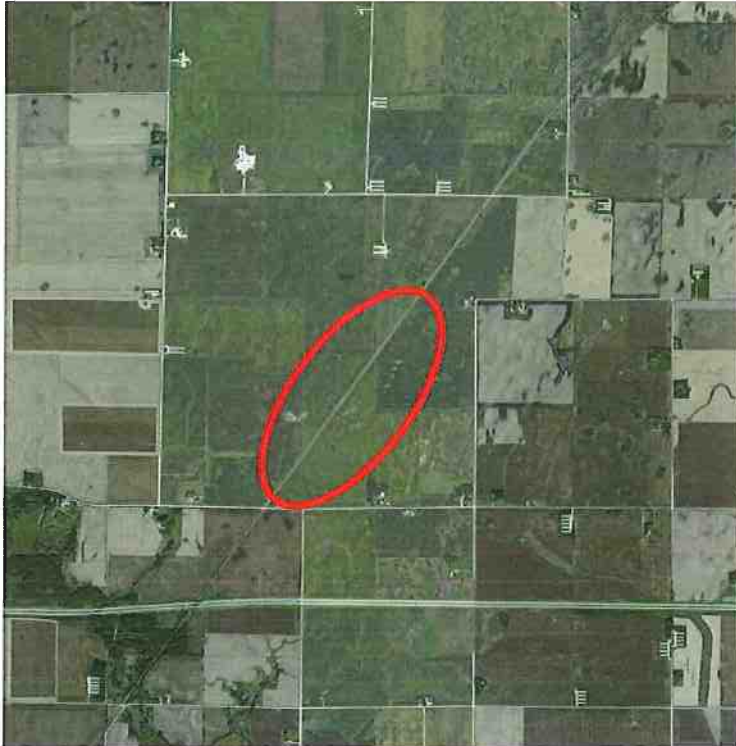
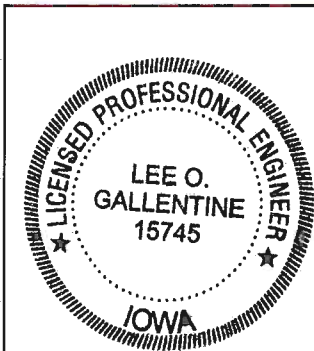


**HARDIN COUNTY, IOWA**

**2019**



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

LEE O. GALLENTINE, P.E.

DATE

LICENSE NUMBER: 15745  
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2020  
PAGES OR SHEETS COVERED BY THIS SEAL:  
SHOWN ON TABLE OF CONTENTS

**CGA**  
ENGINEERS • LAND SURVEYORS

**CLAPSADDLE-GARBER ASSOCIATES OFFICE LOCATIONS**

16 East Main Street, PO Box 754 | Marshalltown, IA 50158  
1523 S. Bell Avenue, Suite 101 | Ames, IA 50010  
5106 Nordic Drive | Cedar Falls, IA 50613  
739 Park Avenue | Ackley, IA 50601  
511 Bank Street | Webster City, IA 50595

**Project Office**  
739 Park Avenue  
Ackley, IA. 50601  
Phone: 641-847-3273  
Fax: 641-847-2303

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

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# **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 repairs or improvements to the Main tile of Drainage District No. 9. This report will summarize the history of repairs, investigate the necessity and feasibility of said repairs or improvements, and present opinions of probable construction costs associated with said repairs or improvements. At the Drainage District Meeting held on November 28, 2018, the preliminary results of the investigation for Work Order #229 were discussed and reviewed by the District Trustees. For reference, a copy of the meeting minutes is included in Appendix A and a copy of the final Investigation Summary for Work Order #229 (as considered at the April 24, 2019 Drainage District Meeting) is included in Appendix B. As a result of these meetings, the District Trustees requested Clapsaddle-Garber Associates to move ahead with an investigation and report concerning repairs or improvements to the Main tile.
  
- LOCATION – The area of investigation was limited to the middle portion of the Main tile that is southeast of the existing railroad. Said middle portion is located in Section 6, Township 88 North (T88N), Range 21 West (R21W) and Section 1, Township 88 North (T88N), Range 22 West (R22W), Hardin County, Iowa. Specifically, the downstream limit of the investigation is at the southernmost railroad crossing approximately 1/8 mile north of County Highway D-25. Going upstream, the tile then proceeds northeast for approximately 1/4 mile when it turns northwest. It then continues northwest for approximately 1/4 mile where it crosses said railroad again. For reference, a map showing the limits of investigation is included in Appendix C.

2.0 PARTIAL DISTRICT HISTORY – The following is a summary of the partial history of Drainage District No. 9 as obtained from the Hardin County Auditor’s drainage minutes and records.

- 1909, June 30 Contract with S.W. Ansell for construction of original district facilities.
- 1917, Sept. 12 Recommendation of repair of the Main tile outlet.
- 1959, May 13 Bill for repair of tile located in Section 6.
- 1959, May 25 Bill for repair of tile located in Section 6.
- 1960, Jun. 1 Bill for repair of tile located in Section 6.
- 1962, May 29 Bill for repair and cleaning of tile located in Section 6.
- 1962, Jun. 27 Bill for repair of tile located in Section 6.
- 1962, Oct. 12 Bill for repair of tile located in Section 6.
- 1968, Nov. 1 Request for repair of tile located in Section 6 as tile was not working along railroad tracks.
- 1969, Apr. 21 Request to repair broken tile located in Section 6.
- 1970, Oct. 20 Request for extension of the Main tile at its outlet and possible annexation as a result.
- 1970, Sept. 14 Bill for repair of Main tile located in Section 1.
- 1972, Oct. 27 Bill for repair of tile blowout located in Section 1.
- 1978, Apr. 27 Bill for repair of broken tile located in Section 6.
- 1991, Oct. 9 Bill for repair of broken Main tile in or near railroad located in Section 1.
- 1995, Nov. 27 Bill for repair of broken Lateral 2 tile located along railroad right of way fence in Section 6.
- 2004, Apr. 28 Request for repair of broken Main tile located in Section 6.

- 3.0 INVESTIGATION – All field investigation for this report was performed as part of the Investigation Summary for Work Order #229. Said investigation was limited repairing a tile blowout, excavating the tile at regular intervals, locating tile (including GPS survey), and noting the level of debris in the tile at each excavation. For reference, a copy of the Investigation Summary is included in Appendix B. The following key issues should be noted:
- At the upstream limits of investigation, another sinkhole was found in or near the railroad right of way. From this sinkhole, the tile could not be located upstream (i.e. underneath the existing railroad) due to debris and the Main tile appeared to be approximately ½ full of debris (i.e. rock, sand, soil, silt, etc). It was also noted that the upstream land on the other side of the railroad tracks was extremely saturated and appeared not to be draining.
  - At the last excavation (near the downstream limits of investigation), the tile could not be located downstream (i.e. underneath the existing railroad) due to apparent tree growth inside the railroad right of way.

A review of district history shows that 15 repairs since the original district construction. These repairs have consisted of tile replacement in lengths up to 20 feet and repairs of blowouts/sinkholes. It should be noted that 3 of the repairs have been in or near the existing railroad. It is also possible that a lack of other repairs is not an indication of lack of repairs, but instead an indication of lack of documentation.

- 4.0 DISCUSSION AND CONCLUSIONS – Based on the above, it is obvious that the Main tile has a history of failure, especially in or near railroad right of way. Since the original profile for the Main tile shows installation depths of approximately 3 to 5 feet at the above mentioned upstream sinkhole, the issue is probably not attributable to lack of ground cover. Instead, it is probably due to the utility installation, tile age, or both. Differentiating between these causes would be hard at best.

Regardless of the cause of the tile failure, if repairs or improvements are not performed the Main tile will not properly drain any of the land upstream of the railroad track due to its plugged or restricted state. This will likely prevent crop production on a large portion of the field upstream of the same location. Also, depending upon the condition of said Main tile under the existing railroad tracks, there may be a liability exposure by the drainage district if a sinkhole were to develop in the existing railbed.

5.0 REPAIR METHOD – To repair the existing Main tile, the following option is the most straightforward available:

Tile Replacement

- For the portion of the Main tile in the railroad right of way at the upstream limits of investigation, install a new Main tile at the location dictated by railroad standards and abandon the existing Main tile at its current location.
- 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 D.

With the above-mentioned repair methods, 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 and a new crossing will be installed at a location dictated by railroad standards.
- For the above option, trees within 50' of the locations of the existing or replaced 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.
- 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 offices to verify the existence of said jurisdictional wetlands and that there will be no impact on them.

Per Iowa Code Chapter 468.126, any of the above actions that do not increase capacity 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 next section of this report exceeds said \$50,000 limit. Therefore, a hearing will be required. Per Iowa Code Chapter 468.126.1.g, the right of remonstrance does not apply to the proposed repairs.

6.0 IMPROVEMENT METHOD – To improve the drainage capacity for the existing Main tile, the following option is the most straightforward available:

Tile Reroute

- 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 Main tile from the location of severing southwest parallel with the railroad right of way to the downstream side of the downstream railroad crossing and connect the new Main tile with the existing Main tile at this location.
- 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 E.

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.
- This improvement would split the current drainage shed of the Main into two different pieces. As a result, these watersheds should be separated and each have its own classification.
- 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.

7.0 OPINIONS OF PROBABLE CONSTRUCTION COSTS – Using the above methods of repair and improvement, an itemized list of project quantities and associated opinions of probable construction cost for each option were compiled and are included in Appendices F and G of this report. A summary of said costs are as follows:

<b>METHOD</b>	<b>DRAINAGE COEFF.</b>	<b>CONSTRUCTION COST</b>
Tile Replacement – Repair	Existing	\$195,600
Tile Reroute – Improvement	Existing	\$154,200

It should be noted that said costs include materials, labor, and equipment supplied by the contractor to complete the necessary repair and include 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, 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.



8.0 OWNERSHIP AND CLASSIFICATIONS – Any and all information concerning ownership of lands and classifications of said lands within Drainage District No. 9 can be obtained from the Hardin County Auditor’s office.

It should be noted that Iowa Code Chapter 468.65 states “When, after a drainage . . . district has been established . . .” and “. . . a repair . . . has become necessary, the board may consider whether the existing assessments are equitable as a basis for payment of the expense of . . . making the repair . . .” and “If they find the same to be inequitable in any particular . . . they shall . . . order a reclassification . . .” Based on this, it is our opinion that a reclassification may be required if the repair were to move forward.

It should also be noted that since the Main tile is being split into two watersheds, a reclassification of at least the Main tile would be required if the improvement were to move forward.

The final note is that Iowa Code Chapter 468.131 states “When an assessment for improvements . . . exceeds twenty-five percent of the original assessment and the original or subsequent assessment . . . did not designate separately the amount each tract should pay for the main ditch and tile lateral drains then the board shall order a reclassification . . .” Since the proposed project does not involve the laterals, it is not clear if a reclassification separating the laterals would be required or not. Therefore, it is our recommendation that the District Trustees seek advice from their legal counsel.

9.0 RECOMMENDATIONS – There is a definite need to perform one of the above-mentioned actions. The repair would remove the current restrictions and impediments to the Main tile and extend the lifespan of the same. The improvement would do the same and increase the capacity of the Main tile east of the railroad. 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 repairs or improvements.
- Adopt one of the recommendations of the Engineer’s Report.
- Direct plans and specifications for the proposed repairs or improvements be prepared by Clapsaddle-Garber Associates.
- Proceed with receiving bids from interested contractors by Clapsaddle-Garber Associates.
- Award contract to the lowest responsible contractor.
- If desired or required by Iowa Code, proceed with reclassification proceedings

## REGULAR DRAINAGE MEETING

11/28/2018 - Minutes

1. Open Meeting

Hardin County Board of Supervisor Chairman, BJ Hoffman, opened the meeting. Also present were Supervisors, Lance Granzow and Renee McClellan; Hardin County Attorney, Darrell Meyer; Contractor, Jacob Handsaker with Hands On Excavating; Lee Gallentine with Clapsaddle-Garber Associates (CGA); Drainage Clerk, Tina Schlemme.

2. Approve Agenda

McClellan moved, Hoffman seconded to approve the agenda as presented. All ayes. Motion carried.

3. Approve Minutes

McClellan moved, Hoffman seconded to approve the minutes of the November 14, 2018 regular drainage meeting. All ayes. Motion carried.

4. Approve Claims For Payment

McClellan moved, Hoffman seconded to approve the claims for payment with pay date of Friday, November 30, 2018. All ayes. Motion carried.

DD H-S 3-58 Assessments 2018	Story County Auditor	\$ 943.90
DD H-H 1-103 ASSESSMENTS 2018	Hamilton Co Auditor	\$ 781.00
DD H-F 4-53 ASSESSMENTS 2017	Franklin Co Auditor	\$ 6.00
DD 22 ENG SVCS 9/15-10/20/18	Clapsaddle-Garber Assoc	\$ 660.00
DD 55-3 LAT 9A WO 29 ENG FEES	Clapsaddle-Garber Assoc	\$ 544.65
DD 136 WO 146 POSTAGE	Hardin County Auditor	\$ 7.98
DD 25 CANCEL CONTRACT BONDING COSTS	Farm Tile Pro LC	\$5,336.00
DD 52 Legal Advice for filing petition	The Davis Brown Law Firm	\$ 57.00
DD 148 WO 211 Repair	R D Customs LLC	\$ 967.00

5. DD 41, 77, 123, 128, 143 & Big 4 Main - Approve Change Order #2

Hoffman stated there were concerns with Hands On completing some municipal projects and not working on the contracted drainage projects to meet the deadline. Handsaker replied that due to the weather, they were only able to work on the municipal projects because they were rock surfaces. They completed the streets and waterway drainage projects but did not get the excavator work done due to wet soil conditions. He added that they were hoping to get it done yet this winter or early spring. McClellan moved, Hoffman seconded to approve Change Order #2 for a time extension from November 30, 2018 to May 1, 2019. All ayes. Motion carried.

6. DD 48 - Approve Work Order Request #237

McClellan moved, Granzow seconded to approve Work Order Request #237 for an outlet problem in section 23-88-21. CGA is to investigate and report back. All ayes. Motion carried.

7. DD 21 - Approve Work Order Request #239 For Reclassification

McClellan moved, Granzow seconded to approve Work Order Request #239 for a reclassification to result as discussed at the June 13, 2018 regular drainage meeting. All ayes. Motion carried.

8. DD 9 - Discuss, With Possible Action, Updates To Work Order #229

Gallentine presented a few problems discovered: 1) Trees in the RR right of way with some water flow on the south track crossing of the main tile. 2) A sinkhole in/near RR right of way with fiber optic warning tape in hole. Tile 1/2-3/4 full of dirt and rock and no water flow on the north track crossing of the main tile. 3) A sinkhole in field with tile 1/4-1/2 full of dirt and sand and some water flow on the main tile east of tracks. A couple options were discussed, both being over \$50,000. McClellan moved, Granzow seconded for CGA to

prepare an engineer's report. All ayes. Motion carried.

9. Discuss, With Possible Action, Drainage Clerk Position

Much discussion was had regarding changing the drainage clerk position to a full-time position under the Board of Supervisors. Meyer submitted Code of Iowa sections pertaining to drainage clerk position. After many ideas were discussed, the Trustees agreed for Meyer to draft an agreement between the Auditor and the Board. The position will begin January 1, 2019 and the clerk will then track all time spent on drainage districts, which will be assessed to the districts annually based off of the calendar year. The current budget will be used for January 1, 2019 to June 30, 2019 and then 100% of the salary will be taken out of a new line item under the Board from the general fund and will be reimbursed when assessments are collected (first collecting in 2020). The Trustees understood that the salary would not be 100% reimbursed due to general administrative duties.

10. Other Business

DD 55-3 Lat 12 - Schlemme updated the Trustees that the Notice of Repair Across Railroad Right-of-Way was mailed to the UPRR on September 27, 2018, giving them 30 days notice. Granzow moved, McClellan seconded to perform the additional actions recommended of removing the trees within 50 feet of the tile, root cleaning and jetting the lateral tile and televising the lateral to verify the condition, as shown in the Repair Summary for Work Order #201. All ayes. Motion carried.

11. Adjourn Meeting

Granzow moved, McClellan seconded to adjourn the meeting. All ayes. Motion carried.

## Drainage District:

9

## Repair Summary:

- Tenant in SW¼ Section 6, Township 89 North, Range 22 West reported two blowouts/sinkholes on Main tile.
- Visually searched area and found one blowout/sinkhole, approximately 225 feet southeast of railroad right of way (see attached spot repair map).
- Tile blowout/sinkhole is missing one section of VCP tile and is 1/3 full of debris.
- Located Main tile upstream for 590'± and downstream for 1430'± from blowout/sinkhole.
- Upstream found broken VCP tile in sinkhole/blowout just downstream of railroad. The tile appears to have possibly been broken when fiber optic line was installed (see attached spot repair map).
- During location of main tile, excavated 7 observation holes. Excavation of one of the observation holes damaged a 4" private tile. Repaired private tile with 2' of 6" Dual Wall HDPE tile.
- Repaired first blowout/sinkhole with 18.3' of 15" Dual Wall HDPE tile with concrete collars.
- Repaired observation hole approximately 150' south railroad right of way with 6.25' of 15" Dual Wall HDPE tile with fabric wrapped joints.
- Filled holes as much as possible with on-site soil.
- Note: Contractor was changed midway through repairs from Randy Brown per 1-16-2019 Drainage Meeting minutes. McDowell and Sons Contractors completed the work after this date (see breakdown on attached).
- In April, backfilling of excavation was completed by McDowell with un-frozen soil.

## Contractor Time and Materials (spent while CGA was on-site):

See attached Tabulated Contractor Time and Materials Sheet.

## Additional Actions Recommended:

The unrepaired broken tile in the railroad right of way is severely limiting the drainage upstream and will eventually cause additional blowouts/sinkholes and ponding. Moving forward, we would recommend abandoning the current railroad crossing, install a new crossing meeting Union Pacific Railroad standards/permits to restore the drainage to its original design or install a bypass tile on the north side of the railroad right of way. Based on either of these options, it is my opinion that the construction cost would be well over \$50,000. This cost is high enough that a hearing and engineering report would be required.



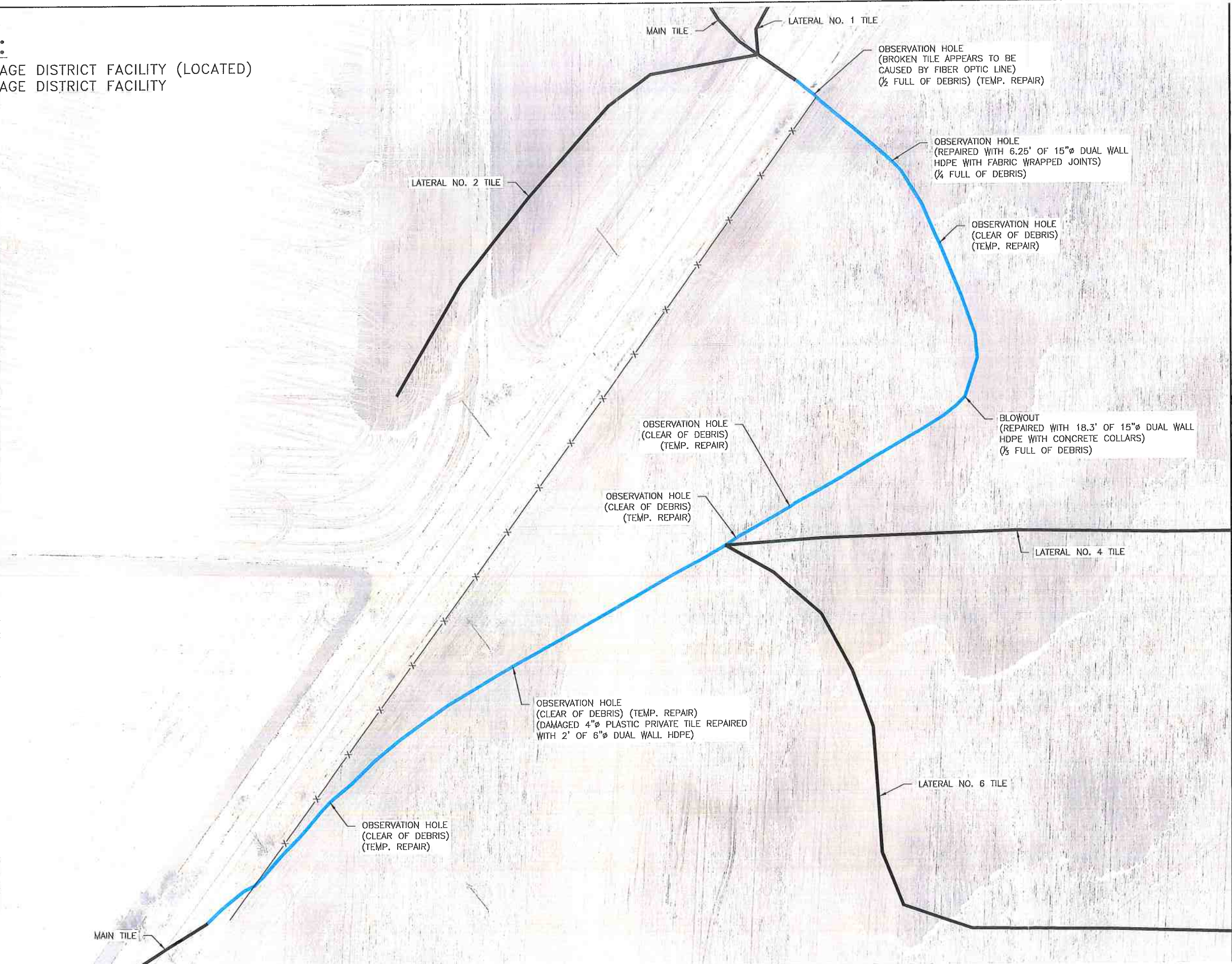
# Tabulated Contractor Time and Materials

Date	Totals	11/16/2018	11/19/2018	11/21/2018	11/23/2018	11/26/2018	11/29/2018	3/8/2019
Workman (hrs)	39	7	5.5	2.25	1	2.5	5.5	15
Backhoe (hrs)	17		5.5	2.25		1.25	2.75	5
15" Dual Wall HDPE (ft.)	24.55						6.25	18.3
Concrete Collar (ea.)	2							2
RD Customs								
McDowell								

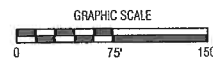


# LEGEND:

- DRAINAGE DISTRICT FACILITY (LOCATED)
- DRAINAGE DISTRICT FACILITY



P:\6735\6735-00\Quantities\6735-repair\_summary.dwg - CGA Plan - 04-10-19 - 4:49pm - ZDS43



NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

**CGA** Clapsdelle-Garber Associates, Inc.  
 1323 S. Bell Ave., Suite 101  
 Ames, Iowa 50010  
 Ph 515-232-1784  
 www.cgaconsultants.com

DESIGNED: ### DATE: ###  
 DRAWN: ### DATE: ###  
 CHECKED: ### DATE: ###  
 APPROVED: ### DATE: ###

## DRAINAGE DISTRICT #9

HARDIN, IOWA

## SPOT REPAIRS

PROJECT NO. 6735  
 SHEET NO. 1



# Drainage Work Order Request For Repair Hardin County

Date: 10/26/2018

Work Order #: WO00000229

Drainage District: Drainage Districts \DD 9 (51022)

Sec-Twp-Rge: 06-88-21 Qtr Sec: SW

Location/GIS: 88-21-06-300-002

Requested By: Scott Renaud (Tenant)

Contact Phone: (641) 751-4734

Contact Email: \_\_\_\_\_

Landowner (if different): Tom Roberts

Description: 

DD 9 - Huge lake (approx 15 acres) of corn under water. Blowout approximately 300-500 yards southeast of RR and another one NW of RR along fenceline. All crops are out except those around blowouts.
---

Repair labor, materials and equipment: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Repaired By: \_\_\_\_\_ Date: \_\_\_\_\_

Please reference work order # and send statement for services to:  
Hardin County Auditor's Office  
Attn: Drainage Clerk  
1215 Edgington Ave, Suite 1  
Eldora, IA 50627  
Phone (641) 939-8111  
Fax (641) 939-8245

For Office Use Only

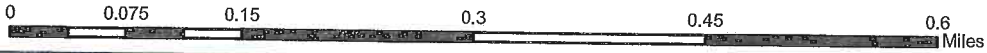
Approved: \_\_\_\_\_ Date: \_\_\_\_\_



# Hardin County Auditor's Office



Date: 10/26/201



The Data is provided "as is" without warranty or any representation of accuracy, timeliness or completeness. The burden for determining accuracy, completeness, timeliness, merchantability and fitness for or the appropriateness for use rests solely on the requester. Hardin County makes no warranties, express or implied is to the use of the Data. There are no implied warranties of merchantability or fitness for a particular purpose. The requester acknowledges and accepts the limitations of the Data, including the fact that the Data is dynamic and is in a constant state of maintenance, correction and update. Cadastral Data represents land ownership, but does not define it. This Data does not replace a legal survey.



CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

11/19/18  
11/16/18

PROJECT NUMBER:

6735

COUNTY, ROUTE, ROAD:

DD 9 HARLOW CO

LOCATION:

D25, "RACINE", UPRR

DAYS OF WEEK:

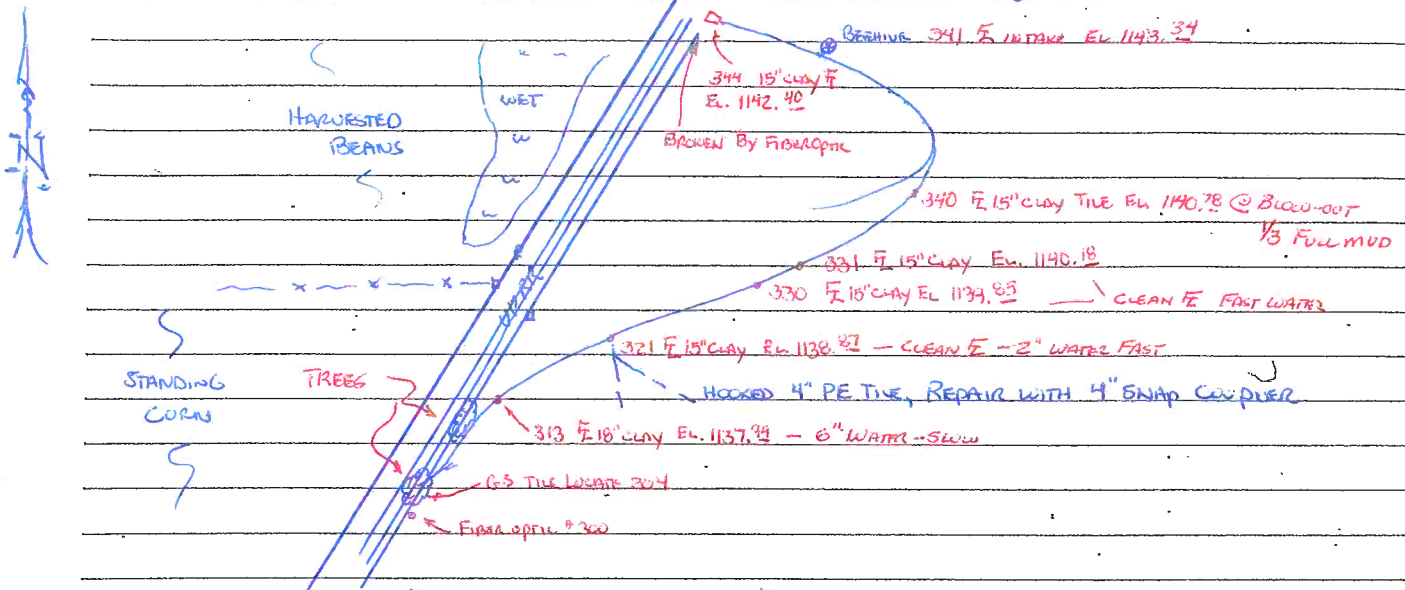
S M T W T F S

SHEET NO.

1 OF 1

DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUE NAME, ITEM NO. AND LOCATION

9:00, 2 MAN CREW ON SITE, DUG UP TILE @ BLOW-OUT AND TRIED TO FIND TILE WHETHER IT CROSSED UPRR DOWN STREAM TO SW.



11/19/18; 10:00, SET R ON #87 (DD41 JOB), RANDY BROWN ON SITE WITH RUBBER TIRE BACKHOE (NO HELPER). 2:00 DONE LOCATING DOWNSTREAM TO UPRR. COULD NOT GET UNDER RR WITH CABLE. WHEN CORN IS OUT ON W. SIDE RR, WE SHOULD LOCATE AND INSPECT TILE ON WEST SIDE OF RR. DUG 4 POT HOLES AND LOCATED WITH CABLE FROM BLOW-OUT TO UPRR. SHOTS 300-344 LEFT JOB @ 3:30

WATER ON W. SIDE RR IS SURFACE BRAINING THRU RR CMP TO DOWNSTREAM TILE @ 344. INTAKE @ 341 HAS BROKEN BEHIND BUT T IS DRY (OFFSET INTAKE)

I Certify that the work described in this report was incorporated into this contract unless otherwise noted.

Observer's Signature:

*[Handwritten Signature]*

Date Prepared:

11/16/18, 11/19/18

Reviewed by:

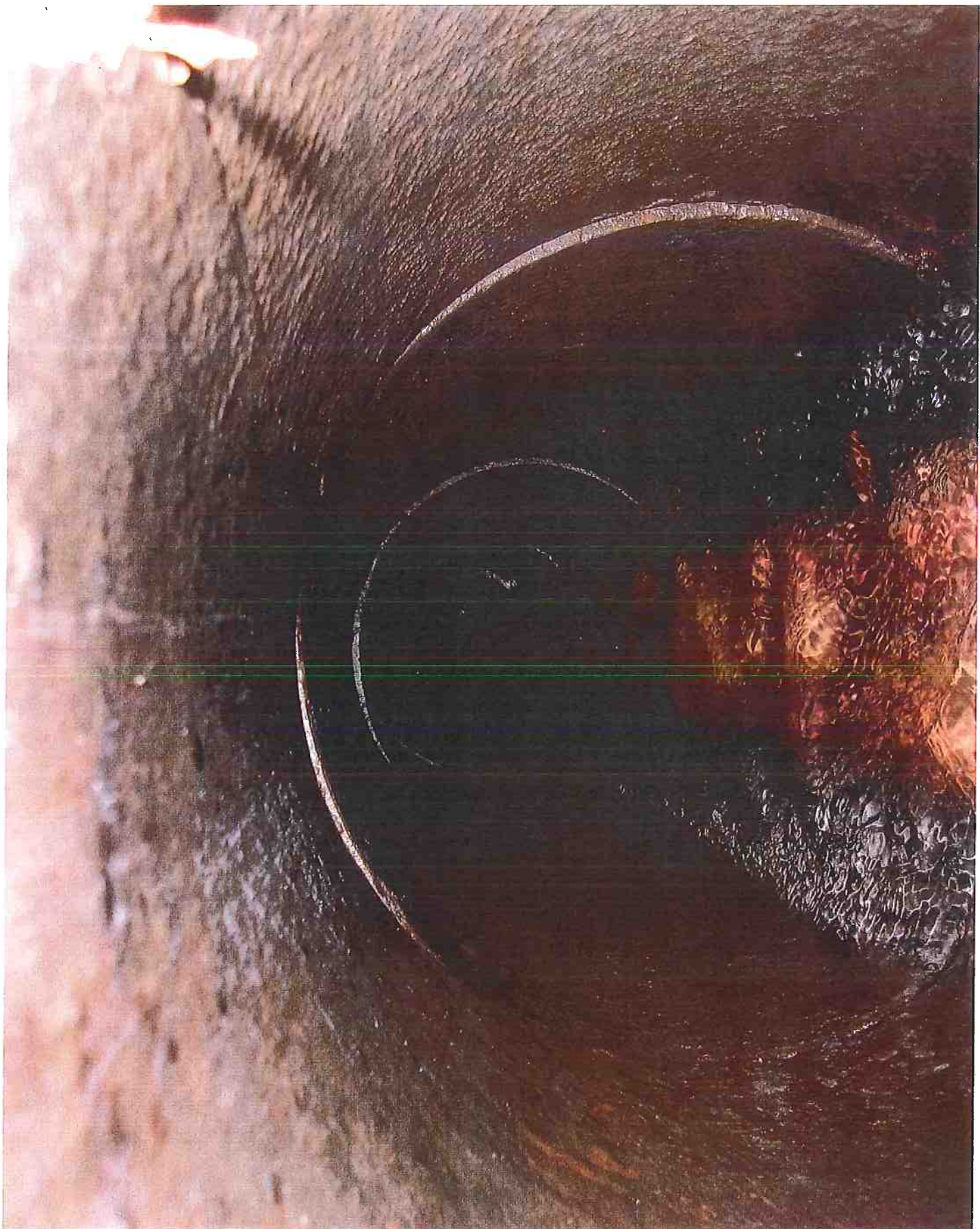
Engineer

Date Reviewed

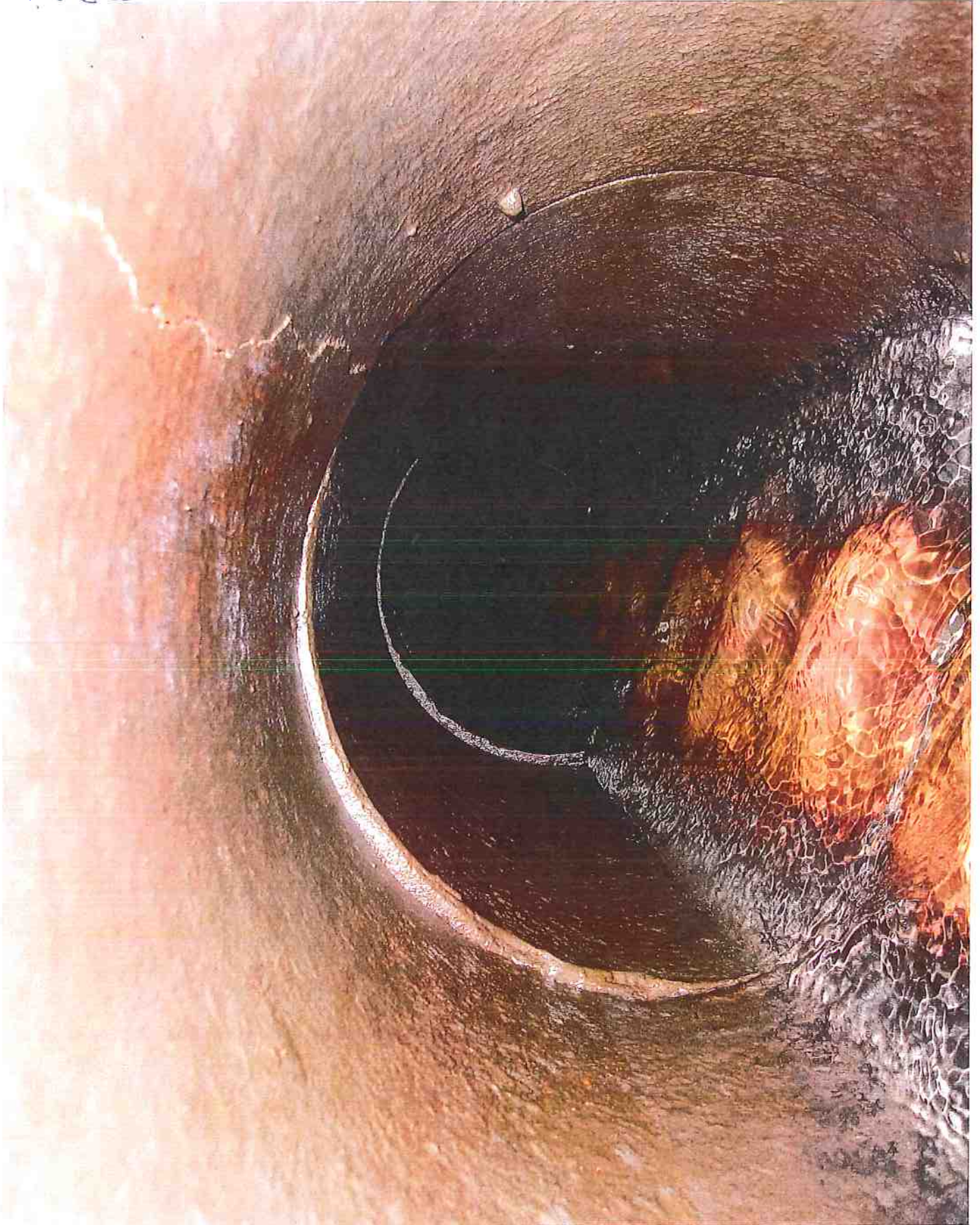
Tide @ 331



TILE © 331



TUE @ 330



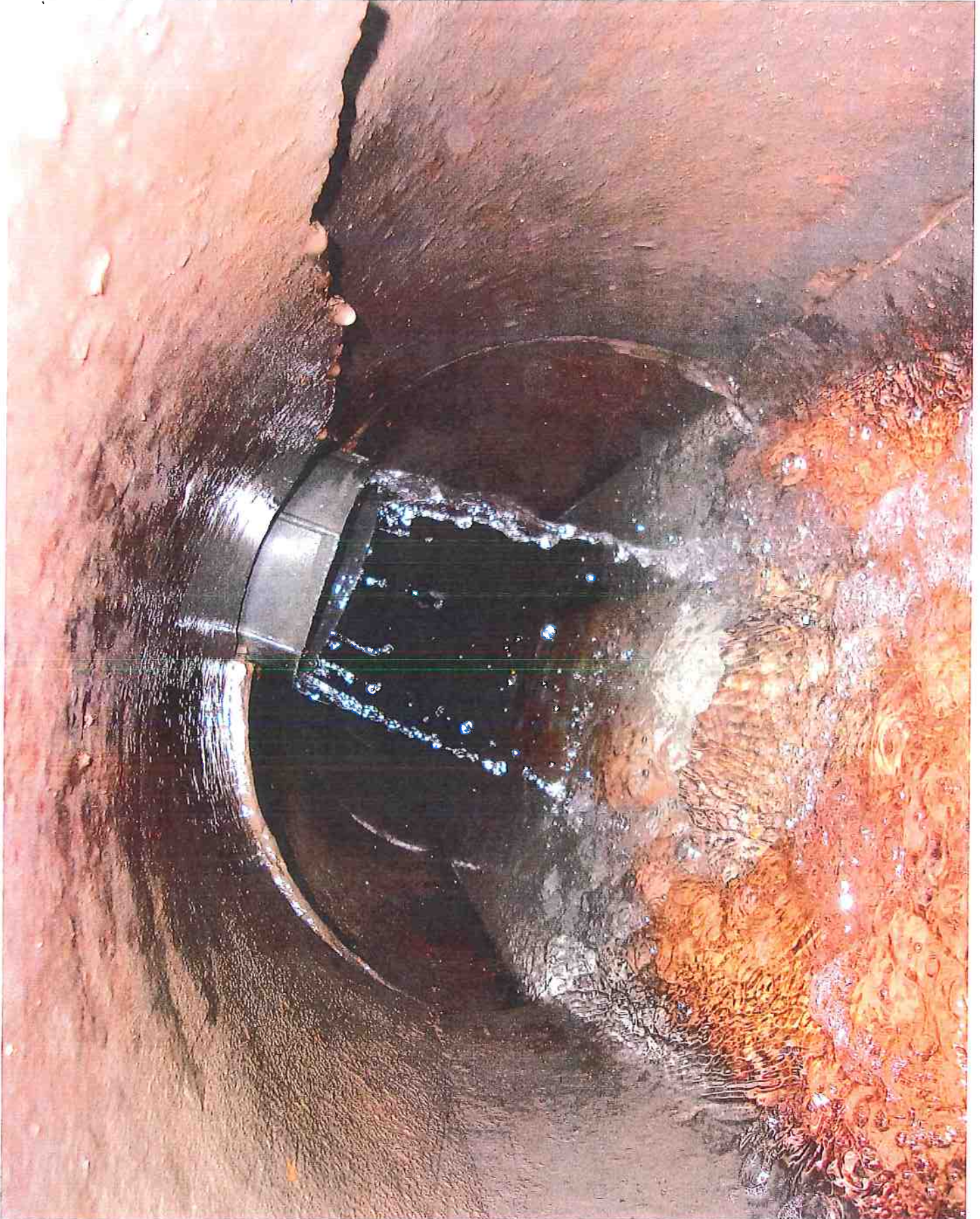
TUR @ 330



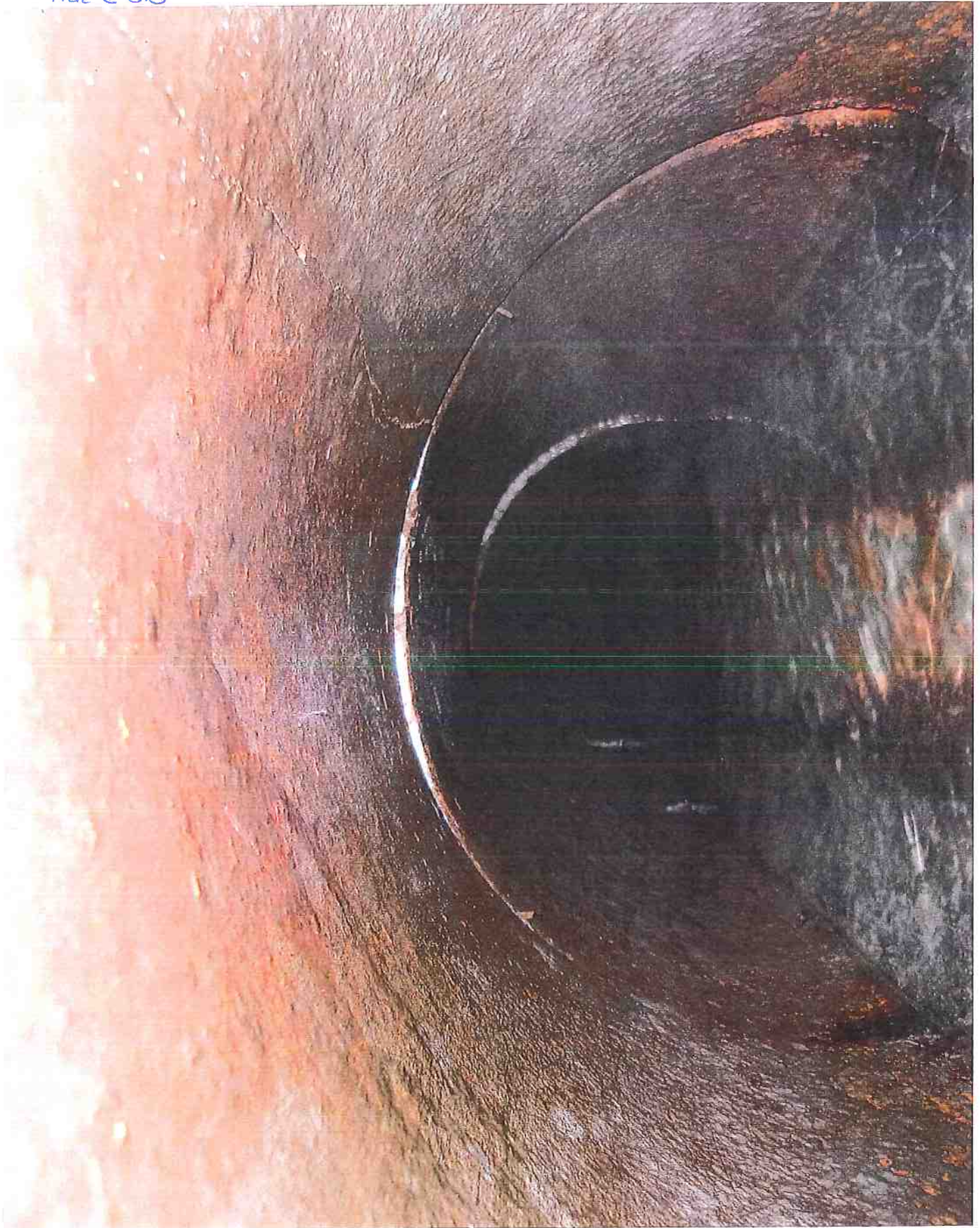
downstream From 321



UPSTREAM FROM #321, HOOKED 4" PE WITH BUCKET, REPAIR WITH SNAP COUPLER



Tue @ 313





Tile @ #313



TREES DOWNSTREAM FROM #313



009 HARDIN

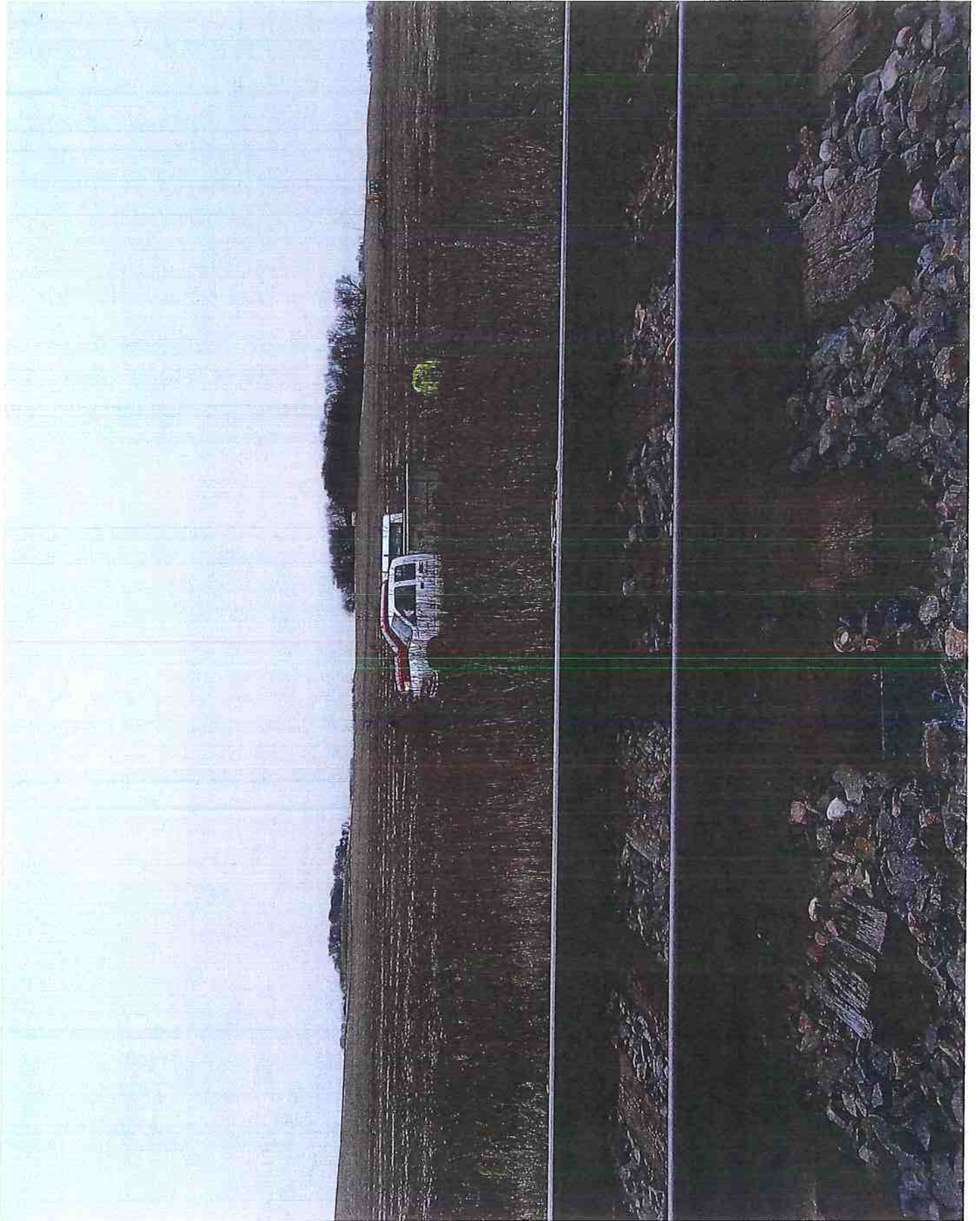






Blow-out Hole @ #340





CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

11-21-18

DAYS OF WEEK:

S M T W T F S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6735

COUNTY, ROUTE, ROAD:

DD9 CATS<sup>MAIN</sup>

LOCATION:

SE 1/4 SEC 6 - 88 - 21

DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUB NAME, ITEM NO. AND LOCATION

9:30 SET UP BASE AT 87 ✓ 1000

9:45 ARRIVED ON SITE 1 MAN IN BACKHOE

10:00 OPENED HOLE #350 3"-4" CLEAN WATER FLOWING THROUGH PIPE,

INTAKE #341 CONC INTAKE IN GOOD CONDITION W/ 6" CLAY RUNNING NW DRY BEEHIVE ON TOP IS BROKEN

10:45 OPENED HOLE #354 CONTRACTOR BROKE 1 PIECE OF TILE W/ BACK HOE BOTH TILE UP & DOWN STREAM HAVE MULTIPLE LATERAL CRACKS TILE IS FLOWING 3"-4" CLEAN WATER LOCATED TO THE OPEN TILE @ #344

11:00 HOLE 344 DOWN STREAM IS HALF FULL OF DIRT UPSTREAM IS 3/4 FULL ROCK W/ A TRICKLE OF WATER, WATER AT THIS SPOT IS SLOW MOVING @ 7" DEEP

11:45 PICKED UP BASE + LEFT SITE

LEE SAID TO TEMPORARILY PATCH POTHOLES AND FILL THE HOLES IN. RANDY SAID HE WOULD DO IT FRIDAY

I Certify that the work described in this report was incorporated into this contract unless otherwise noted.

Observer's Signature:

*Chris [Signature]*

Date Prepared:

11-21-18

Reviewed by:

Engineer

Date Reviewed



6735 HOLE 350 LOOKING N.

2018/11/21



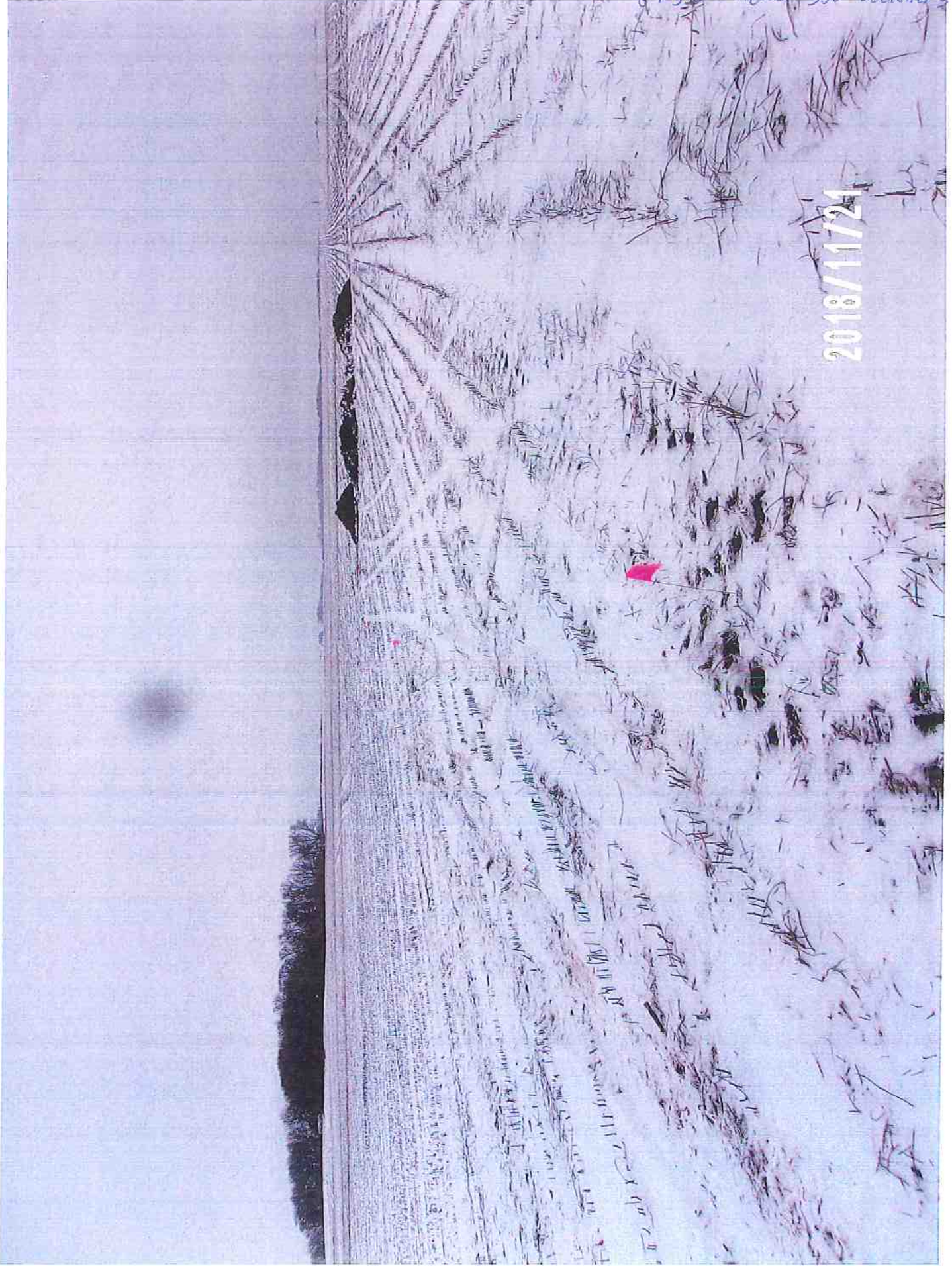
6735 Hole 350 Looking S.

2018/11/21



6735 HOUS 350 LOOKING S

2018/11/21



6735 HOLE 350 LOOKING N



2018/11/21

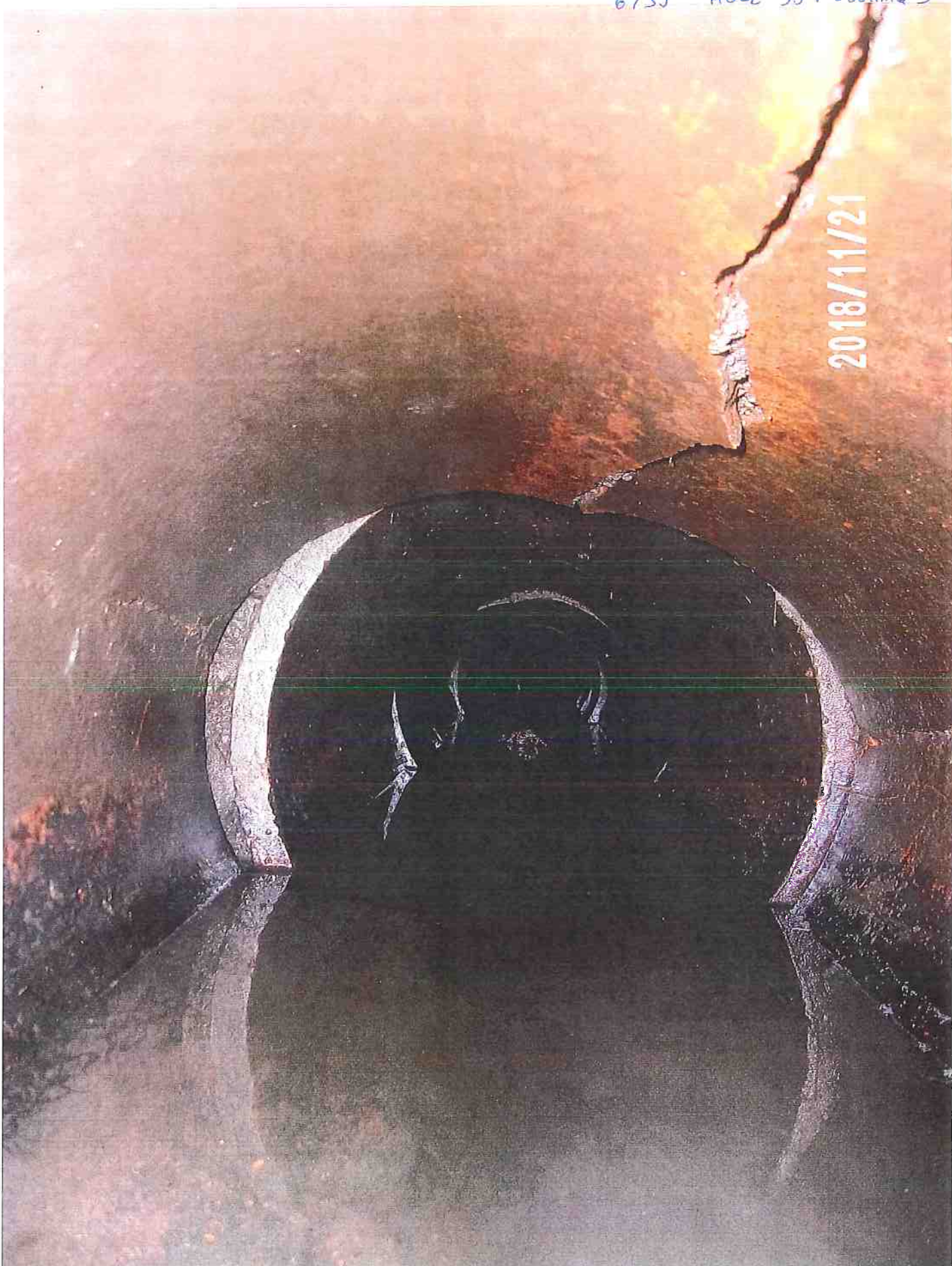
6735 HOLE 380

018/11/21



6735 HOLE 354 LOOKING S

2018/11/21



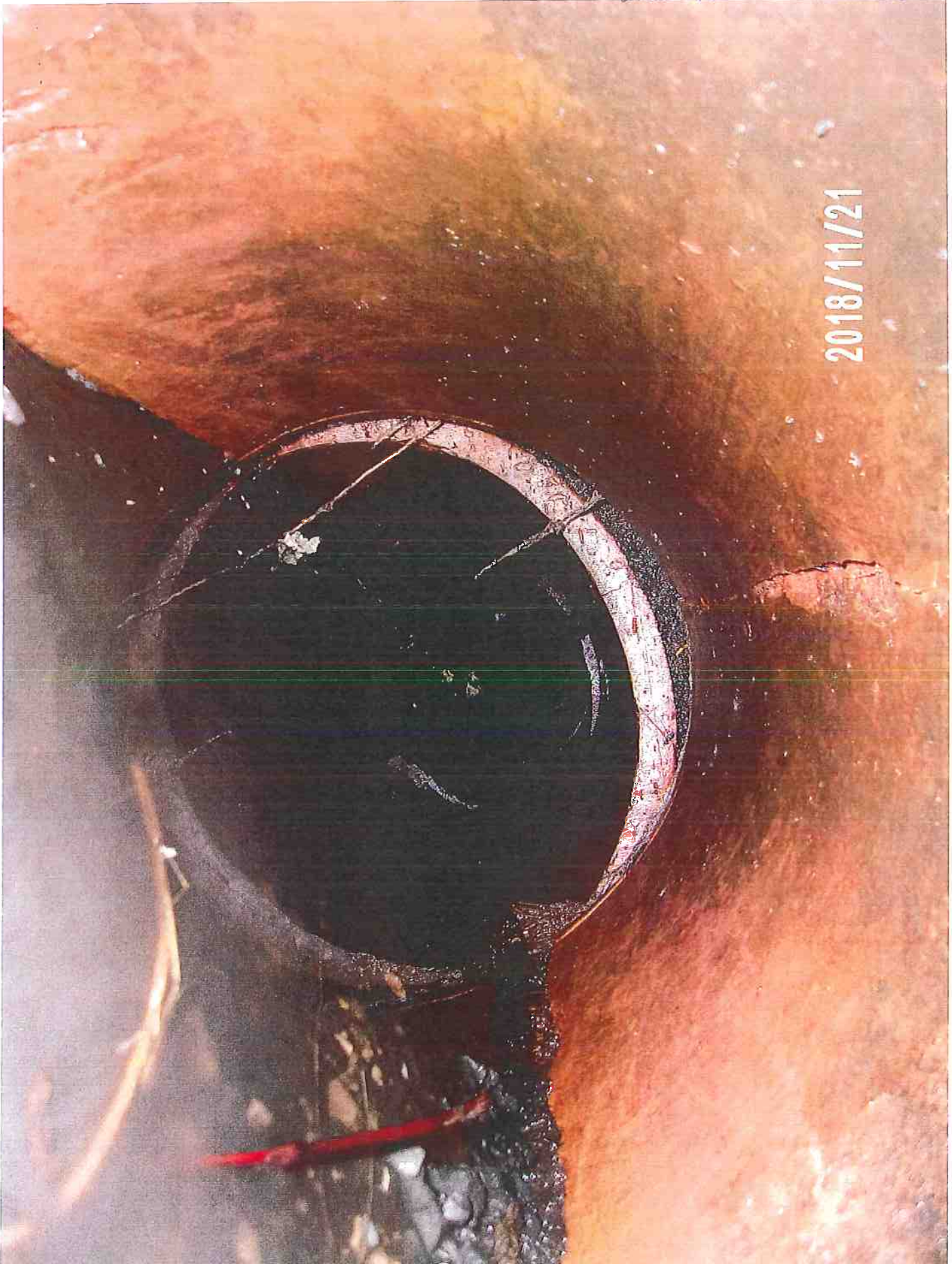
6735 HOLE 354 LOOKING N.

2018/11/21



6735 HOLE 344 LOGGING

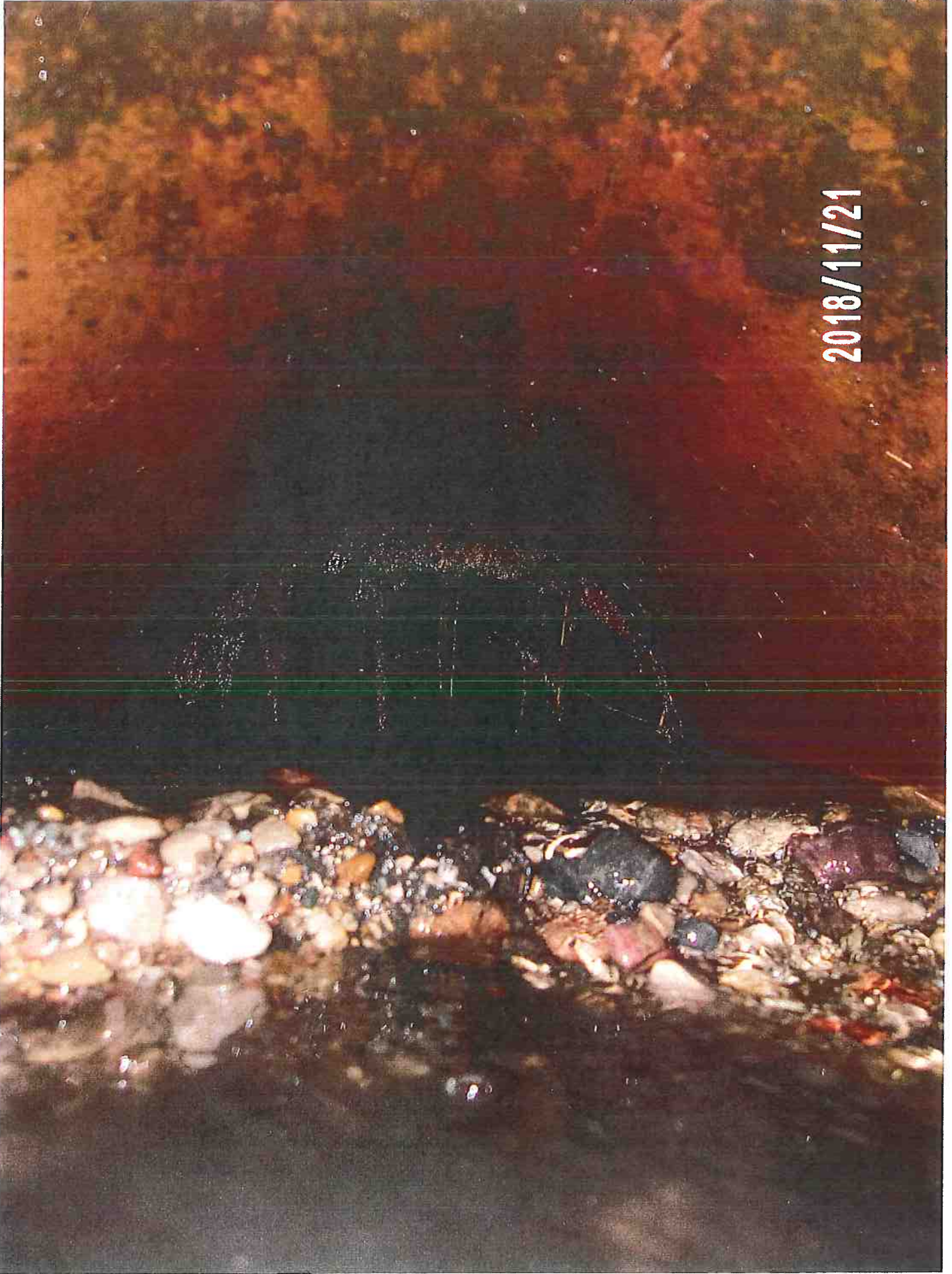
2018/11/21





6735 HOLE 344 LOOKING N.

2018/11/21



CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

11/23/18

DAYS OF WEEK:

S | M | T | W | T | F | S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6735

COUNTY, ROUTE, ROAD:

DD9

LOCATION:

Repairs From, N. of D25

DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUB  
NAME, ITEM NO. AND LOCATION

Cloudy, SCATTERED SHOWERS, 35°, BREEZY FROM S.E.

ARRIVED @ JOB @ 9:30, NO CREW ON SITE.

2 MAN CREW ARRIVED @ 10:00 A.M. STARTED TEMP. REPAIRS ON ACCESS INSPECTION

6" x 6" HOLES IN TILE BY LAYING A 12" x 12" PIECE OF DUM WALL AND FABRIC  
OVER HOLE AND BACKFILLING WITH NO COMPACTION, MINIMAL BUCKET COMPACTION

TRAVY BREWER SAID HE WOULD NOT DO THE LONGER 20' REPAIR WHERE  
TILE IS FULL OF DIRT, HE COULDN'T GET ANY PIPE TODAY.

LEFT JOB @ 10:30 FOR DD125W

I Certify that the work described in this report was incorporated into this contract unless otherwise noted.

Observer's Signature:

Date Prepared:

11/23/18

Reviewed by:

\_\_\_\_\_

Engineer

Date Reviewed \_\_\_\_\_

RANDY BROWN AND BACKHOE TO DO TEMP FIXS ON DD 9

11/23/18



REPAIRING Temp Fix's



CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

11/26/2018

DAYS OF WEEK:

S M T W T F S

PROJECT NUMBER:

6735 HARDIN COUNTY  
DRAINAGE  
WO# 229

COUNTY, ROUTE, ROAD:

DD#9

SHEET NO.

1 OF 1

LOCATION:

NORTH OF HWY DD25 & HAVE INTERSECTION  
"RACINE" SE OF UPRR

MID TEENS TO LOW 20'S OVERCAST  
& WINDY WITH LIGHT FLURRIES.

JOB# 6735 DD9 H. SURVEY

DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUB  
NAME, ITEM NO. AND LOCATION

8:50 A.M. RANDY FROM OUR OFFICE INFORMED ME THAT LEE RECEIVED  
AN EMAIL FROM RANDY BROWN THAT THEY WILL BE MAKING  
TEMPORARY TILE REPAIRS FOR 6735/DD#9 TODAY AND WILL  
BE ON SITE AROUND 10:00 A.M.

8:55 A.M. RANDY GAVE ME THE WORK FILE FOR 6735/DD#9  
AND ALSO GAVE ME THE WORK FILE FOR 6952, DD#148  
IF THEY DID GET TO THAT REPAIR TOO

9:00 A.M. OBSERVER TRIED CELL PHONE NUMBER FOR RANDY BROWN  
TO VERIFY IF HE WAS STILL PLANNING ON BEING @ JOB SITE  
AROUND 10:00 A.M. BUT MESSAGE CAME UP THAT THIS  
NUMBER WAS NO LONGER IN SERVICE. TRIED PHONE NUMBER  
THAT RANDY RECEIVED A CALL FROM RANDY BROWN ON 11/23/2018  
BUT WENT TO VOICEMAIL. LEFT MESSAGE ON THAT CELL PHONE  
TO VERIFY IF RANDY WOULD BE ON SITE AROUND 10 A.M.

9:20 A.M. OBSERVER LEFT OFFICE ENROUTE TO SITE.

9:50 A.M. OBSERVER ARRIVED ON SITE WITH NO ACTIVITY ON SITE.

10:25 A.M. RANDY AND NICK ARRIVED ON SITE WITH CASE  
580 SURBERM BACK HOE ALREADY IN FIELD. CREW SAID  
THEY WERE RUNNING LATE SINCE PICKUP WOULD NOT START  
THIS MORNING AND HAD TO JUMP START IT. CREW PLUGGED  
ENGINE BLOCK HEATER INTO GENERATOR.

10:44 A.M. CREW HAD BACK HOE RUNNING

11:00 A.M. CREW FOUND FROZEN SOIL AROUND CLAY TILE REPAIR. CREW THOUGHT  
THEY WOULD DO MORE DAMAGE THEN GOOD WHILE TRYING TO REMOVE  
FROZEN SOIL SO THEY WILL WAIT TILL ABOUT WEDNESDAY TO FINISH  
REPAIRS WHEN TEMPERATURES ARE WARMER.

11:00 A.M. OBSERVER LEFT SITE. CREW WAS MEASURING UP PIPE NEEDED FOR TEMPORARY  
REPAIRS

I Certify that the work described in this report was incorporated into this contract unless otherwise noted.

Observer's Signature:

*Dean Penning*

Date Prepared:

11/26/2018

Reviewed by:

Engineer

Date Reviewed

CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

11/29/18

DAYS OF WEEK:

S M T W T F S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6735

COUNTY, ROUTE, ROAD:

DD9 HARDIN

LOCATION:

D25 and H. Ave. North, upRR

DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUB NAME, ITEM NO. AND LOCATION

Partly Sunny, 30°, CALM,

ARRIVED @ JOB SITE @ 10:00 AM, RANDY BROWN CALLED SAID HE WON'T BE THERE TIL 12:00 NOON. LEFT FOR DDGR H. @ DAGO LAKE.

ARRIVED BACK @ JOB DD9 @ 11:45, NO CREW YET.

12:15 P.M., RANDY AND NICK SHOWS UP WITH PARTS TO REPAIR 4" PLASTIC TILE ACCIDENTALLY HACKED DURING EXPLORATION DIG @ #321. BUT IT'S A 5", RANDY WENT BACK TO GET PARTS FOR A 5", CAN'T FIND ANY. USED A 2' PIECE OF 6" DUAL WALL SLIP OVER THE 5" SINGLE WALL TIGHT FIT WITH FABRIC OVER. THEY ALSO PUT A CHUNK OF DUAL WALL AND FABRIC OVER INSPECTION HOLE AND BACKFILLED. PILES OF DIRT ARE FROZEN, 1' THICK. HARD TO BACKFILL.

1:30 P.M. WENT TO HOLE #354 WITH BROKEN CLAY TILE. TOOK OUT 75" OF BROKEN CLAY TILE AND REPAIRED IT WITH 15" DUAL WALL HDPE AND FABRIC JOINTS (6'3")

3:00, CREW IS DOWN WITH REPAIRS FOR TODAY. RANDY BROWN SAID HOPEFULLY THEY WILL ROCK AND PIPE TOMORROW.

I Certify that the work described in this report was incorporated into this contract unless otherwise noted.

Observer's Signature:

Date Prepared:

11/29/18

Reviewed by:

Engineer

Date Reviewed

6' 3" Repair Temp



6'3" Repair Temp.





PRIVATE TIE REPAIR ● 5" IPE WITH 6" HOPE OVER TOP



009, 6'3" REPAIR



CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE: 3/8/19

PROJECT NUMBER: 6735

DAYS OF WEEK: S M T W T F S

COUNTY, ROUTE, ROAD: DD 9 HARDIN

SHEET NO. 1 OF 1

LOCATION: \_\_\_\_\_

DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUB NAME, ITEM NO. AND LOCATION

Cloudy, Foggy, 25°, Wind From S.E., RAIN PREDICTED FOR TOMORROW. 1/2' OF SNOW ON GROUND, LOTS OF ICE. 2' OF FROZEN EARTH IN FIELDS

8:30 ARRIVED @ JOB SITE @ "RACINE" GHOST TOWN. CONTRACTOR "McDOWELL'S" ARE ON SITE 3 MEN + RUBBER TIRE BACKHOE. PLAN IS TO REMOVE BROKEN 14" CLAY TILE (ALREADY EXPOSED BY RANDY BROWN), AND REPAIR PERMANENTLY WITH 15" HOPE OVAL WALL / ROCK / CONC. COLLARS. BARE MINIMUM IS TO GET HOPE IN PLACE WITH ROCK AND FABRIC OVER CONNECTIONS. BACK FILL MATERIAL ON SITE MAY BE TO FROZEN. WOULD HAVE TO POUR COLLARS @ A LATER DATE. 1" OF RAIN IS PREDICTED TOMORROW AND THIS COULD WASH MORE DIRT IN TILE.

EXISTING HOLE FROM RANDY BROWN #340 IS FULL OF SNOW, LEVEL FULL!

11:30 A.M., BEDDING ROCK @ F IS IN PLACE. 18'4" BETWEEN ENDS ON CLAY TILE.

TIM IS BRINGING 20' STICK OF 15", 5 TON ROCK, FABRIC, 12 BAGS CONC., WIRE MESH.

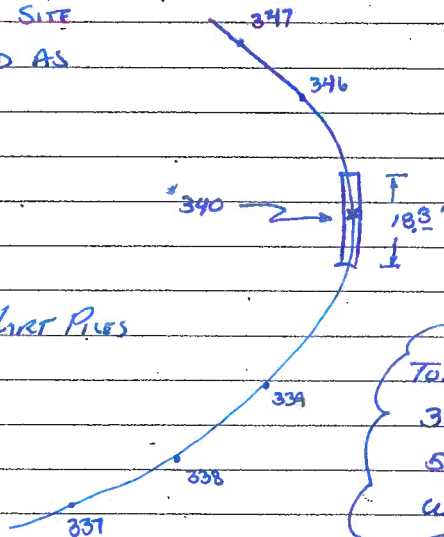
1 TON ± OF ROCK WAS EXISTING ON SITE

FROM RANDY BROWN. IT WAS USED AS BASE ROCK IN F.

1:30, TILE IN PLACE, BACK FILLED WITH ROCK.

WILL NEED TO PUSH FROZEN DIRT PILES IN WHEN THAWED OUT.

FURTHER ACTION NEEDED



TOTAL FOR TODAY 3/8/19  
3 MEN + BACKHOE = 5 HRS.  
5 TON 1" CLEAN ROCK  
WIRE MESH  
FABRIC  
18.3' OF OVAL WALL 15" HOPE  
12 BAGS CONC.

I Certify that the work described in this report was incorporated into this contract unless otherwise noted.

Observer's Signature: [Signature]

Date Prepared: 3/8/19

Reviewed by: \_\_\_\_\_

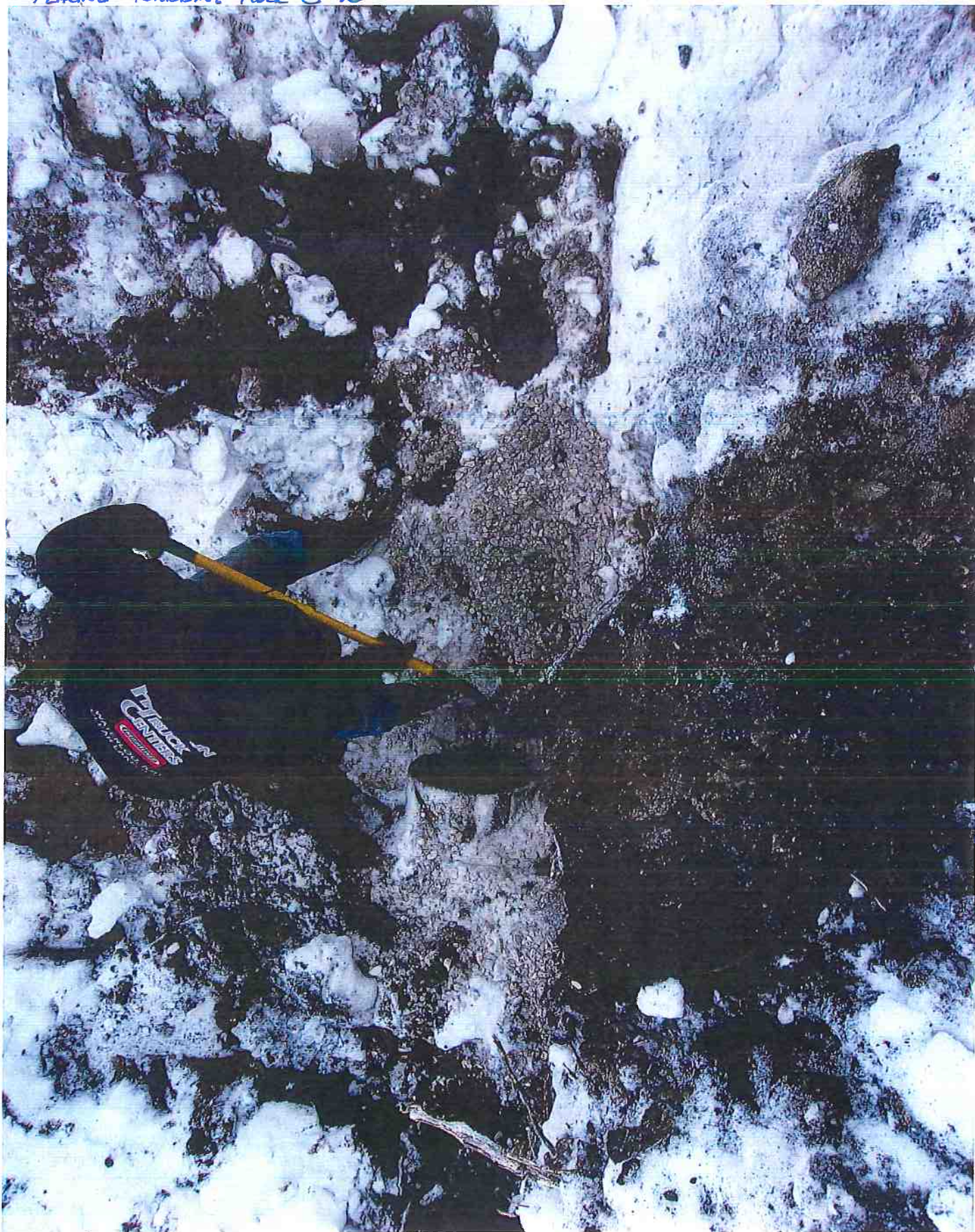
Engineer

Date Reviewed: \_\_\_\_\_

REMOVING SNOW FROM EXISTING HOLE @ #340



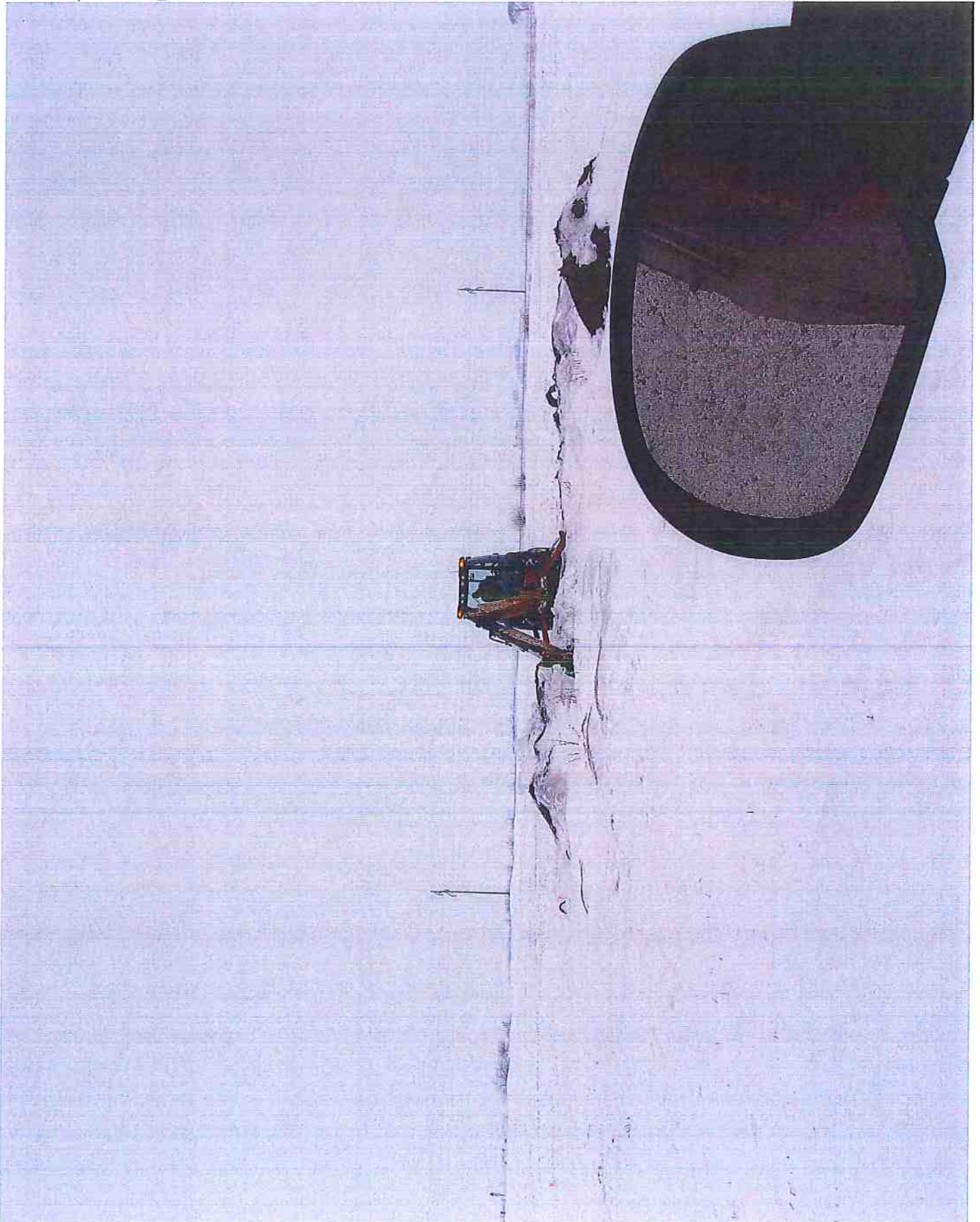
PEAKING BROODING ROCK @ FK



CONDITIONS @ JOB SITE



CONDITIONS @ JOB SITE #340



LOADING UP 12 BAGS CONC. FOR 3/4 CURBS





6 TON BRIDGING ROCK USED



PLACING ROCK AROUND 15" HDPE



18.3' OF 15" HDPE DUAL WALL



CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

4/3/19

PROJECT NUMBER: \_\_\_\_\_  
COUNTY, ROUTE, ROAD: 6735  
LOCATION: DD9 H.

DAYS OF WEEK:

S	M	T	W	T	F	S
---	---	---	---	---	---	---

SHEET NO.

1 OF 1

DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUB  
NAME, ITEM NO. AND LOCATION

Cloudy, LIGHT RAIN

DROVE IN OFF Co. Hwy @ DD9, TO muddy To drive To Hole,  
Pile OF dirt IS GONE, Hole must BE Filled, Hopefully THEY HAD ENOUGH dirt.  
Jim McDougal Sawed Russ AND CONFIRMED THAT Hole WAS Filled AND No  
imported dirt NEEDED.

I Certify that the work described in this report was incorporated into this contract unless otherwise noted.

Observer's Signature: [Signature]

Date Prepared: 4/3/19

Reviewed by: \_\_\_\_\_

Engineer

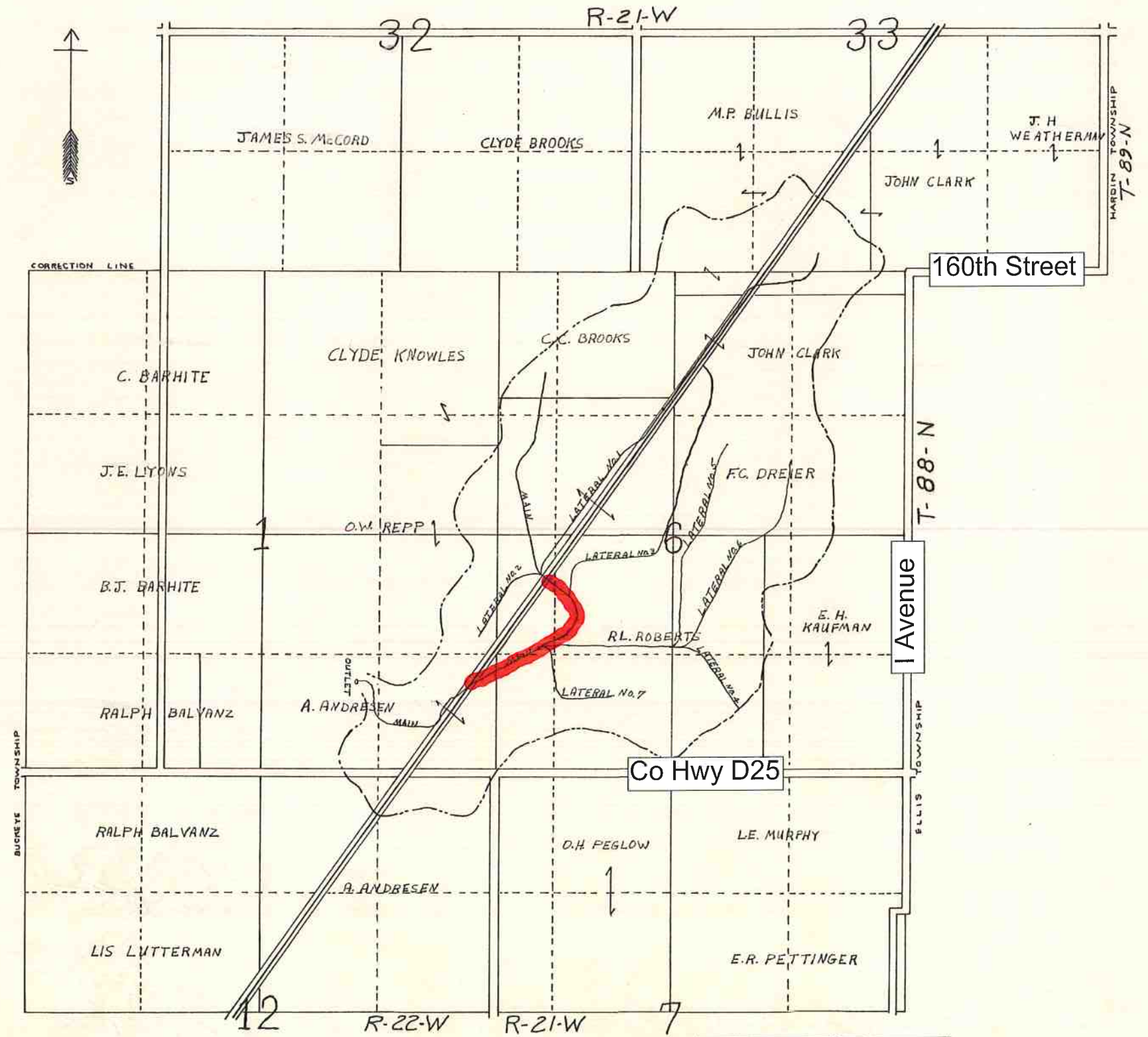
Date Reviewed \_\_\_\_\_

3, 3618723.499, 4931323.978, 1161.577, CONMON 8005  
4, 3624567.908, 4967262.956, 1167.807, CP 3/4 .5DOWN  
300, 3629737.028, 4962244.618, 1146.788, GS FO  
301, 3629822.903, 4962308.404, 1146.891, FNL RR  
302, 3629791.707, 4962284.913, 1147.160, FNL RR  
303, 3629758.052, 4962260.329, 1146.995, FNL RR  
304, 3629753.034, 4962225.981, 1147.279, GS TILELOCATE  
305, 3629774.811, 4962248.609, 1146.216, GS TILELOCATE  
306, 3629802.148, 4962282.548, 1146.295, GS TILELOCATE  
307, 3629810.400, 4962298.964, 1147.030, GS TILELOCATE  
308, 3629822.735, 4962312.159, 1147.277, GS TILELOCATE  
309, 3629859.081, 4962343.846, 1146.943, GS TILELOCATE  
310, 3629870.624, 4962355.908, 1146.838, GS TILELOCATE  
311, 3629891.427, 4962375.437, 1146.813, GS TILELOCATE  
312, 3629925.863, 4962404.629, 1146.573, GS TILELOCATE  
313, 3629938.454, 4962416.585, 1137.943, FL 18"CLAYTILE  
314, 3629966.977, 4962450.914, 1146.365, GS TILELOCATE  
315, 3630000.822, 4962485.614, 1146.076, GS TILELOCATE  
316, 3630032.434, 4962523.364, 1146.174, GS TILELOCATE  
317, 3630060.547, 4962561.809, 1146.201, GS TILELOCATE  
318, 3630086.093, 4962598.790, 1146.213, GS TILELOCATE  
319, 3630110.060, 4962639.449, 1146.103, GS TILELOCATE  
320, 3630134.112, 4962679.895, 1146.022, GS TILELOCATE  
321, 3630145.419, 4962699.671, 1138.867, FL 15"CLAYTILE  
322, 3630165.561, 4962736.783, 1146.293, GS TILELOCATE  
323, 3630184.950, 4962772.002, 1146.211, GS TILELOCATE  
324, 3630209.546, 4962815.860, 1146.642, GS TILELOCATE  
325, 3630233.486, 4962858.464, 1146.934, GS TILELOCATE  
326, 3630260.767, 4962906.353, 1147.113, GS TILELOCATE  
327, 3630284.883, 4962948.292, 1147.262, GS TILELOCATE  
328, 3630309.102, 4962994.641, 1147.441, GS TILELOCATE  
329, 3630329.428, 4963029.441, 1147.266, GS TILELOCATE  
330, 3630340.493, 4963046.219, 1139.845, FL 15"CLAYTILE  
331, 3630387.704, 4963129.871, 1140.181, FL 15"CLAYTILE  
332, 3630393.247, 4963137.165, 1146.271, GS TILELOCATE  
333, 3630413.212, 4963174.386, 1146.167, GS TILELOCATE  
334, 3630437.412, 4963217.367, 1146.018, GS TILELOCATE  
335, 3630463.134, 4963259.309, 1146.716, GS TILELOCATE  
336, 3630485.395, 4963300.163, 1146.670, GS TILELOCATE  
337, 3630507.477, 4963337.687, 1146.238, GS TILELOCATE  
338, 3630526.017, 4963368.056, 1146.568, GS TILELOCATE  
339, 3630540.580, 4963386.775, 1146.581, GS TILELOCATE  
340, 3630555.208, 4963401.223, 1140.781, FL 15"CLAY@BLOWOUT  
341, 3630929.429, 4963280.734, 1143.344, FL INTAKE BEEHIVE  
342, 3630928.602, 4963282.665, 1145.920, GS  
343, 3631016.362, 4963171.872, 1146.759, FNL RR  
344, 3631020.255, 4963167.827, 1142.396, FL 15"CLAYTILE  
345, 3630999.195, 4963158.235, 1146.570, GS FO  
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347, 3630650.646, 4963417.231, 1146.017, GS TILE LOCATE  
348, 3630708.938, 4963395.887, 1146.757, GS TILE LOCATE  
349, 3630756.966, 4963375.972, 1147.574, GS TILE LOCATE  
350, 3630790.418, 4963361.690, 1141.512, fl clay 15"  
351, 3630800.420, 4963356.626, 1146.844, GS TILE LOCATE  
352, 3630850.131, 4963334.822, 1146.385, GS TILE LOCATE  
353, 3630901.850, 4963302.566, 1146.282, GS TILE LOCATE  
354, 3630917.044, 4963287.278, 1141.856, fl clay 15"  
355, 3630925.850, 4963277.378, 1145.963, GS TILE LOCATE  
356, 3630967.858, 4963229.027, 1146.672, GS TILE LOCATE  
357, 3631010.898, 4963176.712, 1146.134, GS TILE LOCATE  
358, 3631028.257, 4963156.684, 1146.702, GS TILE LOCATE  
359, 3631042.449, 4963139.401, 1150.590, GS TILE LOCATE  
8016, 3618659.060, 4946889.650, 1169.720, GPS MON  
8016\_GNSS, 3618659.060, 4946889.650, 1169.720, Autonomous Setup

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

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

Ellis



Investigation Limits

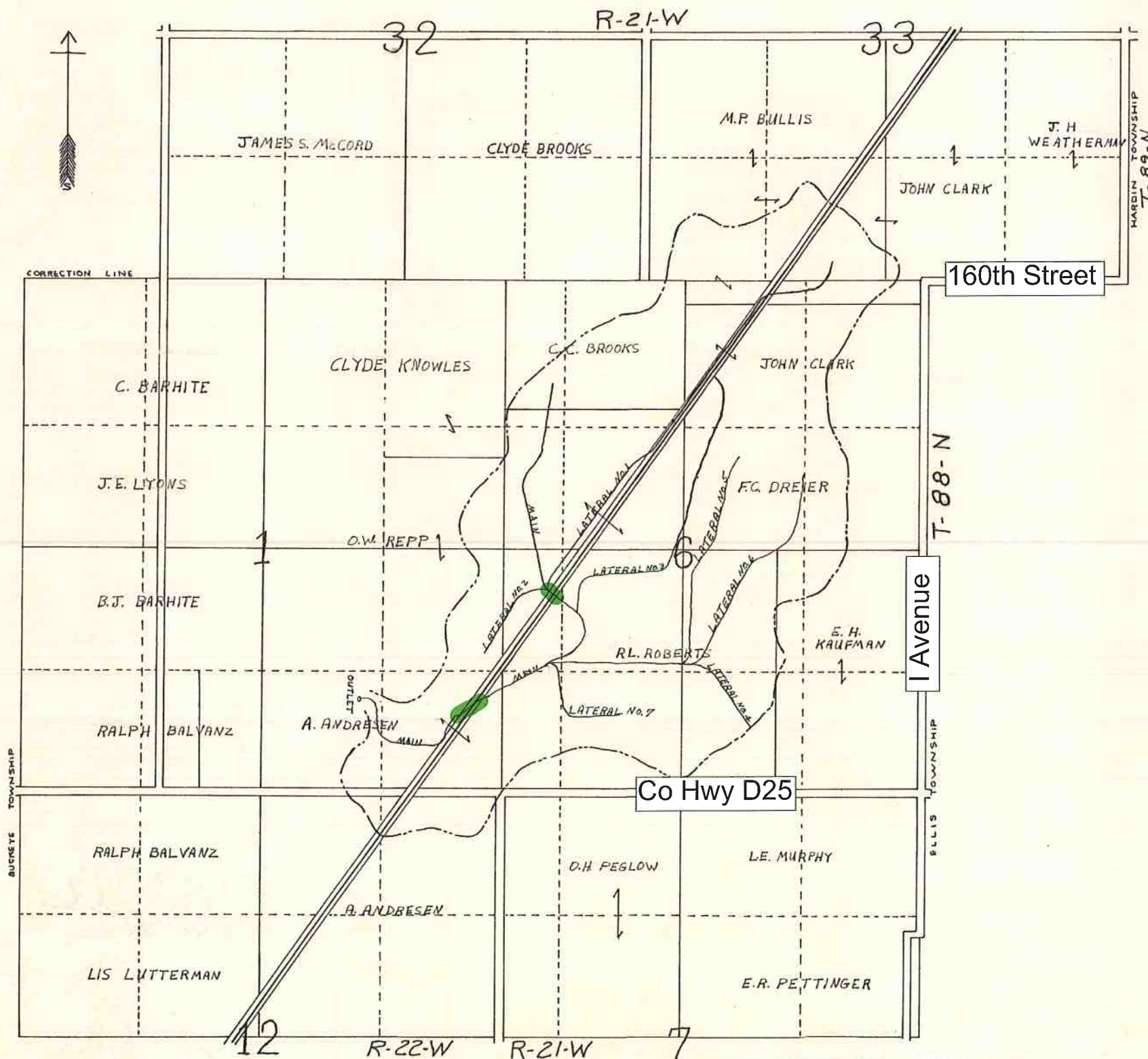
No. 9

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

PLAT  
of  
D.D. No. 9

Total Acs. 550

Scale  
1" = 600 ft. Ellis



Repair Locations

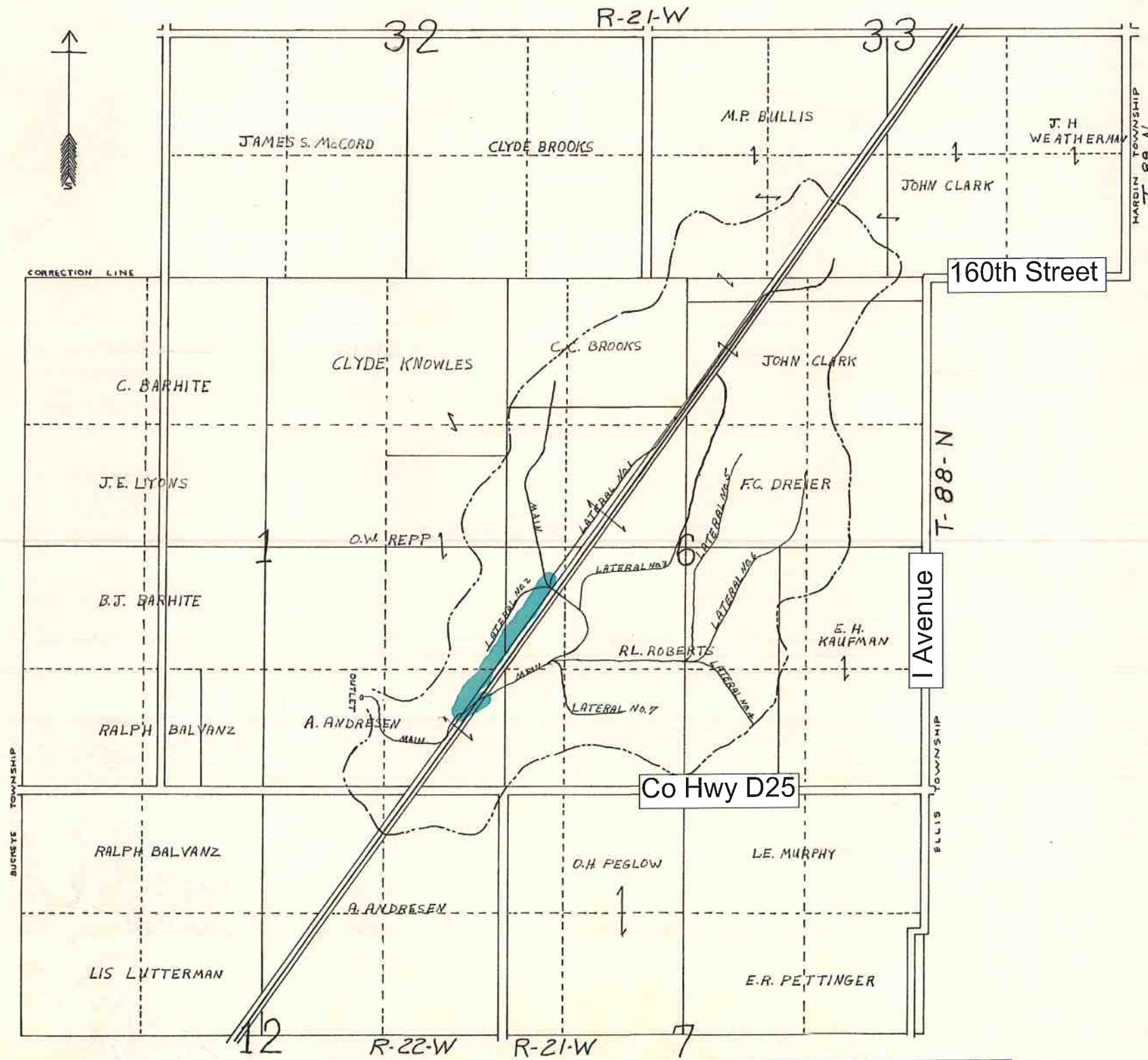
No. 9

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

PLAT  
of  
D.D. No. 9

Total Acs. 550

Scale  
1" = 600 ft. F/115



Co Hwy D25

160th Street

I Avenue

Improvement Locations

No. 9





By: L.O.G.  
 Date: 4/30/2019  
 Checked By: L.O.G.  
 Date: 4/30/2019

**Engineer's Opinion of Probable Construction Cost**

Project: Main tile **Repair** for D.D. #9

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

TILE REPLACEMENT	ITEM #	DESCRIPTION	Unit Cost	Units	Quantity	Units	Total Cost	
	<b>CONSTRUCTION COSTS</b>							
	1	15" DIP TILE	\$ 80.00	LF	120	LF	\$ 9,600.00	
	2	30" JACK AND BORE TILE (RAILROAD CROSSING)	\$ 600.00	LF	110	LF	\$ 66,000.00	
	3	INTAKE JUNCTION STRUCTURE	\$ 4,000.00	EA	2	EA	\$ 8,000.00	
	4	CONCRETE COLLARS	\$ 300.00	EA	2	EA	\$ 600.00	
	5	TILE REMOVAL	\$ 10.00	LF	10	LF	\$ 100.00	
	6	ABANDON EXISTING TILE (RAILROAD CROSSING)	\$ 30.00	LF	110	LF	\$ 3,300.00	
	7	RAILROAD REQUIREMENTS	\$ 20,000.00	LS	1	LS	\$ 20,000.00	
	8	LOCATE EXISTING DISTRICT TILE	\$ 1,000.00	LOC	2	LOC	\$ 2,000.00	
	9	TILE JET CLEANING	\$ 50.00	LF	200	LF	\$ 10,000.00	
	10	TILE CCTV	\$ 4.00	LF	200	LF	\$ 800.00	
11	TREE REMOVAL	\$ 10,000.00	LS	1	LS	\$ 10,000.00		
<b>CONSTRUCTION SUBTOTAL</b>							\$ 130,400.00	
Contingency (20%)							\$ 26,080.00	
<b>CONSTRUCTION TOTAL</b>							\$ 156,480.00	
Engr. & Const. Observation (25%)							\$ 39,120.00	
<b>TOTAL COST</b>							\$ 195,600.00	



By: L.O.G.  
 Date: 4/30/2019  
 Checked By: L.O.G.  
 Date: 4/30/2019

**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

TILE REROUTE	ITEM #	DESCRIPTION	Unit Cost	Units	Quantity	Units	Total Cost	
	<b>CONSTRUCTION COSTS</b>							
	101	15" RCP OR DUAL WALL TILE	\$ 30.00	LF	1900	LF	\$ 57,000.00	
	102	INTAKE JUNCTION STRUCTURE	\$ 4,000.00	EA	2	EA	\$ 8,000.00	
	103	CONCRETE COLLARS	\$ 300.00	EA	2	EA	\$ 600.00	
	104	TILE REMOVAL	\$ 10.00	LF	10	LF	\$ 100.00	
	105	ABANDON EXISTING TILE (RAILROAD CROSSING)	\$ 30.00	LF	110	LF	\$ 3,300.00	
	106	RAILROAD REQUIREMENTS	\$ 10,000.00	LS	1	LS	\$ 10,000.00	
	107	LOCATE EXISTING DISTRICT TILE	\$ 1,000.00	LOC	3	LOC	\$ 3,000.00	
	108	TILE JET CLEANING	\$ 50.00	LF	200	LF	\$ 10,000.00	
	109	TILE CCTV	\$ 4.00	LF	200	LF	\$ 800.00	
110	TREE REMOVAL	\$ 10,000.00	LS	1	LS	\$ 10,000.00		
		<b>CONSTRUCTION SUBTOTAL</b>				\$ 102,800.00		
		Contingency (20%)				\$ 20,560.00		
		<b>CONSTRUCTION TOTAL</b>				\$ 123,360.00		
		Engr. & Const. Observation (25%)				\$ 30,840.00		
		<b>TOTAL COST</b>				\$ 154,200.00		