



PO Box 44
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Commissioner's Report

Drainage District No. 40 Reclassification

Worth County, Iowa
2025

 A circular professional engineer seal. The outer ring contains the text "PROFESSIONAL ENGINEER" at the top and "IOWA" at the bottom, with two stars at the bottom. The inner circle contains the name "JACOB L. HAGAN" and the license number "25738".	<p>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p> <p> <u>10/27/25</u> Jacob L. Hagan, P.E. (date) License No. 25738 My license renewal date is December 31, 2026. Pages or sheets covered by this seal: <u>All</u></p>
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Introduction

Overview

When drainage infrastructure needs repaired or improved, landowners have the legal right to request work order repairs or to petition for major repairs or improvements. The costs of these repairs or improvements require an assessment schedule to allocate expenses fairly. Because each parcel of land may receive a different level of benefit from the district facilities, each parcel's share of the cost may vary accordingly.

Recognizing that the current assessment schedule had not been updated since its original adoption, the Worth County Board of Supervisors serving as the trustees of the district determined that the existing schedule was not equitable. As authorized under Iowa Code §468.65, the Board appointed Jacob Hagan of AgriVia as a qualified engineer, along with Worth County resident freeholders Mike Stevens and Nathaniel Julseth, to form a Reclassification Commission. This report presents the findings and recommendations of that commission.

Location

Drainage District No. 40 (DD 40) serves approximately 1,646 acres including lands in Sections 5-9, 17 of Kensett Township, Sections 1-2 of Brookfield Township, and Sections 31, and 36 of Hartland Township in Worth County, Iowa. A Map of the DD 40 benefitted area is included in Appendix A.

Benefits of Drainage

Crop Yield Response

A 1983 ISU study found that poor drainage can reduce yields by up to 32%, but installing tile in these areas often provides strong economic returns. A table showing yield increases from that study is provided below:

Soil Drainage Class	Poor Drainage (Less than $\frac{1}{4}$ " Drainage Coefficient)		High Drainage ($\frac{1}{2}$ " Drainage Coefficient)		Percent Increase	
	Corn Yield (bu/acre)	Soybeans Yield (bu/acre)	Corn Yield (bu/acre)	Soybeans Yield (bu/acre)	Corn Yield	Soybeans Yield
Very Poorly Drained	28	12	123	48	339%	300%
Poorly Drained	80	31	121	47	51%	52%
Somewhat Poorly Drained	90	34	124	48	38%	41%

Long-term research from Ohio State University found similar benefits. Their data showed that tiled fields produced 24–39% more corn and 12–45% more soybeans compared to untilled ground. Benefit-cost ratios ranged from 1.7:1 up to 4:1, meaning a return of \$3–\$4 for every \$1 invested in tile.

Additionally, the soil ratings (CSR2) used in this report assume proper drainage is in place. This means poorly drained soils are rated based on their potential with tile, not their current condition. As a result, soils with high potential held back by poor drainage may offer some of the best economic returns when drainage is improved.

For more detail, we have included a summary of drainage benefits from Ohio State in Appendix B.

Non-Crop Benefits

Drainage districts do not just serve farmland. Acreages, conservation areas, and other rural homes depend on district infrastructure to lower the water table, keep basements dry, and manage stormwater that would otherwise pool in yards and create muddy driveways for example. These properties benefit from better growing conditions for trees and gardens, similar to how urban properties benefit from storm sewer systems.

Public roads are another example. Modern roadways, especially paved ones, shed water quickly. That runoff often enters the drainage system through roadside intakes. Drier roads and driveways are more durable, easier to maintain, and less prone to erosion or frost damage. Iowa Code 468.43 allows for assessing roads because they directly benefit from district facilities.

Many game animals, particularly those favored by hunters, prefer drier upland habitats over persistently wet swamp conditions. Uplands offer better cover, forage, and nesting opportunities without the risks associated with flooding or poor drainage. Likewise, many of Iowa's native upland plants and trees cannot tolerate extended flooding, as prolonged saturation leads to root rot, oxygen deprivation, and eventual death, often within 7 to 14 days of submersion. These species thrive on well-drained uplands but quickly "drown out" in swampy areas, resulting in reduced forage and cover for upland wildlife.

There are also public health benefits. In the early days, before drainage districts existed, wetlands across Iowa were breeding grounds for mosquitoes and disease. The law (Iowa Code 468.2) recognizes drainage as a tool to improve public health, safety, and overall welfare.

Landscape Considerations

District Landscape

Drainage District No. 40 serves a watershed defined by a low-lying area near the outlet within the Shell Rock River plain connected to a narrow valley that drains the low-lying areas on the upper lands of the watershed. The current landscape includes a considerable number of acres not used for row crop cultivation, such as pasture, woodland, grassland, and wetland areas particularly in the upper reach of the watershed. Historical aerial imagery suggests that the district has consistently included large areas of non-row crop land since its establishment. The 1950s aerial photo in Appendix C illustrates this.

To better understand the watershed, we used publicly available LiDAR (Light Detection and Ranging) technology to map the district's surface topography. LiDAR uses laser pulses from aircraft to produce highly accurate elevation data, allowing us to identify natural drainage patterns and areas of water accumulation. Based on this analysis, we determined that 1,646 acres drain to the district's facilities. An elevation map is included in Appendix D, and a water flow paths map is included in Appendix E.

Soils

The soils in this drainage district are primarily silts and clays. Common soil types include Saude, Wauke, Wapsie, with slopes ranging from flat to moderately steep. Drainage classes vary across the district as shown below:

Soil Drainage Class		
Drain Class	Acres	Percentage of Watershed
Very Poorly Drained	173	10.5%
Poorly Drained	230	14.0%
Somewhat Poorly Drained	137	8.3%
Moderately Well Drained	119	7.3%
Well Drained	963	58.5%
Excessively Well Drained	24	1.4%

Private Drainage

The primary purpose of a drainage district is to provide a legal and reliable outlet for surface and subsurface drainage, allowing coordinated water management across multiple properties. While the district maintains shared infrastructure, such as main tile lines and open ditches, individual landowners are responsible for installing and maintaining private tile systems on their land to connect to and benefit from the district system.

Water Flow Behavior

Subsurface drainage systems collect excess water using perforated pipes or clay tiles installed below ground. As the soil becomes saturated, water moves through the soil's pores and enters the tile system through small openings. The water is then carried away to the district main. This process lowers the water table, improves soil aeration, and reduces surface runoff.

A key soil property in drainage design is saturated hydraulic conductivity (Ksat), which measures how quickly water moves through saturated soil. Sandy soils have high Ksat values and drain quickly, while clay soils, such as those common in District No. 40, have lower Ksat values and drain more slowly. Most soils in the district are classified as clay loams, with moderate to low Ksat values. These values are used to determine appropriate drainage coefficients and to guide decisions on tile spacing and depth for an effective and efficient drainage system.

In addition to managing subsurface water, it is important to consider the risk of surface erosion. This is measured by the K factor, which indicates how easily soil particles can be detached and transported by water. Soils with high K values are more prone to erosion, particularly on sloped ground or where vegetation is sparse.

Existing Infrastructure

Existing Tile Review

The existing tile system was installed in 1919, and the original plans and profiles, and historical records are on file at the Worth County Courthouse. As part of the reclassification process, we did not investigate the current condition of the tile. A summary of the drainage district main and lateral tile sizes, and grades is provided in the table below:

Drainage District No. 40 Existing Tile		
Section Name	Diameter (inches)	Grade (%)
Main (Stations 0-20)	20	Unknown
Main (Stations 20-50)	16	Unknown
Main (Stations 50-64)	15	Unknown
Main (Stations 64-74)	14	Unknown
Main (Stations 74-88)	12	Unknown
Lateral No. 1 (Stations 0-25)	10-8	0.20
Lateral No. 2 (Stations 0-16)	12-6	0.20
Lateral No. 3 (Stations 0-14)	10	0.20
Lateral No. 4 (Stations 0-8)	8	0.20
Lateral No. 5 (Stations 0-13)	6	1.45
Lateral No. 6 (Stations 0-7)	6	0.70

Classification Method

Rules of Classification

The classification method used in this reclassification was selected to align with the requirements of Iowa Code §468.40, incorporate accurate and publicly available data, and ensure a fair and transparent approach to assigning benefits across all parcels in the district. The methodology combines legal compliance with technical precision and is designed to produce equitable assessments for landowners.

Under Iowa law, drainage district assessments must be based on the benefits land receives from the original construction of the district's drainage infrastructure. Section 468.40 outlines three specific types of benefit that must be considered:

- Bringing the outlet nearer to the land
- Relieving the land from overflow and protecting it from erosion
- Affording the land an outlet for drainage

To determine how much a parcel benefits from the **outlet being brought nearer**, we compared the pre-district drainage outlet distance to the now shorter distance made possible by the constructed facilities. Measurements were calculated using spatial data for each one-acre square within the district.

Relieving the lands from overflow and erosion protection was assessed using five soil-based indicators: drainage class, depth to the water table, saturated hydraulic conductivity (Ksat), Corn Suitability Rating (CSR2), and soil erodibility (K-factor). These values were extracted from USDA-NRCS soil surveys, allowing us to evaluate how effectively drainage can improve crop productivity, field trafficability, and soil health. They help identify where drainage will provide the most economic benefit.

Affording an outlet was addressed through a composite analysis involving average slope from each one-acre square to the facility, the parcel's position along the drainage system (i.e., its share of infrastructure), and its proximity to the facility. This allowed for a comprehensive assessment of both physical drainage need and relative use of the system.

Land Use

It is important to understand that the classification method does not take current land use into account—except in the case of state-owned lakes. Landowners are free to manage their land as they choose, regardless of how much benefit they receive from the drainage system.

The current classification schedule has been in place for over one hundred years, and in that time, land use on many parcels has likely changed. However, the drainage district classification process is focused on providing a drainage outlet, not on how or whether each parcel is actually drained. That decision rests entirely with the landowner.

In some cases, the classification commission may recommend adjustments based on land use, but these are typically limited to permanent land retirement or large-scale industrial developments.

Procedure

Data Collection and Preparation

For each one-acre square, key physical and soil characteristics were compiled. Elevation and slope data were derived from LiDAR datasets. Soil attributes including drainage class, depth to water table, Ksat, CSR2, and K-factor were obtained from USDA-NRCS soil surveys. In addition, spatial measurements were made to determine

each one-acre square's distance to the drainage district facility, its location along the drainage system, and the total distance to the ultimate natural outlet.

Normalization of Inputs

To evaluate different variables on the same scale, each factor was normalized to a 0–100 range. This standardization allows for weighted averaging. For example, a square where the district facility is located would receive a proximity score of one hundred, while a square more than a mile from the facility would score zero. Very poorly drained soils, which benefit most from artificial drainage, scored one hundred, while excessively well drained soils score zero in the drainage class factor.

Similarly, shallow water tables, low Ksat values, high CSR2 values, and high erodibility (K-factor) all received higher benefit scores. Proximity to the district facility, upstream position, and greater reduction in outlet distance also promotes high values.

Component Benefit Scoring

Once normalized, the inputs were used to compute scores for the three benefit categories as defined by Iowa Code. A map of each of the three component scores for the Lower Main Tile is included in Appendices F, G, and H as an example.

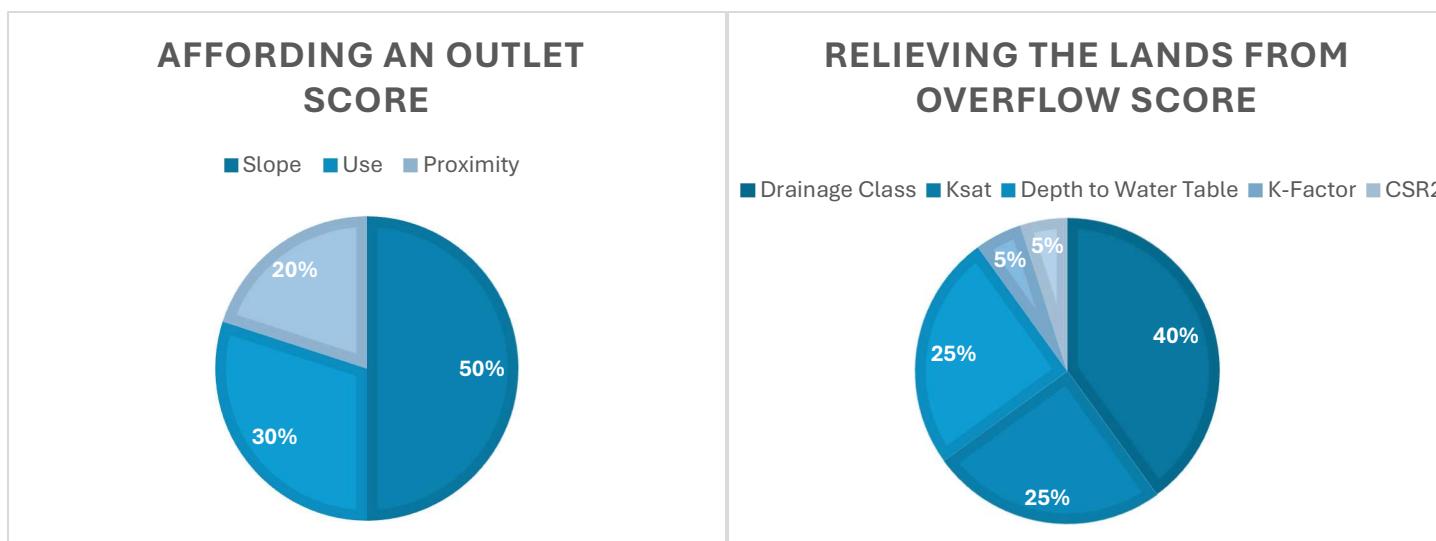
Bringing the outlet nearer is based on one score as described above.

Relieving Overflow and Erosion was based on a weighted average of the five soil characteristics:

- Drainage Class (40%)
- Ksat (25%)
- Depth to Water Table (25%)
- K-factor (5%)
- CSR2 (5%)

Affording an Outlet was calculated using a weighted average of the following factors:

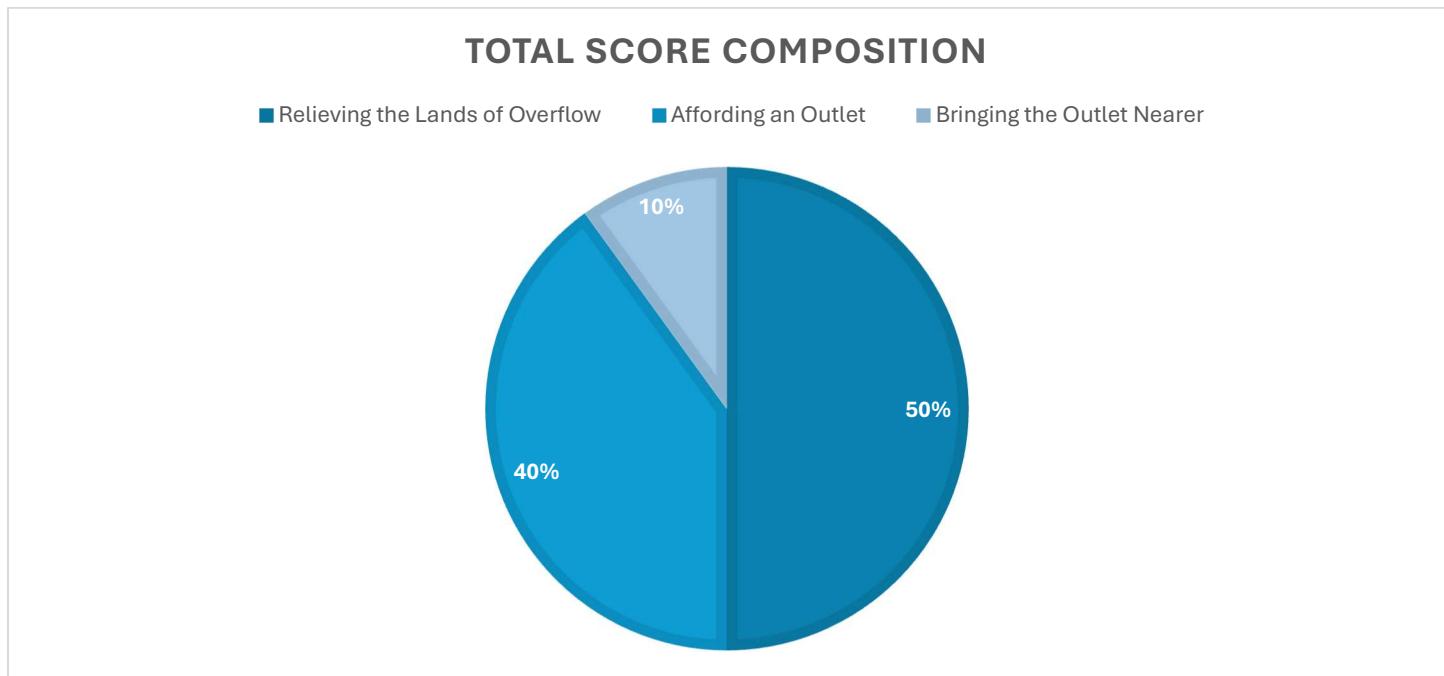
- Slope (50%)
- Infrastructure Use (30%)
- Proximity to the district system (20%)



Aggregation into Final Benefit Score

Each parcel's final benefit score was calculated using a weighted average of the three components:

- Fifty percent weight was given to **overflow and erosion relief**.
- Forty percent to **affording an outlet**.
- Ten percent to **bringing the outlet nearer**.



These weights were chosen to emphasize the core purpose of the drainage system, removing excess water from poorly drained soils, while also acknowledging infrastructure use and proximity benefits.

Additional Considerations

Because county road rights-of-way are constructed to shed water more quickly than typical land uses, an additional benefit factor is applied to account for the increased reliance on the drainage system. This results in a 20% increase in the benefit score applied to Secondary Roads within the drainage district.

We recommend dividing the Main Tile into two separate assessment schedules: the Upper Main Tile and the Lower Main Tile. This division reflects a clear difference in land use—the upper portion consists mainly of woods, pasture, and other non-cropland areas, while the lower portion is predominantly row-crop farmland. The Upper Main Tile is likely in very poor condition due to long-term tree encroachment. According to the *Iowa Drainage Guide* (Iowa State University Extension), all water-loving trees within one hundred feet of a tile should be removed to prevent root intrusion. Aerial imagery shows extensive tree growth in this area for many years, suggesting the Upper Main Tile is no longer functioning and is effectively abandoned. Restoring it to working condition would be expensive.

Additionally, the district includes several small lateral tiles. These small laterals are included within the Upper Main Tile schedule due to their short length (many less than one hundred feet). We recommend that the larger lateral tiles each have their own assessment schedule, ensuring that any future work on those tiles is funded solely by the landowners who directly benefit from them.

Landowner Considerations

Public Hearing on Report

A public hearing will be scheduled to review this reclassification report. Per Iowa Code § 468.14, all landowners in the district will be notified by mail, and notice will also be published in a local newspaper. At the hearing, we will present our findings, proposed classification schedule, and will be available to answer questions and address concerns.

The Board of Trustees will conduct the hearing and may continue it to a later date if more discussion or information is needed. No decision can be made until the hearing is held and all landowner input is considered. This report may be amended as needed in response to feedback received during the hearing.

Objections

Landowners who have concerns about the proposed classification schedules are encouraged to submit written objections either before or during the public hearing. These written objections will be included in the official record and are necessary to preserve the right to appeal the Board's final decision.

Landowners who wish to object to their assessment are strongly encouraged to provide any relevant information, such as tile maps, permanent wetland easements, or other documentation not available to us, that could assist in refining the schedule if necessary.

Recommendations

Classification Schedule

We recommend the following seven classification schedules for Drainage District No. 40 to be used for future maintenance and all costs to the district.

Classification Schedule	Basis Cost
Main Tile	\$100,000
Lateral No. 1 Tile	\$100,000
Lateral No. 2 Tile	\$100,000
Lateral No. 3 Tile	\$100,000
Lateral No. 4 Tile	\$100,000
Lateral No. 5 Tile	\$100,000
Lateral No. 6 Tile	\$100,000

The Basis Cost shown is for illustrative purposes only and does not reflect any actual project costs. A round number of \$100,000 was selected to provide an easy reference for calculating each parcel's proportional share. This example allows landowners to see how assessments would be allocated based on percentages without implying a final or actual cost.

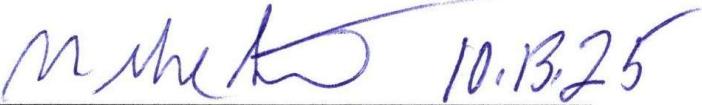
For each parcel listed in the assessment schedule, both the units assessed (\$) and the relative benefit percentage are shown. As required by Iowa Code, one parcel within the district is designated as the "100% benefit" parcel — meaning that parcel receives the greatest benefit from the drainage district system. All other parcels are assigned a relative percentage based on how their benefit compares to that parcel. For example, a parcel listed at 60% receives 60% of the benefit compared to the most benefited parcel.

Recommendations

We recommend that the Board accept the filing of this report and schedule a public hearing to formally present the findings and proposed schedules to all affected landowners. At the closing of the hearing, we further recommend that the Board proceed with adopting the schedule as presented.

If the Board of Trustees or landowners have any questions or concerns, please feel free to contact AgriVia at the phone number or email listed.

Sincerely,



10/13/25

Mike Stevens
Worth County Resident Freeholder



10/13/25

Jacob Hagan, P.E.
Professional Licensed Engineer
Cell: 712-250-4318
Email: jacob.agrivia@gmail.com



10/17/25

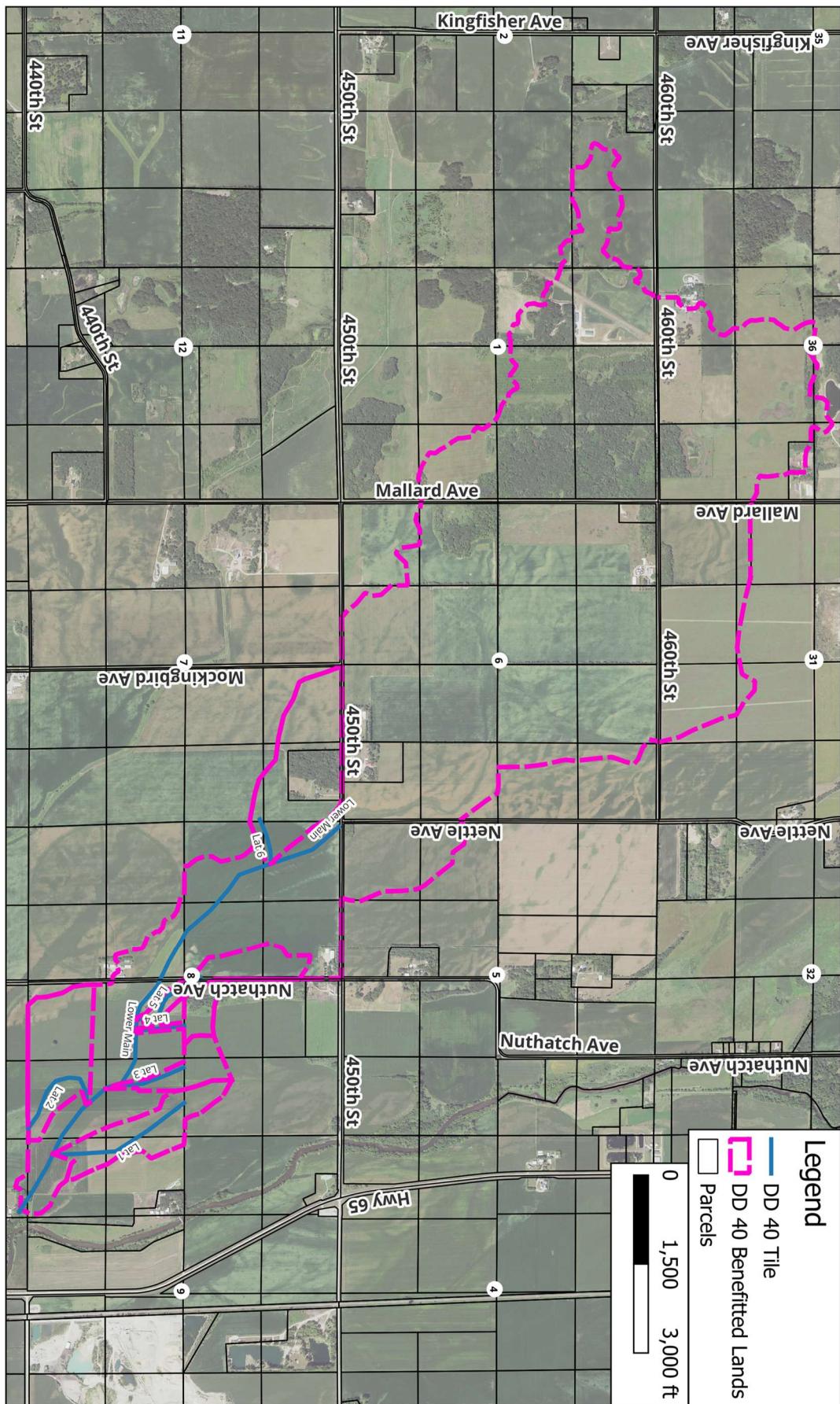
Nathaniel Julseth
Worth County Resident Freeholder

Appendix A – Drainage District No. 40 Benefitted Area



Drainage District No. 40
Worth County, IA

Benefitted Area
October 2025



Appendix B- "Twenty Benefits of Drainage"- Ohio State Extension



SOIL AND WATER NO. 31

JULY 1982

TWENTY BENEFITS OF DRAINAGE

Many of the best soils in the United States and throughout the world have drainage problems that need to be solved before efficient agricultural production can be achieved. This discussion of drainage benefits is based on an earlier paper by the author entitled "Ten Benefits of Drainage" and several reports from other agricultural engineers in the United States, Canada, and England. Some of these drainage benefits are difficult to measure precisely, and many are interrelated, but their combined effect has been observed in numerous drainage studies.

1. Better soil aeration results from good drainage (surface water and free water in the root zone removed within 24 hours after heavy rainfall). This permits more extensive root development and a more favorable environment for beneficial soil microorganisms and earthworms. When soil aeration is reduced, the severity of soil-borne root diseases is increased.
2. Better soil moisture conditions with good drainage permit more efficient operation of tillage, planting, and harvesting equipment.
3. Better soil structure can be developed and maintained with good drainage, since there is less chance of destroying soil tilth due to compaction when working soil that is too wet.
4. Soils warm up more quickly in the spring when free water is removed by a drainage system. This results in better seed germination and an increased rate of plant growth.
5. An increased supply of nitrogen can be obtained from the soil when drainage lowers the water table in the root zone. Denitrification often occurs in soils with poor drainage.
6. Longer growing seasons can be achieved with good drainage due to earlier possible planting dates. This also permits the use of higher-yielding crop varieties or extended grazing periods for livestock.
7. Certain toxic substances and disease organisms are removed from the soil due to better drainage and soil aeration. In wet soil, roots can be injured by toxic substances produced in the reduction of iron and manganese salts and the reduction of nitrates to nitrites.
8. Winds are less liable to uproot plants growing in soils that have been properly drained, since root systems are deeper.
9. Soil erosion and sediment loss can be reduced by subsurface drainage, since drained soils have a greater capacity to absorb rainfall and the soil filters out suspended sediment.
10. Good drainage saves fuel that would be used in working around wet areas in fields

(over)

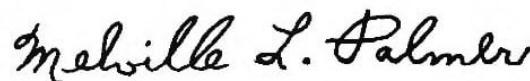
College of Agriculture and Home Economics of The Ohio State University and The United States Department of Agriculture Cooperating

that are not properly drained. Also, since drained land is easier to work, there is less need for dual wheels or four-wheel drive tractors.

11. Good drainage reduces winter crop damage such as frost heaving of alfalfa and smothering of wheat under patches of ice.
12. Good drainage promotes earlier crop maturity and earlier fall harvests when climatic conditions are better for natural drying of grain in the field, thereby saving artificial drying costs.
13. A greater variety of crops can be grown on a farm that has good drainage. Alfalfa and sweet corn are examples of those that a farmer may choose.
14. Weed control is easier with good drainage since shallow-rooted weeds and undesirable grasses often thrive in wet soil, crowding out the planted crop.
15. Well-drained grazing land supports more livestock, with less compaction damage to vegetation and soil from animal traffic.
16. Good drainage reduces diseases that thrive on wet land. These include foot rot and liver fluke that infect livestock, and diseases carried by mosquitoes to both livestock and people.
17. Valuable livestock water supplies can be obtained by draining hillside seeps and piping the water to stock water tanks.
18. Plants are better able to withstand summer droughts with good drainage, since lower water tables in the spring permit deeper root development for extraction of soil moisture and nutrients.
19. Drainage is essential for salinity control in drier regions where irrigation is needed for permanent agricultural production.
20. Overall, good drainage results in higher crop yields, improved crop quality, and reduced risk of crop loss due to waterlogged soil. Also, fewer acres are required to produce our needed food supplies.

Several years of drainage research in Ohio has compared corn and soybean yields from undrained, surface drained only, tile drained only, and combined tile plus surface drained plots. Annual benefit/cost ratios were also calculated for these alternative drainage systems. It was shown that the average annual return per \$100 invested in drainage ranged from \$120 to \$210 for soybeans, and from \$170 to \$220 for corn. Further details on this research are reported in Soil and Water No. 23 (DRAINAGE--What is it Worth on CORN Land?") and Soil and Water No. 24 (DRAINAGE--What is it Worth for SOYBEAN Land?"). These leaflets are available from Extension Agricultural Engineers, 2073 Neil Avenue, Columbus, OH 43210.

Actual returns on a drainage investment for a particular farm will vary with factors such as soil type, weather conditions, cost of the drainage system, crops grown, and management. Drainage improvements may involve surface drainage, subsurface drainage, outlet ditches, or a combination of practices. Changes in soil and crop management techniques may also be desirable to improve soil structure and water movement in the soil. Almost 60 percent of Ohio's cropland and 25 percent of all U. S. cropland is in need of drainage.



Melville L. Palmer
Extension Agricultural Engineer

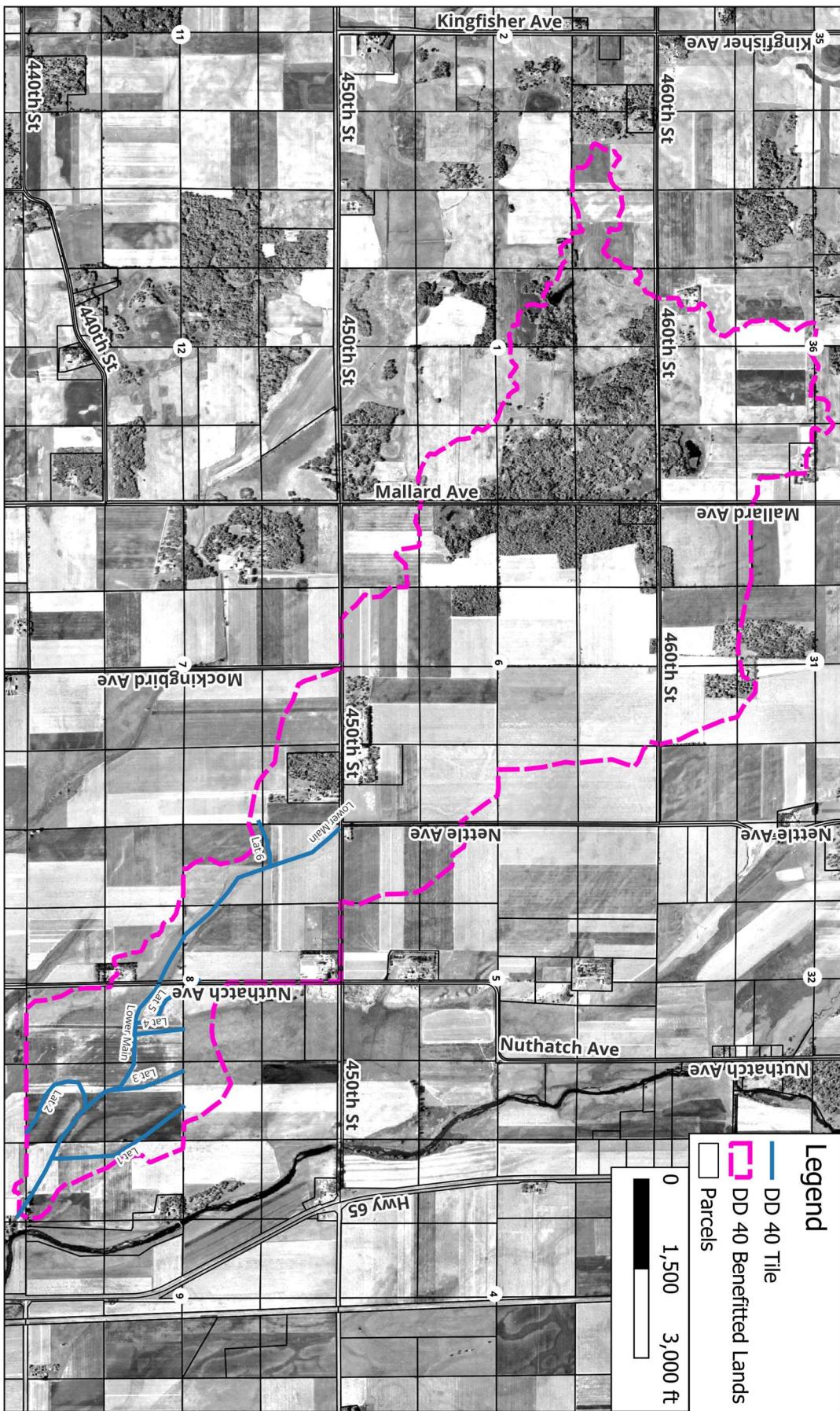
All educational programs and activities conducted by the Ohio Cooperative Extension Service are available to all potential clientele on a non-discriminatory basis without regard to race, color, national origin, sex, handicap or religious affiliation.

Appendix C – 1950's Aerial Photo



Drainage District No. 40
Worth County, IA

1950's Aerial Photo
October 2025

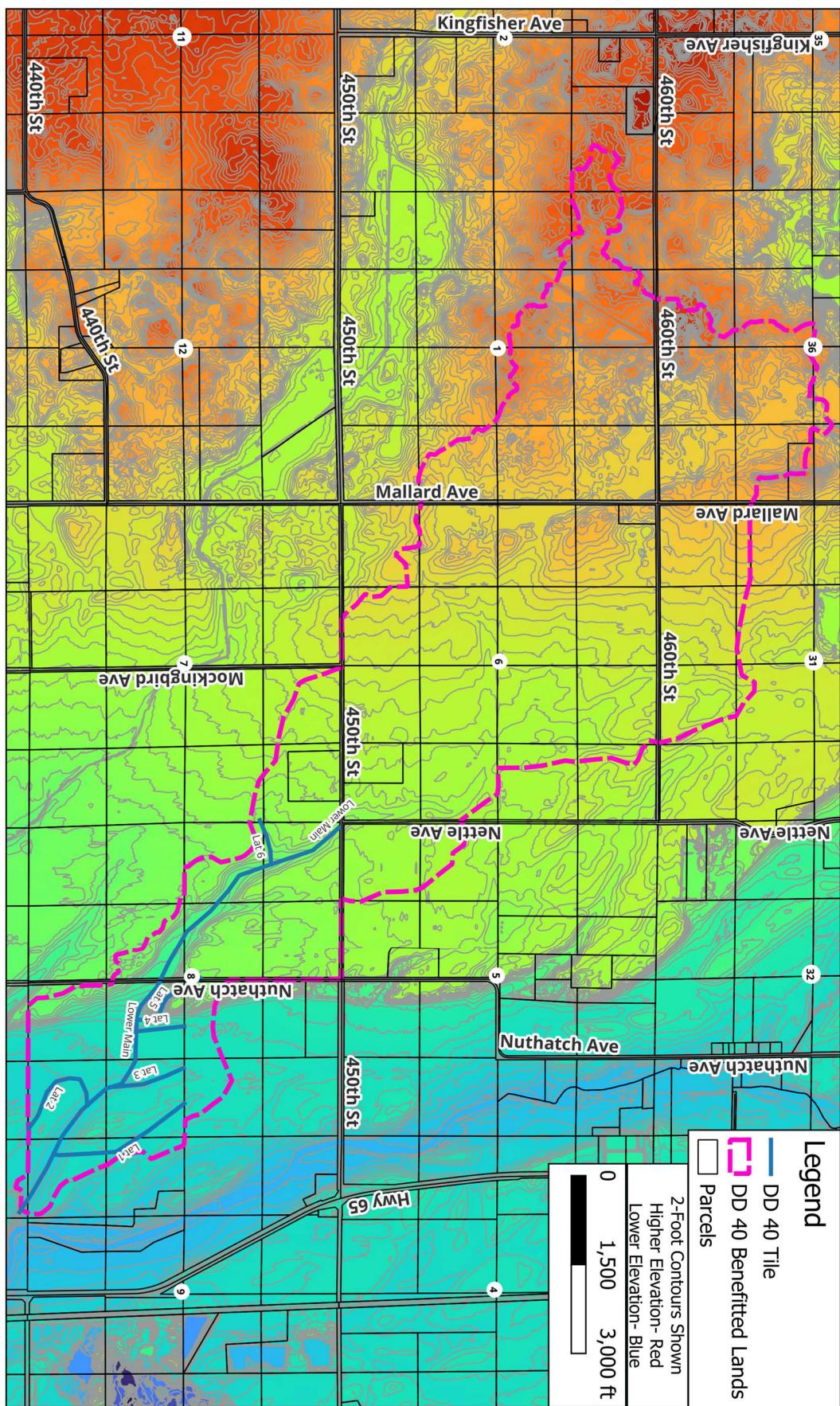


Appendix D – Elevation Map



Drainage District No. 40
Worth County, IA

Elevation
October 2025



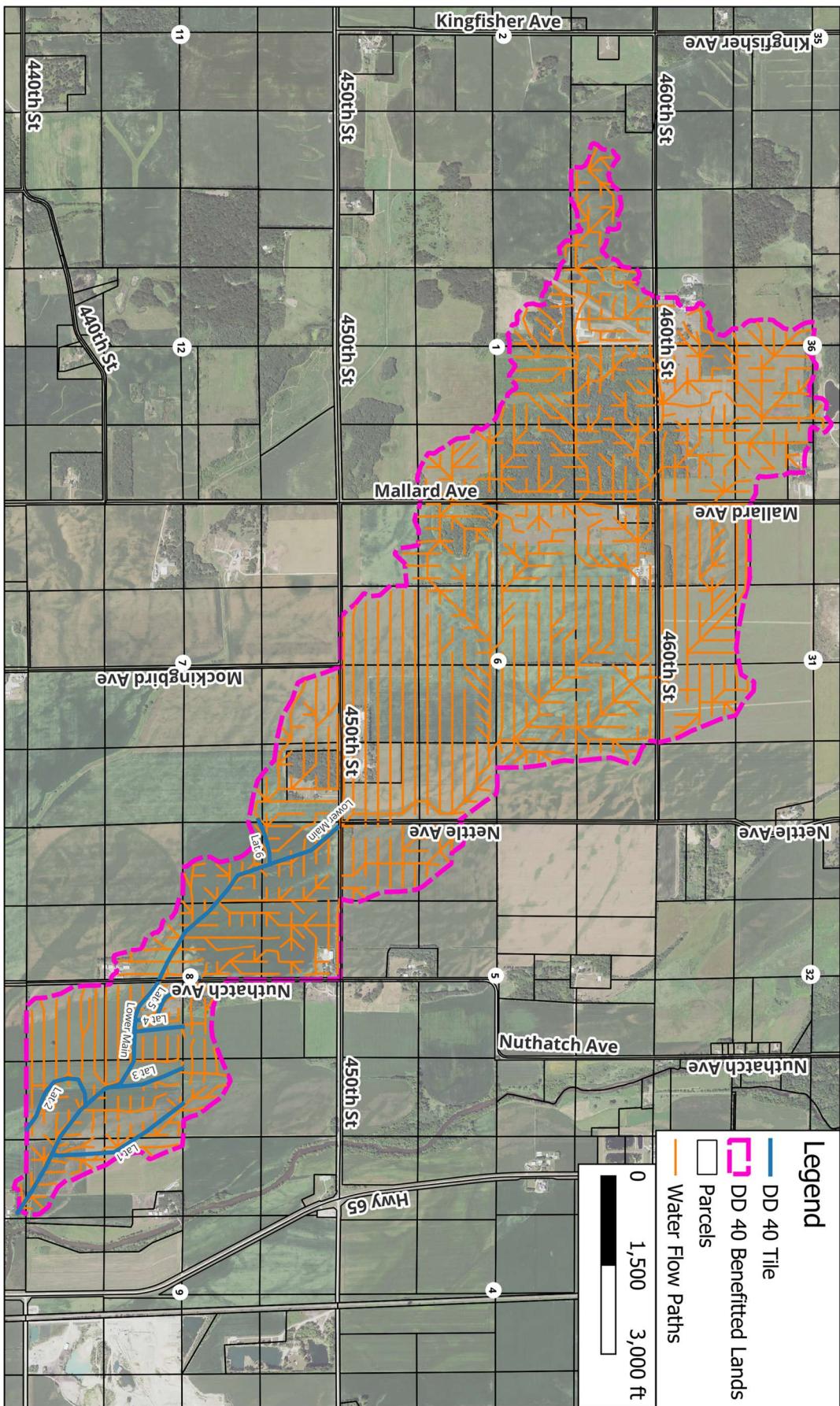
Appendix E- Water Flow Paths Map



Drainage District No. 40
Worth County, IA

Water Flow Paths

October 2025



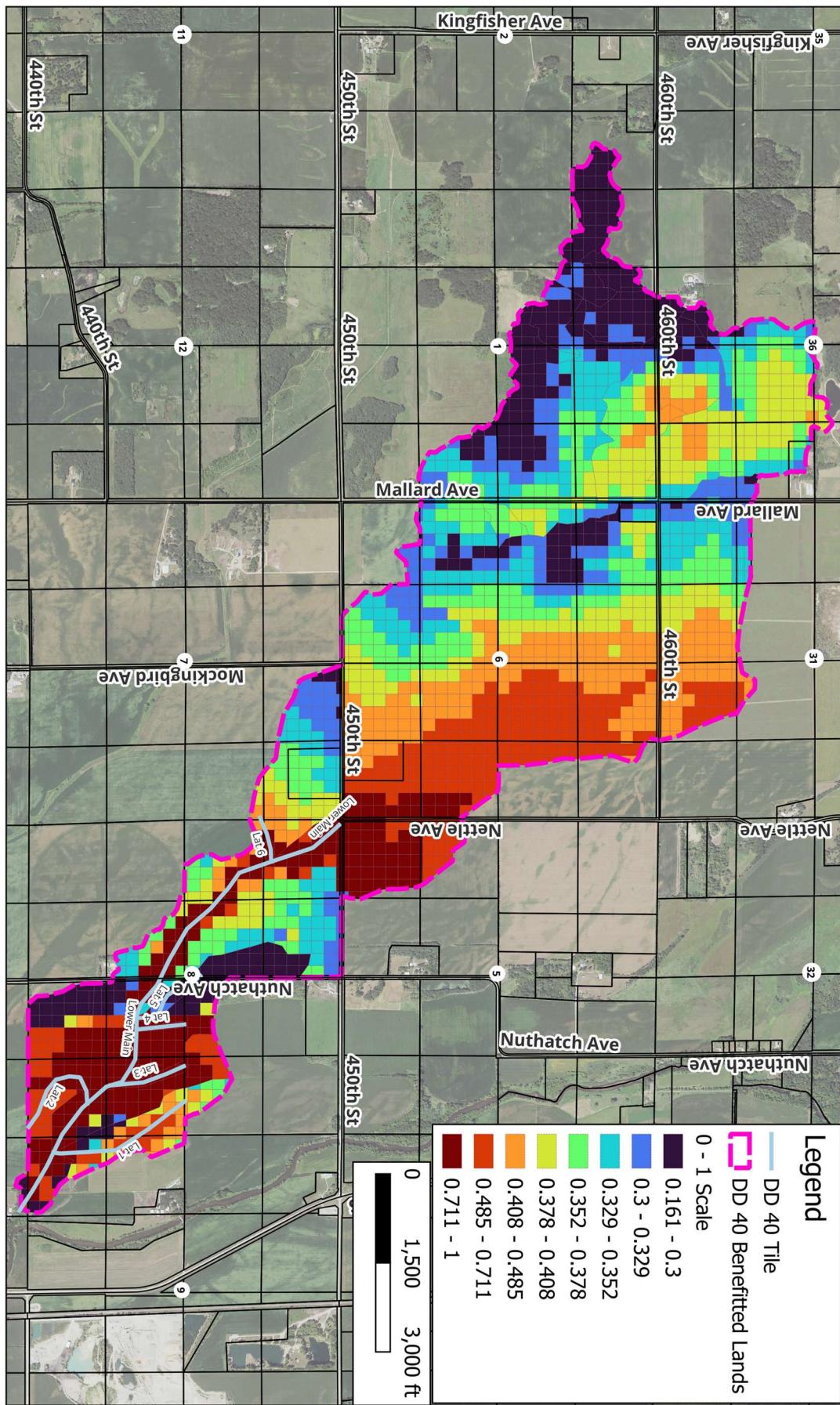
Appendix F – Main Tile- Affording an Outlet Score



Drainage District No. 40- Main Tile
Worth County, IA

Affording an Outlet

October 2025



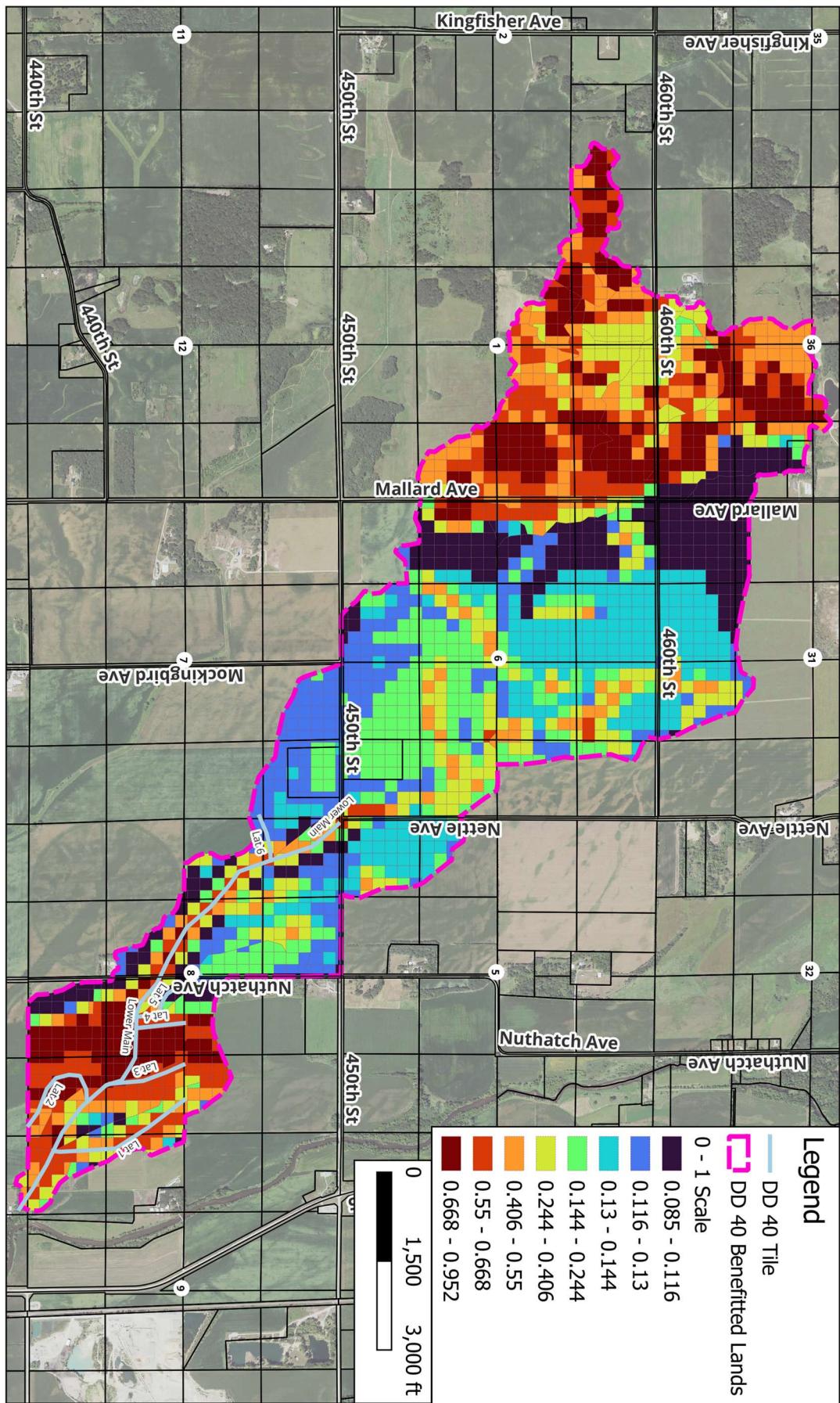
Appendix G – Main Tile- Relieving the Lands of Overflow Score



Drainage District No. 40- Main Tile
Worth County, IA

Relieving the Lands of Overflow

October 2025

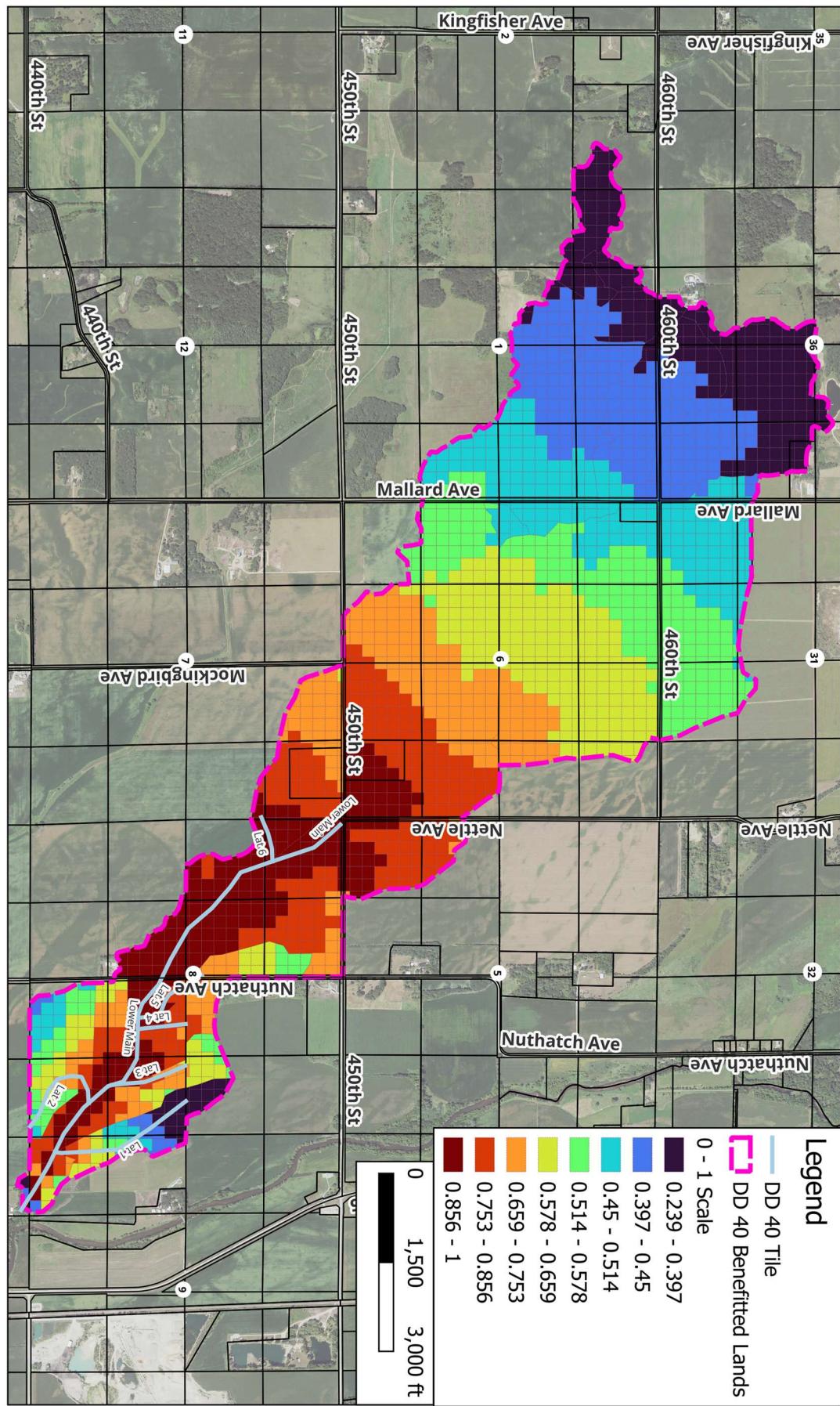


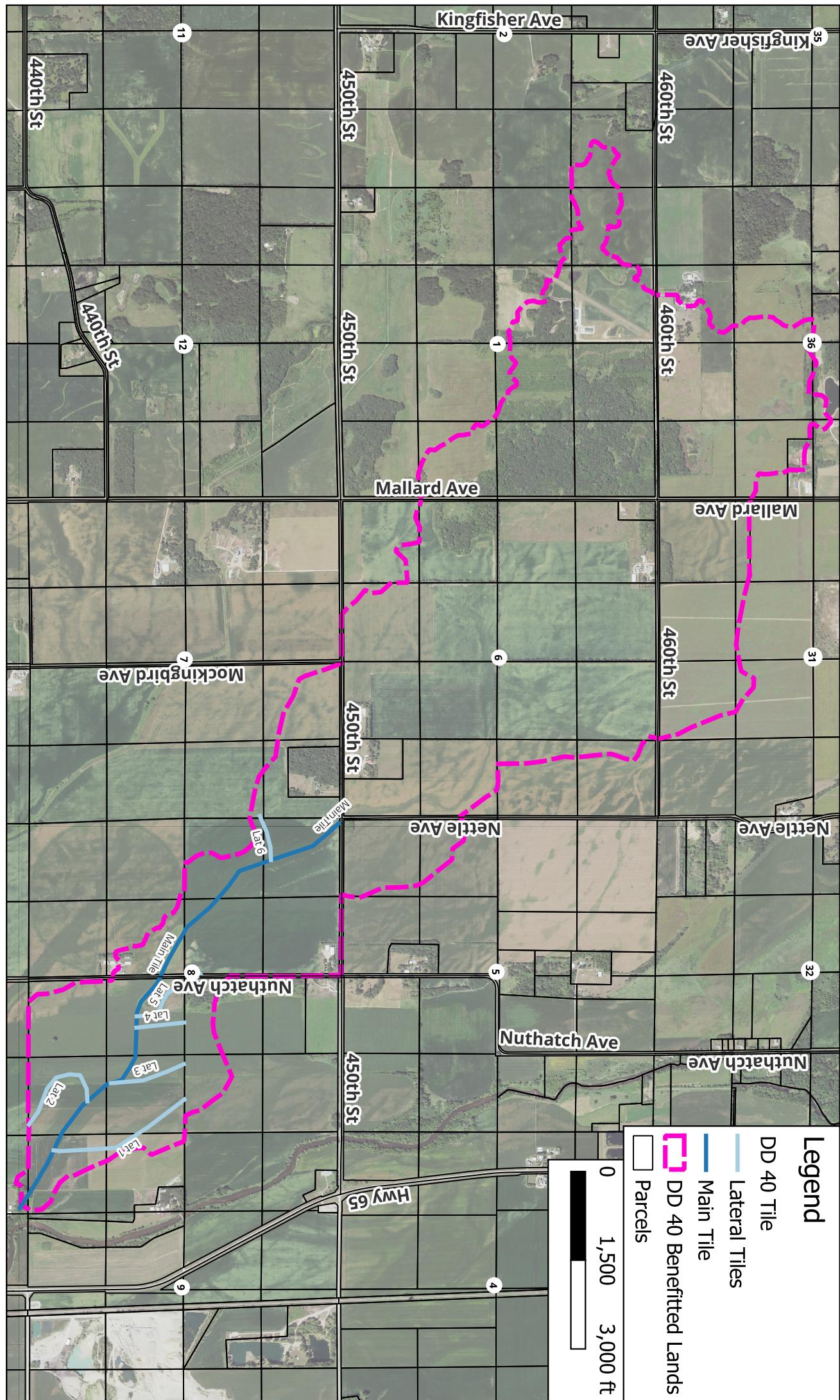
Appendix H – Main Tile- Bringing the Outlet Nearer Score



Drainage District No. 40- Main Tile
Worth County, IA

Bringing the Outlet Nearer
October 2025





Drainage District No. 40

Classification Schedule

Main Tile

PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0705300001	BUTLER, LUJANE TRUST		05-99-20 SECTION:05 TOWNSHIP:99 RANGE:20 NW SW SW KENSETT	13	20.79%	\$ 767.93
0705300003	BUTLER, LUJANE TRUST		05-99-20 SECTION:05 TOWNSHIP:99 RANGE:20 SW SW KENSETT	35.5	71.68%	\$ 2,647.68
0708200003	BUTLER, LUJANE TRUST		08-99-20 SECTION:08 TOWNSHIP:99 RANGE:20 SW NE KENSETT	16.4	31.88%	\$ 1,177.57
0708200005	BUTLER, LUJANE TRUST		08-99-20 SECTION:08 TOWNSHIP:99 RANGE:20 SE NE KENSETT	14.2	30.32%	\$ 1,119.95
0706400004	BUTLER, LYNN A & SHANA J		06-99-20 6 99 20 PAR. IN SE SE(990X660')	14.5	24.19%	\$ 893.52
0706200001	BUTLER, RICHARD		06-99-20 SECTION:06 TOWNSHIP:99 RANGE:20 NW NE FRL 1/4 KENSETT	40.7	62.28%	\$ 2,300.47
0706200003	BUTLER, RICHARD		06-99-20 SECTION:06 TOWNSHIP:99 RANGE:20 SW NE KENSETT	40	63.58%	\$ 2,348.49
0706200004	BUTLER, RICHARD		06-99-20 SECTION:06 TOWNSHIP:99 RANGE:20 SE NE KENSETT	11.4	17.86%	\$ 659.70
0708300002	BUTLER, RICHARD		08-99-20 SECTION:08 TOWNSHIP:99 RANGE:20 NE SW KENSETT	19.7	39.14%	\$ 1,445.73
0706200002	BUTLER, ROBERTA		06-99-20 6 99 20 NE NE	6.8	10.14%	\$ 374.55
0708100001	DAHLBY, ROGER W & JANET		08-99-20 8-99-20 NW NW	39	73.03%	\$ 2,697.55
0708100002	DAHLBY, ROGER W & JANET		08-99-20 8-99-20 NE NW	38	45.63%	\$ 1,685.46
0708100003	DAHLBY, ROGER W & JANET		08-99-20 8-99-20 SW NW	25.1	44.10%	\$ 1,628.94
0708100004	DAHLBY, ROGER W & JANET		08-99-20 8-99-20 SE NW	39	59.92%	\$ 2,213.30
0236400005	DIERENFELD, MICHAEL & JOAN		36-100-21 36 100 21 PAR. IN NE SE	3.7	3.73%	\$ 137.78
0236300002	GAARDER, SCOTT O		36-100-21 SECTION:36 TOWNSHIP:100 RANGE:21 NE SW HARTLAND	39	18.98%	\$ 701.07
0236400001	GAARDER, SCOTT O		36-100-21 SECTION:36 TOWNSHIP:100 RANGE:21 NW SE HARTLAND	39	80.86%	\$ 2,986.77
0236400004	GAARDER, SCOTT O		36-100-21 SECTION:36 TOWNSHIP:100 RANGE:21 SE SE HARTLAND	38	64.81%	\$ 2,393.92
0236400006	GAARDER, SCOTT O		36-100-21 SECTION:36 TOWNSHIP:100 RANGE:21 NE SE EXC PAR HARTLAND	24.5	30.71%	\$ 1,134.35
0706100002	HARRIS, LONNIE L TRUST		06-99-20 6-99-20 FRL. NE NW	40.95	47.46%	\$ 1,753.06
0706100003	HARRIS, LONNIE L TRUST		06-99-20 6-99-20 FRL. SW/NW	41.91	50.74%	\$ 1,874.21
0706100004	HARRIS, LONNIE L TRUST		06-99-20 6-99-20 SE NW	40	48.22%	\$ 1,781.13
0706100006	HARRIS, LONNIE L TRUST		06-99-20 6-99-20 FRL. NW NW EX PAR	38.41	43.10%	\$ 1,592.01
0706300001	HARRIS, MYRAL TRUST		06-99-20 6-99-20 NW SW FRL	23.83	54.15%	\$ 2,000.17
0706300003	HARRIS, MYRAL TRUST		06-99-20 6-99-20 SW SW FRL	4.3	4.26%	\$ 157.35
0706100005	HARRIS, ROGER D & LAURIE A		06-99-20 6 99 20 PAR NW NW	4.46	4.68%	\$ 172.87

Drainage District No. 40

Classification Schedule

Main Tile

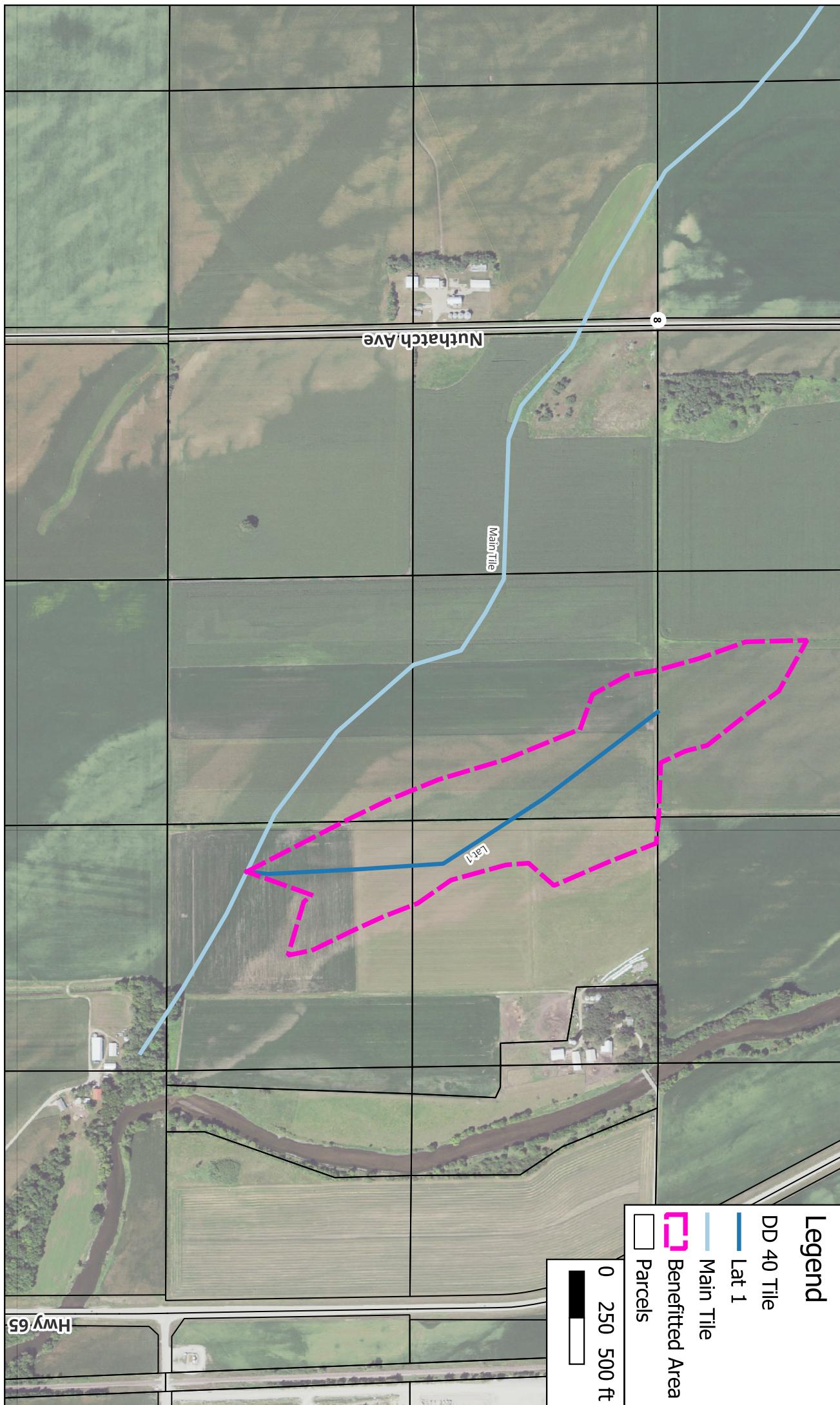
PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0331300004	HARRIS, TONY		31-100-20 31-100-20 NESW	2.5	2.62%	\$ 96.78
0331300005	HARRIS, TONY		31-100-20 31-100-20 SE SW	39	43.89%	\$ 1,621.19
0331400001	HARRIS, TONY		31-100-20 31-100-20 NW SE	3.3	4.21%	\$ 155.51
0331400003	HARRIS, TONY		31-100-20 31-100-20 SW SE	31.9	46.66%	\$ 1,723.50
0601400002	HELLER, STEVEN		01-99-21 1-99-21 NE SE	29.6	57.72%	\$ 2,132.03
0601100003	HENGESTEG, STEVEN C TRUST		01-99-21 SECTION:01 TOWNSHIP:99 RANGE:21 SW NW BROOKFIELD	1.8	3.01%	\$ 111.18
0235200003	HOEPPNER, TODD R & RENEE M		36-100-21 36-100-21 SW NE	2.4	4.94%	\$ 182.47
0235200004	HOEPPNER, TODD R & RENEE M		36-100-21 36-100-21 SE NE	0.8	1.58%	\$ 58.36
0601100001	HOLT FARMS LLC		01-99-21 SECTION:01 TOWNSHIP:99 RANGE:21 NW FRL NW BROOKFIELD	20.9	40.52%	\$ 1,496.71
0601100002	HOLT FARMS LLC		01-99-21 SECTION:01 TOWNSHIP:99 RANGE:21 FRL NE NW BROOKFIELD	39	68.75%	\$ 2,539.45
0601100004	HOLT FARMS LLC		01-99-21 SECTION:01 TOWNSHIP:99 RANGE:21 SE NW BROOKFIELD	21	40.51%	\$ 1,496.34
0602200006	HOLT FARMS LLC		02-99-21 SECTION:02 TOWNSHIP:99 RANGE:21 FRL NE NE EXC PAR BROOKFIELD	9.3	18.77%	\$ 693.32
0703400001	IRONS, PATTY L & DAVID C		08-99-20 8 99 20 NW SE	39	96.45%	\$ 3,562.62
0707200001	JOHNSON, NORM & BARB FAMILY PARTNERS		07-99-20 SECTION:07 TOWNSHIP:99 RANGE:20 NW NE KENSETT	23	23.72%	\$ 876.16
0707200004	JOHNSON, NORM & BARB FAMILY PARTNERS		07-99-20 SECTION:07 TOWNSHIP:99 RANGE:20 SE NE KENSETT	2.8	3.46%	\$ 127.80
0707200005	JOHNSON, NORM & BARB FAMILY PARTNERSHIP LP		07-99-20 SECTION:07 TOWNSHIP:99 RANGE:20 NE NE EX PAR KENSETT	20.4	25.43%	\$ 939.32
0703400002	LEHMAN, AVIS		08-99-20 8 99 20 NE SE	40	95.98%	\$ 3,545.26
0703400004	LEHMAN, AVIS		08-99-20 8 99 20 SE SE	40	100.00%	\$ 3,693.75
0703300005	LEHMAN, AVIS		09-99-20 9 99 20 SW SW	25.3	54.47%	\$ 2,011.99
0709300007	LEHMAN, AVIS		09-99-20 9 99 20 NW SW EX. PAR.	8.6	16.48%	\$ 608.73
0236300004	LOW, CHRISTOPHER		36-100-21 SECTION:36 TOWNSHIP:100 RANGE:21 SE SW HARTLAND	16.6	23.69%	\$ 875.05
0236400003	LOW, CHRISTOPHER		36-100-21 SECTION:36 TOWNSHIP:100 RANGE:21 SW SE HARTLAND	39	71.15%	\$ 2,628.11
0706400002	NELSON, ROBERT A		06-99-20 6 99 20 NE SE	35.4	66.56%	\$ 2,458.56
0706400005	NELSON, ROBERT A		06-99-20 6 99 20 SE SE EX. PAR.	23.5	48.02%	\$ 1,773.74

Drainage District No. 40

Main Tile

Classification Schedule

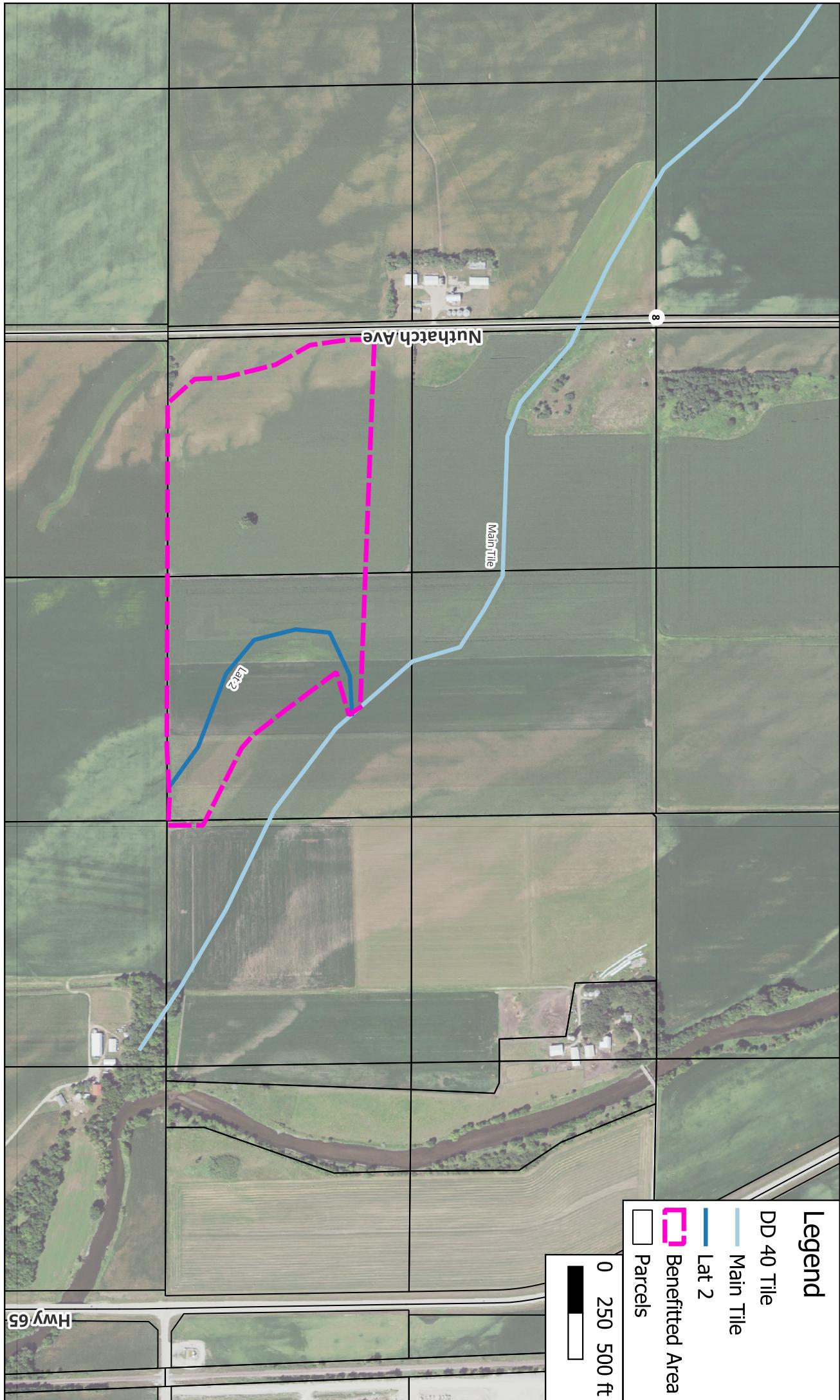
PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0717200002	PARCHER, KENNETH M & REBECCA L	17-99-20	SECTION:17 TOWNSHIP:99 RANGE:20 NE NE NE KENSETT	0	0.00%	\$ -
0331300002	RUITER, MARIE I & JACKIE E	31-100-20	31 100 20 S 7.46 A. NW SW	7.3	6.86%	\$ 253.39
0331300003	RUITER, MARIE I & JACKIE E	31-100-20	31 100 20 SW SW	40.15	39.59%	\$ 1,462.36
0706300002	SEVERSON, GENEM & JANET L	06-99-20	6 99 20 NE SW	40	53.46%	\$ 1,974.68
0706300004	SEVERSON, GENEM & JANET L	06-99-20	6 99 20 SE SW	35.2	39.38%	\$ 1,454.60
0706400001	SEVERSON, GENEM & JANET L	06-99-20	6 99 20 NW SE	40	61.00%	\$ 2,253.19
0706400003	SEVERSON, GENEM & JANET L	06-99-20	6 99 20 SW SE	39	51.21%	\$ 1,891.57
0703400003	STONE, CHARLES M. & ELSIE M.	08-99-20	8 99 20 SW SE	35.2	67.57%	\$ 2,495.87
0707200006	THOMPSON, GREGORY & CYNTHIA	07-99-20	SECTION:07 TOWNSHIP:99 RANGE:20 PAR IN NE NE KENSETT	5.78	20.42%	\$ 754.26
0601200001	WORTH COUNTY, IOWA	01-99-21	1 99 21 FRL NW NE	0	69.91%	\$ 2,582.30
0601200002	WORTH COUNTY, IOWA	01-99-21	1 99 21 FRL NE NE	0	87.45%	\$ 3,230.19
0601200003	WORTH COUNTY, IOWA	01-99-21	1 99 21 SW NE	33.7	58.74%	\$ 2,169.71
0601200004	WORTH COUNTY, IOWA	01-99-21	1 99 21 SE NE	0	81.21%	\$ 2,999.70
	WORTH COUNTY SECONDARY ROADS		ROAD RIGHT-OF-WAY	36.1		\$ 2,424.72
			Total Acres	1490.79	Total Units	\$ 100,000.00
			Assessed			



Drainage District No. 40
Lateral No. 1 Tile

Classification Schedule

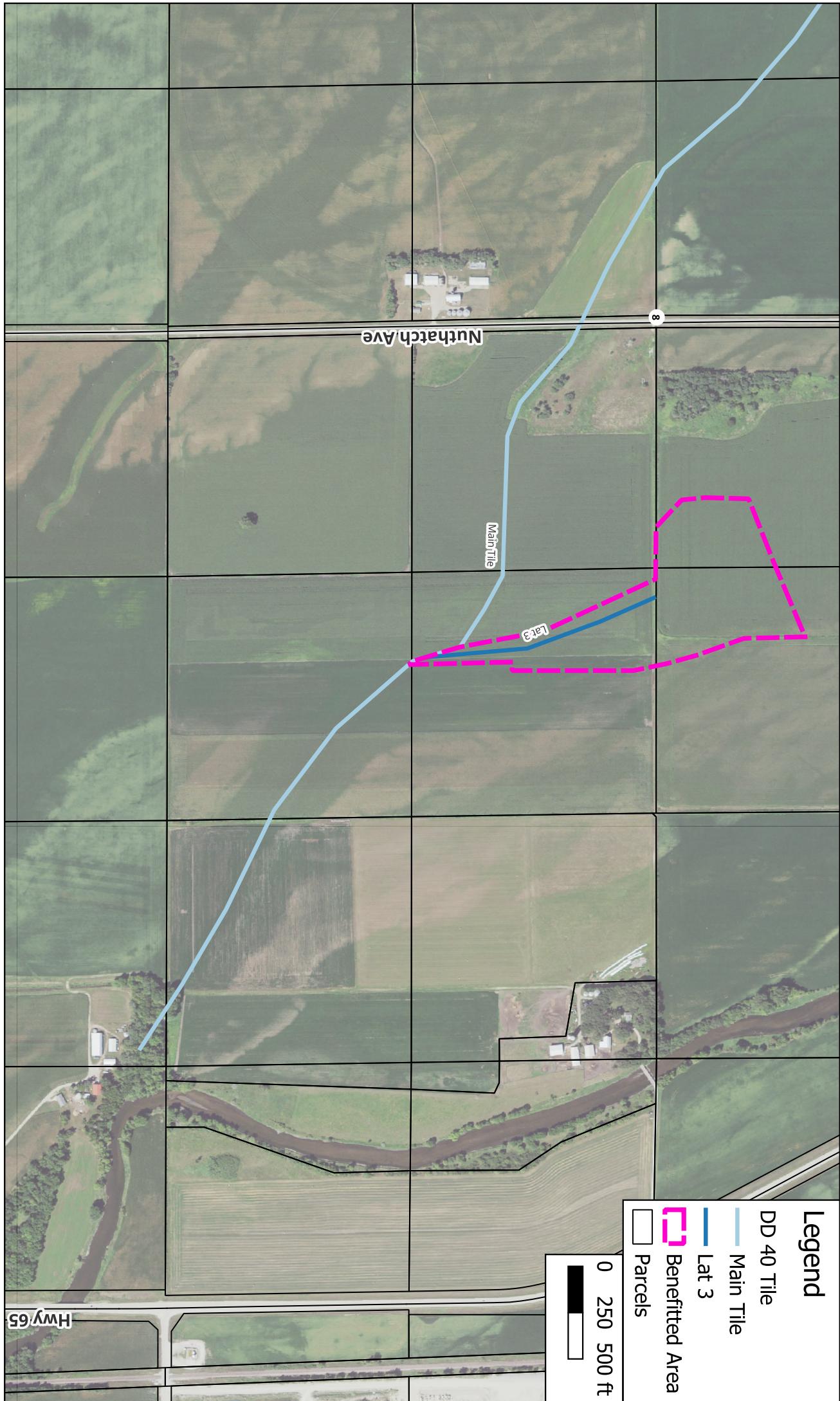
PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0708200005	BUTLER, LUJANE TRUST		08-99-20 SECTION:08 TOWNSHIP:99 RANGE:20 SE NE KENSETT	7	53.51%	\$ 20,056.94
0708400002	LEHMAN, AVIS		08-99-20 8 99 20 NE SE	13.4	100.00%	\$ 37,483.27
0708400004	LEHMAN, AVIS		08-99-20 8 99 20 SE SE	0.7	2.36%	\$ 886.09
0709300005	LEHMAN, AVIS		09-99-20 9 99 20 SW SW	8.7	50.10%	\$ 18,777.55
0709300007	LEHMAN, AVIS		09-99-20 9 99 20 NW SW EX. PAR.	8.6	60.82%	\$ 22,796.15
			Total Acres	38.4	Total Units Assessed	\$ 100,000.00



Drainage District No. 40
Lateral No. 2 Tile

Classification Schedule

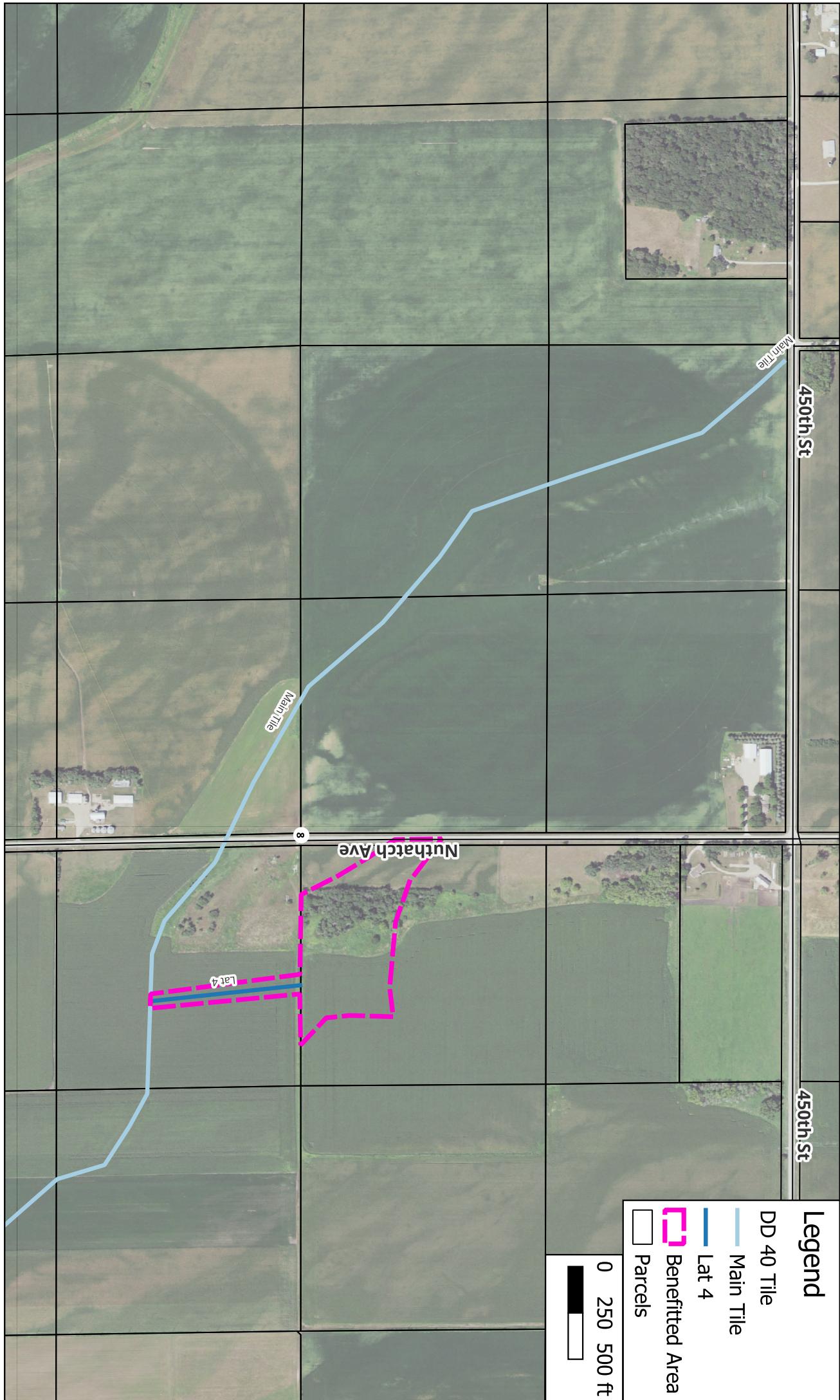
PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0703400004	LEHMAN, AVIS		08-99-20 8 99 20 SE SE	22	100.00%	\$ 53,248.84
0703400003	STONE, CHARLES M. & ELSIE M.		08-99-20 8 99 20 SW SE	28.6	87.80%	\$ 46,751.16
				Total Acres	50.6	Total Units Assessed
					\$ 100,000.00	



Drainage District No. 40
Lateral No. 3 Tile

Classification Schedule

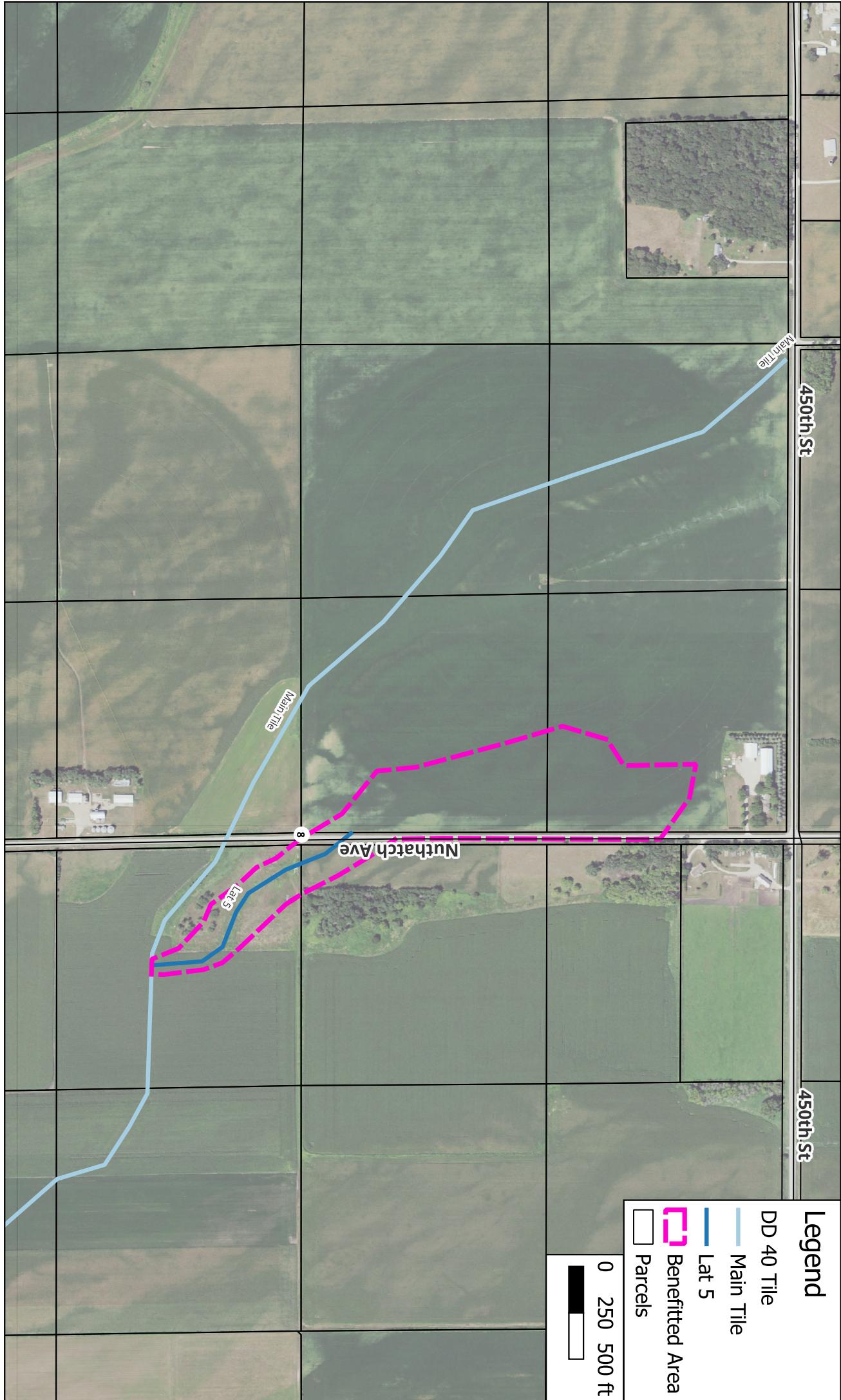
PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0708200003	BUTLER, LUJANE TRUST		09-99-20 SECTION:08 TOWNSHIP:99 RANGE:20 SW NE KENSETT	4.6	66.57%	\$ 25,833.84
0708200005	BUTLER, LUJANE TRUST		08-99-20 SECTION:08 TOWNSHIP:99 RANGE:20 SE NE KENSETT	7.2	100.00%	\$ 38,805.87
0708400002	LEHMAN, AVIS		08-99-20 8 99 20 NE SE	6.8	91.12%	\$ 35,360.29
			Total Acres	18.6	Total Units	\$ 100,000.00
			Assessed			



Drainage District No. 40
Lateral No. 4 Tile

Classification Schedule

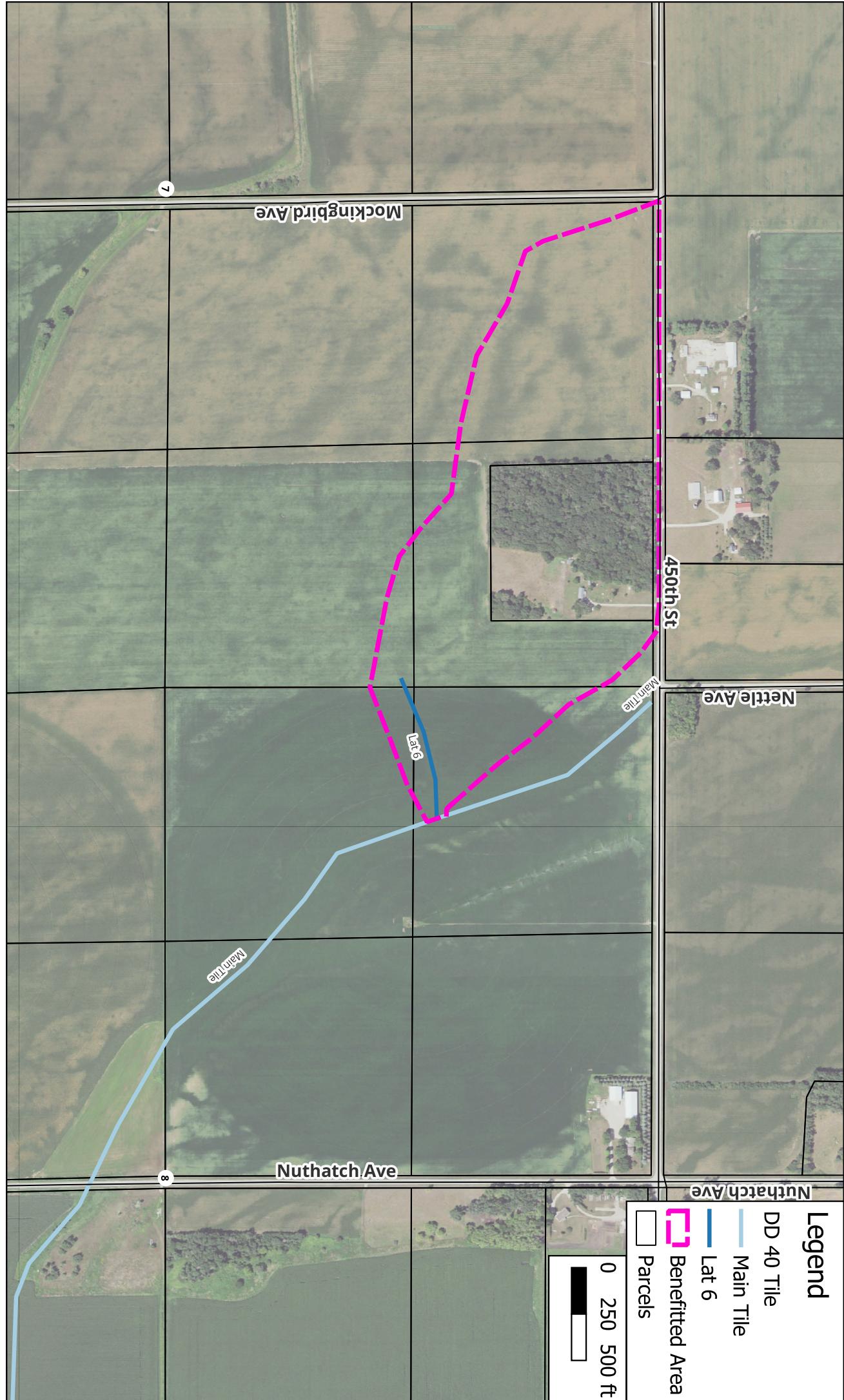
PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0703200003	BUTLER, LUJANE TRUST		08-99-20 SECTION:08 TOWNSHIP:99 RANGE:20 SW NE KENSETT	10.2	100.00%	\$ 79,286.08
0703400001	IRONS, PATTY L & DAVID C		08-99-20 8 99 20 NW SE	1.7	25.01%	\$ 19,832.62
	WORTH COUNTY SECONDARY ROADS		ROAD RIGHT-OF-WAY	0.2		\$ 881.30
				Total Acres	12.1	Total Units Assessed
						\$ 100,000.00



Drainage District No. 40
Lateral No. 5 Tile

Classification Schedule

PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
07083400001	IRONS, PATTY L & DAVID C		08-99-20 8 99 20 NW SE	4.9	42.28%	\$ 17,108.58
07083200003	BUTLER, LUJANE TRUST		08-99-20 SECTION:08 TOWNSHIP:99 RANGE:20 SW NE KENSETT	1.5	13.43%	\$ 5,434.44
07083100004	DAHLBY, ROGER W & JANET		08-99-20 8-99-20 SE NW	10.1	100.00%	\$ 40,464.94
07083100002	DAHLBY, ROGER W & JANET		08-99-20 8-99-20 NE NW	7.6	69.30%	\$ 28,042.20
	WORTH COUNTY SECONDARY ROADS		ROAD RIGHT-OF-WAY	1.9		\$ 8,949.84
			Total Acres	26.0	Total Units Assessed	\$ 100,000.00



Drainage District No. 40
Lateral No. 6 Tile

Classification Schedule

PIN	Deedholder	S-T-R	Legal Description	Area (Acres)	Relative Benefit Percentage (%)	Units Assessed (\$)
0708100001	DAHLBY, ROGER W & JANET	08-99-20	8-99-20 NW NW	8.7	51.94%	\$ 14,791.72
0708100003	DAHLBY, ROGER W & JANET	08-99-20	8-99-20 SW NW	1.7	9.88%	\$ 2,813.67
0707200001	JOHNSON, NORM & BARB FAMILY	07-99-20	SECTION:07 TOWNSHIP:99 RANGE:20 NW NE KENSETT	23	78.31%	\$ 22,301.49
0707200004	JOHNSON, NORM & BARB FAMILY PARTNERSHIP LP	07-99-20	SECTION:07 TOWNSHIP:99 RANGE:20 SE NE KENSETT	2.8	18.23%	\$ 5,191.63
0707200005	JOHNSON, NORM & BARB FAMILY PARTNERSHIP LP	07-99-20	SECTION:07 TOWNSHIP:99 RANGE:20 NE NE EX PAR KENSETT	19.7	100.00%	\$ 28,478.47
0707200006	THOMPSON, GREGORY & CYNTHIA	07-99-20	SECTION:07 TOWNSHIP:99 RANGE:20 PAR IN NE NE KENSETT	5.78	85.17%	\$ 24,255.12
	WORTH COUNTY SECONDARY ROADS		ROAD RIGHT-OF-WAY	1.7		\$ 2,167.90
Total Acres			Total Units Assessed	\$ 100,000.00		