

# **Exhibit U**

## **Agricultural Field Drainage Inventory**

## EDF ; Fox Squirrel Site

### Agricultural Field Drainage Inventory

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#### **Project Description:**

The intent of this document is to describe the methodology used to prepare an inventory of the existing agricultural field drainage network at the EDF Fox Squirrel project. The project is located in Madison County, Ohio, approximately 8.5 miles southeast of London, Ohio and approximately 23 miles southwest of Columbus, Ohio. The total project site includes 15 parcels, totaling 1,488 acres.

The following sections will describe the methodology use in preparing the inventory, with details regarding our outreach efforts, compiling of gathered data, data analysis, and how the data is presented.

#### **Outreach:**

We began our efforts by investigating and identifying possible sources that could provide information regarding the extent and approximate location of the existing drainage network.

Possible sources identified include landowners within the project limits, local public agencies, state agencies, and available commercial operators specializing in aerial imagery. The following groupings describe the contacts that were made.

#### Landowners within the project limits:

EDF sent questionnaires to all landowners within the proposed project limits. Questionnaires were sent to:

Filo Farms LLC  
Ben-Elen Farms  
Mr. Robert M. Higgins  
Ms. Lynn A. Snyder Messenger

The responses to those questionnaires are attached herein and identified as "Exhibit A".





#### Local public agencies:

Correspondence was established with both Madison County Soil and Water Conservation and Madison County Engineer's Office. Requests were made to both offices to research available records and provide any available information.

#### State agencies:

Correspondence was established with both The Ohio State University Agricultural Extension Office and the Ohio Department of Transportation. Requests were made to both offices to research available records and provide any available information. Additionally, the Ohio Statewide Imagery Program was utilized due to availability of current, high resolution imagery.

#### Available commercial operators specializing in aerial imagery:

Correspondence was established with MAN Mapping, a well-established aerial mapping firm, with 35 years of experience in the central Ohio region. Additionally, a well-recognized source of aerial imagery, Google Earth, was utilized due to the availability of data and historical data sets. Aerial imagery was also available through the Madison County Auditor's Office Geographic Information System (GIS).

### **Compile Data:**

#### Landowners within the project limits:

Questionnaires were completed and returned by all of the landowners previously listed. The amount of information returned by the owners varied greatly in quantity and owner's knowledge of the existing drainage networks on their property.

#### Local public agencies:

Several phone and email correspondences were held with representatives of Madison County Soil and Water Conservation and Madison County Engineer's Office. Both offices only had limited data available for the project site. The collected information is attached herein and identified as "Exhibit B".

#### State agencies:

Several phone and email correspondences were held with representatives of The Ohio State University Agricultural Extension Office and The Ohio Department of Transportation, with the goal of collecting any available historical imagery. Neither office had any available information for the project site.

#### Available commercial operators specializing in aerial imagery:

Several phone and email correspondences were held with aerial imagery professionals at MAN Mapping. Consideration was given to available historical data sets, including both black and white imagery, high contrast color amplification, and infrared imagery.

After MAN Mapping collected historical imagery sets from available State of Ohio sources, the conclusion was reached that no imagery was available that provided improved imagery

beyond that available through Google Earth, Madison County GIS, the and Ohio Statewide Imagery Program.

### **Analyze Data:**

The approach to analyzing the collected data began by reviewing the various written descriptions provided by the landowners and the hand drawn sketches provided by the landowners and public agencies. This information was compared against the historical aerial imagery gathered from Google Earth, Madison County GIS, the and Ohio Statewide Imagery Program. In most instances, the location of the drainage lines reported by the landowners and public agencies were visually apparent in the aerial imagery. When a match between reported locations and aerial imagery was confirmed, digital overlay line work was created for these field drainage locations.

Additionally, digital linework was created by digitizing drainage lines visually apparent in the historical data sets but lacking supporting documentation from landowners or other sources. Historical imagery data sets from Google Earth from years 2020, 2018, 2016, 2015, 2014, 2011, 2010, 2009, 2007, 2006, 2005, 2004, and 1994 were utilized with varying results. Google Earth utilizes aerial imagery data sets from sources that include the United States Geological Survey, USDA Farm Service Agency, State of Ohio and Landsat/Copernicus. Data Sets from the Ohio Statewide Imagery Program from the years 2019, 2011, and 2006 were also used.

The success of visually identifying existing agricultural drainage lines in aerial imagery varied based on the time of year imagery was exposed, the ground cover at time of image exposure, and ground moisture at time of exposure. Generally, imagery from multiple years was utilized to ensure consistency and to provide confirmation that drainage lines are present.

### **Present Data:**

After analysis and preparation of digital line work, the comprehensive information is presented herein and identified as "Exhibit C". The inventory is a combination of many sources of data, together with experience in analyzing aerial imagery.

Glaus, Pyle, Schomer, Burns, & DeHaven, Inc.  
dba GPD Group



Steven L. Mullaney, P.S.  
Ohio Professional Surveyor No. 7900

## **Exhibit “A”**

File Form LLC  
9657 Yontebrown - Clenoweth Rd.  
Mount Sterling Oh. 43143

INDIANAPOLIS IN 460  
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Fox Savinree Solar



### DRAINAGE QUESTIONNAIRE

1. Are you aware of any drainage systems located on your property such as drain tile?  
(circle Yes or No)

Yes

No

2. If you answered Yes above, please describe the drainage systems to the best of your ability (type, size, condition, installer, date installed, how maintained, etc.):

I am aware of tile in all the fields. However, I do not know of the installer. I can find no maps. I do know it would have been somewhere in the 2005 to 2013 range. I am sorry, but I only saw the dirt mounds after it was installed.

3. If you answered Yes above, please describe and provide any relevant records such as receipts or maps provided by installers:

see above

4. If you answered Yes above, please use the attached map to sketch the location of the drainage systems to the best of your ability.

(See attached map)

If you have any questions, please call EDF Renewables' Landowner Helpline at 844.943.0723



Fox Squirrel 801W

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4. If you answered Yes above, please use the attached map to sketch the location of the drainage systems to the best of your ability.

(See attached map)

If you have any questions, please call EDF Renewables' Landowner Helpline at 844.943.0723





**DRAINAGE QUESTIONNAIRE**

1. Are you aware of any drainage systems located on your property such as drain tile?  
(circle Yes or No)

Yes

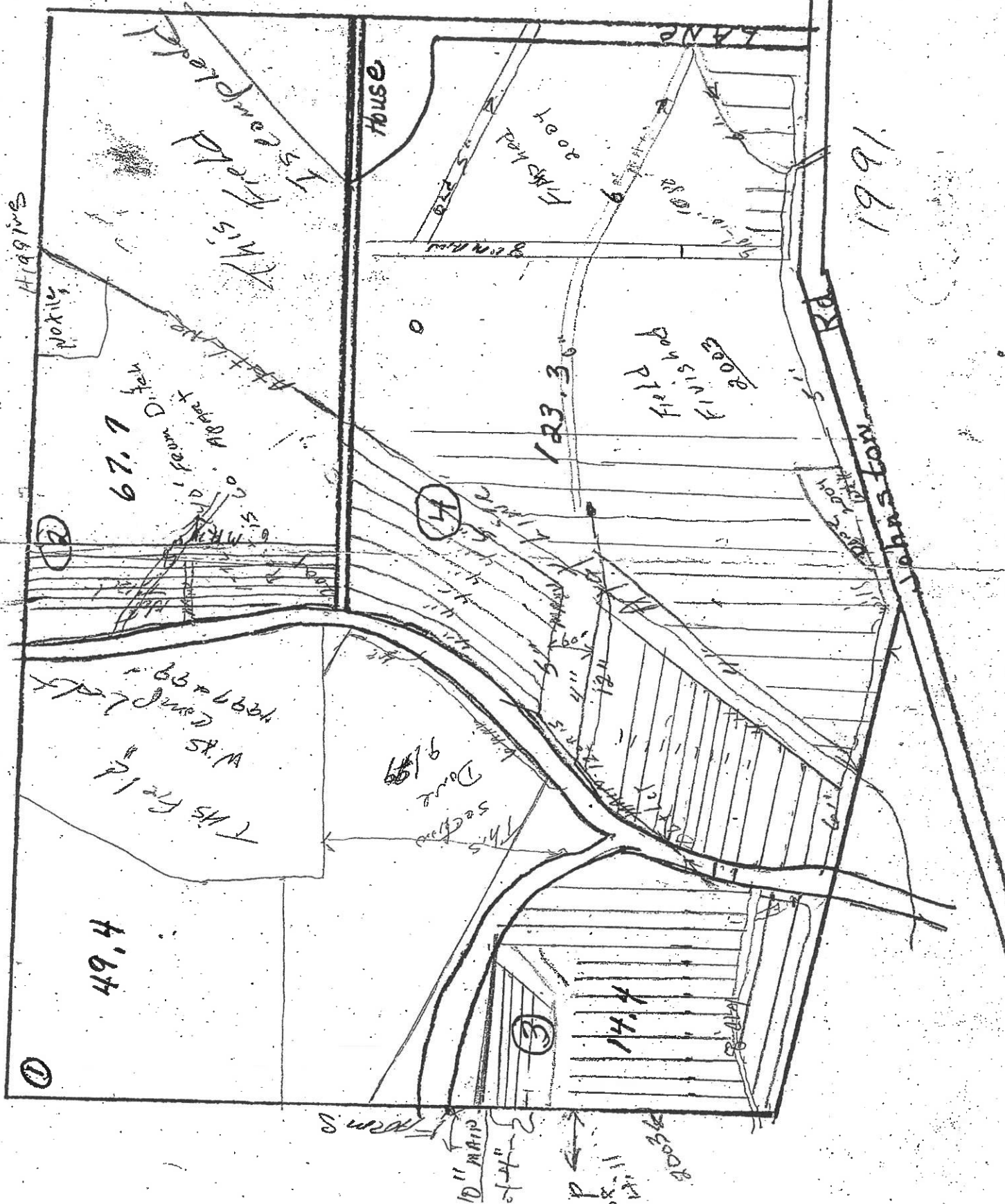
No

2. If you answered Yes above, please describe the drainage systems to the best of your ability (type, size, condition, installer, date installed, how maintained, etc.):

The Farm had clay tile installed in the ~~late 1950s~~<sup>late 1950s</sup>

The Farm had plastic tile installed systematically but over several years. I have enclosed the maps that were given to me when I purchased the Farm.

3. If you answered Yes above, please describe and provide any relevant records such as receipts or maps provided by installers:

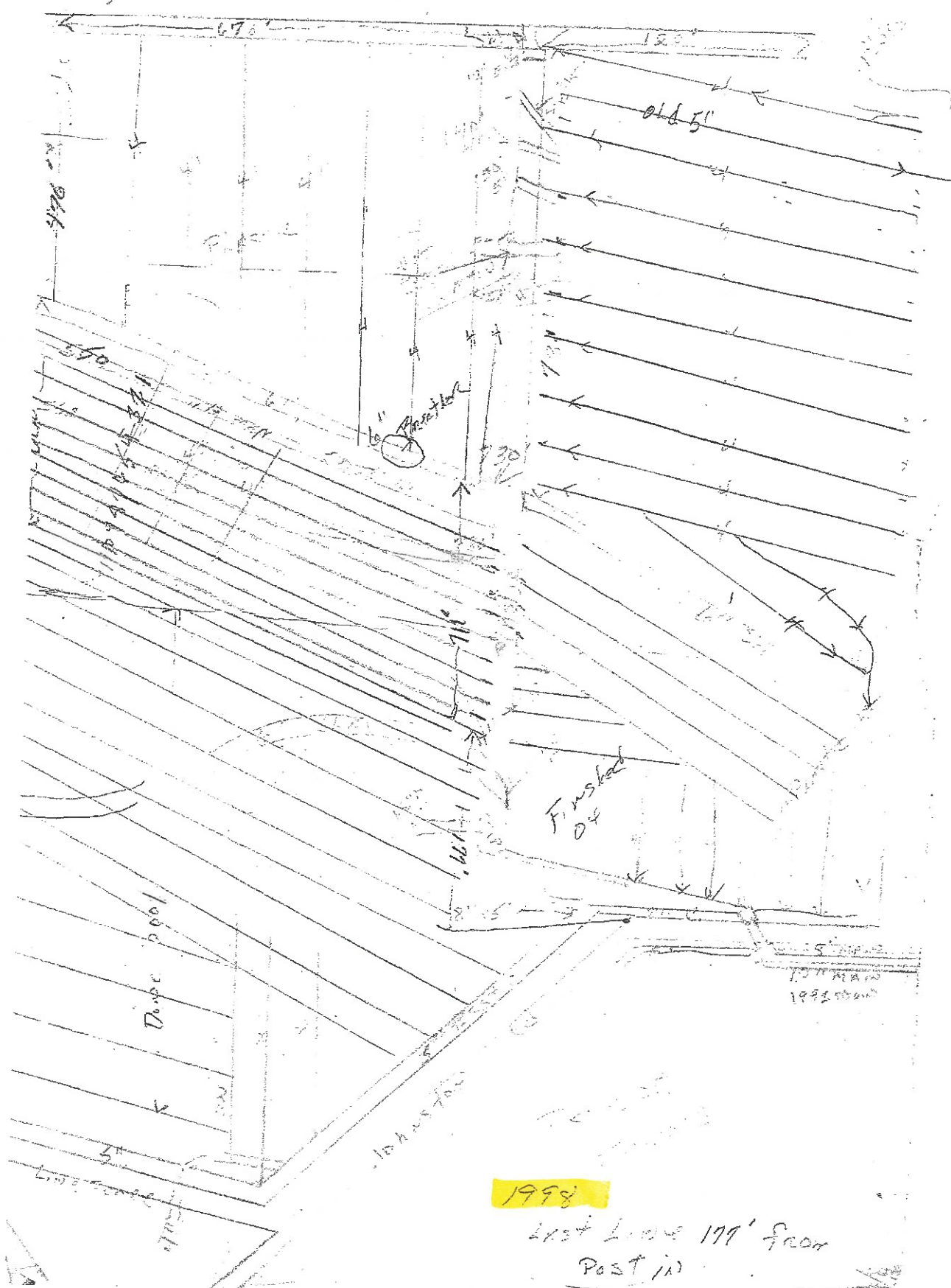


④ East edge  
of 123.3

New MAIN

60" wide

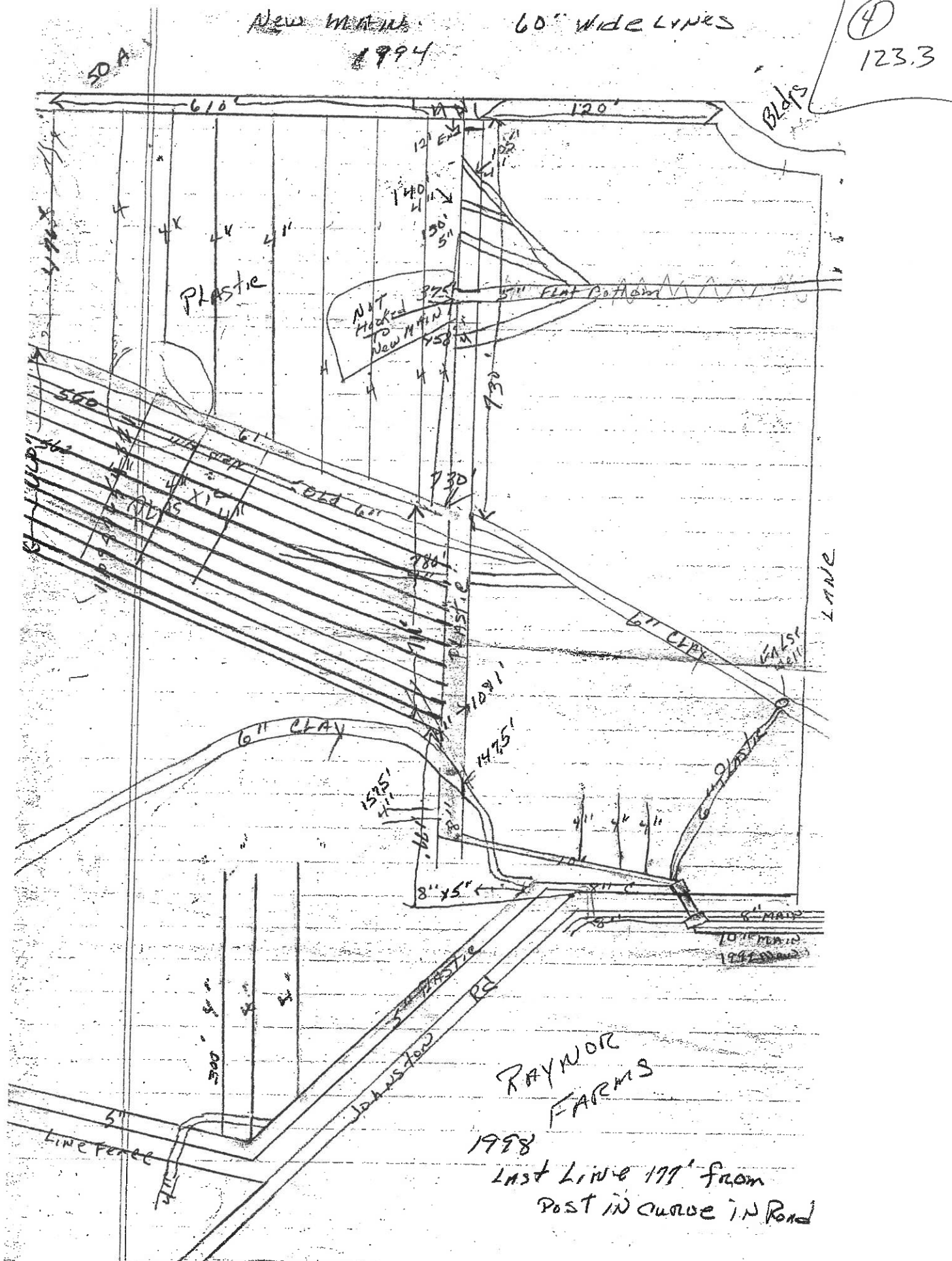
1994

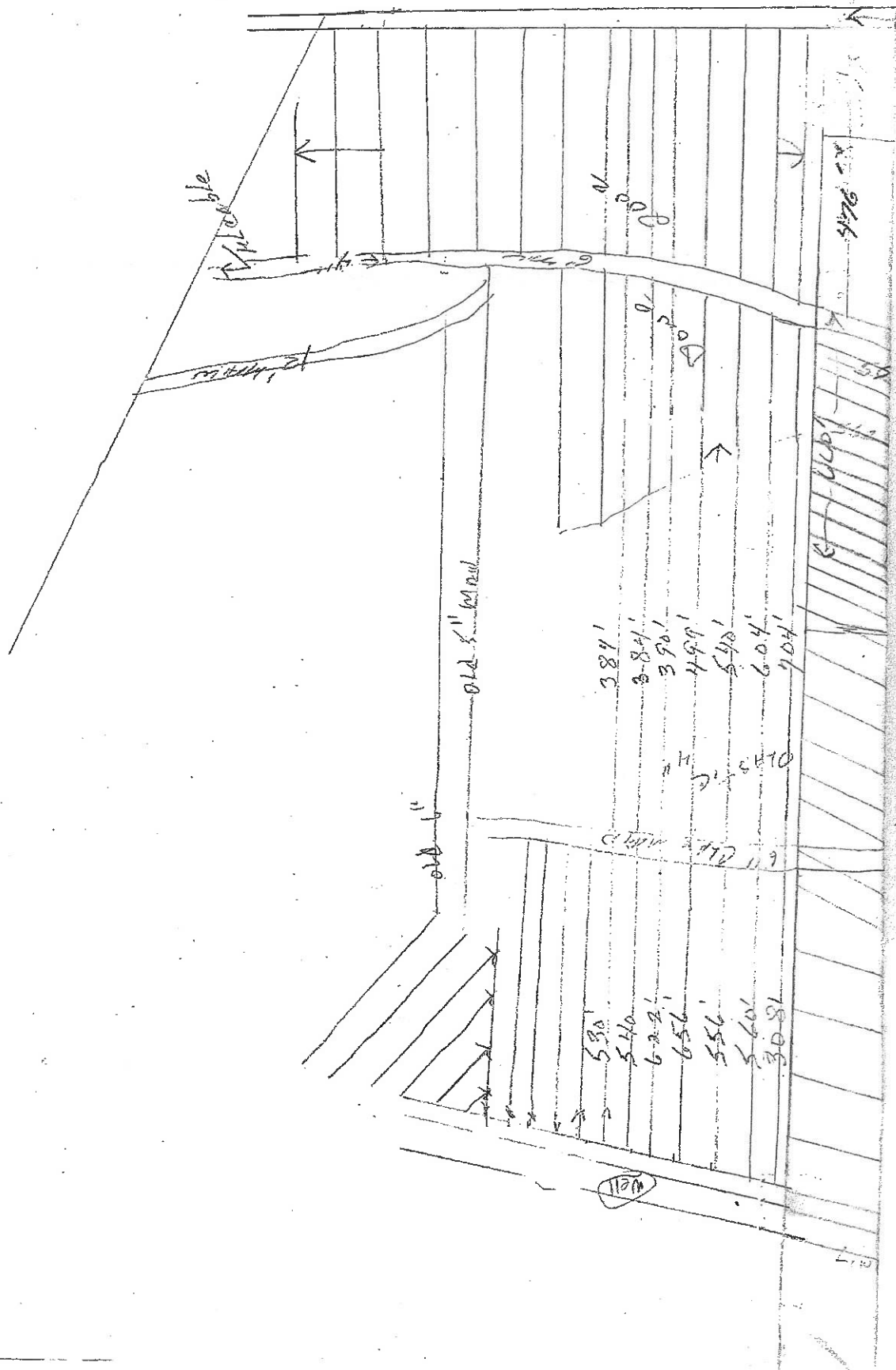


1998

Last Line 199' from  
Post in

123.3





① 49.4 ac

N

# CONSTRUCTION DATA

TILE SPACING 60 FT. EXCEPTIONS NOTED ON PLAN.  
 MINIMUM DEPTH OF LATERALS 30" AVERAGE 36" TO 42".  
 USE MANUFACTURED CONNECTIONS.  
 GAP BETWEEN TILE 1/8" TO 1/4".  
 BLIND TILE WITH TOP SOIL.  
 TILE OUTLETS INTO OPEN CHANNELS SHOULD BE GUARDED  
 TO EXCLUDE RODENTS.  
 TILE OUTLETS INTO OPEN CHANNELS SHOULD BE GUARDED  
 BY METAL PIPE EXTENDED FROM DITCH BANK.  
 \* TILE MAINS LAID ON A GREATER SLOPE THAN 1.0%  
 SHOULD BE LAID CLOSE AND EARTH TAMPED AROUND  
 THE TILE.  
 ACRES BENEFITED 20  
 SPECIAL CONDITIONS None

## LEGEND

ROAD  
 FENCE  
 PROPERTY LINE  
 EXISTING TILE  
 PROPOSED TILE  
 NEW INSTALLED TILE  
 STATIONS  
 BENCH MARK  
 LANE  
 STREAM  
 CONTOUR ELEVATIONS  
 SOIL TYPE SYMBOLS 6086  
 BREATHER-RELIEF WELL  
 OTHER

Bench Mark

B.M.#1

Elev 100.00'

Now open ditch

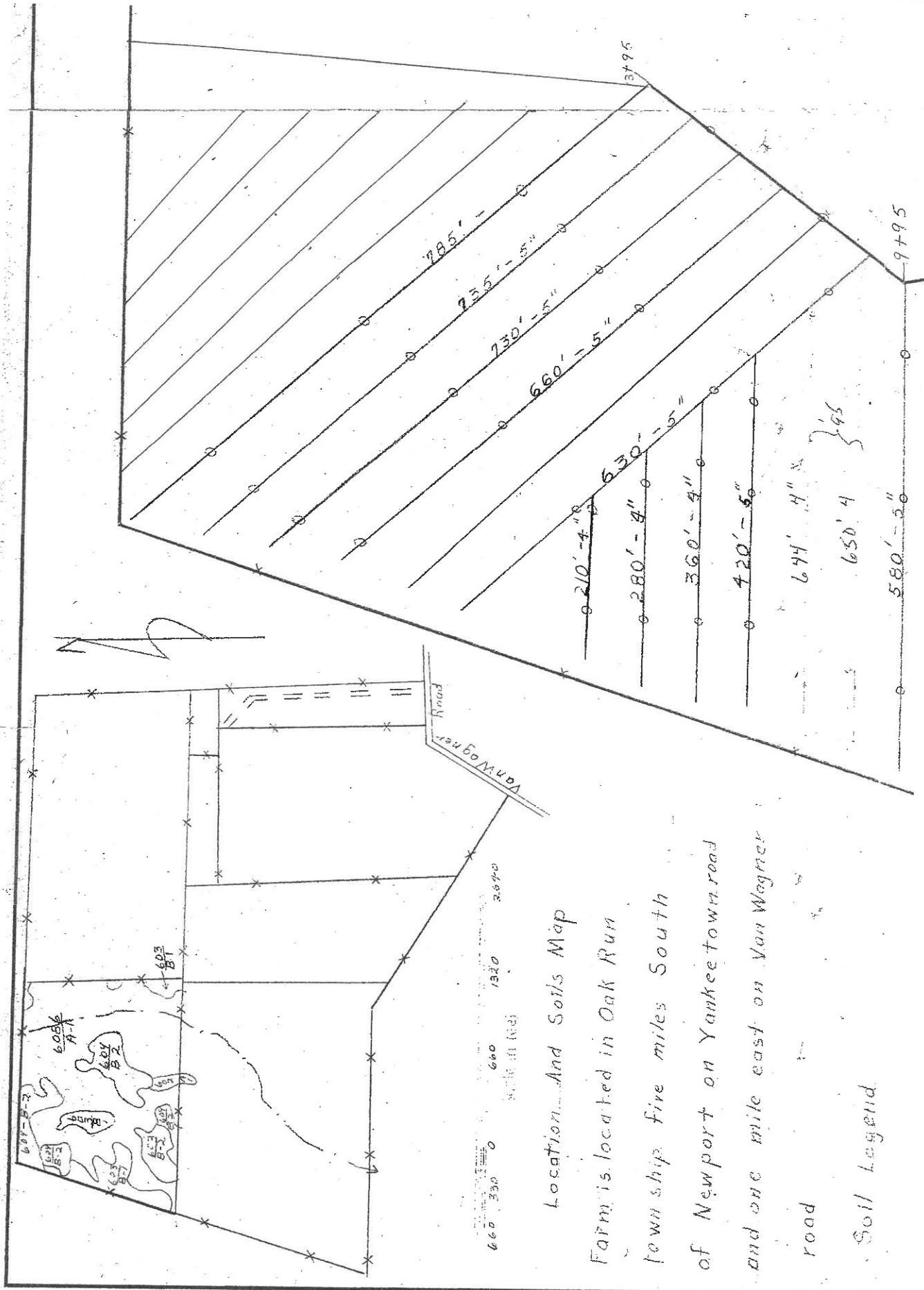
Comp. Road in '91

85'

5'

3795

795



### Location And Soils Map

Farm is located in Oak Run township five miles South of Newport on Yankeetown road and one mile east on Van Wagner road

Soil Legend



Scale in feet

3. 4. 5.

1170'-6" Sub Main-A & 325'-8"

Normal Ground

Title Grade

Sub Maki A

8+0.0

10-00

12500

14-00

F.O. 6

ELEVATIONS  
(ASSUMED)

95.0

~~0.50~~

Madison County

Bennie Miller

Asbuilt tile drainage plan

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Designed	Date	Approved by
Frank Wilson		D. C. Colburn
Drawn	Title	
		LAG ENG.

John A. Jacobs

[illegible]



# Soil Legend

602 - Crosby

603 - Celina

604 - Miami

608 - Brookston

## Materials

6" dia tile 1170' Lineal Ft

4" dia tile 850' Lineal Ft

5" dia tile 5190' Lineal Ft

8" dia tile 225' Lineal Ft

Total Lineal Ft 7435

## TILE DESIGN DATA

Line	Station	Grade	Size	Investigation No.	Vol.	Sheet
Existing	12	0.15%	12"	90	9260	40
Sub Main A	0+00	0.15%	8"	30	37	76
Sub Main A	2+25	0.20%	6"	20	19	140

1000

950

900

Outlet discontinue

to be adequate

by field inspection

at station 12

0+00 Elev 121.11 to 121.49 2+00

225' 8"

0.15% Grade

1

1170' - 6"

0.26% Grade

1

8+00

10+00

Normal Grpund

Tile Grade

Sub Main A

8+00

10+00

4420

Atat Line 360' From Pole in 22A.

P.L.  
File Line

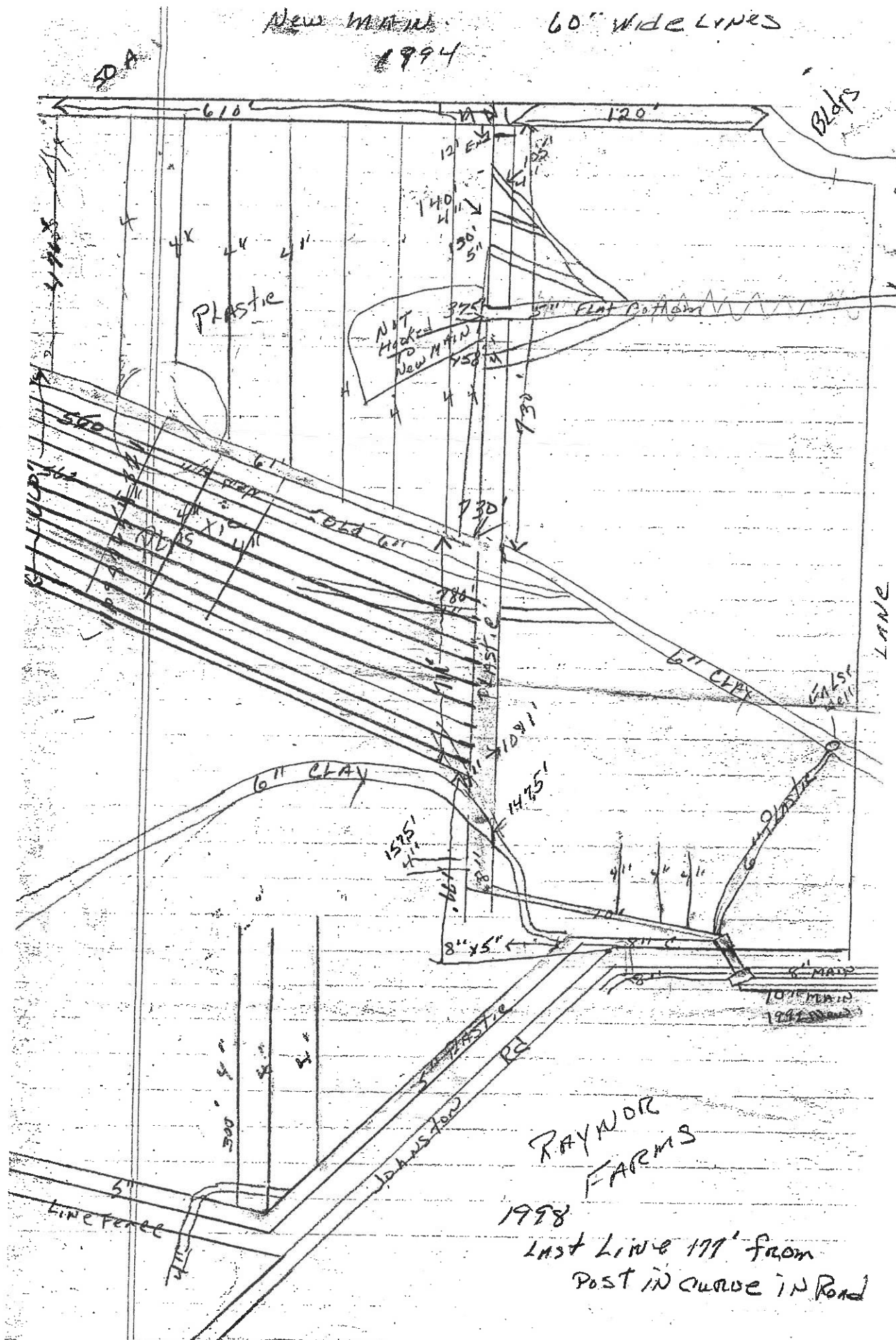
12 mi 11/2"

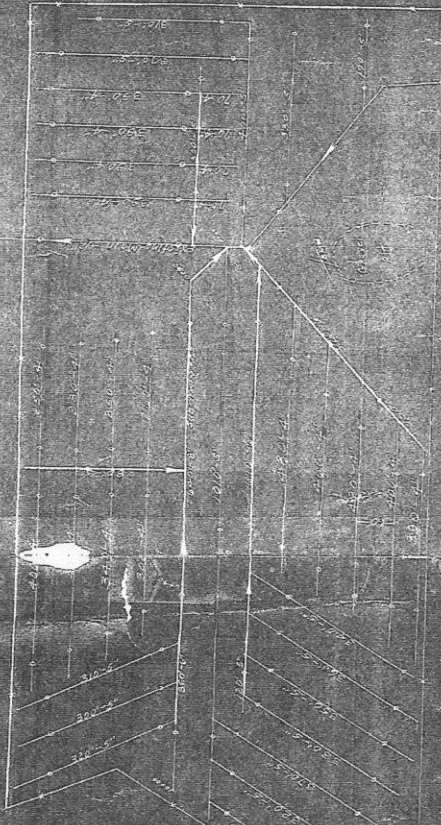
360'

Pole

60" Wide Lines

1994





Scale in feet

ROAD  
FENCE  
PROPERTY LINE  
EXISTING TILE  
PROPOSED TILE  
NEW INSTALLED TILE  
STATIONS  
BENCH MARK  
CULVERT  
SOFT SPOTS  
ELEVATIONS  
SYMBOLS  
BRIGHTEN-RELIEF  
WELL  
OTHER

TILE SPACING 60 FT. EXCEPTIONS NOTED ON PLAN.  
 MINIMUM DEPTH OF EXTERNALS 30", AVERAGE 30" TO 42".  
 USE UNREINFORCED CONCRECTIONS.  
 GUTTERS 18" WIDE 18" TO 22".  
 BLIND TILE IN TOPSIDE \_\_\_\_\_  
 TILE JOINTS AND OPEN CHANNELS SHOULD BE GUARDED  
 TO PREVENT FALLOUT OF DEBRIS.  
 TILE MANHOLES AND EXPOSED CHANNELS SHOULD BE GUARDED  
 BY METAL GRATES EXTENDING FROM DRAIN  
 TILE MANHOLES AND ON GREATER SLOPE THAN 1:60  
 SHOULD BE Laid ABOVE AND EARTH TAMPED AROUND  
 IN TILE \_\_\_\_\_  
 ACCESS SPECIFIED 20 \_\_\_\_\_  
 SPECIAL CONDITIONS \_\_\_\_\_

**MAINTENANCE**  
THE CROP ROTATION SHOULD CONTAIN DEEP-ROOTED LEGUMES AND GRASS CROPS TO KEEP THE SOIL IN A CONDITION SO THAT WATER CAN GET TO THE TILLAGE. REGULAR INSPECTION AND PROMPT REPAIRS TO YOUR SYSTEM ARE ESSENTIAL. THE GUILLET MUST BE KEPT OPEN AND FREE OF SILT AND DEBRIS AT ALL TIMES.

Line	Station	Grade	Size	actual (cu) in 24 hr
Existing 15		6.10%	16"	8.5
Submain 4	eee	6.45%	8"	6.0
		6.30%	6"	2.3

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Wilson + Jacobs - 7521  
Selling - 7521  
Title - 7521  
Appraisal - 7521  
Insurance - 7521

[illegible]

Form 505-310 (November 1995)

fox squirrel solar

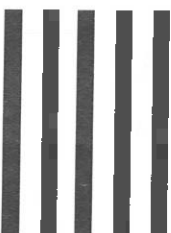
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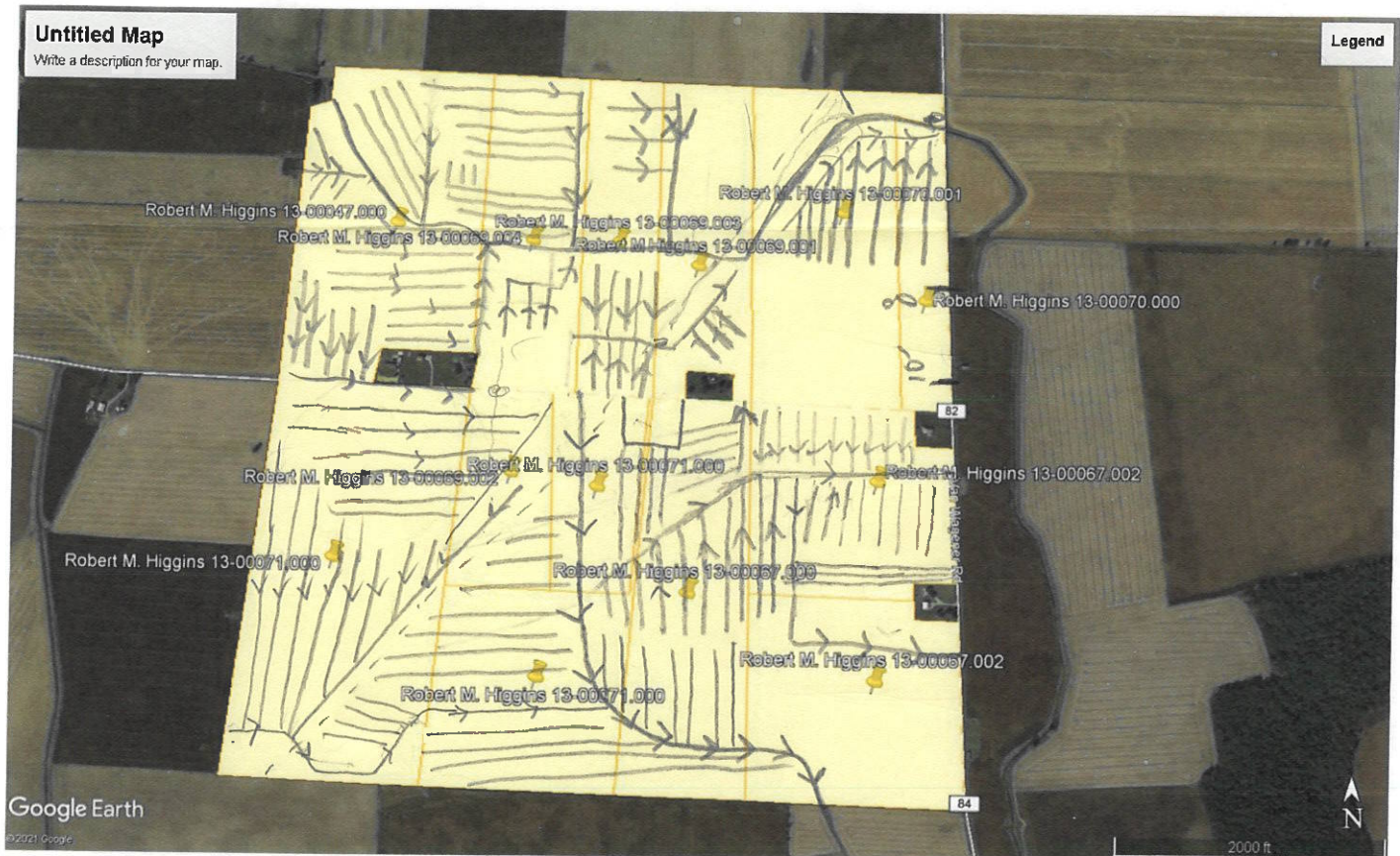




4. If you answered Yes above, please use the attached map to sketch the location of the drainage systems to the best of your ability.

(See attached map)

If you have any questions, please call EDF Renewables' Landowner Helpline at 844.943.0723



**DRAINAGE QUESTIONNAIRE**

1. Are you aware of any drainage systems located on your property such as drain tile?  
(circle Yes or No)

Yes

No

2. If you answered Yes above, please describe the drainage systems to the best of your ability (type, size, condition, installer, date installed, how maintained, etc.):

There is a tile system on ~~the~~ majority of the farm. I have included a rough sketch of where the tiles are. There are a couple areas that have tile, we just could not locate the maps. Majority of the tile is perforated plastic tile, ranging from 4" laterals to 12" mains. The tile was installed ~~beginning~~ beginning in the mid 70's up to the early 90's. We do have some ~~at the~~ blueprint maps for the surveyors and or engineers to look at when the time comes.

3. If you answered Yes above, please describe and provide any relevant records such as receipts or maps provided by installers:

we will provide maps when they are needed.



**DRAINAGE QUESTIONNAIRE**

1. Are you aware of any drainage systems located on your property such as drain tile?  
(circle Yes or No)

Yes

No

2. If you answered Yes above, please describe the drainage systems to the best of your ability (type, size, condition, installer, date installed, how maintained, etc.):

Jim Daugherty

Main Tile 8"

Runs 6"

Various Years

Year of 2006 - 2012

3. If you answered Yes above, please describe and provide any relevant records such as receipts or maps provided by installers:

ADS systematic tiled



4. If you answered Yes above, please use the attached map to sketch the location of the drainage systems to the best of your ability.

(See attached map)

If you have any questions, please call EDF Renewables' Landowner Helpline at 844.943.0723



40' Centers



## **Exhibit “B”**



**Legend**

**Tile**

**Tile Size**

- Unknown
- 10"
- 12"
- 14"
- 15"
- 16"
- 18"
- 2"
- 20"
- 22"
- 24"
- 3"
- 4"
- 5"
- 6"
- 7"
- 8"



1 inch = 1,750 feet



## **Exhibit “C”**

Filo Farms LLC



151

9

85

85

Google Earth

© 2021 Google





# Ben-Elen Farms

Madison Ditch

Johnston Rd 85





# Robert M. Higgins Farm



Madden Higgins Rd

82

84

82

82

84

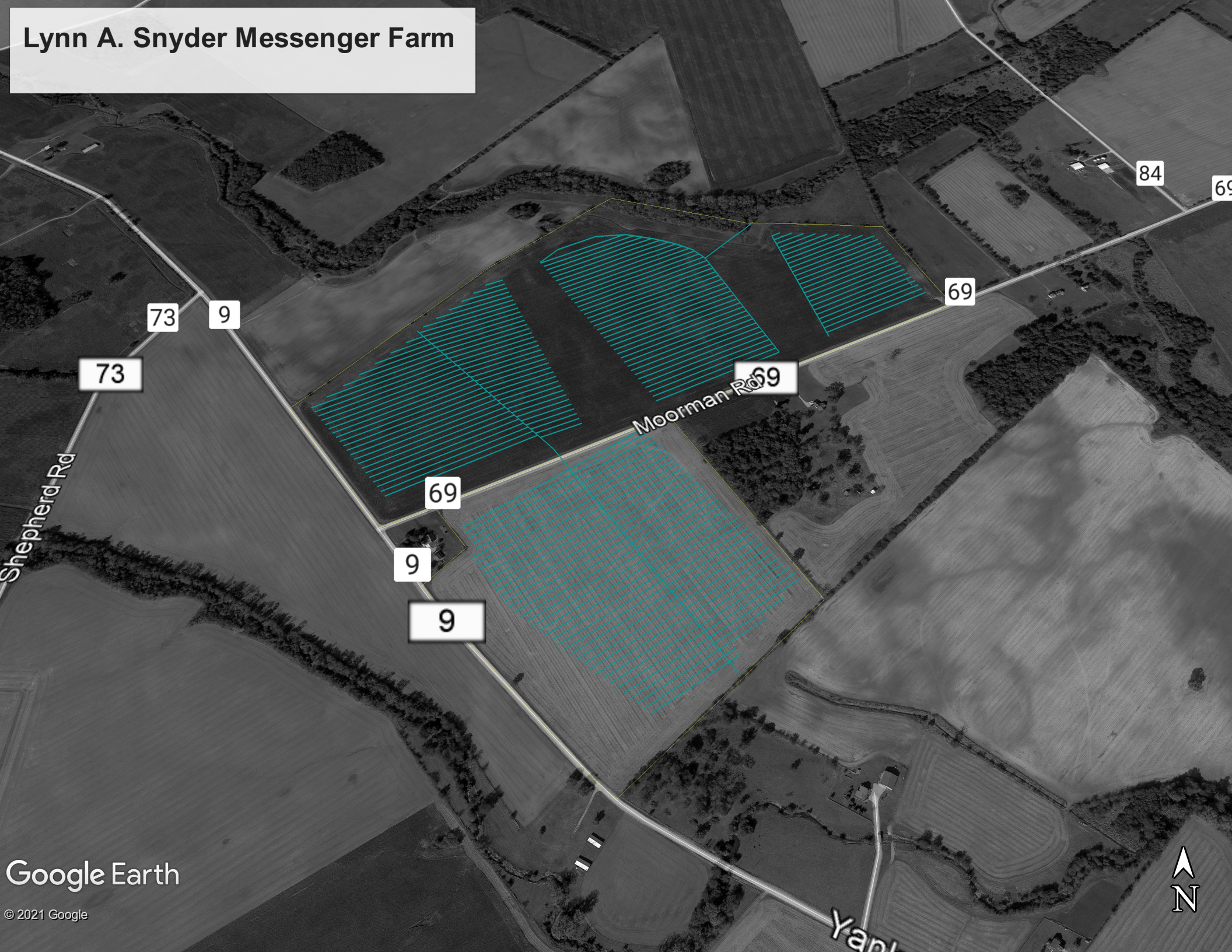
84

84





# Lynn A. Snyder Messenger Farm



Google Earth

© 2021 Google





**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**10/8/2021 3:50:19 PM**

**in**

**Case No(s). 21-1031-EL-BGA**

Summary: Application - 24 of 24 (Exhibit U - Agricultural Field Drainage Inventory)  
electronically filed by Christine M.T. Pirik on behalf of Fox Squirrel Solar, LLC