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Report of

# Classification Commission

## Drainage District No. 26

## Worth County, Iowa

2024

**Submitted by:**

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Report  
of  
Classification Commission  
Drainage District No. 26  
Worth County, Iowa  
0T7.132489  
2024

# Report of Classification Commission

## Schedules

Main Tile & Laterals 1, 1-A, 3, & 4

Laterals 2, 2-A, & 2-B Tiles

Laterals 5, 5-A, 5-B, 5-C, 5-D, 5-E & L-A Tiles

**REPORT OF CLASSIFICATION COMMISSION  
CLASSIFICATION OF BENEFITS FOR  
DRAINAGE DISTRICT NO. 26  
WORTH COUNTY, IOWA  
2024**

**Introduction**

**A. Scope of Work**

The Board of Trustees, having examined the existing assessment schedule, had determined the assessment schedule was not equitable and thus, under Iowa Code 468.65, ordered a reclassification commission. We, Merlin Bartz and Mike Stevens, resident freeholders in Worth County, and Jacob L. Hagan, professionally licensed civil engineer, are the commissioners duly appointed to classify lands to Drainage District No. 26 in Worth County, Iowa. Pursuant to our appointment we have examined every parcel within the district and each ¼-¼ section or smaller tract of land in the district has been classified, and the relative percentage of benefit each parcel derives from the district facilities has been determined. This report will be on file with the Worth County Auditor’s Office and is available to the public. We encourage the landowners to read the report and enclosed appendices and schedules on file at the Worth County Auditor’s Office. We will answer any questions or concerns at the public hearing.

**B. District Facilities**

Drainage District No. 26 consists of a Main Tile and 15 lateral tiles totaling 14,795 LF ranging in size from 15” to 6”. table of all the district facilities is shown below:

Existing DD 26 Lateral Tiles			
<b>Main</b>	Lateral 1		1A
	Lateral 2	2A	2A1
		2B	
	Lateral 3		
	Lateral 4		
	Lateral 5	5A	
		5B	
		5C	
		5D	
		5E	
		L-A	

**C. Landscape**

The district’s land is typical of Worth County, largely devoted to row crop corn and soybean production with some marsh, woodland, and CRP/grass. Approximately 55% of the watershed consists of either somewhat poorly, poorly, or very poorly drained soils.

## D. History

The existing schedule was developed at the time of establishment in 1917. The existing schedule includes all the facilities in one schedule and was created with the land use at that time considered. The drainage district's land use has changed since establishment. Looking at the US Census of Agriculture in 1925, Worth County had approximately 43,000 acres of grain corn, 27,000 acres of corn silage and corn pasture, 63,000 acres of oats, 56,000 acres of pasture, and 34,000 acres of hay land. For comparison, in 2022 Worth County had 110,000 acres of grain corn and 86,000 acres of soybeans. This represents a nearly 4.6 times increase in row crop grain production in Worth County over the last 100 years.

## Methodology

In accomplishing reclassification, Iowa Code 468.40 lays out the rules for classification.

*"In estimating the benefits to the lands..... only the benefits which will be received by reason of the construction of the improvement in question as it affords an outlet to the drainage of such lands or brings the outlet nearer to said lands or relieves the same from overflow and relieves and protects the same from damage by erosion.*

*When the land is a state-owned lake or state-owned wetland, the commissioners shall ascertain the benefits realized from removing excess water and shall not consider any benefit realized if the state-owned lake or state-owned wetland were drained or converted to another land use."*

The construction of the improvement cited in the above code section is referring to the original construction of the open ditch and/or tiles at the time of district establishment. There are no plans to improve the current district facilities at this time.

The rules outline three benefits in which the classification determines benefit:

1. As it affords an outlet to the drainage of such lands;
2. Brings the outlet nearer to the lands; and/or
3. Relieves the land from overflow and relieves and protects from erosion.

We refer to the three factors for calculating benefit as: Proximity; Use; and Wetness and Runoff. The process of reclassification uses these factors to equitably spread project costs based upon benefits received.

1. Affording an outlet to drainage is the Proximity Factor. This considers the portion of the outlet provided. Lands nearer to the ditch receive a higher assessment because they have easy access to district facilities. Lands farther from the facility must invest in additional private drainage to access the facility. Therefore, a 40 acre tract which is crossed by a ditch benefits more than a 40-acre tract a mile away which must build a private system to reach the open ditch.
2. Bringing the outlet nearer to your lands is the Use Factor. This considers how much of the facility is required to bring an outlet to a particular location. The more of a facility that is used by any given property, the higher the Use Factor on that property. A parcel using one mile of a facility benefits less than a parcel using 5 miles of the facility.
3. Relieving your land from overflow and protecting your land from erosion are ways your property responds to improved drainage. The Wetness Factor as it's commonly called accounts for the soil types' varying natural wetness and need for drainage. Wet soils in a pothole are highly benefitted because the soils have more need for drainage than drier soils on the hill tops. This translates to a greater benefit for parcels with wetter soils as those parcels are relieved from overflow. Upland soils still receive benefit from improved drainage, and protection from erosion, as upland soils are more likely to erode due to surface runoff which can be controlled through improved drainage. We also

use what we call a runoff factor to account for land areas that shed water off their properties quicker than agricultural land. These properties rely on the drainage district to remove their water quicker. State and county roads are examples of hard surface areas that shed water quicker than agricultural lands.

## Benefits of Drainage

The primary benefit of drainage is increased agricultural productivity. We have included some of the agricultural benefits of Drainage District No. 26 as described by Ohio State Professor Mel Palmer. Below are listed the benefits as described by Professor Palmer.

- 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 extensive root development and a more favorable environment for beneficial soil micro-organisms and earthworms. When soil aeration is reduced, the severity of soil-borne root is increased.
- Better soil moisture conditions with good drainage permit more efficient operation of tillage, planting, and harvesting equipment.
- Better soil structure can be developed and maintained with good drainage by reducing compaction when working soil that is too wet.
- Soils warm up 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.
- 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.
- 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.
- 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.
- Winds are less liable to uproot plants growing in soils that have been properly drained since root systems are deeper.
- 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.
- Good drainage saves fuel that would be used in working around wet areas in fields 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.
- Good drainage reduces winter crop damage such as frost heaving of alfalfa and smothering of wheat and cover crops under patches of ice.
- 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.
- 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.
- Weed control is easier with good drainage since shallow-rooted weeds and undesirable grasses often thrive in wet soil moisture and nutrients.
- Well-drained grazing land supports more livestock with less compaction damage to vegetation and soil from animal traffic.

- 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.
- Valuable livestock water supplies can be obtained by draining hillside seeps and piping the water to stock water tanks.
- 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.
- Drainage is essential for salinity control in drier regions where irrigation is needed for permanent agricultural production.

Acreages and non-agricultural properties benefit from drainage district facilities. These properties rely on drainage district tiles and the outlets they provide to lower the water table and keep their basements drier. They are provided storm sewer relief, and their yards, gardens, and trees benefit from the increased soil productivity. Much like residents in town pay for storm sewers, the acreages should help pay for drainage districts providing the same benefit.

Roads can be assessed for benefits from a drainage district as outlined in Iowa Code 468.43. Iowa's early roads were muddy. The roads being drier makes maintenance easier. The roads also have higher runoff due to the hard surfaces. This runoff doesn't soak into the soil but instead quickly goes to the district tiles typically via intakes in the road ditches.

All landowners within the district benefit from the decrease in mosquitoes and the diseases associated with mosquitoes. Today, we don't think about how before drainage districts and other public health measures, malaria was a common disease in Iowa's wetlands. Iowa Code 468.2 even goes as far as stating one of the reasons to construct drainage districts as being conducive to public health, convenience, and welfare.

Overall, good drainage results in higher crop yields, improved public health, and higher land values. Most of these benefits may not be easily recognized as the system has been in place for 100 years now, and no one alive today remembers how this area drained prior to the district establishment. Therefore, when assessing benefits, we must review the historical information and use scientific and mathematical modeling to estimate the benefits.

## Investigation

To calculate these factors and determine the relative benefits for each parcel, we employed a grid system using hexagons. Each hexagon covers an area of approximately one acre, which provides a comprehensive and precise assessment of the benefitted area. Within each hexagon, three key variables were documented: elevation, soil composition, and land usage. By establishing connectivity between these hexagons, the natural flow paths of water towards district facilities were outlined. The distance of the flow path from each hexagon to its associated district facility was then calculated. All this data, Proximity, Use, and Wetness and Runoff were compiled to determine a relative benefit for each hexagon. Visual representations of these hexagonal areas will be presented during the reclassification hearing to illustrate our approach and findings regarding water management planning.

The assessment schedule assumes that all landowners take advantage of the drainage provided by the drainage district. Iowa Code does not have a method to assign benefits based on the number of private tiles each individual landowner has. It would also be difficult to administrate such a method; it would require landowners to inform the district of any work being done on their lands and every time someone completed any work, the district would need to be reclassified.

## Drainage District Procedure on Report

### A. Notice and Hearing

Upon filing this report, the Board of Trustees will schedule a public hearing inviting all landowners in the district by regular mail and publishing the Notice of Hearing in the local newspaper per Iowa Code Sections 468.14 and 468.15. Landowners are encouraged to attend. At this hearing, we will present this report and answer any questions or concerns from the landowners and the Board of Trustees. No decision can be made outside a public hearing with all landowners invited. The hearing will be recorded and any information shared at the public hearing shall become a part of this report.

Our office and the Auditor's office will only mail letters and notices to the landowners of record. They do not have any official knowledge of any tenants. It is the landowner's responsibility to notify their tenants. Tenants have no official position, or the ability to file objections, or to file claims for damages.

### B. Objections

Landowners have the right to object to their proposed assessments. The Board will consider these objections, and may raise or lower assessments at the hearing. It's important to note that a change to the schedule either raising or lowering one parcel's assessment, will effect every parcel in the district.

## Schedules

We recommend and report three assessment schedules herein all to be used for all future maintenance and other costs of each of the separate facilities as may arise. Set beside the new schedules is a basis cost. This basis cost is assumed and should not be considered as the cost of an improvement. We have apportioned this basis to the lands determined to be benefited by each named facility.

<b><u>New Schedule</u></b>	<b><u>Basis Cost</u></b>
Main Tile & Laterals 1, 1-A, 3, & 4	\$10,000
Laterals 2, 2-A, & 2-B Tiles	\$10,000
Laterals 5, 5-A, 5-B, 5-C, 5-D, 5-E, & L-A Tiles	\$10,000

Accordingly, we herewith submit our report. The schedule presents in tabular form for each benefited parcel:

- 1) The names of the owners thereof as shown on the transfer books in the Auditor's office.
- 2) The parcel section, number, and description.
- 3) The number of benefited acres.
- 4) The classification or percentage of benefits derived relative to a 100% benefit assigned to the tract having the greatest benefit.

It is the recommendation of the commissioners that this report be adopted.

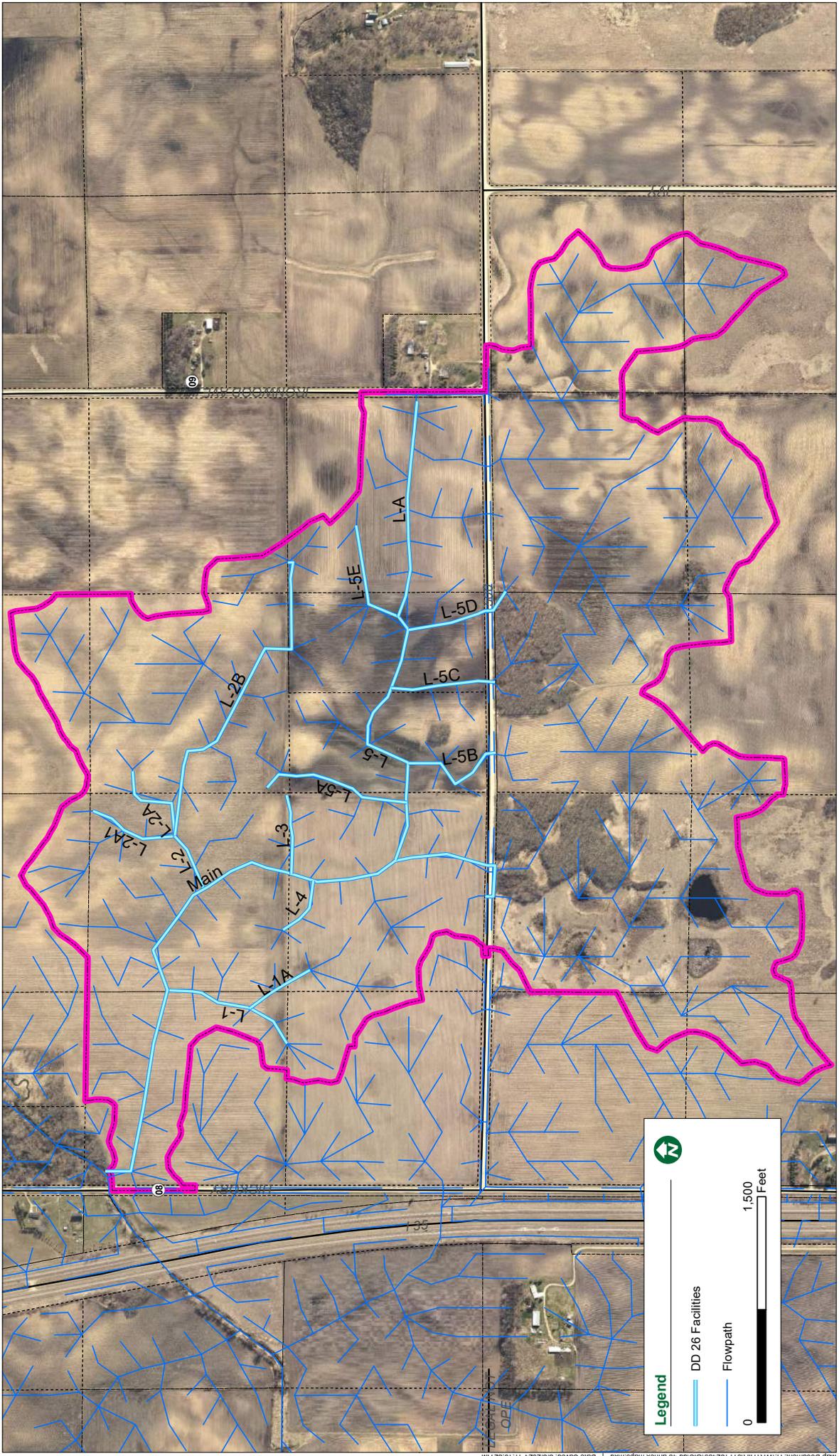
Respectfully submitted

Merlin Bartz 5-24-24  
Resident Freeholder

Mike Stevens 5.24.24  
Resident Freeholder

Jacob Hagan 5-24-24  
Professional Engineer No. 25738

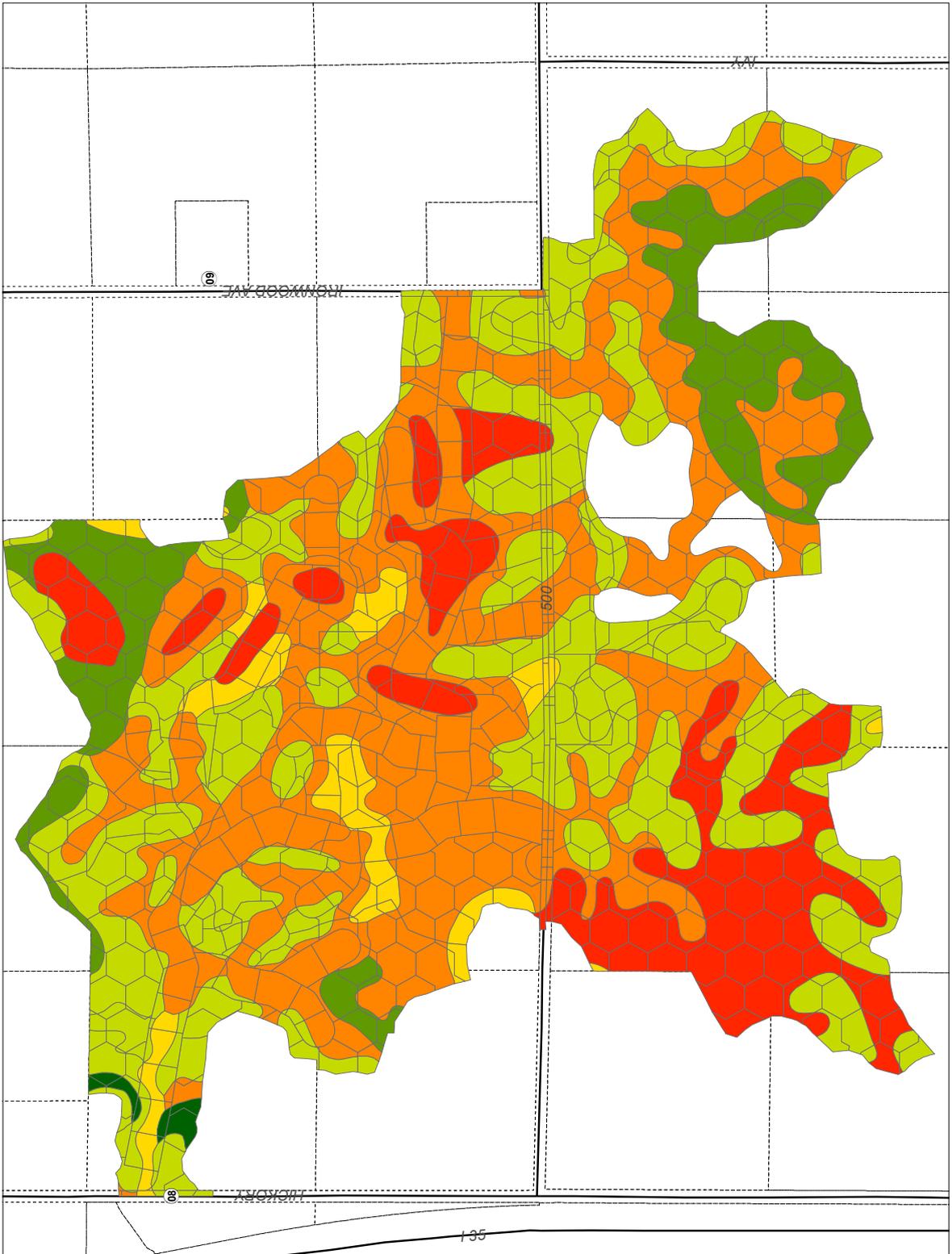




**Legend**

- DD 26 Facilities
- Flowpath

0 1,500 Feet



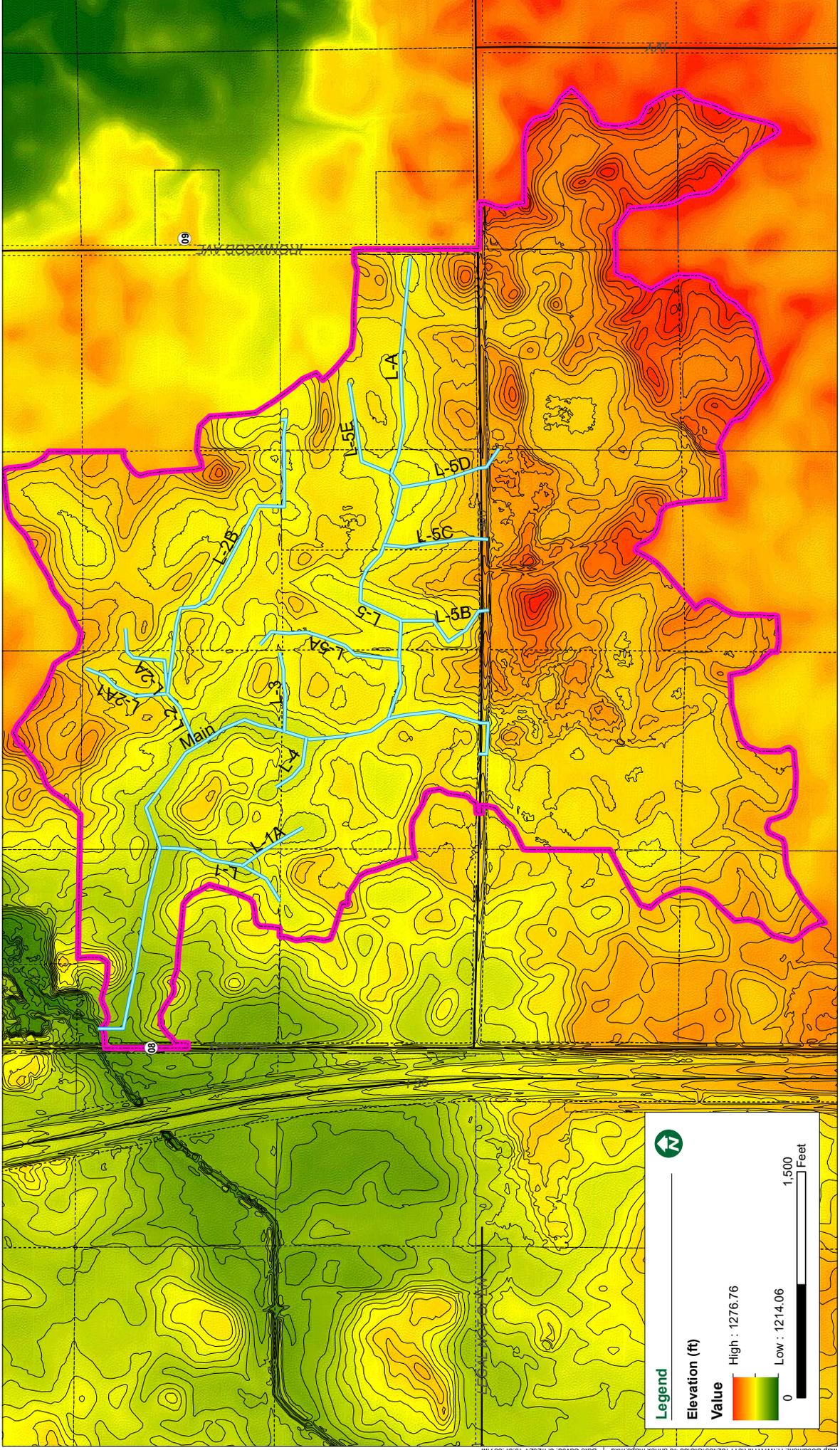
LEGAL NOT OPEN

**Legend**

**DRNCLASS**

- Excessively Well
- Well- Moderately Well
- Well Drained
- Somewhat Poorly
- Poorly Drained
- Very Poorly

0  1,500 Feet



**Legend**

**Elevation (ft)**

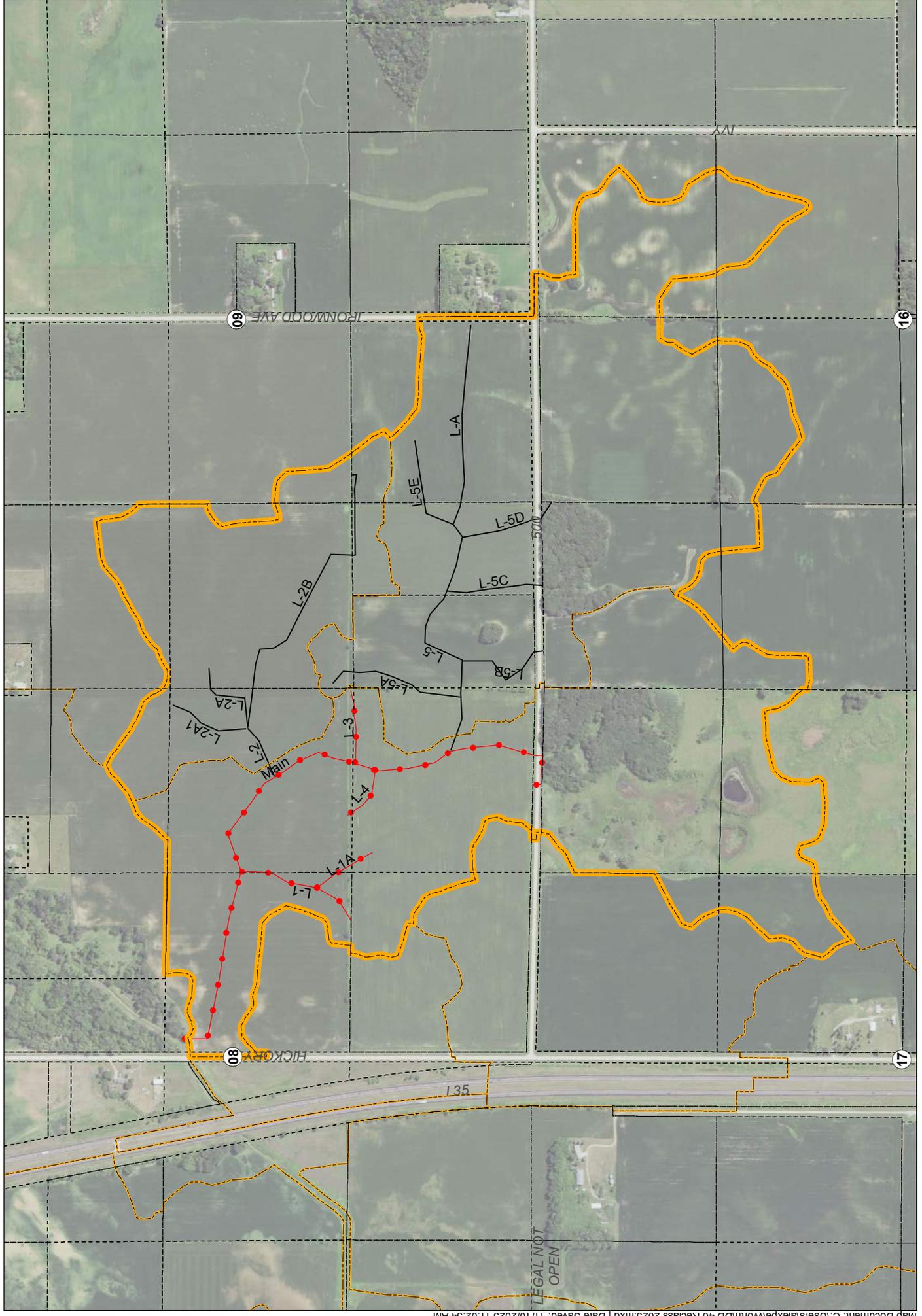
**Value**

High : 1276.76

Low : 1214.06

0 1,500 Feet

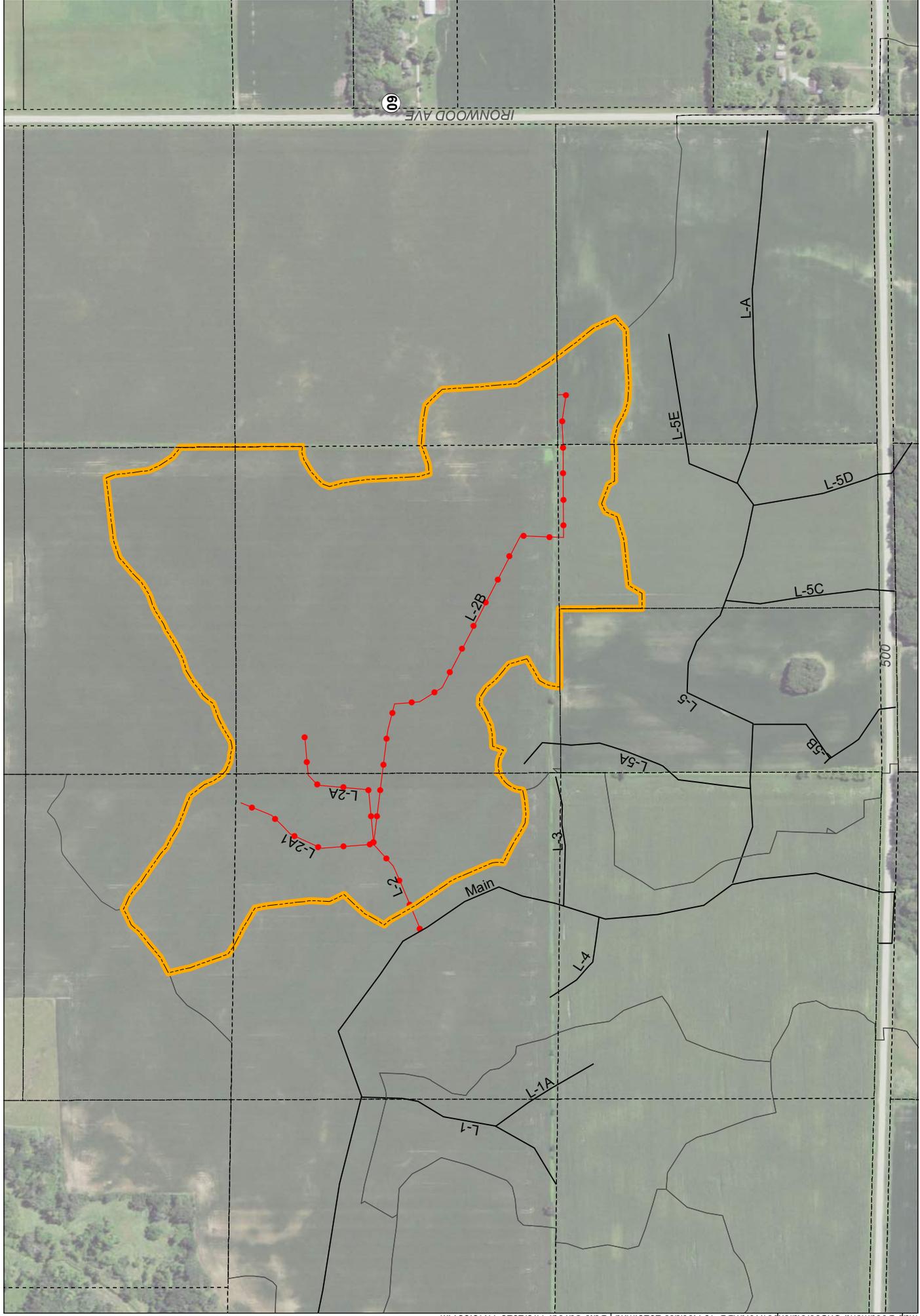
Main Tile & Laterals 1, 1-A, 3, & 4



**PARCEL ASSESSMENTS SCHEDULE  
 MAIN TILE AND LATERALS 1, 1-A, 3, & 4  
 DRAINAGE DISTRICT NO. 26  
 WORTH COUNTY, IOWA**

Deedholder(s)	Parcel Number	Sec-Twp-Rng	Legal Description	Benefited Acres	Classification (%)	Base Assessment (\$)
ARNESON, DOUGLAS & DONICA	0216200003	16-100-21	SW NE	6.1	2.48	41.23
LOKEN, RONALD M REVOCABLE TRUST	0216100004 0216100001 0216100003	16-100-21 16-100-21 16-100-21	SE NW NW NW SW NW	11.4 36.8 6	5.52 37.16 6.72	91.77 617.76 111.72
MITTAG, LYDIA J	0216200001 0209300003	16-100-21 09-100-21	NW NE W 1/2 SW SW	20.6 19.8	9.16 42.75	152.28 710.69
NELSON, KEVIN R	0209300002	09-100-21	NE SW	3.1	2.93	48.71
REYERSON, DENNIS L	0217200004 0217200003 0217200001	17-100-21 17-100-21 17-100-21	SE NE SW NE NW NE	16.2 7.9 2.9	32.70 14.15 10.26	543.61 235.23 170.57
REYERSON, MACE	0217200002	17-100-21	NE NE	37.9	100.00	1,662.43
RUGLAND, ARLOW A C TRUST	0208400001 0208400002 0208200004 0209300001 0209100005	08-100-21 08-100-21 08-100-21 09-100-21 09-100-21	NW SE NE SE SE NE FRL NW SW SW NW FRL.	21.9 39.8 6.5 38.3 8.7	15.50 51.94 5.70 43.00 7.26	257.68 863.46 94.76 714.84 120.69
SANDERSON, DEREK	0209300004	09-100-21	E1/2 SW SW	19.7	37.26	619.42
TASKER, JONAH E	0208400004 0208400003	08-100-21 08-100-21	SE SE SW SE	35.8 7.1	87.80 12.09	1,459.61 200.99
WALLIN, LINDA F TRUST	0209300005 0216100002	09-100-21 16-100-21	SE SW NE NW	29.3 36.9	38.32 27.91	637.04 463.98
WORTH COUNTY SECONDARY ROADS		0-0-0	RIGHTS-OF-WAY	6.9		181.54
<b>Totals</b>				<b>419.6 ac</b>		<b>\$10,000</b>

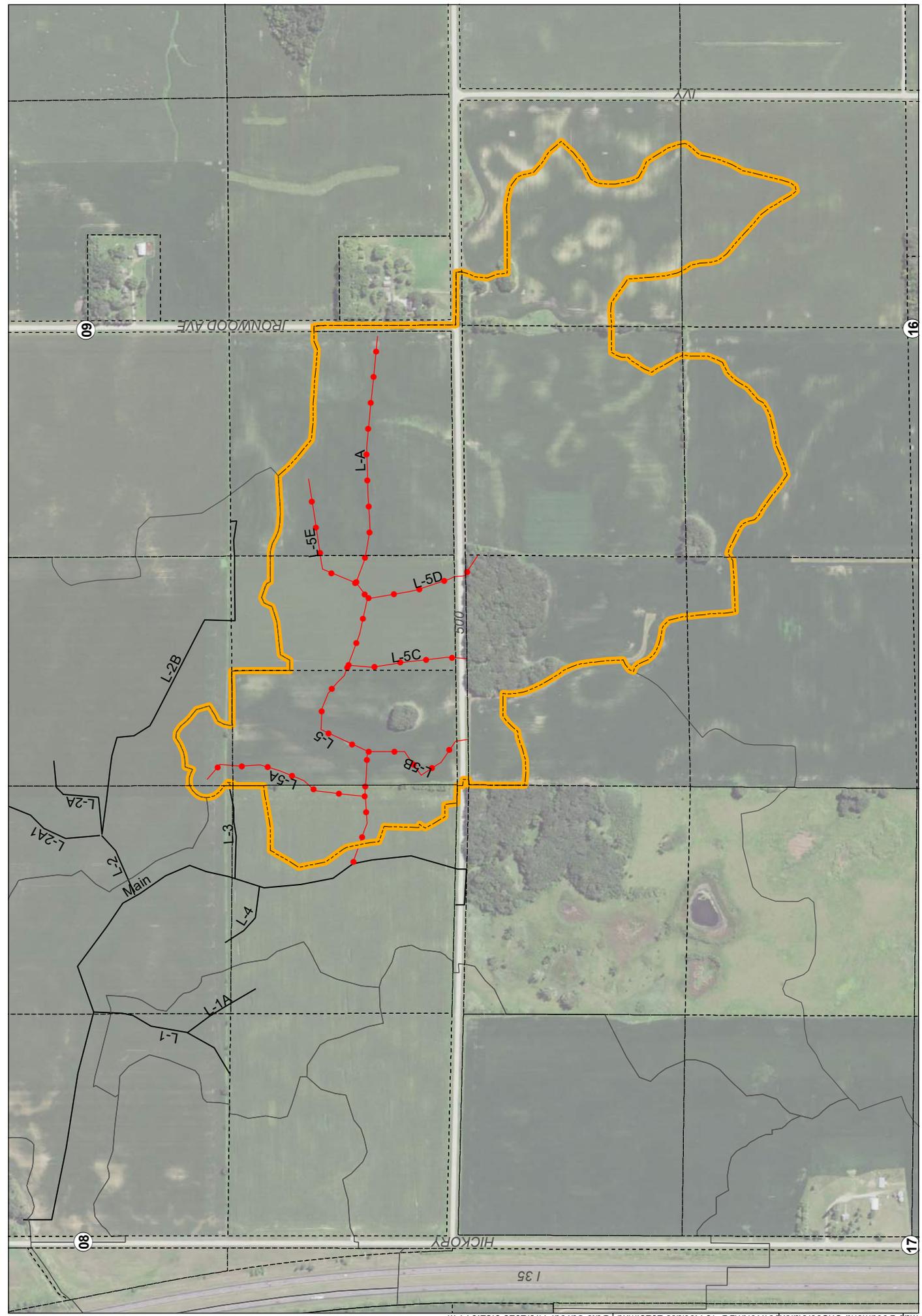
## Laterals 2, 2-A, & 2-B Tiles



**PARCEL ASSESSMENTS SCHEDULE  
 LATERALS 2, 2-A, & 2-B  
 DRAINAGE DISTRICT NO. 26  
 WORTH COUNTY, IOWA**

<b>Deedholder(s)</b>	<b>Parcel Number</b>	<b>Sec-Twp-Rng</b>	<b>Legal Description</b>	<b>Benefited Acres</b>	<b>Classification (%)</b>	<b>Base Assessment (\$)</b>
NELSON, KEVIN R	0209300002	09-100-21	NE SW	3.1	17.36	906.43
RUGLAND, ARLOW A C TRUST	0208400002	08-100-21	NE SE	13.1	21.85	1,140.87
	0209300001	09-100-21	NW SW	35.7	100.00	5,221.39
	0208200004	08-100-21	SE NE FRL	5.3	7.80	407.27
	0209100005	09-100-21	SW NW FRL.	8.7	8.50	443.82
SANDERSON, DEREK	0209300004	09-100-21	E1/2 SW SW	3.8	21.64	1,129.91
WALLIN, LINDA F TRUST	0209300005	09-100-21	SE SW	2.8	14.37	750.31
<b>Totals</b>				<b>72.5 ac</b>		<b>\$10,000</b>

Laterals 5, 5-A, 5-B, 5-C, 5-D, 5-E & L-A Tiles



**PARCEL ASSESSMENTS SCHEDULE  
 LATERALS 5, 5-A, 5-B, 5-C, 5-D, 5-E, & L-A  
 DRAINAGE DISTRICT NO. 26  
 WORTH COUNTY, IOWA**

Deedholder(s)	Parcel Number	Sec-Twp-Rng	Legal Description	Benefited Acres	Classification (%)	Base Assessment (\$)
ARNESON, DOUGLAS & DONICA	0216200003	16-100-21	SW NE	6.1	4.62	111.04
LOKEN, RONALD M REVOCABLE TRUST	0216100001 0216100004 0216100003	16-100-21 16-100-21 16-100-21	NW NW SE NW SW NW	22.5 11.4 2.1	40.55 10.81 2.85	974.64 259.82 68.50
MITTAG, LYDIA J	0209300003 0216200001	09-100-21 16-100-21	W 1/2 SW SW NW NE	19.8 20.6	45.03 26.94	1,082.32 647.52
RUGLAND, ARLOW A C TRUST	0209300001 0208400002	09-100-21 08-100-21	NW SW NE SE	2.6 0.2	6.06 0.55	145.66 13.22
SANDERSON, DEREK	0209300004	09-100-21	E1/2 SW SW	15.9	59.15	1,421.70
TASKER, JONAH E	0208400004	08-100-21	SE SE	8.9	13.36	321.12
WALLIN, LINDA F TRUST	0209300005 0216100002	09-100-21 16-100-21	SE SW NE NW	26.5 36.9	100.00 91.88	2,403.56 2,208.39
WORTH COUNTY SECONDARY ROADS		0-0-0	RIGHTS-OF-WAY	4.9		342.51
<b>Totals</b>				<b>178.4</b>	<b>ac</b>	<b>\$10,000</b>