

**SUPPLEMENT TO
ENGINEER'S REPORT
ON REPAIRS OR
IMPROVEMENTS TO
MAIN TILE
DRAINAGE DISTRICT
NO. 9
HARDIN COUNTY,**



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

Lee O. Gallentine, P.E. PE June 3, 2019
LEE O. GALLENTINE, P.E. DATE

LICENSE NUMBER: 15745
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2020
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**Supplement to Engineer's Report
on Repairs or Improvements
to Main Tile, Drainage District No. 9
Hardin County, Iowa**

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Supplement to Engineer's Report on Repairs or Improvements to Main Tile, Drainage District No. 9 Hardin County, Iowa

1.0 INTRODUCTION

- SCOPE OF WORK – The Hardin County Board of Supervisors, acting as District Trustees, requested Clapsaddle-Garber Associates to investigate and report concerning repair or improvements to the Main tile of Drainage District No. 9. At the regular drainage meeting held on May 22, 2019, the original Engineer's Report along with the options that it contains were discussed by the District Trustees. As a result, the District Trustees requested Clapsaddle-Garber Associates to move ahead with this supplement to explore an additional option requested by one of the landowners.

2.0 IMPROVEMENT METHOD – To improve the drainage capacity for the existing Main tile, the following option is an additional option available:

Tile Sever

- Sever the existing Main tile upstream of the upstream railroad crossing and plug the downstream end on northwest side of the railroad right of way.
- Abandon existing Main tile at said upstream railroad crossing under the railroad tracks.
- Install a new separate Main tile from the location of severing west and southwest to a new separate outlet in the existing water course (approximately 1/8 mile downstream of the outlet of the existing main tile).
- For the portion of the Main tile in the railroad right of way at the downstream limits of investigation, jet clean the existing Main tile, CCTV inspect the existing Main tile to verify its condition and remove the trees inside the railroad right of way.
- For reference, the locations of proposed work are shown on the map included in Appendix H.

With the above-mentioned improvement method, the following should be noted:

- The condition of the Main tile at the downstream railroad crossing is unknown.
- For the above option, the current railroad crossing would not be removed, but would be abandoned as dictated by railroad standards.
- For the above option, trees within 50' of the locations of the existing Main tile inside railroad right of way would be removed to stop infiltration of tree roots.
- The pipe sizes used are those that are currently manufactured that most closely meet the current Main tile size.
- The above option would only remove soil and debris in the existing Main tile at the areas of work.
- The above work is for the identified portions of the Main tile only. No work is proposed for the remainder of the existing Main tile.

- The above work would turn the drainage area upstream of the upstream railroad crossing into a separate Drainage District.
- The proposed tile on the above work would be installed at some depths slightly larger than the Tile Reroute Method from the original report.
- The above work may require annexation to extend the district boundary to the West and Southwest to allow for installation of the proposed tile.
- Improvements have historically been viewed as having an impact on jurisdictional wetlands. As such, individual landowners should consult with applicable staff at the Hardin County NRCS office to determine the existence of said jurisdictional wetlands and what said impact may be on them.

Per Iowa Code Chapter 468.126, the above actions would be considered an improvement. As such, Subsection 4, paragraph c of Chapter 468.126 states “If the estimated cost of the improvement does not exceed fifty thousand dollars, the board may order the work done without conducting a hearing on the matter. Otherwise, the board shall set a date for a hearing on whether to construct the proposed improvement and whether there shall be a reclassification of benefits for the cost of the proposed improvement.” The opinion of probable construction cost contained in the next section of this report exceeds said \$50,000 limit. Therefore, a hearing will be required. Per Iowa Code Chapter 468.126.4.e, the right of remonstrance may apply to the proposed improvements.

3.0 **OPINION OF PROBABLE CONSTRUCTION COSTS** – Using the above method of improvement, an itemized list of project quantities and associated opinion of probable construction costs was compiled and is included in Appendix I of this report. A summary of said costs are as follows:

METHOD	TOTAL COST
Tile Sever - Improvement	\$187,800

It should be noted that said costs include materials, labor, and equipment supplied by the contractor to complete the necessary repair and includes applicable engineering, construction observation, and project administration fees by Clapsaddle-Garber Associates. However, said costs do not include any interest, legal fees, county administrative fees, crop damages, other damages, previous repairs, engineering fees to date, or reclassification fees (if applicable). As always, all costs shown are opinions of Clapsaddle-Garber Associates based on previous lettings on other projects. Said costs are just a guideline and are not a guarantee of actual costs.

4.0 **RECOMMENDATIONS** – There is a definite need to perform the above-mentioned action or one of those mentioned in the original Engineer’s report. The actions would remove the current restrictions in the Main tile and extend the lifespan of the same. Therefore, it is recommended that the District Trustees should take the actions stated in the original report.

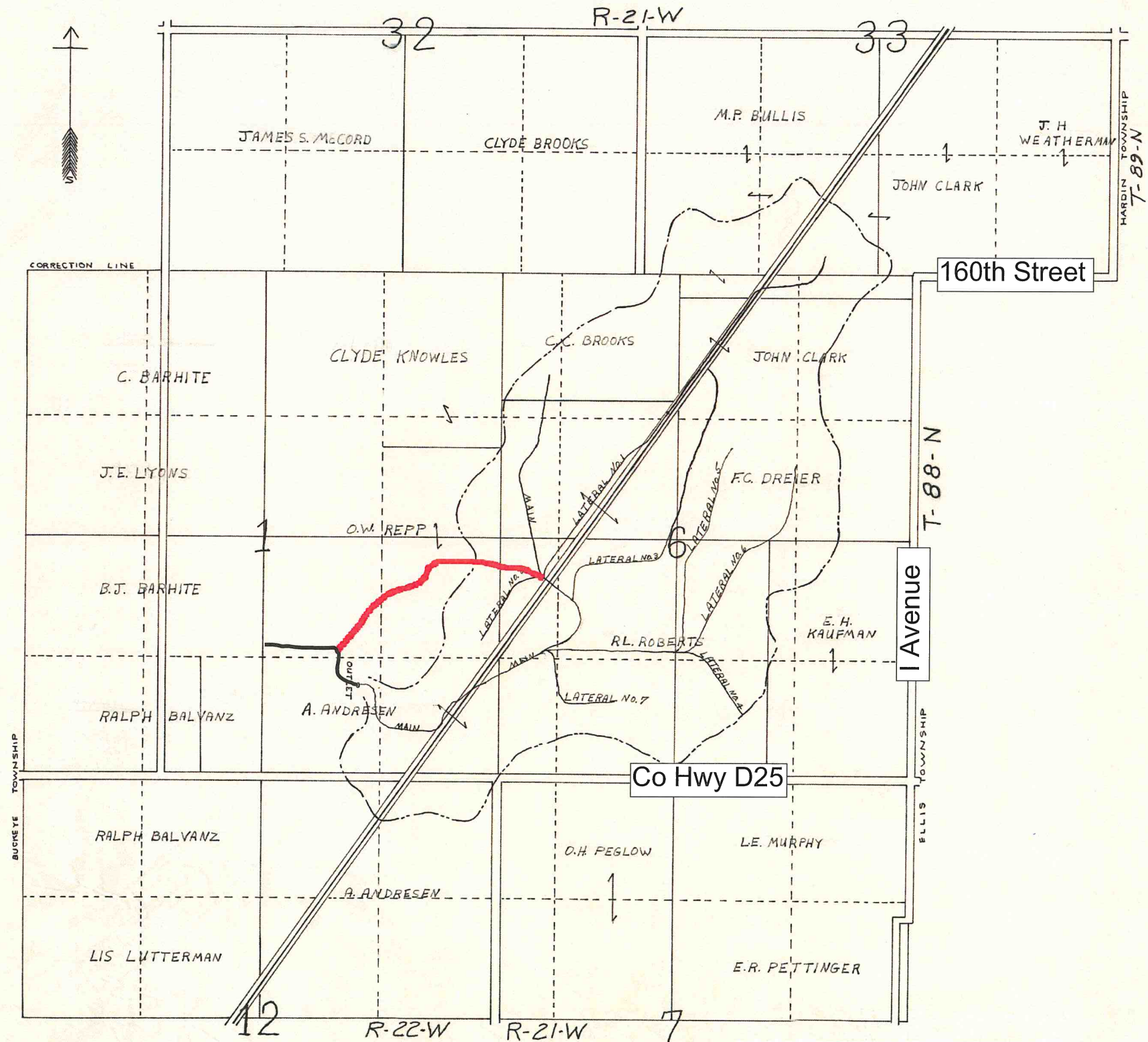
It should be noted that if the Tile Sever option from this supplement is selected, the following additional recommendations apply:

- Confirm that Drainage District 9 should be split into two separate districts.
- Confirm if annexation is necessary to the West and Southwest.

Traced by:- Reigles Eng'g Co.
Feb. 1956

PLAT
D.D. No. 9
Total Acs. 550
Scale
1" = 600 ft.

Ellis



— Severed Main Tile Route
— Existing Water Course



By: Z.J.S.
 Date: 5/30/2019
 Checked By: L.O.G.
 Date: 6/3/2019

Engineer's Opinion of Probable Construction Cost

Project: Main tile Improvement for D.D. #9

Location: Section 6, T88N, R21W and Section 1, T88N, R22W Hardin County, Iowa

ITEM #	DESCRIPTION	Unit Cost	Units	Quantity	Units	Total Cost
CONSTRUCTION COSTS						
201	15" RCP OR DUAL WALL TILE	\$ 30.00	LF	2640	LF	\$ 79,200.00
202	18" CMP OUTLET	\$ 30.00	LF	40	LF	\$ 1,200.00
203	REVTMENT	\$ 40.00	TN	50	TN	\$ 2,000.00
204	INTAKE JUNCTION STRUCTURE	\$ 4,000.00	EA	1	EA	\$ 4,000.00
205	CONCRETE COLLARS	\$ 300.00	EA	2	EA	\$ 600.00
206	TILE REMOVAL	\$ 10.00	LF	10	LF	\$ 100.00
207	SEEDING	\$ 1,000.00	LS	1	LS	\$ 1,000.00
208	ABANDON EXISTING TILE (RAILROAD CROSSING)	\$ 30.00	LF	110	LF	\$ 3,300.00
209	RAILROAD REQUIREMENTS	\$ 10,000.00	LS	1	LS	\$ 10,000.00
210	LOCATE EXISTING DISTRICT TILE	\$ 1,000.00	LOC	3	LOC	\$ 3,000.00
211	TILE JET CLEANING	\$ 50.00	LF	200	LF	\$ 10,000.00
212	TILE CCTV	\$ 4.00	LF	200	LF	\$ 800.00
213	TREE REMOVAL	\$ 10,000.00	LS	1	LS	\$ 10,000.00
CONSTRUCTION SUBTOTAL						\$ 125,200.00
Contingency (20%)						\$ 25,040.00
CONSTRUCTION TOTAL						\$ 150,240.00
Engr. & Const. Observation (25%)						\$ 37,560.00
TOTAL COST						\$ 187,800.00

TILE SEVER