



**JACOBSON-WESTERGARD
& ASSOCIATES, INC.**

Consulting Engineers & Land Surveyors

www.jacobson-westergard.com

105 South 6th Street
Estherville IA 51334

PHONE 712-362-2647 • FAX 712-362-2668
EMAIL jwa@jacobson-westergard.com

Scott A Brunsvold, PE
Patrick N Boggess, PLS
Richard A Hopper, PE
Collin J Klingbeil, PE

Jeffrey L Rose, PE
Dallas L Heikens, PE

Dale D Jacobson, PE (1922—1995)
Kenneth D Westergard, PE, PLS (1930—2020)
Robert V Bendixen, PLS (1947—2022)

"Bettering Iowa since 1970"

August 6, 2025

RE: Amendment No. 1 to Engineer's Report
Joint Drainage District No. 61 Branch 399 West Drainage Improvements
Dickinson County, Iowa
JWA PROJECT NO: E24106

Dear Board Members and Landowners:

We previously filed an engineer's report regarding proposed improvements to the Branch 399 West tile system of Joint Drainage District No. 61 (JDD61 Br 399W) dated January 2, 2025. An informational meeting was held on January 28, 2025. At said meeting we were directed to prepare a preliminary classification, and to investigate possible lower cost drainage improvement alternatives. Based on Iowa Code, our originally filed report may be amended at any time prior to final approval. We hereby submit this Amendment No. 1 to our originally filed report dated January 2, 2025. Our recommendations from the originally filed report remain the same unless otherwise modified per this report amendment. The preliminary classification (preclass) is a separate report.

A. Improvement Alternatives

As directed, we investigated possible lower-cost alternatives to the improvements proposed in our originally filed engineer's report (\$2.206 million tile improvement project).

1. Surface Drains / Shallow Ditches / Waterways

Currently the watershed has many depressional areas where water collects and can only be drained via subsurface drainage tile. One alternative we investigated was a possible system of shallow ditches to carry surface runoff to the JDD61 Main Open Ditch. This would not be sufficient in itself to provide adequate drainage; however, would allow for a lower size and lower cost design of an improved subsurface tile system.

In order to be feasible the ditches would need to be inexpensive, shallow, and traversable by farming equipment (8:1 side slopes or less). In attempting to design a shallow surface ditch from Terril to the JDD61 Main Open Ditch, we found that cuts as deep as 8-10 feet would be required. To make the ditches traversable by equipment would require a tremendous amount of dirt moving, and expense. In our opinion this is not a feasible alternative.

2. Pond / Retention Basin / Wetland

At the informational meeting incorporating one or more ponds into the design was brought up as a possible idea. The thought behind this was that outside funding (e.g. Iowa Department of Agriculture and Land Stewardship) could be used to construct a pond and allow for downsizing the tile downstream from the pond, resulting in overall project cost savings.

Unfortunately, we have doubts whether downsizing tiles downstream from a pond would be appropriate. In agricultural drainage, it is acknowledged that short duration ponding and saturation is acceptable with minimal detriment to the crops. Tiles therefore are not designed to handle peak drainage rates, rather they are designed to remove excess water over time (less than the time that would cause significant crop damage). During and shortly after a large rainfall event the flow in a tile would typically be dominated by surface runoff entering the tile via surface intake. Over time the surface water flow rates will decrease, and the subsurface drainage flows will increase in the tile system.

With a pond, in a large rain event the pond may fill up with surface runoff, then when subsurface drainage dominates the flow attenuation benefits of the pond will have already been exhausted. Downsizing the tile downstream from a pond in our opinion would be inadvisable.

We do note that if a pond could be constructed in a location that receives very little surface runoff downsizing the pipes could be acceptable. However, ponds are typically constructed in low-lying areas that receive surface runoff in order to minimize the cost of construction (less digging needed), and to make it easier to route water into it.

We are not opposed to the idea of incorporating a pond / wetland into this project but would not result in an overall project cost reduction. If any landowners are interested, please let us know.

3. Open Ditch

At the informational meeting we discussed the possibility of replacing the first approximately 3,100 feet of proposed large diameter tile with an open ditch, along the north side of 230th Street. We have further explored this alternative and believe it to be a viable means of significantly reducing the overall project cost.

In order to construct an open ditch, right-of-way (ROW) acquisition would be required. This would involve appraisers to place a value on the lands taken for ROW, a report, and a separate hearing. The ROW would need to be acquired before construction could begin. Although some land would be permanently removed from crop production, lands with the ROW would be removed from property tax rolls and would not be assessed for benefits from drainage district facilities.

We do note that there are pros and cons to an open ditch versus a tile. The major advantage in this case is the significant reduction in upfront cost. Another advantage is higher capacity as compared to a tile. The major disadvantage is the higher long-term cost of maintenance, including cleanouts, tile outlet and surface drain replacements, bank repairs, etc.

4. Reduced Scope Tile Improvements

In our original report and at the informational meeting we discussed the possibility of eliminating the improvement to the Branch 399 West-24, and ending the improvement of the Branch 399 West tile just north of 230th Street in the SE SW ¼ of Section 10. These continue to be options to reduce the overall cost of the project.

Cost Estimate Summary Table

Option	1	2	3	4
Description	Full Tile Improvements	Reduced Tile Improvement	Open Ditch & Tile Improvements	Open Ditch & Reduced Tile Improvements
Estimated Project Cost	\$2.206 million	\$1.541 million	\$1.848 million	\$1.218 million
Avg Cost Per Acre*	\$1,568	\$1,095	\$1,313	\$852

*: Actual costs per acre vary by parcel. See preliminary classification report for parcel specific cost estimates.

B. Incremental Improvements

During the informational meeting we discussed the idea of completing improvements incrementally, a piece at a time. The thought behind this idea to spread the large cost over time, and not result in any large one-time assessments.

However, in our opinion this is already built into Iowa Code for drainage districts. When a drainage district assessment exceeds \$500 on a single parcel, the landowner has the option to pay the assessment in installment payments over up to 10 – 20 years (maximum number of years set by the Board). Interest does accrue, typically at 5-6%.

Additionally, there would be many cost inefficiencies associated with incremental improvements. By Iowa Code a new petition, engineer's report, and hearing(s) would be required for each phase of improvement. A new round of construction plans and public bidding would be required, likely new contractors and mobilizations, etc. for every new phase of improvement. Additionally, with cost inflation we would expect that projects done 5, 10, or 20 years from now would be significantly more expensive than if done today.

We understand the thought process in trying to spread the cost over time, but because of cost inefficiencies and the fact that large drainage district assessments can already be paid over 10 – 20 years in our opinion it is most cost efficient to complete necessary drainage improvements in as few projects/increments/phases as possible.

C. Natural Gas Pipeline

There is a natural gas pipeline in this area that crosses the existing JDD61 Branch 399W tile system at three (3) separate locations. See enclosed map. The pipeline company worked with us to visit the site, locate the pipeline, and provide approximate depths. We used this information to determine the potential for conflicts with our improvement proposals. It appears that no conflicts exist with the current tile improvement design proposals; however, there would be a conflict for the improvement options that include an open ditch (#3 & 4).

Under Iowa Code 468.27 (2) the drainage district holds a permanent easement for its tile lines. Iowa Code 468.186 requires that in the case of a drainage district improvement, if a utility needs to be relocated it is at the expense of the utility company.

We have been communicating with the pipeline company and understand that relocating the pipeline underneath the proposed open ditch would be very expensive. As a lower-cost alternative for the pipeline company we proposed crossing the natural gas pipeline with a large diameter culvert. Unfortunately, the pipeline company has indicated they believe they are not obligated either to relocate their pipeline or to pay the cost of a culvert crossing.

The open ditch improvement options (#3 & 4) are much less expensive than the tile options (#1 & 2), by upwards of nearly \$360,000 (assuming the pipeline company pays the costs associated with resolving the conflict of the pipeline and the proposed open ditch). Even if ultimately the drainage district paid for a culvert crossing of the pipeline the overall cost savings could still be around \$300,000 as compared to the tile improvement project options.

D. Discussion / Recommendations

Any of Options #1-4 presented in the Cost Estimate Summary Table are viable. We recommend that landowners review the separate preliminary classification report to evaluate their parcel-by-parcel cost estimates for each improvement option. Overall, we would recommend Option #3, which includes an open ditch combined with full tile improvements (including full length Branch 399W and Branch 399W-24 improvements). If the landowners served by the upper extents of Branch 399W and Branch 399W-24 are opposed, then Option #4 (open ditch and reduced tile improvements) is acceptable as well. With either of these options we would have to work through issues related to the conflict of the proposed open ditch with the natural gas pipeline. However, in our opinion the potential project cost savings are worthwhile as compared to a full tile improvement.

Sincerely,

JACOBSON-WESTERGARD & ASSOCIATES INC.

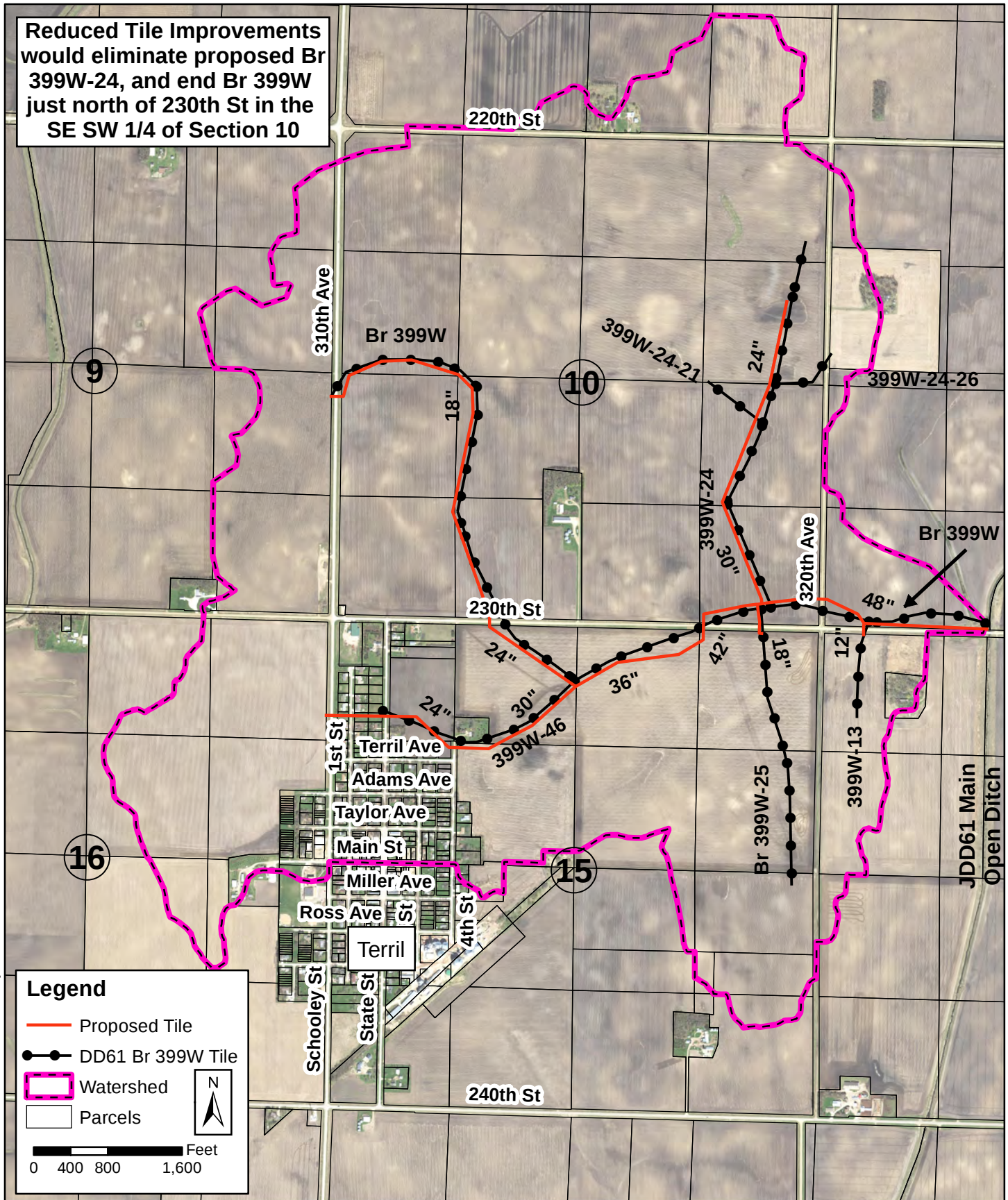


Collin J. Klingbeil, P.E.

Encl. Proposed Tile Improvements Map, Proposed Open Ditch Improvements Map

Joint Drainage District No. 61 Branch 399 West Preliminary Proposed Tile Improvements Map

Dickinson County, Iowa



Joint Drainage District No. 61 Branch 399 West Preliminary Open Ditch Alternative Map

Dickinson County, Iowa

