



1124 Willis Ave
Perry, IA 50220
PO Box 44

August 8, 2025

Drainage District No. 238
City of Kamrar
414 Elm St.
Kamrar, IA 50132

Re: Engineer's Report for Drain Tile Repairs

Dear Drainage District No. 238 Trustees,

We were appointed as engineers for Drainage District No. 238 to study and recommend necessary repairs to the existing district tile system, pursuant to Iowa Code §468.126. We have completed our survey and evaluation of the damaged tile, and this letter constitutes our Engineer's Report of findings and recommendations.

Findings

This report focuses on the existing 14-inch clay drain tile located in Section 35 of Independence Township, within the city limits of Kamrar, on the north side of the Union Pacific Railroad. The tile is in very poor condition, exhibiting several blowouts, large sinkholes, and extensive tree growth directly above it. It is likely that tree roots are obstructing the tile and have contributed significantly to the current failures.

Enclosed with this report are photographs documenting the tile blowouts and excessive tree growth over the tile.

Recommendations

The *Iowa Drainage Guide*, published by Iowa State University Extension, provides the following guidance for similar situations:

- **Repair Blowouts:** Holes that develop over subsurface drains should be repaired promptly. Otherwise, large amounts of soil may wash into the tile and block the entire system.
- **Control Tree Roots:** Water-loving trees such as willow, elm, soft maple, and cottonwood within approximately 100 feet of a drain should be removed. A 50-foot clearance is recommended for other species. Where removal is not feasible, or rerouting is not possible, a closed tile with sealed joints should be installed through the root zone.

Due to the substantial tree growth within the Union Pacific Railroad right-of-way directly over the existing tile, it is neither feasible nor cost-effective to repair the tile in place. Rerouting the tile is the best long-term solution to avoid recurring maintenance issues.

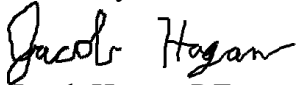
We recommend rerouting approximately 600' tile using 15-inch HDPE pipe with taped joints, outside the impacted area. A plan sheet showing the proposed reroute is enclosed. We estimate the construction cost to be approximately \$40,000. Given the risk of continued silting and blockage, we recommend the work be completed as soon as possible, consistent with guidance in the *Iowa Drainage Guide*.

Though we are recommending construction of a new alignment, this rerouting qualifies as a repair under Iowa Code §468.126, which states:

“If in maintaining and repairing tile lines the board finds from an engineer’s report it is more economical to construct a new line than to repair the existing line, the new line may be considered to be a repair.”

As the estimated cost of this repair is under \$50,000, the Board may proceed with the work without holding a public hearing. However, because the existing tile lies within the Union Pacific Railroad right-of-way, proper legal notice must be provided. We recommend seeking legal counsel to ensure appropriate notice and compliance.

Sincerely,

A handwritten signature in black ink that reads "Jacob Hagan". The signature is fluid and cursive, with the first name "Jacob" and last name "Hagan" clearly distinguishable.

Jacob Hagan, P.E.

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