

October 21, 2026

RE: Drainage Analysis

Dear Prospective Buyer:

As part of Peoples Company's commitment to providing comprehensive information to prospective buyers, we have engaged Pinion, LLC ("Pinion") to prepare a drainage analysis for the Warren County, IL farmland being offered at auction on November 17, 2026 (the "Property"). This report is available for your review on our website.

This analysis and report is intended as a planning tool only and does not reflect any knowledge of actual drainage tile installed on the Property, whether it be location of drainage of tile or size of drainage tile. Please refer to the last page of this report for the full Pinion disclaimer. Neither Peoples Company nor Seller represents or warrants the accuracy or completeness of the attached reports prepared by Pinion.

Pinion can be reached at **(217) 768-4930**.

We appreciate your interest in the Property and trust these materials will be a helpful resource as you evaluate this opportunity. Please do not hesitate to contact us with any questions regarding the Property.

Sincerely,

Peoples Company
Eric Sarff & Matt Myers
Listing Agents



DT-101

0

Dwg No:

Sheet Rev:

Drawing Title:

Proposed Drain Tile Design

Drawn by: C Gass

Scale: 1"=40'

Project:

Tilton East

2700 NORTH MAIN STREET, MOWEAEQUA, ILLINOIS 62550

Phone : (217) 768-4930, Fax : (217) 768-3041

Rev	Issued For	Date	Init
0	Review	10/9/26	CG



Drainage Design Report



Project: Tilton East
Location: Warren County, IL
Owner: Peoples Company
Prepared by: Pinion Land Advisory

Generated: October 6, 2026

Figure 1: Drainage System Overview

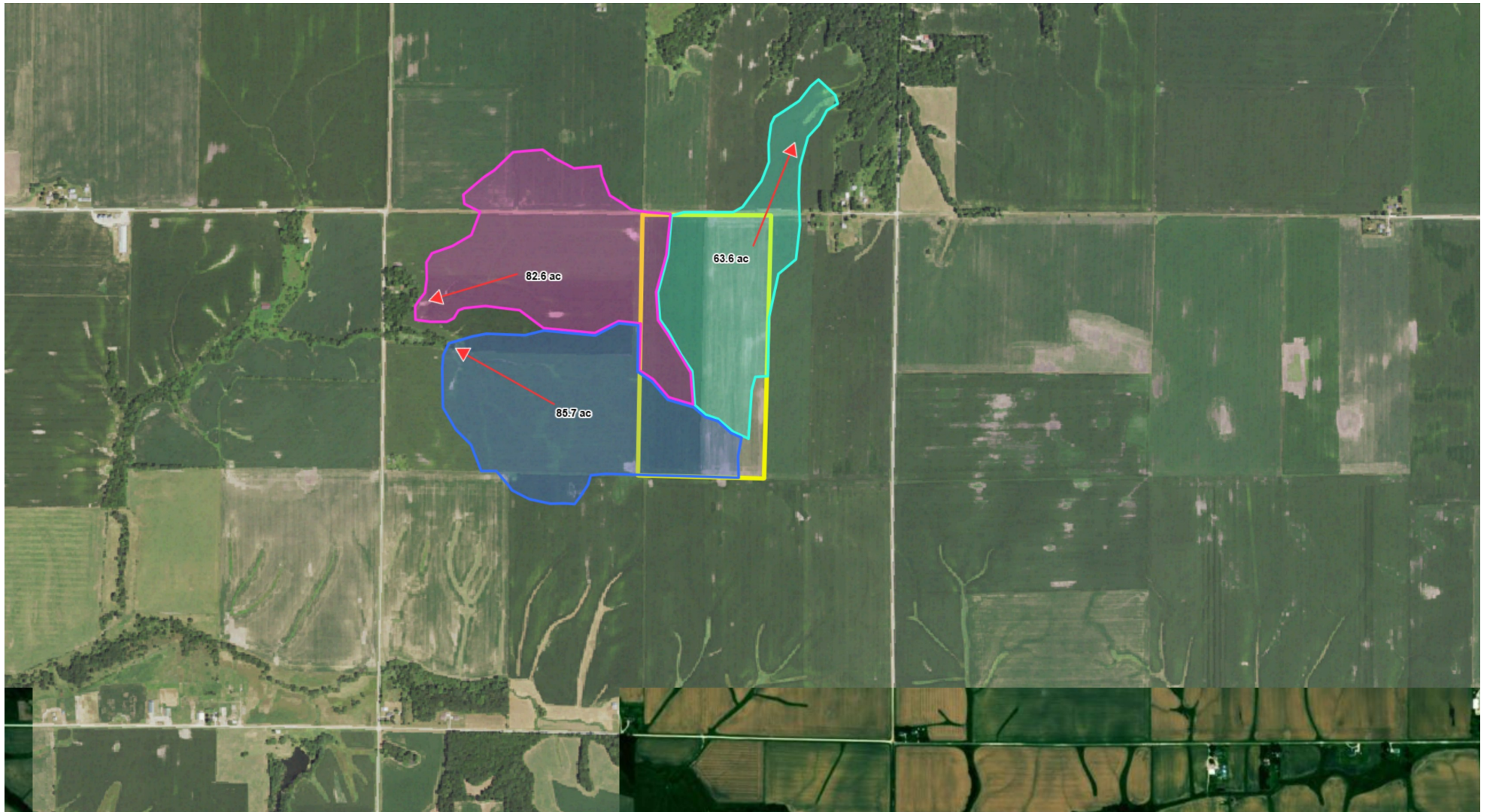




Figure 2: Full Design Map

Pipe sizes: 4" 6" 8" 10" 12" (SW/DW) Coloured dashed line = dual-wall

Watershed



System Summary

Entered for this report: the preparer named on the cover. These are supplied figures, not results measured from the design.

Metric	Value	Pipe size	Length
Field area	182.2 ac	4"	54,077 ft
Est. Area Drained	80.3 ac	6"	312 ft
Runs	69 (1 tile main, 1 tile sub-main, 67 tile laterals)	8"	2,380 ft
Total Length	61,768 ft	10"	660 ft
Tile Drainage Density (per drained acre)	769.4 ft/acre	12"	4,340 ft

Drainage Coverage

Ground inside the field boundary that lies within the drained width of a tile run, by the drainage class of the soil survey map units.

Ground	Area	Within a drained width	Outside
Somewhat poorly drained or poorly drained soils	149.3 ac	78.9 ac (53%)	70.5 ac
Moderately well drained or well drained soils	32.8 ac	1.1 ac (3%)	31.8 ac
All ground inside the boundary	182.2 ac	79.9 ac (44%)	102.3 ac

Areas outside every drained width, largest first

#	Area	Mean ground elevation	Of which somewhat poorly drained or poorly drained soils
1	100.2 ac	765.8 ft	68.4 ac
2	0.4 ac	770.5 ft	0.4 ac
3	0.4 ac	767.2 ft	0.4 ac
4	0.2 ac	770.7 ft	0.2 ac
5	0.2 ac	772.2 ft	0.2 ac

46 areas under 0.10 ac: 0.9 ac in total.

Material Requirements

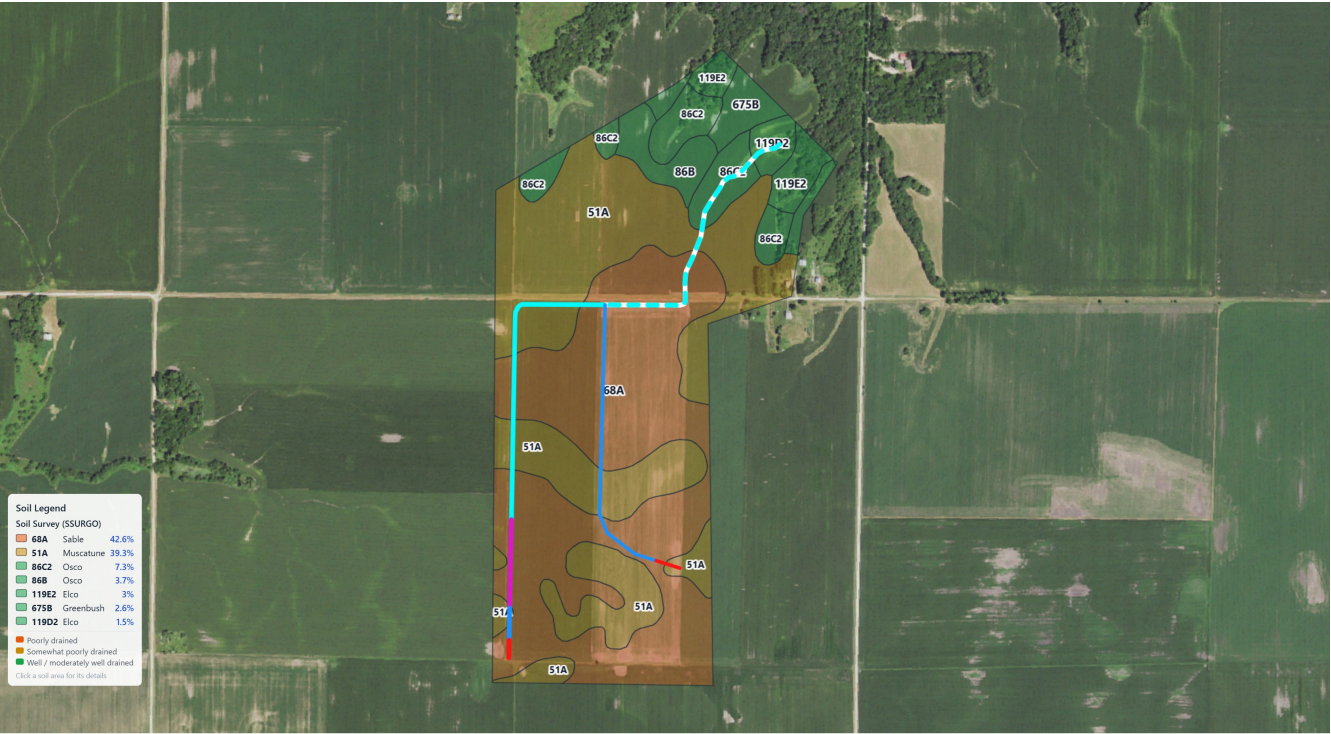
Size	Wall Type	Perforation	Total Length (ft)
4"	SW	Regular	54,077
6"	SW	Regular	312
8"	SW	Regular	2,380
10"	SW	Regular	660
12"	DW	Regular	2,100

Size	Wall Type	Perforation	Total Length (ft)
12"	SW	Regular	2,240
TOTAL			61,768

Soil Information

Source: USDA SSURGO (1:12,000)

Soil Survey Map



Map Units: 119D2 = Elco | 119E2 = Elco | 51A = Muscatune | 675B = Greenbush | 68A = Sable | 86B = Osco | 86C2 = Osco

Soil Properties

Symbol	Soil Name	Texture	Sand/Silt/Clay %	Profile Ksat (µm/s)	Limiting Ksat (µm/s, depth)	Drainage Class	Hydro Group	Water Table	Field %
119D2	Elco	Silt loam	4/73/23	5.87 (0–137 cm)	2.33 (2Bt2, 71–200 cm)	Moderately well drained	C	27"	1.5%
119E2	Elco	Silt loam	4/72/24	6.37 (0–137 cm)	2.33 (2Bt2, 81–200 cm)	Moderately well drained	C	27"	3%
51A	Muscature	Silt loam	3/71/26	9.17 (0–137 cm)	9.17 (Ap, 0–44 cm)	Somewhat poorly drained	B/D	18"	39.3%
675B	Greenbush	Silt loam	4/75/21	9.17 (0–137 cm)	9.17 (Ap, 0–18 cm)	Well drained	B	60"	2.6%
68A	Sable	Silty clay loam	2/66/32	9.17 (0–137 cm)	9.17 (Ap, 0–58 cm)	Poorly drained	B/D	6"	42.6%
86B	Oscos	Silt loam	4/72/24	9.17 (0–137 cm)	9.17 (Ap, 0–36 cm)	Well drained	B	60"	3.7%
86C2	Oscos	Silt loam	3/74/23	9.17 (0–137 cm)	9.17 (Ap, 0–23 cm)	Well drained	B	60"	7.3%

Drainage Recommendations by Soil Unit

These are starting ranges derived from the soil survey data above. They describe the soil, not the drainage system drawn in this report.

Symbol	Spacing	Depth	Drain Coeff.	Envelope	Envelope Reason
119D2 (1)	40–65 ft	3.0–3.5 ft	0.250–0.375 in/day	Geotextile sock recommended	Moderate clay (23%) but high silt (73%) — siltation risk (Stuyt et al. 2005)
119E2 (2)	40–65 ft	3.0–3.5 ft	0.250–0.375 in/day	Geotextile sock recommended	Moderate clay (24%) but high silt (72%) — siltation risk (Stuyt et al. 2005)
51A (3)	50–80 ft	3.5–4.0 ft	0.375–0.500 in/day	Geotextile sock recommended	Moderate clay (26%) but high silt (71%) — siltation risk (Stuyt et al. 2005)
675B (4)	50–80 ft	3.5–4.0 ft	0.250–0.375 in/day	Geotextile sock recommended	Moderate clay (21%) but high silt (75%) — siltation risk (Stuyt et al. 2005)
68A (5)	40–65 ft	3.0–3.5 ft	0.375–0.500 in/day	No envelope needed - regular perforated	Clay 32%; the soil holds together, so it does not wash into the pipe (Stuyt et al. 2005)
86B (6)	50–80 ft	3.5–4.0 ft	0.250–0.375 in/day	Geotextile sock recommended	Moderate clay (24%) but high silt (72%) — siltation risk (Stuyt et al. 2005)
86C2 (7)	50–80 ft	3.5–4.0 ft	0.250–0.375 in/day	Geotextile sock recommended	Moderate clay (23%) but high silt (74%) — siltation risk (Stuyt et al. 2005)

1. 119D2 — Narrower of drainage class (Moderately well drained: 60–100 ft) and texture / Ksat (Silty clay loam at 2.33 µm/s limiting: 40–65 ft). Spacing follows the limiting horizon (2.33 µm/s at 71–200 cm) rather than the thickness-weighted profile value of 5.87 µm/s.

2. 119E2 — Narrower of drainage class (Moderately well drained: 60–100 ft) and texture / Ksat (Silty clay loam at 2.33 µm/s limiting: 40–65 ft). Spacing follows the limiting horizon (2.33 µm/s at 81–200 cm) rather than the thickness-weighted profile value of 6.37 µm/s.

3. 51A — Narrower of drainage class (Somewhat poorly drained: 50–80 ft) and texture / Ksat (Silt loam at 9.17 µm/s limiting: 50–80 ft).

4. 675B — Narrower of drainage class (Well drained: 80–120 ft) and texture / Ksat (Silt loam at 9.17 µm/s limiting: 50–80 ft).

5. 68A — Narrower of drainage class (Poorly drained: 40–70 ft) and texture / Ksat (Silty clay loam at 9.17 µm/s limiting: 40–65 ft).

6. 86B — Narrower of drainage class (Well drained: 80–120 ft) and texture / Ksat (Silt loam at 9.17 µm/s limiting: 50–80 ft).

7. 86C2 — Narrower of drainage class (Well drained: 80–120 ft) and texture / Ksat (Silt loam at 9.17 µm/s limiting: 50–80 ft).

Disclaimer: Soil-based drainage recommendations are general guidelines derived from published sources (NRCS Engineering Field Handbook Ch. 14, ASAE EP260.5, Iowa Drainage Guide PM 1048, Ontario Drainage Guide, Stuyt et al. 2005). Actual spacing, depth, and envelope requirements depend on site-specific conditions including topography, water table depth, outlet availability, and field observations. Some jurisdictions permit only lower drainage coefficients than shown. These recommendations should be verified by a qualified drainage professional before use in design.

Design Parameters

Project Drainage Coefficient	0.375 in/day
Drainage Coefficient Sized At	0.375 in/day
Lateral Spacing	60–72 ft (most common 60 ft)
Min Depth	2.5–3.5 ft
Max Depth - Laterals and Sub-mains	4.0–5.0 ft
Max Depth - Mains	6.5 ft
Min Grade	0.10%
Target Depth	3.3–5.0 ft

IMPORTANT NOTICE: Design Limitations and Proper Use

This report is a **PLANNING TOOL ONLY** and does not constitute engineering specifications or installation-ready construction plans. The values, layouts, and recommendations shown are for preliminary design and budgeting purposes only.

LIMITATIONS AND ASSUMPTIONS:

- **Soil Conditions Not Accounted For:**

Flow capacity calculations assume pipes will run full under design conditions. Actual performance depends on soil type, permeability, and field conditions. In tight soils, pipes may not fill as assumed, affecting actual drainage capacity.

- **Elevation Data Source:**

Elevations in this report come from: USGS 3DEP 1 m LiDAR · IL MidNorth (1 m cell). Heights are NAVD88. No vertical accuracy is published for this surface, so none is claimed here. Remote-sensed elevation is a historical snapshot: capture dates are often not published, water standing in depressions reads as a water surface (flat in profiles), and dense vegetation can read higher than the ground beneath it. Real-Time Kinematic (RTK) survey measures the field as it is on the day and must be used for all field surveying and installation work.

- **Generalization and Smoothing:**

This planning tool uses smoothing algorithms and generalizations to create feasible drainage layouts. Actual field conditions may require adjustments to routes, depths, and grades.

- **Installation Route Variations:**

Actual installed drain routes may vary from designed routes due to field obstacles, soil conditions, utilities, or other site-specific factors encountered during installation.

INSTALLATION WARNING:

Direct installation of drainage systems using exported design files from this software is **NOT RECOMMENDED** and **NOT ENDORSED**. While it may be technically possible to load design files into certain machine control systems, doing so without proper field verification can result in inadequate drainage, code violations, or system failure.

REQUIRED INSTALLATION PROCEDURE:

Each drainage run **MUST** be re-surveyed in the field using RTK GPS and designed within a suitable machine control system with best-fit or grade optimization capabilities. Use the values from this report (target depths, minimum/maximum depth constraints, minimum grade requirements, lateral spacing, etc.) as **INPUT PARAMETERS** for your machine control system, **NOT** as exact specifications to be installed directly.

PROFESSIONAL ENGINEERING:

Depending on project scale, location, and local regulations, professional engineering review, stamped plans, and permits may be required. Consult with local authorities and qualified professionals before proceeding with installation. The user assumes all responsibility for compliance with applicable codes, regulations, and professional standards.

WARRANTY DISCLAIMER:

This software and its outputs are provided "as-is" without warranty of any kind. No guarantee is made regarding the accuracy, completeness, or suitability of this report for any particular purpose.

By using this report, you acknowledge that you have read, understood, and agree to these limitations and requirements.