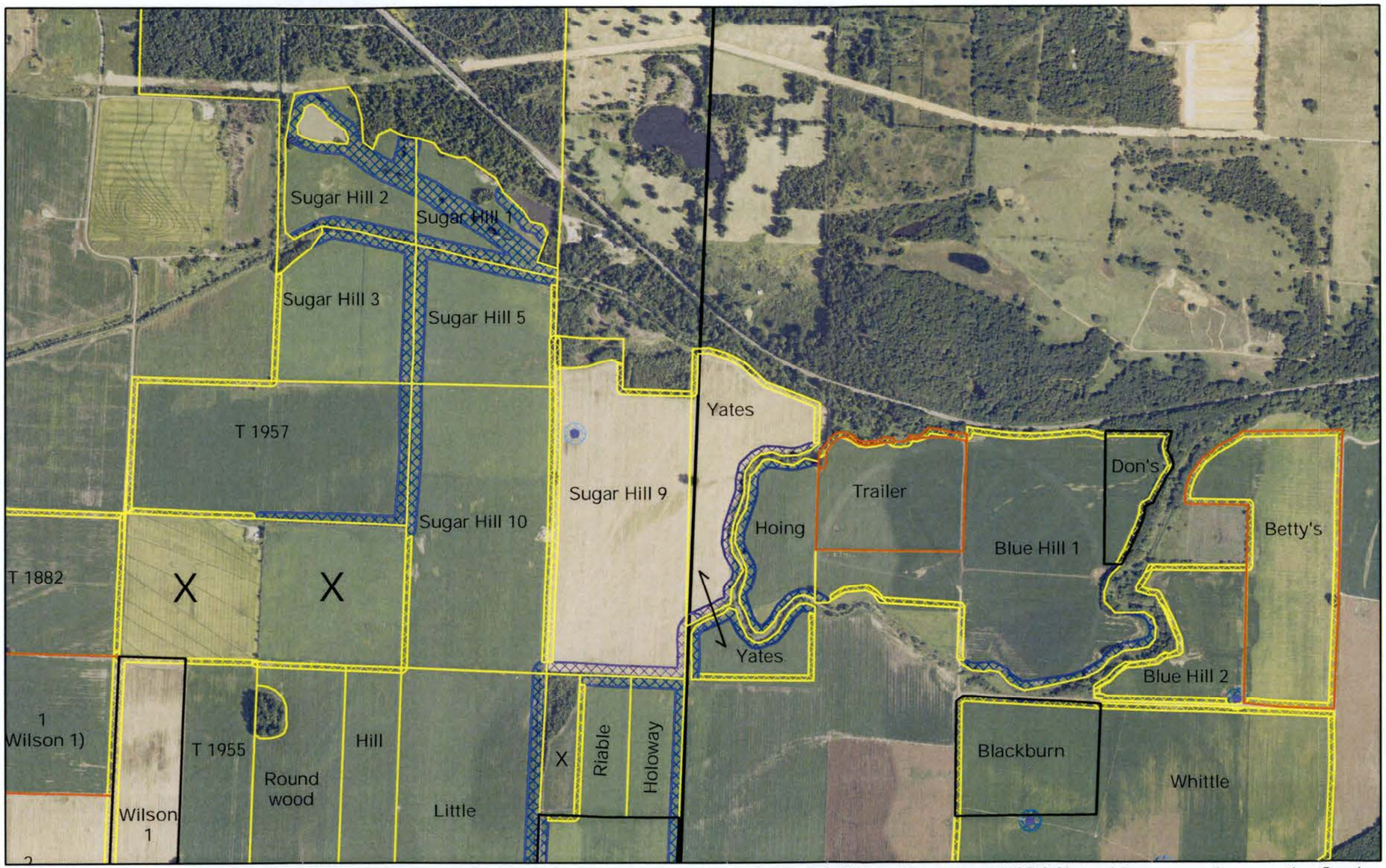
770 0 770 1,540 2,310 3,080 Feet

N

Buffered Farm Map

Sixmile Creek - Arkansas River Watershed

Sections 31 & 32, Township 9N, Range 25W
Sections 25, 35 & 36, Township 9N, Range 26W



Legend

- Donald Hurst
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- 50 Ft Buffer Franklin
- 100 Ft Buffer Franklin
- 50 Ft Buffer Johnson
- 100 Ft Buffer Johnson
- Agricultural Well Head
- 100 Ft Buffer Agri Well Head
- County Line

X - Fields not included in plan

Prepared with assistance from USDA-Natural Resources Conservation Service

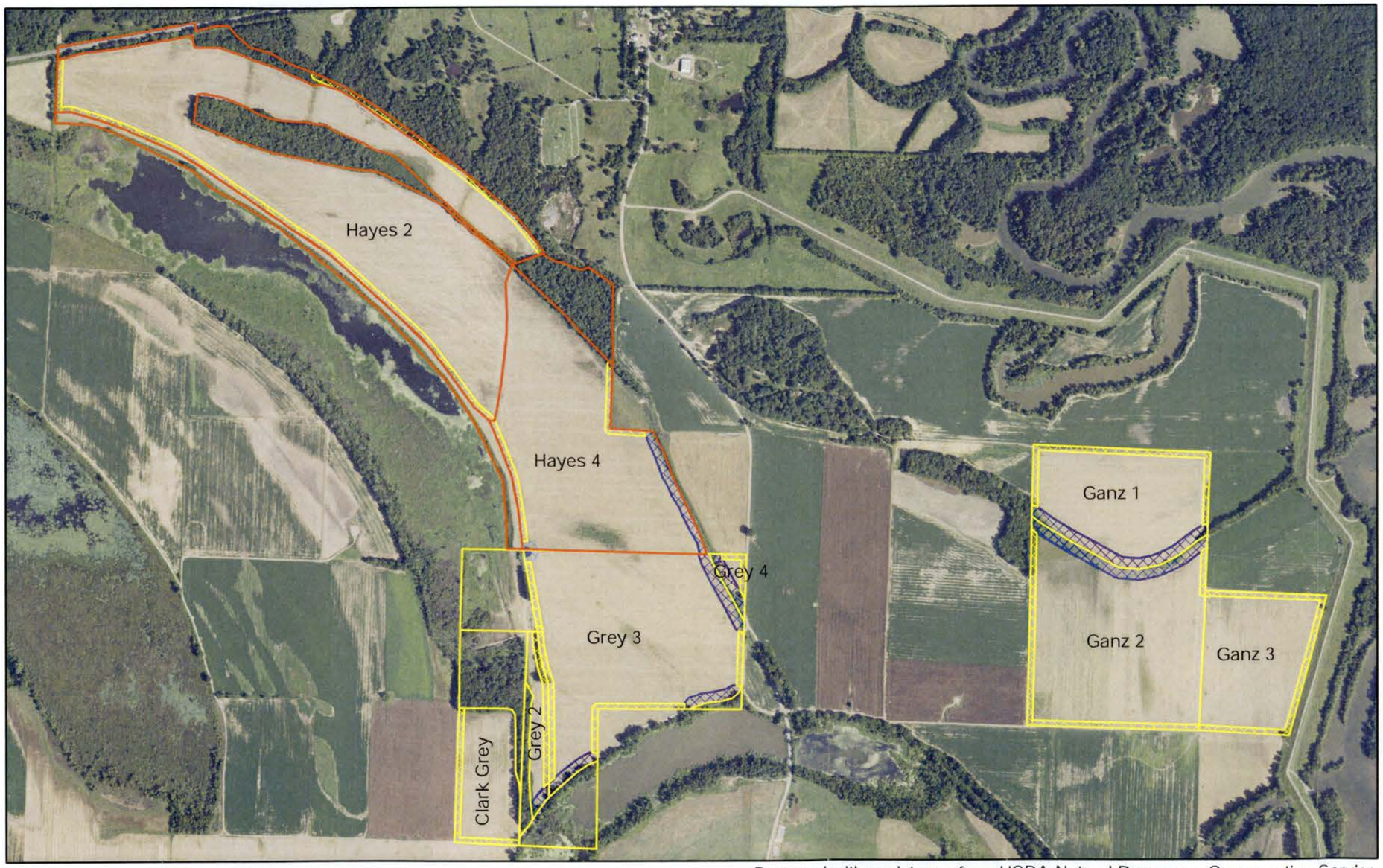
770 0 770 1,540 2,310 3,080 Feet

N

Buffered Farm Map

Hartman Lake - Arkansas River

Sections 23, 24 & 25, Township 9N, Range 25W
Section 30, Township 9N Range 24W



Legend

- Donald Hurst
- Randall Hurst
- Ricky Hurst
- 50 Ft Buffer Franklin
- 100 Ft Buffer Franklin
- 50 Ft Buffer Johnson
- 100 Ft Buffer Johnson
- Agricultural Well Head
- 100 Ft Buffer Agri Well Head
- County Line

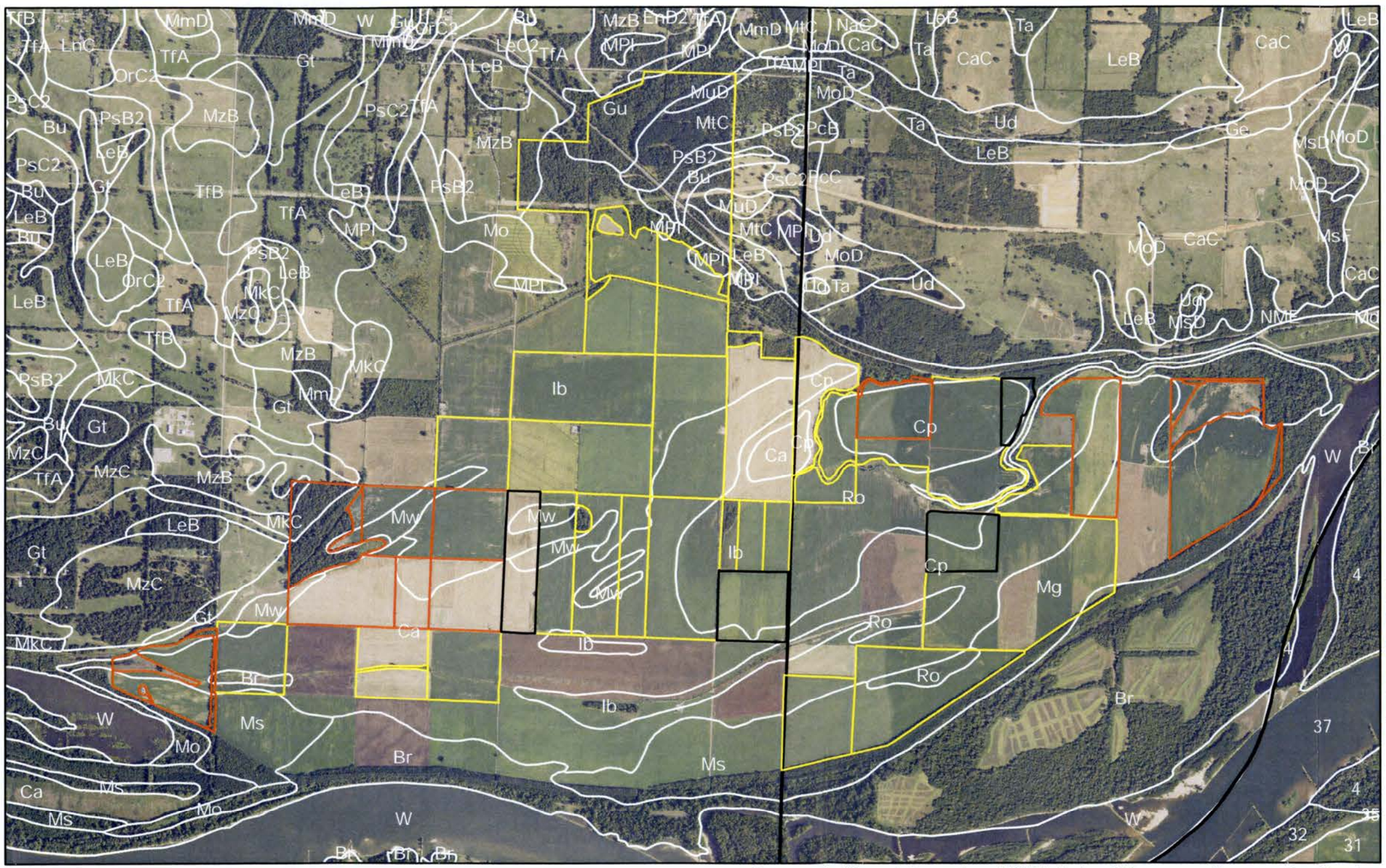
X - Fields not included in plan

Prepared with assistance from USDA-Natural Resources Conservation Service

770 0 770 1,540 2,310 3,080
Feet

N

Soils Map



Legend

- Donald Hurst
- Randall Hurst
- Ricky Hurst
- County Line

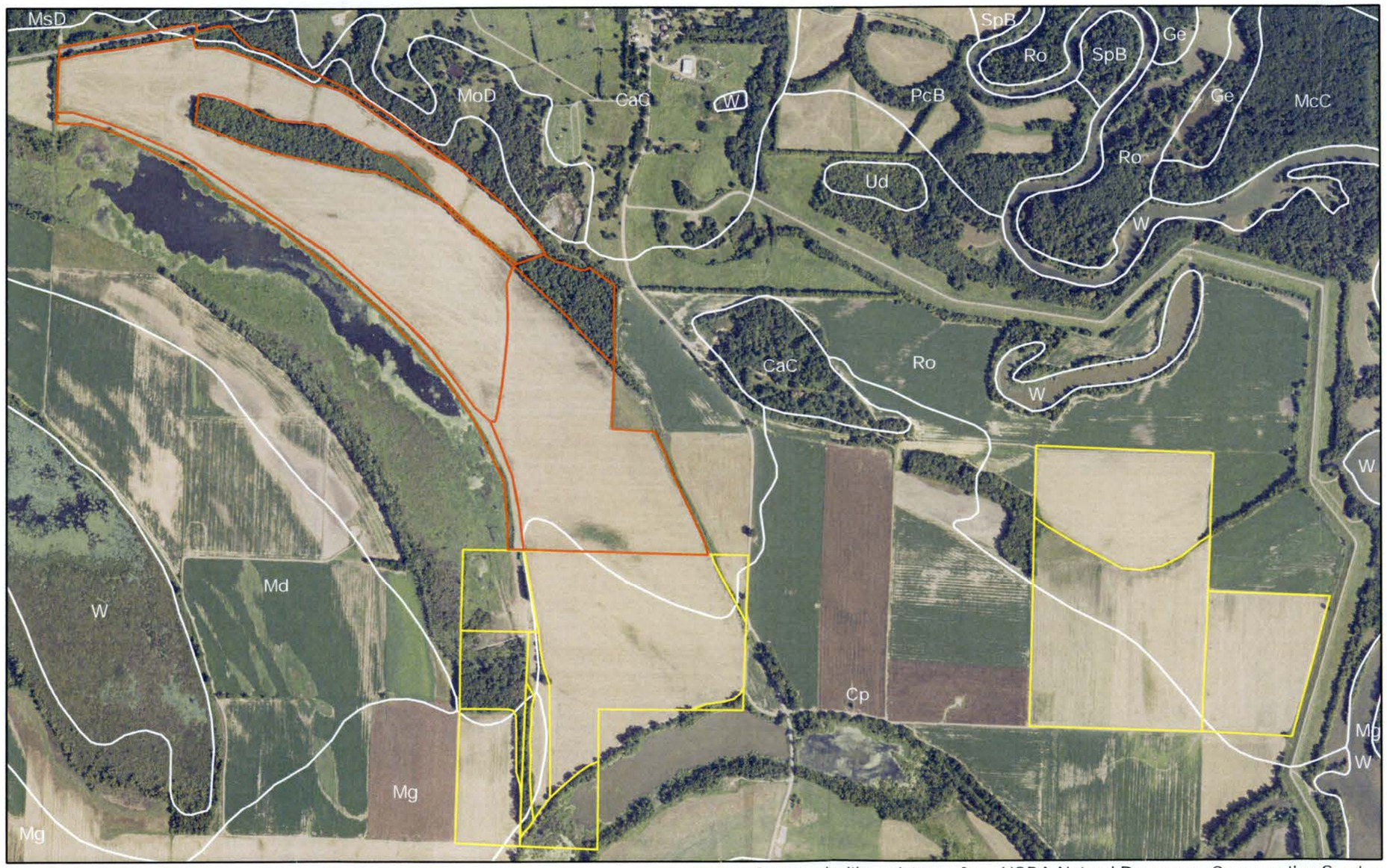
Team_5_soils

Prepared with assistance from USDA-Natural Resources Conservation Service

1,500 0 1,500 3,000 4,500 6,000 Feet

N

Soils Map



Prepared with assistance from USDA-Natural Resources Conservation Service

Map Unit Description (Brief, Generated)

Franklin County, Arkansas

[Minor map unit components are excluded from this report]

Map unit: Br - Bruno loamy fine sand

Component: Bruno (95%)

The Bruno component makes up 95 percent of the map unit. Slopes are 0 to 1 percent. This component is on river valleys, flood plains. The parent material consists of sandy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 60 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria.

Map unit: Ca - Caspiana silt loam

Component: Caspiana (90%)

The Caspiana component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on Arkansas River flood plains, river valleys. The parent material consists of loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 3 percent.

Map unit: Ib - Iberia clay

Component: Iberia (90%)

The Iberia component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on river valleys, backswamps. The parent material consists of clayey alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is very high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 12 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 1 percent.

Map unit: Ms - Morganfield very fine sandy loam

Component: Morganfield (95%)

The Morganfield component makes up 95 percent of the map unit. Slopes are 0 to 1 percent. This component is on Arkansas River flood plains, hills. The parent material consists of silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 42 inches during January, February, March, April. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

Map Unit Description (Brief, Generated)

Franklin County, Arkansas

Map unit: Mw - Muldrow silt loam

Component: Muldrow (90%)

The Muldrow component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on river valleys, backswamps. The parent material consists of silty and clayey alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is somewhat poorly drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, September, October, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Map Unit Description (Brief, Generated)

Johnson County, Arkansas

[Minor map unit components are excluded from this report]

Map unit: Cp - Caspiana silt loam

Component: Caspiana (90%)

The Caspiana component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on river valleys, stream terraces. The parent material consists of loamy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 48 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 3 percent.

Map unit: Mg - Morganfield silt loam

Component: Morganfield (95%)

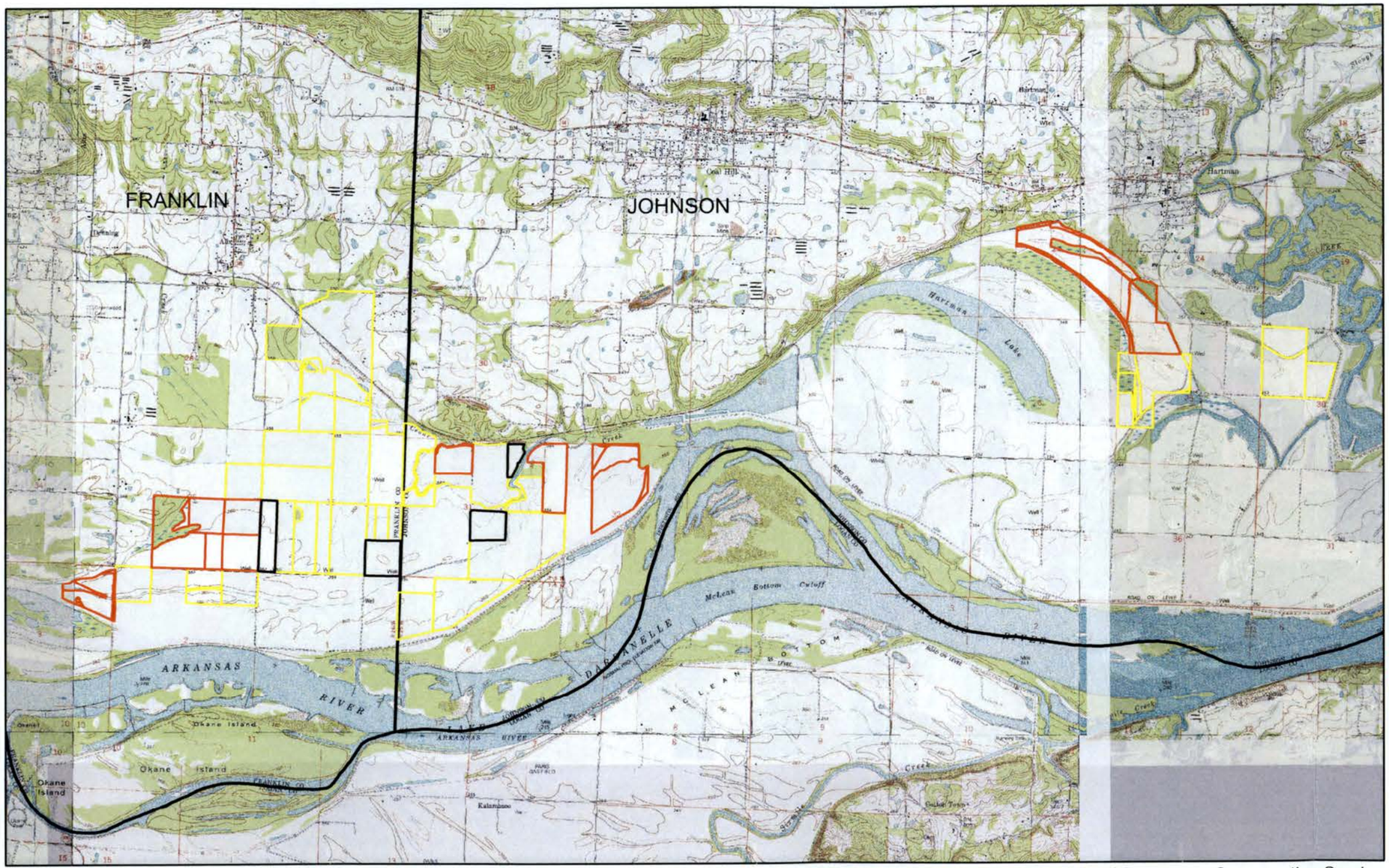
The Morganfield component makes up 95 percent of the map unit. Slopes are 0 to 2 percent. This component is on river valleys, natural levees. The parent material consists of silty alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very high. Shrink-swell potential is low. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 42 inches during January, February, March, April. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

Map unit: Ro - Roellen clay

Component: Roellen (90%)

The Roellen component makes up 90 percent of the map unit. Slopes are 0 to 1 percent. This component is on backswamps, river valleys. The parent material consists of alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3w. This soil meets hydric criteria.

Topo Map



Prepared with assistance from USDA-Natural Resources Conservation Service

3,000 0 3,000 6,000 9,000 12,000 Feet

N

Soil Test Results

Franklin County

UofA UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE

Cooperative Extension Service
Soil Analysis Report
Soil Testing And Research Laboratory
Marianna, AR 72360
http://www.uark.edu/depts/soiltest

RICK HURST		Client ID: 4792090917
3503 SHADY BROOK RD		
ALTUS	AR	72821

Date Processed:	4/9/2018
Field ID:	NICHOLS2
Acres:	16
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42307
Sample Number:	3464647

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	81	162	Above Optimum
K	83	166	Low
Ca	743	1486	--
Mg	94	188	--
SO_4-S	8	16	--
Zn	4.6	9.2	--
Fe	205	410	--
Mn	63	126	--
Cu	3.3	6.6	--
B	0.4	0.8	--
NO_3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.9	--
Soil EC (1:2 soil-water)		µmhos/cm
Soil ECEC	8	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
61.2	48.0	10.1	2.7	0.4

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P_2O_5	K_2O	SO_4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	160	0	105	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	0	120	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

Apply 0.2 to 0.4 oz Molybdenum/acre to seed.

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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DIVISION OF AGRICULTURE

Cooperative Extension Service
Soil Analysis Report
Soil Testing And Research Laboratory
Marianna, AR 72360
http://www.uark.edu/depts/soiltest

RICK HURST
3503 SHADY BROOK RD
ALTUS AR 72821

Client ID: 4792090917

Date Processed:	4/9/2018
Field ID:	HILL1
Acres:	32
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42308
Sample Number:	3464648

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	18	36	Low
K	137	274	Optimum
Ca	1905	3810	--
Mg	246	492	--
SO_4-S	8	16	--
Zn	4.1	8.2	--
Fe	169	338	--
Mn	103	206	--
Cu	3.3	6.6	--
B	0.6	1.2	--
NO_3-N	5	10	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)		µmhos/cm
Soil ECEC	15	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
80.0	63.4	13.7	2.3	0.6

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P_2O_5	K_2O	SO_4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	100	50	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	50	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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Soil Analysis Report
Soil Testing And Research Laboratory
Marianna, AR 72360
http://www.uark.edu/depts/soiltest

RICK HURST
3503 SHADY BROOK RD
ALTUS AR 72821

Client ID: 4792090917

Date Processed:	4/9/2018
Field ID:	LITTLE
Acres:	81
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42309
Sample Number:	3464649

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	67	134	Above Optimum
K	184	368	Above Optimum
Ca	2072	4144	--
Mg	381	762	--
SO_4-S	12	24	--
Zn	4.0	8.0	--
Fe	255	510	--
Mn	70	140	--
Cu	4.2	8.4	--
B	0.7	1.4	--
NO_3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.5	--
Soil EC (1:2 soil-water)		µmhos/cm
Soil ECEC	17	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
82.5	60.4	18.5	2.8	0.8

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P_2O_5	K_2O	SO_4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	290	0	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE

Cooperative Extension Service
Soil Analysis Report
Soil Testing And Research Laboratory
Marianna, AR 72360
http://www.uark.edu/depts/soiltest

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RICK HURST		Client ID: 4792090917
3503 SHADY BROOK RD		
ALTUS	AR	72821

Date Processed:	4/9/2018
Field ID:	ROUNDWOO
Acres:	48
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42310
Sample Number:	3464650

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	23	46	Low
K	141	282	Optimum
Ca	1744	3488	--
Mg	274	548	--
SO_4-S	9	18	--
Zn	4.5	9.0	--
Fe	172	344	--
Mn	79	158	--
Cu	3.5	7.0	--
B	0.6	1.2	--
NO_3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)		µmhos/cm
Soil ECEC	14	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
79.2	60.4	15.8	2.5	0.5

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P_2O_5	K_2O	SO_4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	100	50	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	50	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

Cooperative Extension Service
Soil Testing And Research Laboratory
Marianna, AR 72360
http://soiltest.uark.edu

RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	HOLOWAY
Acres:	15
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42311
Sample Number:	3464651

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	47	94	Optimum
K	393	786	Above Optimum
Ca	4560	9120	--
Mg	1108	2216	--
SO4-S	7	14	--
Zn	3.1	6.2	Medium
Fe	256	512	--
Mn	29	58	--
Cu	4	8	--
B	1.1	2.2	--
NO3-N	5	10	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	36.20	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Clay	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
91.71	62.99	25.51	2.78	0.43

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	290	0	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

Cooperative Extension Service
Soil Testing And Research Laboratory
Marianna, AR 72360
http://soiltest.uark.edu

RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	RIABLE
Acres:	15
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42312
Sample Number:	3464652

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	54	108	Above Optimum
K	431	862	Above Optimum
Ca	4084	8168	--
Mg	1077	2154	--
SO4-S	7	14	--
Zn	3.2	6.4	Medium
Fe	221	442	--
Mn	40	80	--
Cu	3.7	7.4	--
B	1	2	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	32.60	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Clay	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
93.87	62.63	27.53	3.39	0.32

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	290	0	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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Soil Testing And Research Laboratory
Marianna, AR 72360
http://soiltest.uark.edu

RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	SUGAR H1
Acres:	17
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42282
Sample Number:	3464625

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	11	22	Very Low
K	171	342	Optimum
Ca	2479	4958	--
Mg	656	1312	--
SO4-S	10	20	--
Zn	9	18	--
Fe	213	426	--
Mn	129	258	--
Cu	3.5	7	--
B	0.7	1.4	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	21.46	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
86.02	57.77	25.48	2.04	0.73

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	110	40	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	60	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RICK HURST	Client ID:	4792090917
3503 SHADY BROOK RD		
ALTUS	AR	72821

Date Processed:	4/9/2018
Field ID:	SUGAR H2
Acres:	28
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42283
Sample Number:	3464626

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	9	18	Very Low
K	151	302	Optimum
Ca	1510	3020	--
Mg	470	940	--
SO4-S	93	186	--
Zn	4.8	9.6	--
Fe	254	508	--
Mn	104	208	--
Cu	2.7	5.4	--
B	0.7	1.4	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.3	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	17.55	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
68.67	43.01	22.31	2.21	1.14

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	110	40	0	0	0	5000
Crop 2	Soybean - Full Season (14)	0	60	50	0	0	0	5000
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling

If S-deficiency has occurred on this soil before apply 20 lb S04-S/acre

5. Crop 2 Notes:

Apply 0.2 to 0.4 oz Molybdenum/acre to seed

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	SUGAR H3
Acres:	39
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42284
Sample Number:	3464627

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	12	24	Very Low
K	323	646	Above Optimum
Ca	3122	6244	--
Mg	1161	2322	--
SO4-S	12	24	--
Zn	2.3	4.6	--
Fe	230	460	--
Mn	55	110	--
Cu	3.2	6.4	--
B	0.9	1.8	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	29.35	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Clay	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
89.78	53.18	32.96	2.82	0.81

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	110	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	60	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall) Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling

If S-deficiency has occurred on this soil before apply 20 lb S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	SUGAR H5
Acres:	34
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42285
Sample Number:	3464628

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	26	52	Medium
K	351	702	Above Optimum
Ca	2956	5912	--
Mg	1231	2462	--
SO4-S	8	16	--
Zn	3.1	6.2	--
Fe	212	424	--
Mn	50	100	--
Cu	3.8	7.6	--
B	0.9	1.8	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.5	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	29.26	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
89.75	50.51	35.06	3.08	1.10

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	70	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	SUGAR H9
Acres:	78
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42286
Sample Number:	3464629

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	21	42	Low
K	146	292	Optimum
Ca	1405	2810	--
Mg	322	644	--
SO4-S	9	18	--
Zn	1.8	3.6	Low
Fe	175	350	--
Mn	62	124	--
Cu	2.6	5.2	--
B	0.5	1	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.1	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	13.63	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
74.33	51.52	19.68	2.75	0.38

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	100	50	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	50	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

Apply 0.2 to 0.4 oz Molybdenum/acre to seed.

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RICK HURST		Client ID:	4792090917
3503 SHADY BROOK RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	SUGARH10
Acres:	83
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42287
Sample Number:	3464630

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	18	36	Low
K	158	316	Optimum
Ca	1852	3704	--
Mg	360	720	--
SO4-S	7	14	--
Zn	2.4	4.8	Low
Fe	218	436	--
Mn	66	132	--
Cu	3	6	--
B	0.6	1.2	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.2	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	16.23	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
78.43	57.07	18.49	2.50	0.38

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	100	50	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	50	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

Apply 0.2 to 0 4 oz Molybdenum/acre to seed.

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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DONALD HURST	Client ID: 4796677240
3235 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	WILSON1
Acres:	40
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42254
Sample Number:	3464526

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	34	68	Medium
K	183	366	Above Optimum
Ca	1766	3532	--
Mg	299	598	--
SO4-S	10	20	--
Zn	3.1	6.2	--
Fe	224	448	--
Mn	73	146	--
Cu	3.4	6.8	--
B	0.6	1.2	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.6	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	14.87	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
79.82	59.38	16.76	3.16	0.53

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	75	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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DONALD HURST	Client ID: 4796677240
3235 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	WILSON 2
Acres:	40
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42255
Sample Number:	3464527

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	31	62	Medium
K	190	380	Above Optimum
Ca	2693	5386	--
Mg	388	776	--
SO4-S	8	16	--
Zn	3.3	6.6	--
Fe	197	394	--
Mn	90	180	--
Cu	3	6	--
B	0.8	1.6	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.8	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	19.76	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
87.35	68.14	16.36	2.47	0.37

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	290	75	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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MARK WOOLSEY	Client ID: 4796678037
3337 LOW GAP RD	
OZARK	AR 72949
Date Processed:	4/9/2018
Field ID:	T1879
Acres:	40
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42230
Sample Number:	3464515

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	74	148	Above Optimum
K	92	184	Medium
Ca	706	1412	--
Mg	101	202	--
SO4-S	9	18	--
Zn	2.7	5.4	--
Fe	232	464	--
Mn	71	142	--
Cu	2.6	5.2	--
B	0.5	1	--
NO3-N	5	10	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.6	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	7 16	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
65.06	49.33	11.76	3.30	0.67

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Soybean - Full Season (14)	0	0	75	0	0	0	0
Crop 2	Corn for Grain up to 150 bu/acre (2)	160	0	70	0	10	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

5. Crop 2 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall) Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

6. Crop 3 Notes:

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MARK WOOLSEY	Client ID: 4796678037
3337 LOW GAP RD	
OZARK	AR 72949

Date Processed:	4/9/2018
Field ID:	T 1880
Acres:	40
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42231
Sample Number:	3464516

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	46	92	Optimum
K	81	162	Low
Ca	653	1306	--
Mg	131	262	--
SO4-S	9	18	--
Zn	1.7	3.4	--
Fe	277	554	--
Mn	59	118	--
Cu	2.3	4.6	--
B	0.5	1	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.7	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	8.62	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
53.58	37.89	12.67	2.41	0.61

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	---------- lb/acre ----------						
Crop 1	Soybean - Full Season (14)	0	0	120	0	0	0	2500
Crop 2	Corn for Grain up to 150 bu/acre (2)	160	0	105	0	0	0	2500
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply 0.2 to 0.4 oz Molybdenum/acre to seed.

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

5. Crop 2 Notes:

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling

If S-deficiency has occurred on this soil before apply 20 lb S04-S/acre

6. Crop 3 Notes:

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MARK WOOLSEY	Client ID:	4796678037
3337 LOW GAP RD		
OZARK	AR	72949

Date Processed:	4/9/2018
Field ID:	T 1882
Acres:	40
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42232
Sample Number:	3464517

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	31	62	Medium
K	135	270	Optimum
Ca	1817	3634	--
Mg	303	606	--
SO4-S	9	18	--
Zn	1.9	3.8	--
Fe	241	482	--
Mn	66	132	--
Cu	3	6	--
B	0.7	1.4	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.3	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	15.53	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
77.46	58.50	16.26	2.23	0.48

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Soybean - Full Season (14)	0	0	50	0	0	0	0
Crop 2	Corn for Grain up to 150 bu/acre (2)	160	70	40	0	10	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

5. Crop 2 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall) Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence

6. Crop 3 Notes.

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MARK WOOLSEY	Client ID: 4796678037
3337 LOW GAP RD	
OZARK	AR 72949
Date Processed:	4/9/2018
Field ID:	T1957
Acres:	80
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42233
Sample Number:	3464518

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	33	66	Medium
K	319	638	Above Optimum
Ca	2734	5468	--
Mg	828	1656	--
SO4-S	9	18	--
Zn	2.3	4.6	--
Fe	296	592	--
Mn	35	70	--
Cu	3.7	7.4	--
B	1	2	--
NO3-N	3	6	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.5	-
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	24.57	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
87.79	55.63	28.08	3.33	0.76

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	---------- lb/acre ----------						
Crop 1	Soybean - Full Season (14)	0	0	0	0	0	0	0
Crop 2	Corn for Grain up to 150 bu/acre (2)	230	70	0	0	10	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

5. Crop 2 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

6. Crop 3 Notes:

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MARK WOOLSEY		Client ID:	4796678037
3337 LOW GAP RD			
OZARK	AR	72949	

Date Processed:	4/9/2018
Field ID:	T 1955
Acres:	40
Lime Applied in the last 4 years:	No
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42234
Sample Number:	3464519

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	22	44	Low
K	137	274	Optimum
Ca	1677	3354	--
Mg	299	598	--
SO4-S	8	16	--
Zn	2	4	--
Fe	223	446	--
Mn	64	128	--
Cu	3.4	6.8	--
B	0.7	1.4	--
NO3-N	4	8	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.3	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	14.80	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
76.35	56.66	16.84	2.37	0.47

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	---------- lb/acre ----------						
Crop 1	Soybean - Full Season (14)	0	50	50	0	0	0	0
Crop 2	Corn for Grain up to 150 bu/acre (2)	160	90	40	0	10	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

5. Crop 2 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall) Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence

6. Crop 3 Notes:

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RANDY HURST		Client ID:	4792310694
9896 NORTONTOWN RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	OURCUT1
Acres:	51
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42292
Sample Number:	3464559

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	21	42	Low
K	144	288	Optimum
Ca	1811	3622	--
Mg	327	654	--
SO4-S	9	18	--
Zn	2.2	4.4	--
Fe	268	536	--
Mn	63	126	--
Cu	2.7	5.4	--
B	0.6	1.2	--
NO3-N	5	10	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.1	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	15.74	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
77.76	57.54	17.32	2.35	0.55

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	100	50	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	50	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence

5. Crop 2 Notes:

Apply 0.2 to 0.4 oz Molybdenum/acre to seed.

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RANDY HURST	Client ID: 4792310694
9896 NORTONTOWN RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	OURCUT2
Acres:	6
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42293
Sample Number:	3464560

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	16	32	Low
K	70	140	Low
Ca	1013	2026	--
Mg	128	256	--
SO4-S	7	14	--
Zn	3.4	6.8	--
Fe	159	318	--
Mn	76	152	--
Cu	2	4	--
B	0.4	0.8	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.1	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	9.35	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
67.92	54.17	11.41	1.92	0.42

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	100	110	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	60	120	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

Apply 0.2 to 0.4 oz Molybdenum/acre to seed.

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RANDY HURST	Client ID:	4792310694
9896 NORTONTOWN RD		
ALTUS	AR	72821

Date Processed:	4/9/2018
Field ID:	1WILSON2
Acres:	37
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42294
Sample Number:	3464561

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	27	54	Medium
K	117	234	Medium
Ca	1608	3216	--
Mg	270	540	--
SO4-S	8	16	--
Zn	2.3	4.6	--
Fe	278	556	--
Mn	69	138	--
Cu	2.5	5	--
B	0.6	1.2	--
NO3-N	15	30	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.2	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	14.17	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
75.30	56.73	15.88	2.12	0.58

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	75	75	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	75	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

Apply 0 2 to 0 4 oz Molybdenum/acre to seed

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RANDY HURST	Client ID: 4792310694
9896 NORTONTOWN RD	
ALTUS	AR 72821

Date Processed:	4/9/2018
Field ID:	2WILSON2
Acres:	20
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42295
Sample Number:	3464562

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	20	40	Low
K	80	160	Low
Ca	1061	2122	--
Mg	140	280	--
SO4-S	9	18	--
Zn	1.9	3.8	--
Fe	176	352	--
Mn	76	152	--
Cu	2.3	4.6	--
B	0.4	0.8	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	9.72	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
69.15	54.55	12.00	2.11	0.49

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	100	110	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	50	120	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

Apply 0 2 to 0.4 oz Molybdenum/acre to seed

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6 Crop 3 Notes:

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RANDY HURST		Client ID:	4792310694
9896 NORTONTOWN RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	1WILSON1
Acres:	41
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42296
Sample Number:	3464563

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	33	66	Medium
K	153	306	Optimum
Ca	2062	4124	--
Mg	357	714	--
SO4-S	8	16	--
Zn	2.8	5.6	--
Fe	270	540	--
Mn	59	118	--
Cu	3.1	6.2	--
B	0.6	1.2	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.5	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	16.76	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
82.10	61.53	17.76	2.34	0.47

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	290	75	50	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RANDY HURST		Client ID:	4792310694
9896 NORTONTOWN RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	2WILSON1
Acres:	42
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42297
Sample Number:	3464564

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	47	94	Optimum
K	113	226	Medium
Ca	1105	2210	--
Mg	141	282	--
SO4-S	9	18	--
Zn	3.6	7.2	--
Fe	216	432	--
Mn	56	112	--
Cu	3.5	7	--
B	0.5	1	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.1	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	10.53	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
66.77	52.45	11.16	2.75	0.41

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	---------- lb/acre ----------						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	0	75	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	75	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

Apply 0.2 to 0.4 oz Molybdenum/acre to seed.

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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University of Arkansas System

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http://soiltest.uark.edu

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RANDY HURST	Client ID: 4792310694
9896 NORTONTOWN RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	MITCHELL
Acres:	43
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42300
Sample Number:	3464567

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	42	84	Optimum
K	83	166	Low
Ca	925	1850	--
Mg	160	320	--
SO4-S	9	18	--
Zn	1.7	3.4	--
Fe	197	394	--
Mn	97	194	--
Cu	1.9	3.8	--
B	0.5	1	--
NO3-N	13	26	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	5.8	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	10.23	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
60.89	45.22	13.04	2.08	0.55

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	160	0	105	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	0	120	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

Apply 0.2 to 0 4 oz Molybdenum/acre to seed.

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

Soil Test Results

Johnson County

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	GREY 2
Acres:	11
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42266
Sample Number:	3464669

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	28	56	Medium
K	148	296	Optimum
Ca	2153	4306	--
Mg	326	652	--
SO4-S	11	22	--
Zn	2.9	5.8	Medium
Fe	145	290	--
Mn	89	178	--
Cu	3	6	--
B	0.6	1.2	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.8	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	16.43	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
84.78	65.53	16.54	2.31	0.40

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	70	40	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	GREY 3
Acres:	68
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42267
Sample Number:	3464670

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	28	56	Medium
K	143	286	Optimum
Ca	2193	4386	--
Mg	401	802	--
SO4-S	9	18	--
Zn	2.7	5.4	--
Fe	145	290	--
Mn	86	172	--
Cu	3.6	7.2	--
B	0.7	1.4	--
NO3-N	9	18	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	17.74	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)

Total	Ca	Mg	K	Na
83.09	61.81	18.84	2.07	0.37

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	290	75	50	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall) Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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RICK HURST		Client ID:	4792090917
3503 SHADY BROOK RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	GREY 4
Acres:	2
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42268
Sample Number:	3464671

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	22	44	Low
K	166	332	Optimum
Ca	2154	4308	--
Mg	541	1082	--
SO4-S	11	22	--
Zn	2.7	5.4	Medium
Fe	288	576	--
Mn	32	64	--
Cu	3.2	6.4	--
B	0.7	1.4	--
NO3-N	11	22	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.6	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	18.81	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
84.05	57.25	23.96	2.26	0.58

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	90	40	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	50	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	CLKGREY1
Acres:	16
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years;	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42269
Sample Number:	3464672

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	21	42	Low
K	185	370	Above Optimum
Ca	3135	6270	--
Mg	425	850	--
SO4-S	8	16	--
Zn	3.1	6.2	--
Fe	144	288	--
Mn	87	174	--
Cu	4.1	8.2	--
B	0.8	1.6	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.9	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	22.26	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Clay	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
88.77	70.42	15.91	2.13	0.31

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	90	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	50	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RICK HURST		Client ID:	4792090917
3503 SHADY BROOK RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	GANZ 1
Acres:	35
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42270
Sample Number:	3464673

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	14	28	Very Low
K	173	346	Optimum
Ca	2564	5128	--
Mg	511	1022	--
SO4-S	9	18	--
Zn	2.5	5	Low
Fe	162	324	--
Mn	83	166	--
Cu	2.9	5.8	--
B	0.7	1.4	--
NO3-N	11	22	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	20.60	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
85.43	62.25	20.68	2.15	0.36

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	---------- lb/acre ----------						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	110	40	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	60	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS AR 72821	
Date Processed:	4/9/2018
Field ID:	GANE 2
Acres:	61
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42271
Sample Number:	3464674

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	18	36	Low
K	175	350	Optimum
Ca	2459	4918	--
Mg	516	1032	--
SO4-S	8	16	--
Zn	2.2	4.4	--
Fe	195	390	--
Mn	84	168	--
Cu	3.2	6.4	--
B	0.8	1.6	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.9	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	19.65	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
87.28	62.56	21.88	2.28	0.55

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	290	100	50	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	50	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling

If S-deficiency has occurred on this soil before apply 20 lb S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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RICK HU ST	Client ID: 4792090917
3503 SHA Y BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	GANZ 3
Acres:	30
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42272
Sample Number:	3464675

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	19	38	Low
K	173	346	Optimum
Ca	2242	4484	--
Mg	501	1002	--
SO4-S	7	14	--
Zn	2.9	5.8	--
Fe	168	336	--
Mn	91	182	--
Cu	2.9	5.8	--
B	0.7	1.4	--
NO3-N	8	16	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.3	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	19.39	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
81.95	57.80	21.53	2.29	0.34

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	290	100	50	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	50	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	WHITTLE
Acres:	152
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42273
Sample Number:	3464676

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	68	136	Above Optimum
K	141	282	Optimum
Ca	1618	3236	--
Mg	245	490	--
SO4-S	8	16	--
Zn	4.8	9.6	--
Fe	166	332	--
Mn	79	158	--
Cu	3.4	6.8	--
B	0.7	1.4	--
NO3-N	11	22	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7.2	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	12.58	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
84.10	64.31	16.23	2.87	0.69

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	0	50	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	0	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Soybean grown on sandy and silt loam soils with pH > 6.9, North of I-40 and West of Crowley?s Ridge is susceptible to B-Deficiency, especially near well water inlets. Consider applying B.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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RICK HURST	Client ID:	4792090917
3503 SHADY BROOK RD		
ALTUS	AR	72821

Date Processed:	4/9/2018
Field ID:	LEE
Acres:	48
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42274
Sample Number:	3464677

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	26	52	Medium
K	85	170	Low
Ca	1007	2014	--
Mg	156	312	--
SO4-S	6	12	--
Zn	1.5	3	--
Fe	143	286	--
Mn	60	120	--
Cu	1.8	3.6	--
B	0.5	1	--
NO3-N	11	22	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.4	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	9.10	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
72.52	55.35	14.29	2.40	0.48

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	160	70	105	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	120	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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Marianna, AR 72360
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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS AR 72821	
Date Processed:	4/9/2018
Field ID:	PATERSON
Acres:	83
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42275
Sample Number:	3464678

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	44	88	Optimum
K	94	188	Medium
Ca	876	1752	--
Mg	129	258	--
SO4-S	7	14	--
Zn	1.9	3.8	--
Fe	182	364	--
Mn	45	90	--
Cu	1.5	3	--
B	0.5	1	--
NO3-N	19	38	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	8.24	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
69.66	53.16	13.05	2.93	0.53

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	160	0	70	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	75	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	YATES 1
Acres:	51
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42276
Sample Number:	3464679

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	33	66	Medium
K	140	280	Optimum
Ca	1518	3036	--
Mg	387	774	--
SO4-S	8	16	--
Zn	4.9	9.8	--
Fe	187	374	--
Mn	54	108	--
Cu	3.8	7.6	--
B	0.6	1.2	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.6	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	13.80	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
81.88	55.02	23.38	2.60	0.88

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	160	70	40	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	0	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb S04-S/acre

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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RICK HURST		Client ID:	4792090917
3503 SHADY BROOK RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	BLUE H1
Acres:	90
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42242
Sample Number:	3464636

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	32	64	Medium
K	107	214	Medium
Ca	1123	2246	--
Mg	237	474	--
SO4-S	13	26	--
Zn	2.3	4.6	Low
Fe	202	404	--
Mn	66	132	--
Cu	2.2	4.4	--
B	0.5	1	--
NO3-N	10	20	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	11.45	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
69.42	49.05	17.25	2.40	0.72

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	75	75	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	0	75	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

Apply 0.2 to 0.4 oz Molybdenum/acre to seed.

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	BLUE H2
Acres:	28
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42243
Sample Number:	3464637

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	18	36	Low
K	255	510	Above Optimum
Ca	3261	6522	--
Mg	1025	2050	--
SO4-S	11	22	--
Zn	3.2	6.4	--
Fe	201	402	--
Mn	63	126	--
Cu	3.7	7.4	--
B	0.9	1.8	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.8	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	28.21	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Clay	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
91.14	57.79	30.28	2.32	0.76

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	90	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	50	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb SO4-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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RICK HURST	Client ID: 4792090917
3503 SHADY BROOK RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	HOING
Acres:	30
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42244
Sample Number:	3464638

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	22	44	Low
K	208	416	Above Optimum
Ca	2179	4358	--
Mg	768	1536	--
SO4-S	11	22	--
Zn	5.9	11.8	--
Fe	179	358	--
Mn	81	162	--
Cu	3.9	7.8	--
B	0.7	1.4	--
NO3-N	8	16	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.6	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	21.02	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
85.72	51.84	30.45	2.54	0.89

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	90	0	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	50	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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DONALD HURST	Client ID:	4796677240
3235 SHADY BROOK RD		
ALTUS	AR	72821

Date Processed:	4/9/2018
Field ID:	BLACKBUR
Acres:	40
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42245
Sample Number:	3464537

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	51	102	Above Optimum
K	161	322	Optimum
Ca	1991	3982	--
Mg	334	668	--
SO4-S	13	26	--
Zn	3.5	7	--
Fe	180	360	--
Mn	82	164	--
Cu	3	6	--
B	0.7	1.4	--
NO3-N	6	12	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.6	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	16.28	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
81.57	61.16	17.10	2.54	0.77

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	0	50	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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DONALD HURST		Client ID:	4796677240
3235 SHADY BROOK RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	DON S
Acres:	30
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42246
Sample Number:	3464538

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	29	58	Medium
K	112	224	Medium
Ca	1072	2144	--
Mg	241	482	--
SO4-S	10	20	--
Zn	2.8	5.6	Medium
Fe	201	402	--
Mn	82	164	--
Cu	2.1	4.2	--
B	0.5	1	--
NO3-N	8	16	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.2	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	10.25	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
75.61	52.29	19.59	2.80	0.93

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	160	70	70	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	75	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

Apply 0.2 to 0.4 oz Molybdenum/acre to seed

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RANDY HURST	Client ID: 4792310694
9896 NORTONTOWN RD	
ALTUS AR 72821	
Date Processed:	4/9/2018
Field ID:	TRAILER
Acres:	40
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42256
Sample Number:	3464592

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	16	32	Low
K	131	262	Optimum
Ca	1619	3238	--
Mg	319	638	--
SO4-S	13	26	--
Zn	4.4	8.8	Optimum
Fe	186	372	--
Mn	115	230	--
Cu	3.1	6.2	--
B	0.6	1.2	--
NO3-N	9	18	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.5	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	14.21	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
78.88	56.98	18.71	2.36	0.83

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	100	50	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	60	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RANDY HURST	Client ID:	4792310694
9896 NORTONTOWN RD		
ALTUS	AR	72821

Date Processed:	4/9/2018
Field ID:	SHINE 1
Acres:	6
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42257
Sample Number:	3464593

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	38	76	Optimum
K	142	284	Optimum
Ca	1833	3666	--
Mg	362	724	--
SO4-S	6	12	--
Zn	3.2	6.4	--
Fe	158	316	--
Mn	113	226	--
Cu	2.3	4.6	--
B	0.6	1.2	--
NO3-N	9	18	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	15.62	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
80.80	58.66	19.31	2.33	0.50

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	---------- lb/acre ----------						
Crop 1	Corn for Grain up to 150 bu/acre (2)	160	0	40	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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Soil Testing And Research Laboratory
Marianna, AR 72360
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RANDY HURST		Client ID:	4792310694
9896 NORTONTOWN RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	SHINE 2
Acres:	24
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42258
Sample Number:	3464594

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	22	44	Low
K	125	250	Medium
Ca	1872	3744	--
Mg	298	596	--
SO4-S	6	12	--
Zn	7	14	--
Fe	239	478	--
Mn	124	248	--
Cu	2	4	--
B	0.8	1.6	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7.1	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	14.25	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
85.97	65.68	17.43	2.25	0.61

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	160	90	70	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	50	75	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Soybean grown on sandy and silt loam soils with pH > 6.9, North of I-40 and West of Crowley?s Ridge is susceptible to B-Deficiency, especially near well water inlets. Consider applying B.

Lime rates are for ag lime with a relative neutralizing va ue (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RESEARCH & EXTENSION
University of Arkansas System

Cooperative Extension Service
Soil Testing And Research Laboratory
Marianna, AR 72360
http://soiltest.uark.edu

RANDY HURST	Client ID: 4792310694
9896 NORTONTOWN RD	
ALTUS	AR 72821
Date Processed:	4/9/2018
Field ID:	SHINE 3
Acres:	89
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42259
Sample Number:	3464595

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	21	42	Low
K	88	176	Low
Ca	1170	2340	--
Mg	208	416	--
SO4-S	4	8	--
Zn	4.2	8.4	--
Fe	148	296	--
Mn	85	170	--
Cu	1.4	2.8	--
B	0.5	1	--
NO3-N	8	16	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7.2	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	9.85	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
79.70	59.38	17.59	2.29	0.44

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	160	90	105	0	0	0	0
Crop 2	Soybean - Full Season (14)	0	50	120	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp

Soybean grown on sandy and silt loam soils with pH > 6.9, North of I-40 and West of Crowley?s Ridge is susceptible to B-Deficiency, especially near well water inlets. Consider applying B

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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Soil Testing And Research Laboratory
Marianna, AR 72360
http://soiltest.uark.edu

RANDY HURST		Client ID:	4792310694
9896 NORTONTOWN RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	BETTYS
Acres:	51
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42260
Sample Number:	3464596

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	35	70	Medium
K	138	276	Optimum
Ca	1769	3538	--
Mg	292	584	--
SO4-S	9	18	--
Zn	2.6	5.2	Medium
Fe	154	308	--
Mn	108	216	--
Cu	2.3	4.6	--
B	0.6	1.2	--
NO3-N	12	24	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.7	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	14.72	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silt Loam - Silty Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
79.62	60.07	16.53	2.40	0.62

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	220	75	50	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	0	50	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

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RANDY HURST		Client ID:	4792310694
9896 NORTONTOWN RD			
ALTUS	AR	72821	

Date Processed:	4/9/2018
Field ID:	HAYES2
Acres:	119
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42261
Sample Number:	3464597

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	13	26	Very Low
K	200	400	Above Optimum
Ca	2709	5418	--
Mg	641	1282	--
SO4-S	7	14	--
Zn	2.4	4.8	--
Fe	176	352	--
Mn	73	146	--
Cu	3	6	--
B	0.8	1.6	--
NO3-N	8	16	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	6.8	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	21.99	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
88.63	61.59	24.29	2.33	0.42

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 150 bu/acre (2)	230	110	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	60	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence.

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57

6. Crop 3 Notes:

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Soil Testing And Research Laboratory
Marianna, AR 72360
http://soiltest.uark.edu

RANDY HURST	Client ID: 4792310694
9896 NORTONTOWN RD	
ALTUS AR 72821	
Date Processed:	4/9/2018
Field ID:	HAYES4
Acres:	67
Lime Applied in the last 4 years:	Yes
Leveled in past 4 years:	No
Irrigation:	Unknown
County:	Pope
Lab Number:	42262
Sample Number:	3464598

1. Nutrient Availability Index

Nutrient	Concentration		Soil Test Level (Mehlich 3)
	ppm	lb/acre	
P	12	24	Very Low
K	192	384	Above Optimum
Ca	2691	5382	--
Mg	622	1244	--
SO4-S	5	10	--
Zn	2.5	5	--
Fe	185	370	--
Mn	50	100	--
Cu	3.1	6.2	--
B	0.7	1.4	--
NO3-N	7	14	--

2. Soil Properties

Property	Value	Units
Soil pH (1:2 soil-water)	7.1	--
Soil EC (1:2 soil-water)		umhos/cm
Soil Estimated CEC	21.22	cmolc/kg
Organic Matter (Loss on Ignition)		%
Estimated Soil Texture	Silty Clay Loam - Clay Loam	

Estimated Base Saturation (%)				
Total	Ca	Mg	K	Na
90.58	63.40	24.42	2.32	0.43

3. Recommendations

(Notice: State and/or federal nutrient management regulations may supersede these agronomic recommendations.)

Crop		N	P2O5	K2O	SO4-S	Zn	B	Lime
Last Crop	Corn (2)	lb/acre						
Crop 1	Corn for Grain up to 175 bu/acre (3)	290	120	0	0	10	0	0
Crop 2	Soybean - Full Season (14)	0	60	0	0	0	0	0
Crop 3	Reg 5 - Analysis Only (21)							

4. Crop 1 Notes:

Apply one-forth to one-third of the total-N rate immediately before or after planting and side-dress the remainder when corn is at the V4 to V6 stage(6 to 14 inches tall). Consider a 3-way split with a third split (45 lb N/acre) applied 1 to 2 weeks before tasseling.

If S-deficiency has occurred on this soil before apply 20 lb. S04-S/acre

Apply 10 lb Zn/acre as a granular Zn fertilizer before crop emergence

5. Crop 2 Notes:

If more than 3 to 5 years have passed since soybeans have been grown in this field inoculate the seed with the proper Rhizobium sp.

Lime rates are for ag lime with a relative neutralizing value (RNV, or calcium carbonate equivalent based on lime fineness factor and purity) of 57.

6. Crop 3 Notes:

SECTION B – COLLECTED INFORMATION

Updates to this NMP shall be based on manure sampling and analysis from the waste storage structures.

Below is a chart that the U. of A. has compiled showing analysis test results:

January 2005 – March 2010 Liquid Swine Manure Analysis
University of Arkansas Laboratory
Provided by: University of Arkansas Division of Agriculture, to assist ANRC in the writing of Nutrient Management Plans

	lb/1000 gal as is				%
	N	P_2O_5	K_2O	WEP	WEP/TP
Count	99	108	97	32	32
Min	6.2	1.4	0.6	0.4	4.3
Max	45.9	115.2	55.7	5.3	98.2
Mean	18.7	18.4	13.5	2.1	34.5
Median(P_{50})	18.8	12.6	11.2	1.9	27.5

(https://www.ipni.net/app/calculator/crop/SG) (/app/calculator/home)

Soybean grain

Yield Goal

50

bu/A

Nutrient	Removal (lb/A)
N	162.5
P_2O_5	36.5
K_2O	60.0
S	9.0
P	15.9
K	49.8

To convert P_2O_5 to P multiply result by 0.436

To convert K_2O to K multiply result by 0.830

(https://www.ipni.net/app/calculator/crop/NN) (/app/calculator/home)

Corn grain

Yield Goal

150

bu/A

Nutrient	Removal (lb/A)
N	100.5
P_2O_5	52.5
K_2O	37.5
S	12.0
P	22.9
K	31.1

To convert P_2O_5 to P multiply result by 0.436

To convert K_2O to K multiply result by 0.830

(https://www.ipni.net/app/calculator/crop/NN) (/app/calculator/home)

Corn grain

Yield Goal

175

bu/A

Nutrient	Removal (lb/A)
N	117.2
P_2O_5	61.2
K_2O	43.7
S	14.0
P	26.7
K	36.3

To convert P_2O_5 to P multiply result by 0.436
To convert K_2O to K multiply result by 0.830

COON TREE FARM, INC.
Franklin County, Arkansas
Nutrient Management Plan

C. NUTRIENT MANAGEMENT

1. Operation and Maintenance for Land Application
2. Methodology for Determining Acceptable Manure Application Rates
2. Maximum Yearly Application Rates for Corn
    a. Nutrient Balance for Corn
3. Maximum Yearly Application Rates for Soybeans
    a. Nutrient Balance for Soybeans

Operation and Maintenance for Land Application

Nutrient Utilization

- Swine fertilizer/wash water shall be evenly distributed over application sites at the rates specified in this nutrient management plan by means of vac tanker trucks and/or irrigation system. Application rates will be the same, regardless of conveyance method.
- Land application of swine fertilizer/wash water shall not be undertaken when soil is saturated, frozen, covered with ice or snow, or when significant precipitation is reasonably anticipated in the next twenty-four hours (greater than 50% chance).
- Swine fertilizer/wash water shall not be applied on slopes with a grade of more than fifteen percent (15%) or in any manner that will allow nutrients to enter the waters of the state. These non-application buffer areas are marked on the field maps.
- Application of swine fertilizer/wash water shall not be made within 100 feet of streams including intermittent streams, ponds, lakes, springs, sinkholes, rock outcrops, wells and water supplies; or 300 feet of extraordinary resource waters as defined by the Arkansas Pollution Control and Ecology Commission Regulation No. 2. Buffer distances from streams, ponds and lakes shall be measured from the ordinary highwater mark. These non-application buffer areas are marked on the field maps.
- Application of swine fertilizer/wash water shall not be made within 50 feet of property lines or 500 feet of neighboring occupied buildings existing as of the date of the permit. The restrictions regarding property lines or neighboring occupied buildings shall not apply if the adjoining property is also approved as a land application site under a permit issued by the department or if the adjoining property owner consents in writing. These non-application buffer areas are marked on the field maps.
- Application of swine fertilizer/wash water shall not be made in areas where the land application of swine fertilizer/wash water is prohibited by Arkansas Department of Health regulations for the protection of public water supplies.
- Records shall be kept for all land applications of swine fertilizer/wash water. ADEQ requires land application records be submitted to them annually on forms they provide. A copy of ADEQ's Annual Report Form is located in Section D under "Recordkeeping".

Odor Management

Although it may not be practical or feasible to eliminate all odor emissions from the operation, it is possible to manage or mitigate the odor. The odor reduction practices listed below may be utilized by the operation in an effort to reduce odor emissions:

- Animal Cleanliness – Clean, dry, and healthy animals are less odorous.
- Minimize Dust – Dust particles may absorb and concentrate odorous compounds. Proper cleaning techniques within the facility can minimize dust and, therefore, reduce odor.
- Proper Disposal of Mortality – Normal mortality for the animal feeding operation must be properly handled for both odor control and biological security purposes. Composting, freezing, incineration, and rendering are acceptable methods for mortality disposal.
- Land Application Practices – To the extent possible, consider weather conditions when making land applications. Sunny, low humidity days reduce odors; turbulent breezes will dilute and dissipate odors.

Methodology for Determining Manure Application Rates

This farm expects to produce approximately 5,330,000 gallons of fertilizer and wash water each year. There are approximately 1, 932 spreadable acres of row crop land in Franklin and Johnson Counties that are available for fertilizer application.

Land application of fertilizer will be at agronomic rates based on soil test recommendations or crop removal rates. Soil samples were taken of each field and crop removal rates were based on the International Plant Nutrition Institute's crop removal calculator. (https://www.ipni.net/app/calculator/home)

Maximum application rates for both corn and soybean crops are given so that owner/operators of the permitted land receive the guidance they need to plant the crop of their choosing.

Maximum application rates are based on either soil test recommendations or crop removal rates. Soil test recommendations are used to build soil fertility while feeding the crop, while crop removal rates are used to maintain the soil fertility and feed the crop. In either case, applications rates are limited by phosphorous and nitrogen.

Application can be made at any time of the year and will be accomplished using a vac tanker truck or by irrigation lines.

The following pages outline maximum yearly application rates for corn or soybeans with nutrient balance summaries provided for each field and crop. Based on the prior years' cropping history, more than sufficient acreage exist to accommodate yearly fertilizer production.

Maximum Yearly Application Rates for Corn

Field Name	Crop Yield Bushels/Ac	Book Value Manure Analysis			Crop Removal Rate			Soil Lab Nutrient Recommendation			Manure Application Based On:	Maximum Manure Application
		N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O		
Grey 2	150	18.8	12.6	11.2	100.5	52.5	37.5	230	70	40	Soil Lab Recommendation	5,550/ac
Grey 3	175	18.8	12.6	11.2	117.2	61.2	43.7	290	75	50	Soil Lab Recommendation	5,950/ac
Grey 4	150	18.8	12.6	11.2	100.5	52.5	37.5	230	90	40	Soil Lab Recommendation	7,150/ac
ClarkGrey	150	18.8	12.6	11.2	100.5	52.5	37.5	230	90	0	Soil Lab Recommendation	7,150/ac
Ganz 1	150	18.8	12.6	11.2	100.5	52.5	37.5	230	110	40	Soil Lab Recommendation	8,750/ac
Ganz 2	175	18.8	12.6	11.2	117.2	61.2	43.7	290	100	50	Soil Lab Recommendation	7,950/ac
Ganz 3	175	18.8	12.6	11.2	117.2	61.2	43.7	290	100	50	Soil Lab Recommendation	7,950/ac
Whittle	175	18.8	12.6	11.2	117.2	61.2	43.7	220	0	50	Crop Removal Rate	4,850/ac
Lee	150	18.8	12.6	11.2	100.5	52.5	37.5	160	70	105	Soil Lab Recommendation	5,550/ac
Patterson	150	18.8	12.6	11.2	100.5	52.5	37.5	160	0	70	Crop Removal Rate	4,150/ac
Yates	150	18.8	12.6	11.2	100.5	52.5	37.5	160	70	40	Soil Lab Recommendation	5,550/ac
Blue Hill 1	175	18.8	12.6	11.2	117.2	61.2	43.7	220	75	75	Soil Lab Recommendation	5,950/ac
Blue Hill 2	150	18.8	12.6	11.2	100.5	52.5	37.5	230	90	0	Soil Lab Recommendation	7,150/ac
Hoing	150	18.8	12.6	11.2	100.5	52.5	37.5	230	90	0	Soil Lab Recommendation	7,150/ac
Blackburn	175	18.8	12.6	11.2	117.2	61.2	43.7	220	0	50	Crop Removal Rate	4,850/ac
Don's	150	18.8	12.6	11.2	100.5	52.5	37.5	160	70	70	Soil Lab Recommendation	5,550/ac
Trailer	175	18.8	12.6	11.2	117.2	61.2	43.7	220	100	50	Soil Lab Recommendation	7,950/ac
Shine 1	150	18.8	12.6	11.2	100.5	52.5	37.5	160	0	40	Crop Removal Rate	4,150/ac
Shine 2	150	18.8	12.6	11.2	100.5	52.5	37.5	160	90	70	Soil Lab Recommendation	7,150/ac
Shine 3	150	18.8	12.6	11.2	100.5	52.5	37.5	160	90	105	Soil Lab Recommendation	7,150/ac
Betty's	175	18.8	12.6	11.2	117.2	61.2	43.7	220	75	50	Soil Lab Recommendation	5,950/ac
Hayes 2	150	18.8	12.6	11.2	100.5	52.5	37.5	230	110	0	Soil Lab Recommendation	8,750/ac
Hayes 4	175	18.8	12.6	11.2	117.2	61.2	43.7	290	120	0	Soil Lab Recommendation	9,500/ac

25% application loss rating used to figure N

Nutrient Balance: Corn Crop

Field Name	Acres	Maximum Yearly Manure Application Gallons Per Acre	Nutrients Applied (lb/ac)			Surpluses/Deficits (lb/ac)			Maximum Yearly Manure Application Gallons Per Field
			N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Grey 2	4.0	5,550/ac	78	70	62	-152	0	22	22,200/field
Grey 3	60.3	5,950/ac	84	75	67	-206	0	17	358,790/field
Grey 4	0.60	7,150/ac	101	90	80	-129	0	40	4,290/field
ClarkGrey	14.4	7,150/ac	101	90	80	-129	0	80	102,960/field
Ganz 1	28.7	8,750/ac	123	110	98	-107	0	58	251,130/field
Ganz 2	53.9	7,950/ac	112	100	89	-178	0	39	428,510/field
Ganz 3	26.4	7,950/ac	112	100	89	-178	0	39	209,880/field
Whittle	141.1	4,850/ac	68	61	54	-49	0	11	684,340/field
Lee	43.2	5,550/ac	78	70	62	-82	0	-43	239,760/field
Patterson	76.0	4,150/ac	59	52	46	-42	0	9	315,400/field
Yates	40.1	5,550/ac	78	70	62	-82	0	22	222,560/field
Blue Hill 1	81.9	5,950/ac	84	75	67	-136	0	-8	487,310/field
Blue Hill 2	23.3	7,150/ac	101	90	80	-129	0	80	166,600/field
Hoing	17.7	7,150/ac	101	90	80	-129	0	80	126,560/field
Blackburn	30.3	4,850/ac	68	61	54	-49	0	11	146,960/field
Don's	10.4	5,550/ac	78	70	62	-82	0	-8	57,720/field
Trailer	31.7	7,950/ac	112	100	89	-108	0	39	252,020/field
Shine 1	4.6	4,150/ac	59	52	46	-42	0	9	19,090/field
Shine 2	22.9	7,150/ac	101	90	80	-59	0	10	163,740/field
Shine 3	80.4	7,150/ac	101	90	80	-59	0	-25	574,860/field
Betty's	50.7	5,950/ac	84	75	67	-136	0	17	301,670/field
Hayes 2	111.5	8,750/ac	123	110	98	-107	0	98	975,630/field
Hayes 4	62.6	9,500/ac	134	120	106	-156	0	106	594,700/field

Maximum Yearly Application Rates for Corn

Field Name	Crop Yield Bushels/Ac	Book Value Manure Analysis			Crop Removal Rate			Soil Lab Nutrient Recommendation			Manure Application Based On:	Maximum Manure Application
		N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O		
Nichols 2	150	18.8	12.6	11.2	100.5	52.5	37.5	160	0	105	Crop Removal Rate	4,200/ac
Hill	175	18.8	12.6	11.2	117.2	61.2	43.7	220	100	50	Soil Lab Recommendation	7,950/ac
Little	175	18.8	12.6	11.2	117.2	61.2	43.7	290	0	0	Crop Removal Rate	4,850/ac
Round Wood	175	18.8	12.6	11.2	117.2	61.2	43.7	220	100	50	Soil Lab Recommendation	7,950/ac
Holoway	175	18.8	12.6	11.2	117.2	61.2	43.7	290	0	0	Crop Removal Rate	4,850/ac
Riable	175	18.8	12.6	11.2	117.2	61.2	43.7	290	0	0	Crop Removal Rate	4,850/ac
Sugar Hill 1	150	18.8	12.6	11.2	100.5	52.5	37.5	230	110	40	Soil Lab Recommendation	8,750/ac
Sugar Hill 2	150	18.8	12.6	11.2	100.5	52.5	37.5	230	110	40	Soil Lab Recommendation	8,750/ac
Sugar Hill 3	150	18.8	12.6	11.2	100.5	52.5	37.5	230	110	0	Soil Lab Recommendation	8,750/ac
Sugar Hill 5	150	18.8	12.6	11.2	100.5	52.5	37.5	230	70	0	Soil Lab Recommendation	5,550/ac
Sugar Hill 9	175	18.8	12.6	11.2	117.2	61.2	43.7	220	100	50	Soil Lab Recommendation	7,950/ac
Sugar Hill 10	175	18.8	12.6	11.2	117.2	61.2	43.7	220	100	50	Soil Lab Recommendation	7,950/ac
Wilson 1	175	18.8	12.6	11.2	117.2	61.2	43.7	220	75	0	Soil Lab Recommendation	5,950/ac
Wilson 2	175	18.8	12.6	11.2	117.2	61.2	43.7	290	75	0	Soil Lab Recommendation	5,950/ac
T 1879	150	18.8	12.6	11.2	100.5	52.5	37.5	160	0	70	Crop Removal Rate	4,150/ac
T 1880	150	18.8	12.6	11.2	100.5	52.5	37.5	160	0	105	Crop Removal Rate	4,150/ac
T 1882	150	18.8	12.6	11.2	100.5	52.5	37.5	160	70	40	Soil Lab Recommendation	5,550/ac
T 1957	150	18.8	12.6	11.2	100.5	52.5	37.5	230	70	0	Soil Lab Recommendation	5,550/ac
T 1955	150	18.8	12.6	11.2	100.5	52.5	37.5	160	90	40	Soil Lab Recommendation	7,150/ac
Ourcut 1	175	18.8	12.6	11.2	117.2	61.2	43.7	220	100	50	Soil Lab Recommendation	7,950/ac
Ourcut 2	175	18.8	12.6	11.2	117.2	61.2	43.7	220	100	110	Soil Lab Recommendation	7,950/ac
1 (Wilson 2)	175	18.8	12.6	11.2	117.2	61.2	43.7	220	75	75	Soil Lab Recommendation	5,950/ac
2 (Wilson 2)	175	18.8	12.6	11.2	117.2	61.2	43.7	220	100	110	Soil Lab Recommendation	7,950/ac
1 (Wilson 1)	175	18.8	12.6	11.2	117.2	61.2	43.7	290	75	50	Soil Lab Recommendation	5,950/ac
2 (Wilson 1)	175	18.8	12.6	11.2	117.2	61.2	43.7	220	0	75	Crop Removal Rate	4,850/ac
Mitchell	150	18.8	12.6	11.2	100.5	52.5	37.5	160	0	105	Crop Removal Rate	4,150/ac

25% application loss rating used to figure N

Nutrient Balance: Corn Crop

Field Name	Acres	Maximum Yearly Manure Application Gallons Per Acre	Nutrients Applied (lb/ac)			Surpluses/Deficits (lb/ac)			Maximum Yearly Manure Application Gallons Per Field
			N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Nichols 2	12.4	4,200/ac	59	53	47	-41	0	10	52,080/field
Hill	30.3	7,950/ac	112	100	89	-108	0	39	240,890/field
Little	72.4	4,850/ac	68	61	54	-49	0	11	351,140/field
Round Wood	46.1	7,950/ac	112	100	89	-108	0	39	366,500/field
Holoway	11.4	4,850/ac	68	61	54	-49	0	11	55,290/field
Riable	12.0	4,850/ac	68	61	54	-49	0	11	58,200/field
Sugar Hill 1	11.2	8,750/ac	123	110	98	-107	0	58	98,000/field
Sugar Hill 2	21.7	8,750/ac	123	110	98	-107	0	58	189,880/field
Sugar Hill 3	33.4	8,750/ac	123	110	98	-107	0	98	292,250/field
Sugar Hill 5	28.7	5,550/ac	78	70	62	-152	0	62	159,290/field
Sugar Hill 9	72.6	7,950/ac	112	100	89	-108	0	39	577,170/field
Sugar Hill 10	75.3	7,950/ac	112	100	89	-108	0	39	598,640/field
Wilson 1	33.3	5,950/ac	84	75	67	-136	0	67	198,140/field
Wilson 2	32.2	5,950/ac	84	75	67	-206	0	67	191,590/field
T 1879	34.0	4,150/ac	59	52	46	-42	0	9	141,100/field
T 1880	30.6	4,150/ac	59	52	46	-42	0	9	126,990/field
T 1882	36.4	5,550/ac	78	70	62	-82	0	22	202,020/field
T 1957	68.1	5,550/ac	78	70	62	-152	0	62	377,960/field
T 1955	39.8	7,150/ac	101	90	80	-59	0	40	284,570/field
Ourcut 1	4.6	7,950/ac	112	100	89	-108	0	39	36,570/field
Ourcut 2	48.1	7,950/ac	112	100	89	-108	0	-21	382,400/field
1 (Wilson 2)	32.2	5,950/ac	84	75	67	-136	0	-8	191,590/field
2 (Wilson 2)	19.0	7,950/ac	112	100	89	-108	0	-21	151,050/field
1 (Wilson 1)	39.5	5,950/ac	84	75	67	-206	0	17	235,030/field
2 (Wilson 1)	38.6	4,850/ac	68	61	54	-49	0	11	187,210/field
Mitchell	31.8	4,150/ac	59	52	46	-42	0	9	131,970/field

Maximum Yearly Application Rates for Soybeans

Field Name	Crop Yield Bushels/Ac	Book Value Manure Analysis			Crop Removal Rate			Soil Lab Nutrient Recommendation			Manure Application Based On:	Maximum Manure Application
		N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O		
Grey 2	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	50	Crop Removal Rate	2,900/ac
Grey 3	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	50	Crop Removal Rate	2,900/ac
Grey 4	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	50	Crop Removal Rate	2,900/ac
ClarkGrey	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	0	Crop Removal Rate	2,900/ac
Ganz 1	50	18.8	12.6	11.2	162.5	36.5	60.0	0	60	50	Crop Removal Rate	2,900/ac
Ganz 2	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	50	Crop Removal Rate	2,900/ac
Ganz 3	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	50	Crop Removal Rate	2,900/ac
Whittle	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	50	Crop Removal Rate	2,900/ac
Lee	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	120	Crop Removal Rate	2,900/ac
Patterson	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	75	Crop Removal Rate	2,900/ac
Yates	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	50	Crop Removal Rate	2,900/ac
Blue Hill 1	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	75	Crop Removal Rate	2,900/ac
Blue Hill 2	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	0	Crop Removal Rate	2,900/ac
Hoing	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	0	Crop Removal Rate	2,900/ac
Blackburn	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	50	Crop Removal Rate	2,900/ac
Don's	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	75	Crop Removal Rate	2,900/ac
Trailer	50	18.8	12.6	11.2	162.5	36.5	60.0	0	60	50	Crop Removal Rate	2,900/ac
Shine 1	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	50	Crop Removal Rate	2,900/ac
Shine 2	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	75	Crop Removal Rate	2,900/ac
Shine 3	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	120	Crop Removal Rate	2,900/ac
Betty's	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	50	Crop Removal Rate	2,900/ac
Hayes 2	50	18.8	12.6	11.2	162.5	36.5	60.0	0	60	0	Crop Removal Rate	2,900/ac
Hayes 4	50	18.8	12.6	11.2	162.5	36.5	60.0	0	60	0	Crop Removal Rate	2,900/ac

25% application loss rating used to figure N

Nutrient Balance: Soybean Crop

Field Name	Acres	Maximum Yearly Manure Application Gallons Per Acre	Nutrients Applied (lb/ac)			Surpluses/Deficits (lb/ac)			Maximum Yearly Manure Application Gallons Per Field
			N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Grey 2	4.0	2,900/ac	41	36.5	32	-122	0	-28	11,600/field
Grey 3	60.3	2,900/ac	41	36.5	32	-122	0	-28	174,870/field
Grey 4	0.60	2,900/ac	41	36.5	32	-122	0	-28	1,740/field
ClarkGrey	14.4	2,900/ac	41	36.5	32	-122	0	-28	41,760/field
Ganz 1	28.7	2,900/ac	41	36.5	32	-122	0	-28	83,230/field
Ganz 2	53.9	2,900/ac	41	36.5	32	-122	0	-28	156,310/field
Ganz 3	26.4	2,900/ac	41	36.5	32	-122	0	-28	76,560/field
Whittle	141.1	2,900/ac	41	36.5	32	-122	0	-28	409,190/field
Lee	43.2	2,900/ac	41	36.5	32	-122	0	-28	125,280/field
Patterson	76.0	2,900/ac	41	36.5	32	-122	0	-28	220,400/field
Yates	40.1	2,900/ac	41	36.5	32	-122	0	-28	116,290/field
Blue Hill 1	81.9	2,900/ac	41	36.5	32	-122	0	-28	237,510/field
Blue Hill 2	23.3	2,900/ac	41	36.5	32	-122	0	-28	67,570/field
Hoing	17.7	2,900/ac	41	36.5	32	-122	0	-28	51,330/field
Blackburn	30.3	2,900/ac	41	36.5	32	-122	0	-28	87,870/field
Don's	10.4	2,900/ac	41	36.5	32	-122	0	-28	30,160/field
Trailer	31.7	2,900/ac	41	36.5	32	-122	0	-28	91,930/field
Shine 1	4.6	2,900/ac	41	36.5	32	-122	0	-28	13,340/field
Shine 2	22.9	2,900/ac	41	36.5	32	-122	0	-28	66,410/field
Shine 3	80.4	2,900/ac	41	36.5	32	-122	0	-28	233,160/field
Betty's	50.7	2,900/ac	41	36.5	32	-122	0	-28	147,030/field
Hayes 2	111.5	2,900/ac	41	36.5	32	-122	0	-28	323,350/field
Hayes 4	62.6	2,900/ac	41	36.5	32	-122	0	-28	181,540/field

Maximum Yearly Application Rates for Soybeans

Field Name	Crop Yield Bushels/Ac	Book Value Manure Analysis			Crop Removal Rate			Soil Lab Nutrient Recommendation			Manure Application Based On:	Maximum Manure Application
		N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O		
Nichols 2	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	120	Crop Removal Rate	2,900/ac
Hill	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	50	Crop Removal Rate	2,900/ac
Little	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	0	Crop Removal Rate	2,900/ac
Roundwood	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	50	Crop Removal Rate	2,900/ac
Holoway	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	0	Crop Removal Rate	2,900/ac
Riable	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	0	Crop Removal Rate	2,900/ac
Sugar Hill 1	50	18.8	12.6	11.2	162.5	36.5	60.0	0	60	50	Crop Removal Rate	2,900/ac
Sugar Hill 2	50	18.8	12.6	11.2	162.5	36.5	60.0	0	60	50	Crop Removal Rate	2,900/ac
Sugar Hill 3	50	18.8	12.6	11.2	162.5	36.5	60.0	0	60	0	Crop Removal Rate	2,900/ac
Sugar Hill 5	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	0	Crop Removal Rate	2,900/ac
Sugar Hill 9	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	60	Crop Removal Rate	2,900/ac
Sugar Hill 10	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	50	Crop Removal Rate	2,900/ac
Wilson 1	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	0	Crop Removal Rate	2,900/ac
Wilson 2	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	0	Crop Removal Rate	2,900/ac
T 1879	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	75	Crop Removal Rate	2,900/ac
T 1880	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	120	Crop Removal Rate	2,900/ac
T 1882	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	50	Crop Removal Rate	2,900/ac
T 1957	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	0	Crop Removal Rate	2,900/ac
T 1955	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	50	Crop Removal Rate	2,900/ac
Ourcut 1	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	50	Crop Removal Rate	2,900/ac
Ourcut 2	50	18.8	12.6	11.2	162.5	36.5	60.0	0	60	120	Crop Removal Rate	2,900/ac
1 (Wilson 2)	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	75	Crop Removal Rate	2,900/ac
2 (Wilson 2)	50	18.8	12.6	11.2	162.5	36.5	60.0	0	50	120	Crop Removal Rate	2,900/ac
1 (Wilson 1)	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	50	Crop Removal Rate	2,900/ac
2 (Wilson 1)	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	75	Crop Removal Rate	2,900/ac
Mitchell	50	18.8	12.6	11.2	162.5	36.5	60.0	0	0	120	Crop Removal Rate	2,900/ac

25% application loss rating used to figure N

Nutrient Balance: Soybean Crop

Field Name	Acres	Maximum Yearly Manure Application Gallons Per Acre	Nutrients Applied (lb/ac)			Surpluses/Deficits (lb/ac)			Maximum Yearly Manure Application Gallons Per Field
			N	P_2O_5	K_2O	N	P_2O_5	K_2O	
Nichols 2	12.4	2,900/ac	41	36.5	32	-122	0	-28	35,960/field
Hill	30.3	2,900/ac	41	36.5	32	-122	0	-28	87,870/field
Little	72.4	2,900/ac	41	36.5	32	-122	0	-28	209,960/field
Round Wood	46.1	2,900/ac	41	36.5	32	-122	0	-28	133,690/field
Holoway	11.4	2,900/ac	41	36.5	32	-122	0	-28	33,060/field
Riable	12.0	2,900/ac	41	36.5	32	-122	0	-28	34,800/field
Sugar Hill 1	11.2	2,900/ac	41	36.5	32	-122	0	-28	32,480/field
Sugar Hill 2	21.7	2,900/ac	41	36.5	32	-122	0	-28	62,930/field
Sugar Hill 3	33.4	2,900/ac	41	36.5	32	-122	0	-28	96,860/field
Sugar Hill 5	28.7	2,900/ac	41	36.5	32	-122	0	-28	83,230/field
Sugar Hill 9	72.6	2,900/ac	41	36.5	32	-122	0	-28	210,540/field
Sugar Hill 10	75.3	2,900/ac	41	36.5	32	-122	0	-28	218,370/field
Wilson 1	33.3	2,900/ac	41	36.5	32	-122	0	-28	96,570/field
Wilson 2	32.2	2,900/ac	41	36.5	32	-122	0	-28	93,380/field
T 1879	34.0	2,900/ac	41	36.5	32	-122	0	-28	98,600/field
T 1880	30.6	2,900/ac	41	36.5	32	-122	0	-28	88,740/field
T 1882	36.4	2,900/ac	41	36.5	32	-122	0	-28	105,560/field
T 1957	68.1	2,900/ac	41	36.5	32	-122	0	-28	197,490/field
T 1955	39.8	2,900/ac	41	36.5	32	-122	0	-28	115,420/field
Ourcut 1	4.6	2,900/ac	41	36.5	32	-122	0	-28	13,340/field
Ourcut 2	48.1	2,900/ac	41	36.5	32	-122	0	-28	139,490/field
1 (Wilson 2)	32.2	2,900/ac	41	36.5	32	-122	0	-28	93,380/field
2 (Wilson 2)	19.0	2,900/ac	41	36.5	32	-122	0	-28	55,100/field
1 (Wilson 1)	39.5	2,900/ac	41	36.5	32	-122	0	-28	114,550/field
2 (Wilson 1)	38.6	2,900/ac	41	36.5	32	-122	0	-28	111,940/field
Mitchell	31.8	2,900/ac	41	36.5	32	-122	0	-28	92,220/field

COON TREE FARM, INC.
Franklin County, Arkansas
Nutrient Management Plan

D. RECORDKEEPING

1. Arkansas Recordkeeping Requirements
2. Copy of ADEQ's Annual Report Form

ARKANSAS RECORD KEEPING REQUIREMENTS

The Arkansas Department of Environmental Quality (ADEQ) requires that the following test results and records be submitted to them annually by May 30th from any person operating a liquid waste management and disposal system under Regulation 5. All sampling and analysis shall be in accordance with the University of Arkansas Cooperative Extension Service guidelines. Reports must be submitted on forms provided by ADEQ and a blank copy of the form is included in this section.

1. Records shall be kept on all waste/wastewater applications. A log shall be kept at the facility showing dates, volumes or weights, destinations and acreage over which the wastes are applied.
2. A representative sample of the waste/wastewater shall be collected once per year and analyzed for the following parameters: pH, total nitrogen, ammonia nitrogen, potassium, phosphorous, water extractable phosphorous (WEP), and percent solids. The results shall be included in the final yearly report.
3. The soils of each field where liquid animal waste have been land applied shall be sampled and analyzed once every five (5) years for the following parameters: pH, Potassium, Phosphorous and Nitrates.

It should be noted that these are ADEQ requirements and any failure to produce or obtain the reports shall be deemed a violation of Regulation No. 5 and the permit.

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

ANNUAL REPORT FORM FOR PERMITTED CONFINED ANIMAL FACILITIES

REPORTING PERIOD: _____

PERMITTEE NAME: _____ **PERMIT NUMBER:** _____

PHONE NUMBER: _____ **AFIN NUMBER:**

_____

FACILITY TYPE AND SIZE: _____
(ie., 200 Cow Dairy, 2,500 Swine Finishing, 80,000 Bird Layer Operation, etc.)

WASTE DISPOSAL SYSTEM CONSISTS OF:

_____
(ie., Holding Pond, Holding Pond & Settling Basin, Concrete Holding Tank, etc.)

WASTE APPLICATION METHOD: _____
(ie., Tank Spreader, Irrigation System, etc.)

NO. OF APPLICATION FIELDS: _____

TOTAL AVAILABLE ACREAGE: _____

WASTEWATER SAMPLE LOCATION: _____
(Lagoon During Pumping or Field During Application)

YOU MUST SUBMIT A COPY OF THE **WASTEWATER ANALYSIS** FOR EACH SAMPLE PROVIDED TO THE COOPERATIVE EXTENSION SERVICE OR A PRIVATE LAB. THE WASTEWATER ANALYSIS MUST INCLUDE: pH (su), TOTAL NITROGEN, AMMONIA NITROGEN, TOTAL POTASSIUM, TOTAL PHOSPHORUS, AND PERCENT SOLIDS.

IN ADDITION, YOU MUST SUBMIT A COPY OF THE **SOIL ANALYSIS** FOR EACH FIELD WITH THIS FORM. THE SOIL ANALYSIS MUST INCLUDE: pH (su), POTASSIUM (lbs/ac), PHOSPHORUS (lbs/ac), AND NITRATES (lbs/ac). AT LEAST ONE SOIL ANALYSIS SHOULD BE DONE FOR EACH 30 ACRE TRACT.

PLEASE COMPLETE THE TABLE ON THE BACK FOR THE LAND APPLICATION REPORT. YOU MUST SIGN AND DATE THIS REPORT AND SUBMIT IT TO THE DEPARTMENT PRIOR TO MAY 30th OF EACH YEAR. PLEASE KEEP A COPY OF THIS REPORT, THE SOIL ANALYSIS, AND THE WASTEWATER ANALYSIS FOR YOUR RECORD AT THE FACILITY.

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION.

_____ _____

OWNER OR OPERATOR (Please Print) **SIGNATURE** **DATE**

Mail complete annual report form and annual application report to:

ANNUAL ANIMAL WASTE LAND APPLICATION REPORT

PERMITTEE NAME: _____ **PERMIT NUMBER:** _____

Field Name or/and Number	Crop Type	Total* Area Applied (acres)	Total** Volume Applied (gallons)	Total*** Nitrogen (lbs/1000 gal.)	Calculated Nitrogen Applied (lbs/ac)
(1)	(2)	(3)	(4)	(5)	(6)

*** Total available area is the area where manure was applied during the reporting period (this data can be obtained from the management plan).**
**** Total volume applied is the total volume applied to the field during the whole reporting period (this data can be obtained from record sheet).**
***** Total Nitrogen concentration (lbs/1000 gallons) can be obtained from the wastewater analysis sheet.**

Column (6) = Nitrogen Applied (lbs/ac) = Column(4) X Column(5) ÷ Column (3) ÷ 1,334

NOTE: You may make additional copies of this table as needed.

Mail complete annual report form and annual application report to:
Arkansas Department of Environmental Quality
Permits Branch, Water Division
5301 Northshore Drive
North Little Rock, AR 72118

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