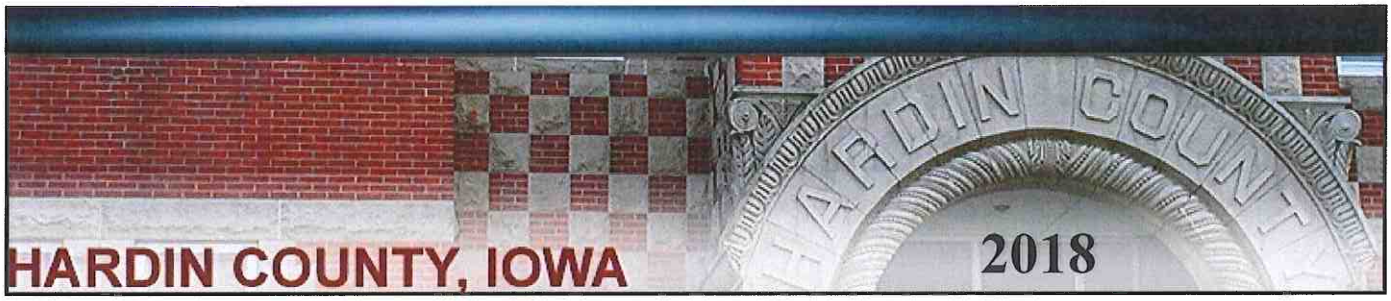
AGENDA
PUBLIC HEARING ON ENGINEER'S REPORT ON REPAIRS TO
MAIN OPEN DITCH, DRAINAGE DISTRICT 148, HARDIN COUNTY

JANUARY 16, 2019 AT 1:00 P.M.
HARDIN COUNTY COURTHOUSE LOWER LEVEL CONFERENCE ROOM

1. Open Meeting
2. Approve Agenda
3. Introductions/Attendance
4. Open Public Hearing
5. Verify Publication
   Published in the Times Citizen on December 22, 2018
6. Explanation Of Project
   -Classification - Ag or Municipal

   Documents:

   DD 148 ENGS REPAIR RPT 11-30-18.PDF
7. Written Or Verbal Comments/Discussion
8. Close Public Hearing
9. Possible Action
   -Adopt Recommendation of Engineer's Report
   -Direct CGA to Prepare Plans and Specifications
10. Other Business
11. Adjourn Meeting



ENGINEER'S REPORT ON REPAIRS TO MAIN OPEN DITCH DRAINAGE DISTRICT NO. 148 HARDIN COUNTY, IOWA

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

PE Nov 30 2018

LEE O. GALLENTINE, P.E. DATE

LICENSE NUMBER: 15745
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2018
PAGES OR SHEETS COVERED BY THIS SEAL:
SHOWN ON TABLE OF CONTENTS

CGA
ENGINEERS • LAND SURVEYORS

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Engineer's Report on Repairs to Main Open Ditch, Drainage District 148, Hardin County, Iowa

Engineer's Report on Repairs to Main Open Ditch, Drainage District 148, 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 repairs to the Main Open Ditch of Drainage District No. 148 at the November 14, 2018 regular drainage meeting. This report will investigate the necessity and feasibility of said repairs and present an opinion of probable construction costs associated with the same. For reference, a copy of the drainage meeting minutes showing said request is included in Appendix G.

- LOCATION – The area of investigation was the entirety of the Main Open Ditch located in Sections 8, 16, and 17, Township 89 North, Range 19 West, Hardin County, Iowa. Specifically, the downstream limit of the investigation is the start of the Main Open Ditch at approximately 400 feet east of T Avenue in the NW¼ NW¼ Section 16. Going upstream, the Main Open Ditch then goes west and leaves Section 16 when it crosses T Avenue approximately ½ mile north of County Highway D15. It then continues west across Section 17 near its north line, crossing north into Section 8 approximately ¼ mile west of T Avenue. It then turns and travels west for approximately ¼ mile where it turns northwesterly. In continues northwesterly until it reaches the bulkhead located on the east side of S Avenue at approximately ¾ mile north of County Highway D15. For reference, a copy of the Investigation Map showing said limits is included in Appendix H.

2.0 **DISTRICT HISTORY** – The following is a summary of the pertinent history of the Main Open Ditch of Drainage District No. 148, as obtained from the Hardin County Auditor's drainage minutes and records.

1944, Feb 1	Petition filed for the establishment of a drainage district.
	H.A. Little appointed Engineer to investigate and report on the establishment of said district.
1944, Sept 25	Bid letting for the construction. Lowe Construction Co. of Cedar Rapids Iowa awarded contract. Contract stated work to commence before October 15, 1944 and completed before July 1, 1945.
1979, Oct 31	District Trustees requested investigation of the Main Open Ditch to determine the necessity of cleaning and/or constructing other repairs and improvements.
1980, Dec 1	Engineer's report for repairs and improvements to the Main Open Ditch approved pending public hearing.
1981, Jan 12	Hearing on construction of repairs and improvements to Main Open Ditch. Secondary Road Department authorized to remove beaver dam from Main Open Ditch.
1981, Mar 16	Bid letting for construction of repairs to the Main Open Ditch. Construction to consist of clearing and disposing of trees, stumps, and brush; leveling spoil banks; cleaning and shaping ends of surface pipe; removing and installing existing surface pipe; and furnishing and installing new surface pipe. Van Hauen Construction Company of Webster City, Iowa awarded contract.
1981, June 19	Engineer submitted that construction is completed.
1981, July 21	Hearing on the completion of repairs and improvements.
1983, Oct 28	Plans for repairs and cleanout of the full length of the Main Open Ditch.
1983, Nov 14	Contract awarded to Jim Peterson of Ellsworth, Iowa for construction of repairs to the Main Open Ditch.
1984, May 30	Contract with Jim Peterson rescinded. Contract awarded to Robert Gehrke with date of completion set as July 1, 1984.
1984, Mar 21	Contract signed with Robert Gehrke.
1984, July 2	Extension for contract completion requested and approved due to unfavorable weather conditions.
1993, Sept 29	Approval for removal of beaver dam in Section 8.
1993, Dec 1	Approval for removal of beaver dam in SE¼ SE¼ Section 8.
1995, Nov 22	Approval for removal of beaver dam in NE¼ NE¼ Section 17.
1997, May 14	Approval for removal of beaver dam in NE¼ NE¼ Section 17.
2001, July 30	Approval for removal of beaver dam in Section 18.
2003, Nov 5	Approval for removal of beaver dam in NE¼ NE¼ Section 17.
2011, Nov 7	Request for the removal of three beaver dams in the S½ SE¼ Section 8 and NE¼ NE¼ Section 17.

3.0 **INVESTIGATION** – For the investigation portion of this report, field and office investigations were performed. For the field portion, the Main Open Ditch was viewed in the field and visible defects (i.e. beaver activity, bank washouts/sloughs, vegetative growth, broken/deteriorated tile outlets, broken/deteriorated surface drains, etc.) were noted. This was done in conjunction with surveying of available spot elevations of the edge of water and toes of bank.

For the office investigation, available copies of the above mentioned plans and profiles along with the district history were reviewed. Said review showed that cleanout of the Main Open Ditch had only been mentioned once since the original construction. This was in the early 1980's and appeared to conform to the original 1940's design of 0.09% slope for the entire 6,350± feet of the Main Open Ditch with a 4 feet wide flat bottom and a bank slope of 2:1. These are the original design components that appear to be controlling.

Using the above survey information, a profile of the existing Main Open Ditch bottom was generated. For comparison purposes, it was necessary to plot the design grade in effect on the profile. Comparison of the two then allowed for approximation of where and how much siltation is in the open ditch. For reference, a copy of said preliminary profile is included in Appendix J.

4.0 **DISCUSSION AND CONCLUSIONS** – Based on the above investigation, there are really six issues which are restricting drainage and/or leading to degradation of the district facilities. For reference, copies of pictures from the field investigation are contained in Appendix I. They are as follows:

- It is apparent that the Main Open Ditch needs to be cleaned out in order to ensure unrestricted drainage from the main tile. Currently, the upper stretch (Sta. 26+50± to Sta. 63+50) has siltation ranging from ½'± to 3'±. Without a cleanout, the silt will reduce the cross-sectional area of the ditch through soil deposition into the ditch bottom. A reduction in the cross-sectional area directly results in a reduction in the volume of water that the ditch can convey. Also, the entire length of the Main Open Ditch has narrow flowlines that meander within the existing Main Open Ditch. This meandering also reduces the volume of water that a ditch can convey. This reduction in turn backs water and silt up into the tiles that outlet into the Main Open Ditch. This effect was visible as the main tile outlet was totally submerged under water and some private tile were partially submerged under water.
- At some locations washouts/sloughs on the Main Open Ditch bank were observed. The causes of said washouts/sloughs are typically either due lack of surface drains to drain water from the field side of the spoil bank into the Main Open Ditch or tile outlets broken in the main open ditch bank. Either way, if not repaired, these washouts/sloughs will continue. This will significantly increase the amount of silt in the Main Open Ditch.
- There are existing rusty surface drains that are either broken or falling into the Main Open Ditch. If not replaced, these surface drains will continue to deteriorate and eventually fail. Once they fail, the result will be additional washouts/sloughs through the resulting holes in the ditch bank or restricted drainage after the surface drain has fallen into the Main Open Ditch.
- There are existing tile outlets that are either broken and outleting behind the ditch banks or falling into the Main Open Ditch. If not repaired, the bank of the Main Open Ditch can become saturated and is susceptible to washouts/sloughs
- At the lower end of the Main Open Ditch, beavers were observed entering the Main Open Ditch, a beaver dam was observed, and areas of beaver activity were visible. Beaver dams reduce drainage by backing water into tile outlets and slows water flow. This thereby decreases water velocity and encourages siltation.
- At the lower end of the Main Open Ditch, there are areas of vegetative growth (small trees and brush) which can impede drainage in three ways. First, when any of these trees die or lose limbs, the resulting debris can enter the drainage ditch, intertwine and create "jams", which reduces the volume of water that the ditch can convey. Second, the roots of said trees naturally seek water sources. As such, said roots can infiltrate and plug tile lines which discharge into said Main Open Ditch. Obviously, the trees and the tile lines must be in the same vicinity for this to happen. Finally, trees provide an ample building material for beaver, who construct dams. Due to the existence of beavers in the Main Open Ditch already, continued tree growth will only encourage more beaver activity.

5.0 **REPAIR METHOD** – To repair the above discussed issues, the following repairs are recommended:

- Remove all siltation and meandering within the Main Open Ditch and return it to the original design flowline, grades, and bottom width.
- Repair all bank washouts/sloughs by flattening the slope on the existing Main Open Ditch bank at these locations.
- Install additional corrugated metal surface drains with flared end sections and anti-seep collars where dictated by topography and spoil bank height.
- Replace existing broken surface drains with corrugated metal surface drains with flared end sections and anti-seep collars.
- Install corrugated metal tile outlets with rodent guards for existing tile outlets which do not have them.
- Replace deteriorated corrugated metal tile outlets with rodent guards for existing tile outlets.
- Remove trees and brush on the slopes of the bank or on the spoil bank.

With the above mentioned methods, the following should be noted:

- The proposed CMP tile outlet pipe sizes would be the same size or larger than the existing tile sizes.
- These actions are considered a repair, and repairs have historically been viewed as not having an impact on jurisdictional wetlands. As such, individual landowners should consult with applicable staff at the Hardin County NRCS office to verify the existence of said jurisdictional wetlands and that there will be no impact on them.

Per Iowa Code Chapter 468.126, the above actions would be considered a repair. As such, Subsection 1, paragraph c of Chapter 468.126 states "If the estimated cost of the repair 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. . ." The opinion of probable construction cost contained in the Opinion of Probable Construction Costs section of this report exceeds said $50,000 limit. Therefore, it is our understanding that a hearing will be required. It is also our understanding that per Iowa Code Chapter 468.126.1.g, the right of remonstrance does not apply to the proposed repairs.

6.0 **OPINION OF PROBABLE CONSTRUCTION COSTS** – Using the above method of repair, an itemized list of project quantities and associated opinion of probable construction cost was compiled and is included in Appendix K of this report. Since the length of open ditch that has siltation is easier to define when compared to the volume of siltation, the repair for siltation is shown in said appendix in units of stations (STA) or 100 foot intervals. It should be noted that said costs includes 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 damage, other damages, previous repairs, engineering fees to date, wetland mitigation fees, 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.

7.0 **OWNERSHIP AND CLASSIFICATIONS** – Any and all information concerning ownership of lands and classifications of said lands within Drainage District 148 can be obtained from the Hardin County Auditor's office.

8.0 **RECOMMENDATIONS** – There is a definite need to perform the repair to ensure the drainage capacity of the Main Open Ditch is maintained. Therefore, it is recommended that the Hardin County Board of Supervisors, acting as District Trustees, should take action to accomplish the following:

- Approve the Engineer's Report as prepared by Clapsaddle Garber Associates.
- Hold the required hearing on the proposed repair.
- Adopt the recommendations of the Engineer's Report.
- Direct Clapsaddle Garber Associates to prepare plans and specifications for the proposed repair.
- Direct Clapsaddle Garber Associates to proceed with receiving bids from interested contractors.
- Award contract to the lowest responsible contractor.
- If desired or required by Iowa Code, proceed with reclassification proceedings.

REGULAR DRAINAGE MEETING

11/14/2018 - Minutes

1. Open Meeting
   Hardin County Board of Supervisor Chairman, BJ Hoffman, opened the meeting. Also present were Supervisors, Lance Granzow and Renee McClellan; Landowner, Curt Bunte; Lee Gallentine with Clapsaddle-Garber Associates; Drainage Clerk, Tina Schlemme.

2. Approve Agenda
   McClellan moved, Granzow seconded to approve the agenda as presented. All ayes. Motion carried.

3. Approve Minutes
   Granzow moved, McClellan seconded to approve the minutes of the November 7, 2018 regular drainage meeting. All ayes. Motion carried.

4. DD 55-3 Lat 9 - Discuss, With Possible Action, Landowner Concerns
   Bunte presented photos of recent drone footage. After much discussion, the Trustees agreed that Bunte should submit a damage claim for crops and waterway seeding. Schlemme is to share the photos with Hands On to locate any possible private tile not hooked back up as indicated by the wet areas. The possible installation of intake(s) were also discussed.

5. DD 41, 77, 123, 128, 143 And Big 4 Main - Approve Change Order #2
   No action was taken as the contractor was not present and the completion deadline is still far enough out.

6. DD 34 - Discuss, With Possible Action, Post-Construction Erosion Control
   Gallentine presented the repair summary for the needed erosion control which stated that the area still needs seeded. Granzow moved, McClellan seconded for CGA to administer seeding themselves while in the area or hire a contractor to perform. All ayes. Motion carried.

7. DD 25 - Approve Cancellation Of Contract With Farm Tile Pro
   Gallentine and Schlemme updated the Trustees that all requested information had been received from Farm Tile Pro stating they would not be invoicing for any further costs but the submitted bond invoices. Granzow moved, McClellan seconded to approve the contract cancellation and payment of $5,360 for bond costs. All ayes. Motion carried.

8. DD 25 - Discuss, With Possible Action, Updates To Project
   Schlemme stated the attorney has worked with Union Pacific and reached an agreement to move forward with the project. Granzow moved, McClellan seconded to approve the agreement as presented. All ayes. Motion carried.

9. DD 25 Lateral 3 - Discuss, With Possible Action, Investigation Summary For Work Order #226
   Gallentine updated the Trustees that the new tile problem near the apple orchard was due to tree roots plugging the tile. There is approximately 150' between the previous tile repair and the new one. McClellan moved, Granzow seconded to approve replacing the longer stretch of tile (current repair plus the 150') and removing the trees during construction. Schlemme is to ask the landowner if they would like the fence replaced during construction if damaged. All ayes. Motion carried.

10. DD 38 - Discuss, With Possible Action, Investigation Summary For Work Order #231
    Gallentine presented the investigation summary for the standing water in 15-89-22. The landowner does not have the contractor available to start right away as originally suggested. Granzow moved, McClellan seconded to either assign the work via lottery system or lump with other projects, if possible, under a contract. All ayes. Motion carried.

11. DD 86 - Approve Work Order Request #236
    McClellan moved, Granzow seconded to approve Work Order #236 for tile damage in the NE1/4 of section 23-89-21. CGA is to investigate and report back or if it's an easy repair, assign a contractor to complete. All ayes. Motion carried.

12. DD 124 - Set Time For December 5, 2018 Landowner Meeting
    Granzow moved, McClellan seconded to set the time for the December 5, 2018 landowner meeting as 1:00 p.m. All ayes. Motion carried.

13. DD 146 - Discuss, With Possible Action, Investigation Summary For Work Order #228
Gallentine presented the investigation summary for an eroded outlet in the NE1/4 of section 15-86-20. Granzow moved, McClellan seconded to approve the additional actions recommended and to assign the work via the lottery system or lump with other projects, if possible, under a contract. All ayes. Motion carried.

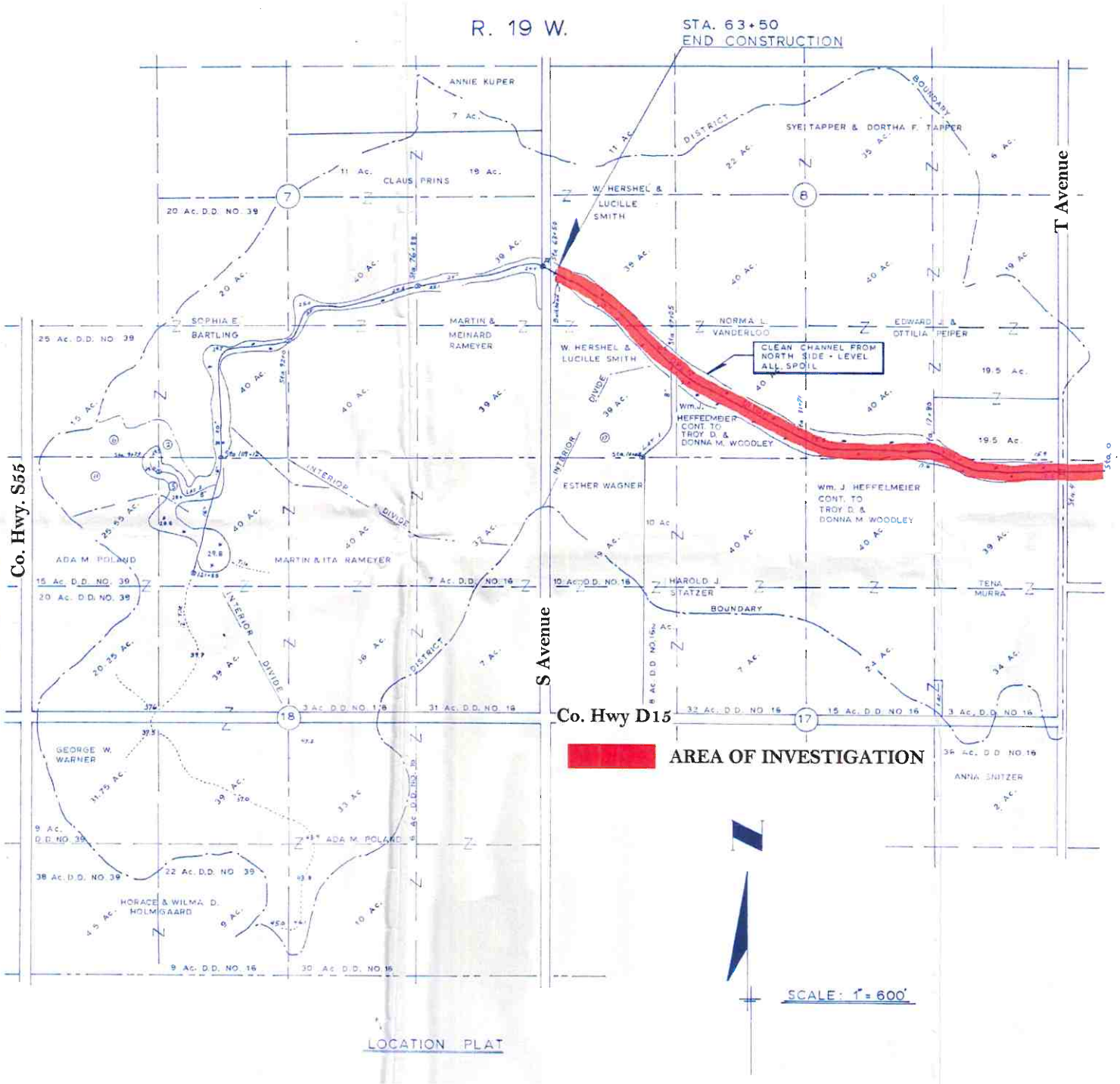
14. DD 148 - Discuss, With Possible Action, Updates Regarding Work Order #227
Gallentine updated the Trustees that it appears the silt is enough to warrant a cleanout which would be over $50,000. Granzow moved, McClellan seconded for CGA to create an engineer's report. All ayes. Motion carried.

15. DD 165 - Discuss, With Possible Action, Investigation Summary For Work Order #232
Gallentine presented the investigation summary for a depression in the SW1/4 of section 5-89-19. Granzow moved, McClellan seconded to approve the additional actions recommended and to assign the work via the lottery system or lump with other projects, if possible, under a contract. All ayes. Motion carried.

16. Discuss, With Possible Action, Legal Opinion Regarding Drainage Clerk Position
Schlemme presented the legal opinion received from Mike Richards that stated his interpretation of the Code of Iowa is the drainage clerk position should stay under the control of the auditor. Granzow stated he believes they could supervise the position but have the ultimate control be under the auditor. McClellan stated she would like Schlemme to contact County Attorney, Darrell Meyer, to draft an agreement between the board and the auditor. The Trustees discussed different funding options and decided that the full-time position should begin no later than July 1, 2019 but could start as early as January 1, 2019 by using the current budgeting method for the first 6 months. The drainage districts would begin to be charged beginning the next fiscal year, July 1, 2019. Hoffman stated he would talk with the auditor to figure out the budgeting arrangement.

17. Other Business
None.

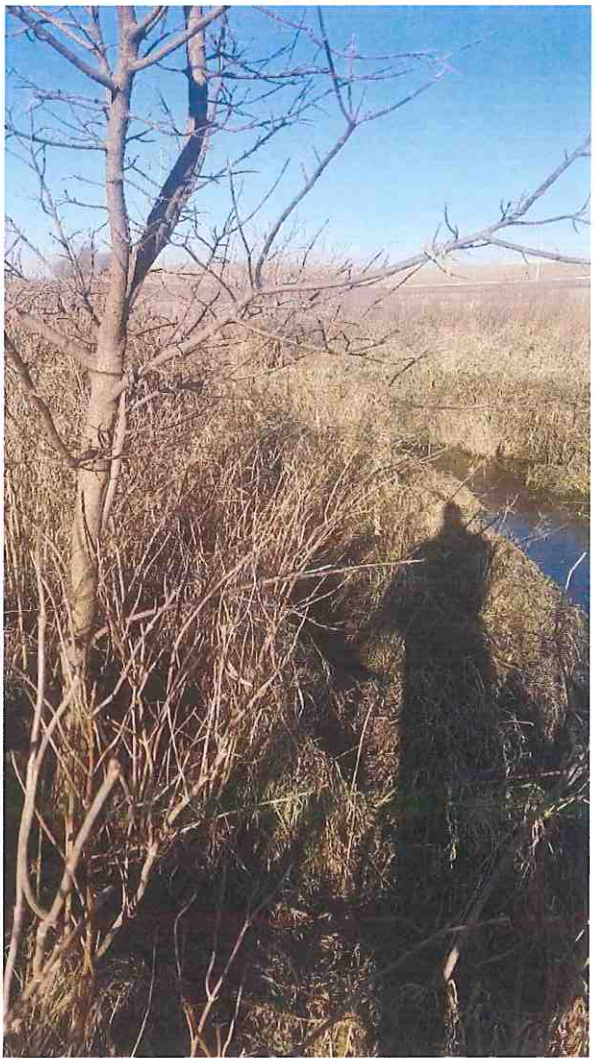
18. Adjourn Meeting
Granzow moved, Hoffman seconded to adjourn the meeting. All ayes. Motion carried.


R. 19 W.
STA. 63+50
END CONSTRUCTION
T. 89 N.
Co. Hwy. S55
S Avenue
T Avenue
Co. Hwy D15
ANNIE KUPER
7 Ac.
11 Ac.
CLAUS PRINS
19 Ac.
20 Ac. D.D. NO. 39
W. HERSHEL & LUCILLE SMITH
SYE TAPPER & DORTHA F. TAPPER
BOUNDARY
DISTRICT
SOPHIA E. BARTLING
25 Ac. D.D. NO. 39
MARTIN & MEINARD RAMEYER
NORMA L. VANDERLOO
EDWARD J. & OTTILIA PEIPER
CLEAN CHANNEL FROM NORTH SIDE - LEVEL ALL SPOIL
DIVIDE
Wm. J. HEFFELMEIER CONT. TO TROY D. & DONNA M. WOODLEY
INTERIOR
ESTHER WAGNER
ADA M. POLAND
15 Ac. D.D. NO. 39
20 Ac. D.D. NO. 39
MARTIN & ITA RAMEYER
7 Ac. D.D. NO. 16
10 Ac. D.D. NO. 16
HAROLD J. STATZER
TENA MURRA
3 Ac. D.D. NO. 16
31 Ac. D.D. NO. 16
32 Ac. D.D. NO. 16
15 Ac. D.D. NO. 16
GEORGE W. WARNER
9 Ac. D.D. NO. 39
38 Ac. D.D. NO. 39
22 Ac. D.D. NO. 39
HORACE & WILMA D. HOLMGAARD
9 Ac. D.D. NO. 16
30 Ac. D.D. NO. 16
ANNA SNITZER
AREA OF INVESTIGATION
SCALE: 1" = 600'
LOCATION PLAT

Sedimentation, woody vegetation, and meandering of Open Ditch at Sta. 4+00 +/- looking downstream (both pictures).

Woody vegetation and erosion near Sta. 4+00 +/-.

←Lack of proper outlet to Main Open Ditch. Water eroding ditch.



Woody vegetation near Sta. 2+00 +/- →

Woody vegetation near Sta. 2+00 +/-.

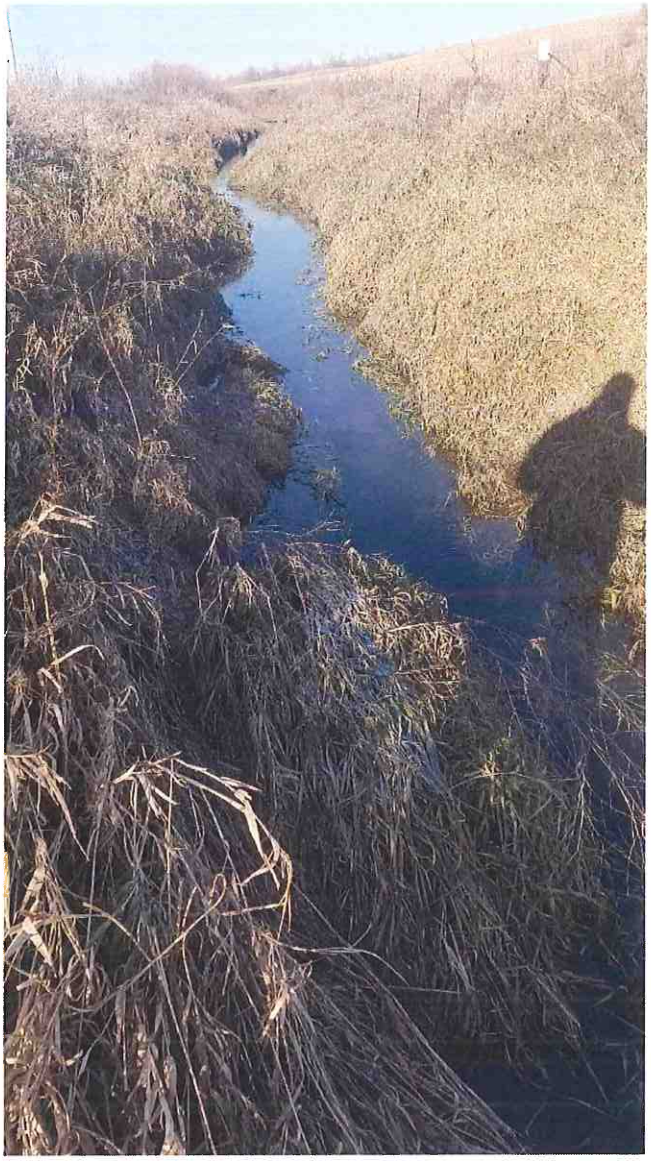
Beaver dam looking west from Sta. 4+00 +/-.

←Silt bar near Sta. 4+00 +/-

Signs of beaver activity. →

←Beaver path for dragging dam material.

Heavy erosion on the south ditch bank. →



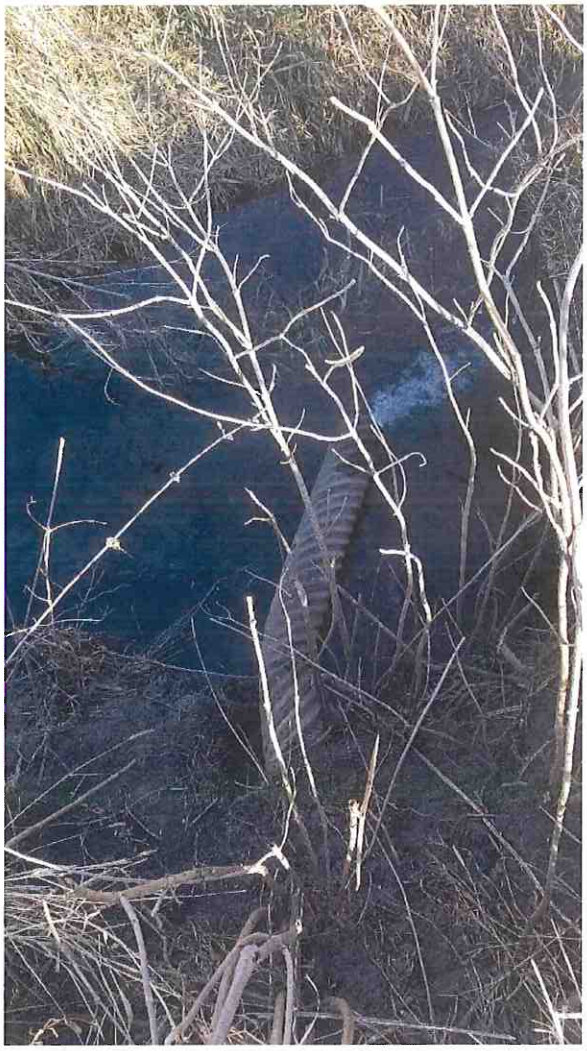
←Bank sloughing off into flowline and slight meandering of Open Ditch near Sta. 15+00 +/-.

Signs of recent beaver activity. Beaver seen darting below water surface. →

Woody vegetation and surface drain partially submerged, deformed, and rusty.

Close-up of above surface drain.

←Tile outlet near Sta. 18+25 +/- cut 8' into bank and causing erosion.



Bent and broken tile outlet with erosion into bank near Sta. 20+40 +/-. →

Bank sloughed into Open Ditch toward bent tile outlet.

Surface drain with no support beneath near Sta. 23+00 +/-.

←Tile outlet cut 8' into bank and causing erosion.

Surface drain on north bank submerged with heavy erosion around structure. South bank sloughed off into Open Ditch.→

←Partially submerged surface drain.

Tile outlet collapsed and buried. Tile is dumping water and cut 30' into bank causing erosion.→

←Partially submerged surface drain with heavy erosion.

Rusty tile outlet partially crushed, surrounded by heavy erosion, and cut into bank.→

←Tile outlet half submerged with sediment at 4' cut into Open Ditch bank.

Wooden tile outlets on opposite sides of Open Ditch. Both near collapse and submerged.→

←Surface drain protruding into Open Ditch, lack of support beneath. Open Ditch heavily silted.

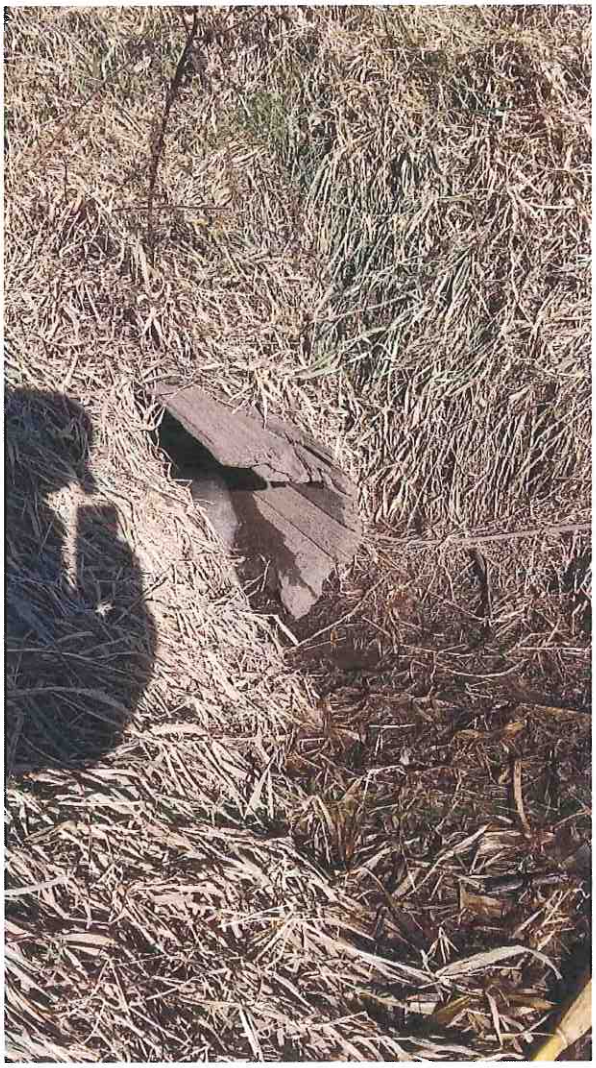
Surface drain collapsed into Open Ditch. Open Ditch heavily silted and meandering.

←Submerged surface drain.

Collapsed and buried wooden tile outlet.→

←Tile outlet cut into Open Ditch bank and causing erosion.

Wooden tile outlet collapsing and cut into bank.→



Tile outlet cut 8’ into bank.

←Sedimentation levels between Sta. 31+75 +/- and bulkhead.

Main tile outlet fully submerged under water and not visible at bulkhead.

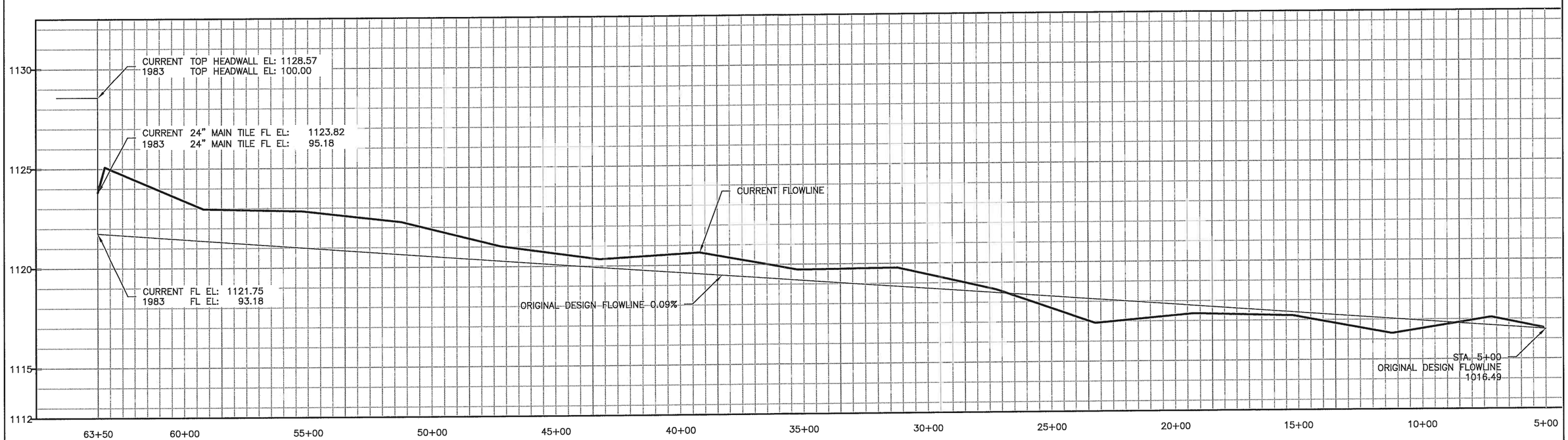
Sedimentation downstream of Main tile outlet.

Erosion and field stone on top of bulkhead.

Tile outlet submerged under water at bulkhead.

Heavy sedimentation downstream of bulkhead with meandering channel.

Sinkhole above Main tile on east shoulder of S Avenue.



GRAPHIC SCALE
0 200' 400'

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

CGA
Clapsaddle-Garber Associates, Inc
Toll Free (800) 542-7981
www.cgaconsultants.com

DESIGNED: JVS DATE: 11/26/2018
DRAWN: JVS DATE: 11/26/2018
CHECKED: LOG DATE: 11/28/2018
APPROVED: LOG DATE: 11/28/2018

D.D. #148 REPAIRS
HARDIN COUNTY, IOWA

MAIN OPEN DITCH PROFILE

PROJECT NO. 6952.2
SHEET NO. 1

P:\6952.2\CADD\Survey\6952.2_PROFILE.dwg - CGA Plan - 11-29-18 - 3:41pm - JVS333

CGA
ENGINEERS • LAND SURVEYORS

By: J.V.S.
Date: 11/21/2018
Checked By: L.O.G.
Date: 11/28/2018

Engineer's Opinion of Probable Construction Cost

Project: Main Open Ditch Repairs for DD #148

Location: Sections 8, 16 & 17, T89N, R19W, Hardin County, Iowa

Main Open Ditch Cleanout and Tile Outlet/Surface Drain Repair

ITEM #	DESCRIPTION	Unit Cost	Units	Quantity	Units	Total Cost
	CONSTRUCTION COSTS					
1	Cleanout of Open Ditch	$ 900.00	STA	64	STA	$ 57,150.00
2	Permanent Seeding	$ 100.00	STA	64	STA	$ 6,350.00
3	Seeding Warranty	$ 3,000.00	LS	1	LS	$ 3,000.00
4	Tile Outlet Repair	$ 1,300.00	EA	36	EA	$ 46,800.00
5	CMP Surface Drain	$ 2,000.00	EA	17	EA	$ 34,000.00
6	CMP Flared End	$ 400.00	EA	17	EA	$ 6,800.00
7	CMP Anti-seep Collar	$ 200.00	EA	17	EA	$ 3,400.00
8	Bank Stabilization	$ 40.00	TN	250	TN	$ 10,000.00
9	Tree, Brush, and Stump Removal	$ 5,000.00	LS	1	LS	$ 5,000.00
10	Floating Silt Curtain	$ 2,000.00	LS	1	LS	$ 2,000.00
		CONSTRUCTION SUBTOTAL				$ 174,500.00
		Contingency (15%)				$ 26,175.00
		CONSTRUCTION TOTAL				**$ 200,675.00**
		Engr. & Const. Observation (25%)				$ 50,168.75
		TOTAL COST				**$ 250,843.75**