

AGENDA
REGULAR DRAINAGE MEETING
Wednesday, May 12, 2021 9:30 AM

This meeting will be held electronically and in-person due to Covid-19 concerns.

To access the meeting call: 1-(312)-626-6799, when prompted enter meeting

ID code: 820 7567 2007

You can also access the meeting online at:

<https://us02web.zoom.us/j/82075672007>

1. Open Meeting
2. Approve Agenda
3. Approve Minutes
4. DD 167 - Discuss W Possible Action - District Organization, Classification & 2021 Assessments

Documents:

DD 167 - 1973 FRONT.PDF
PROVIDENCE.PDF
DD 167 - PROPERTY OWNERS FRONT.PDF
DD 167 ASSESSMENT HISTORY.PDF

5. DD 128 WO 279 - Discuss W Possible Action - Contractor Update
6. DD 120 - WO 298 - Discuss W Possible Action - Engineer's Report On Improvements To Main Tiles

Documents:

DD 120 WO 298 - 6927.1 ENGINEERS REPORT ON IMPROVEMENT TO MAIN
TILE 04_28_21.PDF

7. DD 9 WO 229 - Discuss W Possible Action - Completion Reports On Upper Main Tile Diversion

Documents:

DD 9 WO 229 - 6735.1 COMPLETION REPORT - UPPER MAIN TILE DIVERSION
04_28_21.PDF
DD 9 - 6735.1 OBSERVATION REPORT 04_28_21.PDF

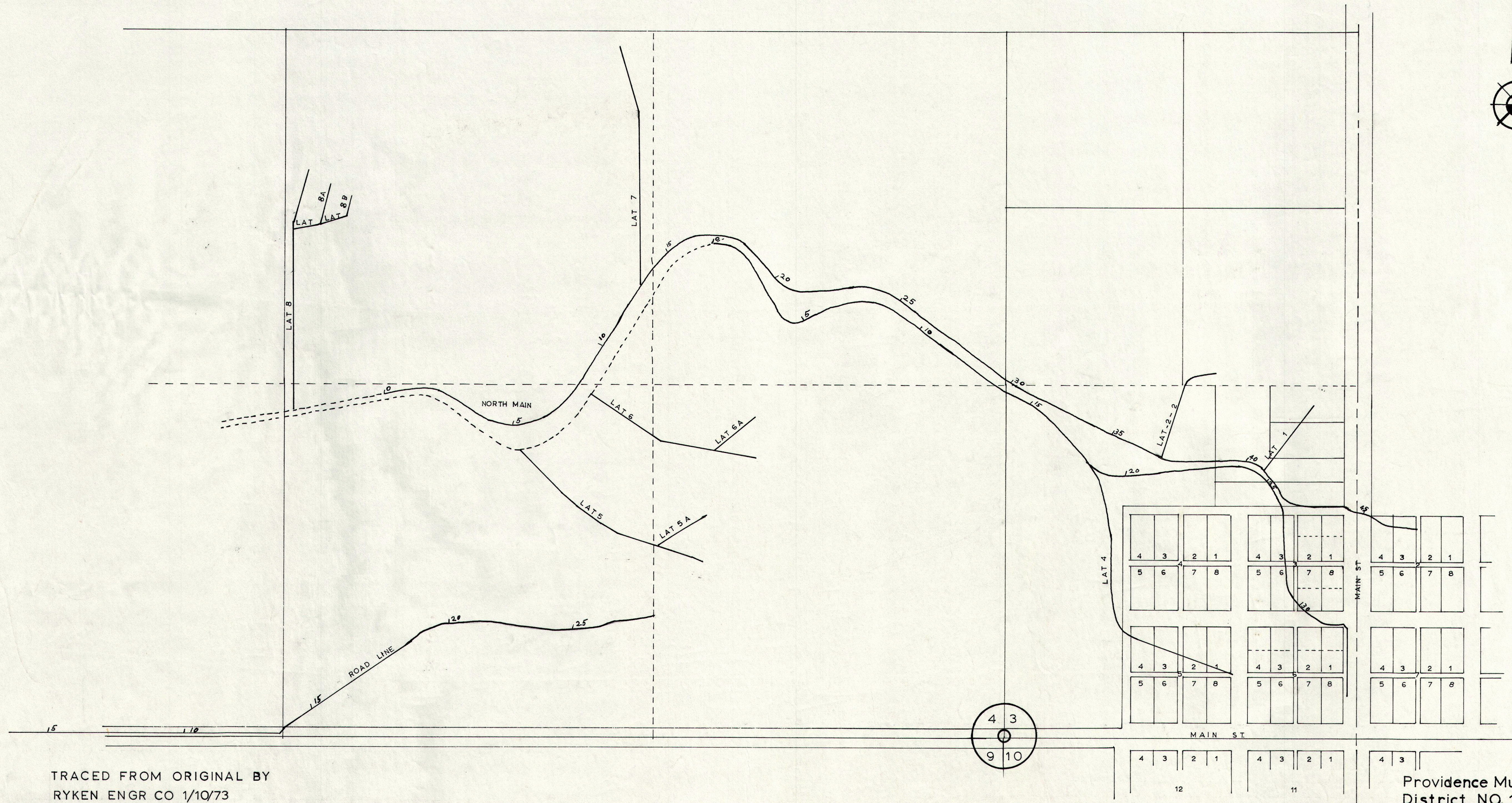
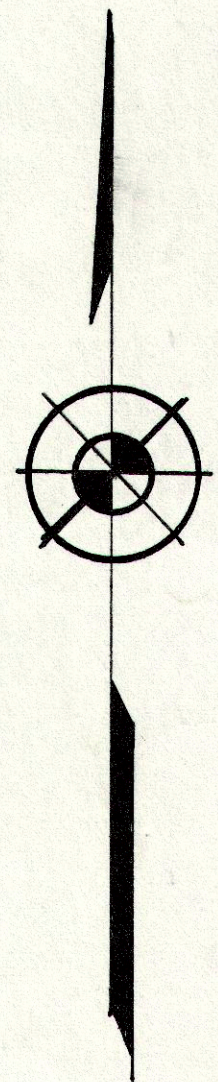
8. DD 25 WO 1 - 6501 - Discuss W Possible Action - Completion Report

Documents:

DD 25 WO 1 - 6501 COMPLETION REPORT 04_29_21.PDF

9. Other Business

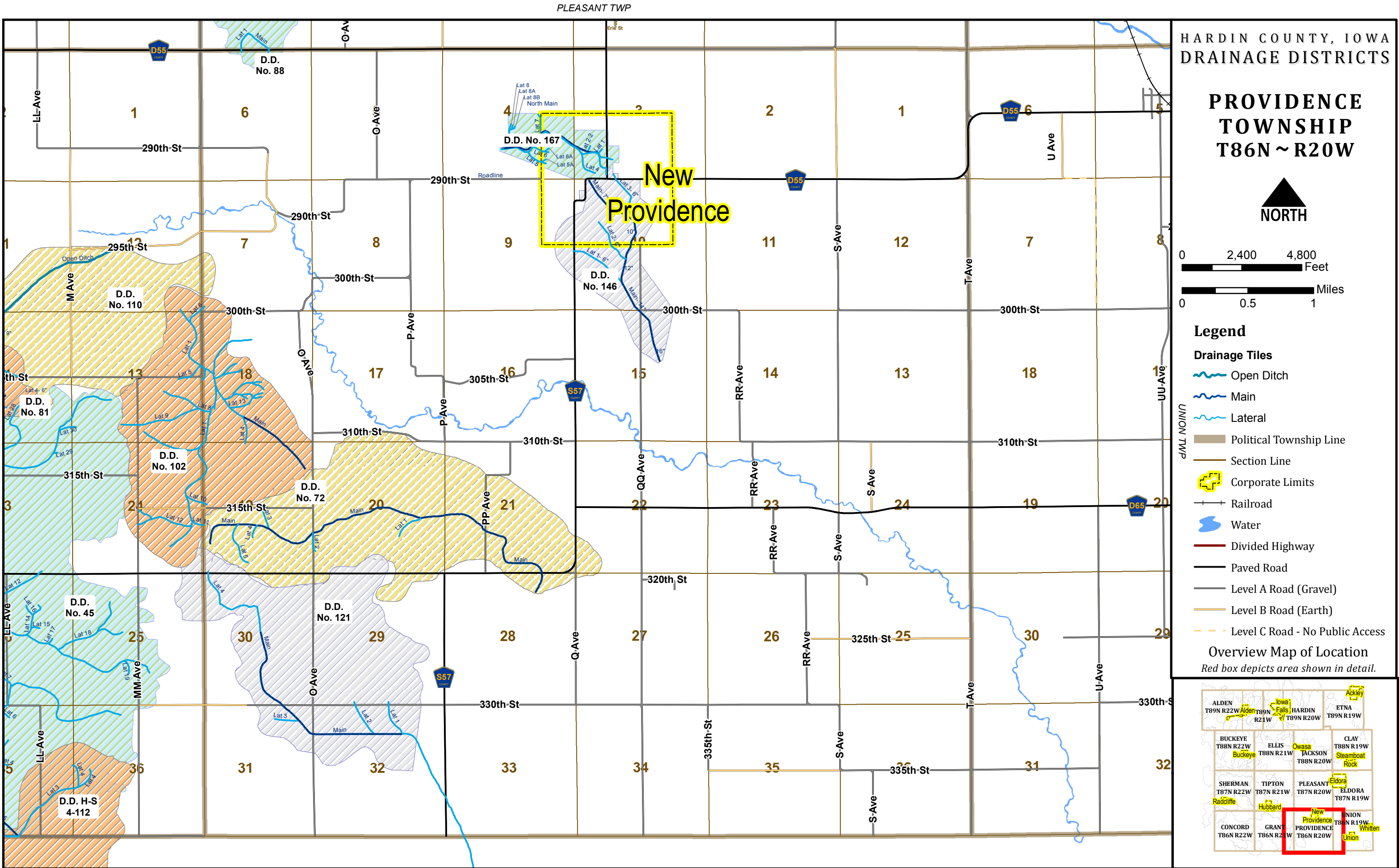
10. Adjourn Meeting



TRACED FROM ORIGINAL BY
RYKEN ENGR CO 1/10/73

Providence Mutual Tile
District NO. 167
SE 1/4 Sec. 4-Twp 86 N-R. 20 W.
SW 1/4 Sec. 3-Twp 86 N-R. 20 W.
FEB 20, 1949 Scale: 1"= 200'

NE 167



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List of property owners, description of property and amount paid by each

C. A. Norman	All of north 101 ft. Lots 1 and 2 Blk. 3 New Providence	\$ 65.00
Ted Stodola	South 72 ft. Lots 1 and 2 Blk. 3 New Providence	65.00
Ida L. Shore	S 5-1/3 rds. of E 960 Sq. rds. of N 1/3 SW-SW Sec. 3-86-20	75.00
Jessie P. Tansey	S 1/2 of E 1/4 of N 16 rds. NE SW-SW Sec. 3-86-20	65.00
E. C. White	E 960 Sq. rds. SW-SW Sec. 3-86-20	75.00
Lewis A. Hutchens	W 4.47 A. of N 13-3/4 A SW-SW Sec. 3-86-20	100.00
M. D. Reese	Lots 5 and 6 Blk. 2 New Providence	100.00
Harold Reece	Lots 3 and 4 Blk. 2 New Providence	65.00
H. D. W. Clemons	N. 1/2 Lots 7 and 8 Blk. 3 New Providence	65.00
J. H. Rash	S. 1/2 Lots 7 and 8 Blk. 3 New Providence	65.00
Ted A. Broer	Commencing at NW cor. SW-SW Sec. 3-86-20 thence W 330 ft., S 132 ft., N 330 ft., N 132 ft. to beginning	100.00
Hardin County	Lots 1, 2 and 3 Blk. 6 North 1/2 New Providence	65.00
Providence Twp. Hall	North 1/2 Lot 8 Blk. 6 New Providence	65.00
C. B. Reece	South 155 ft. Lots 5 and 6 Blk. 3 New Providence	50.00
Harry D. Faris	South 1/2 Lots 3 and 4 Blk. 6 New Providence	65.00
Neil Willa	North 1/2 Lot 4 Blk. 6 New Providence	65.00
New Providence Bldg. Assn.	So. 1/2 Lot 8 Blk. 6 New Providence	375.50
Earl and Lillie Reese	Lot 7 Blk. 6 New Providence	65.00
Reba and G. M. Thornton	Lots 5 and 6 Blk. 6 New Providence	65.00
Rosa and Buford Reece	Lot 8 Blk. 5 New Providence	50.00
Roy Wilson	Lots 1 and 2 Blk. 2 New Providence	65.00
Lawrence Reece	Lot 7 & Blk. 5 New Providence	65.00
C. W. Barnes	Lot 6 Blk. 5 New Providence	65.00
Ethel Faris	Lot 5 Blk. 5 New Providence	50.00
Mary S. Whitehead	W 2 1/4-3/4 rods S 54-1/3 rds. SW-SW Sec. 3-86-20	65.00
J. C. Whitehead	Lots 1, 2, 3, 4 Blk. 5; Lots 3 and 4 Blk. 3 New Providence Lots 1, 2, 3, 4, 5, 6, 7, 8 Blk. 4 and 7-1/3 in SW 1/4 of SW Sec. 4-86-20	390.00
J. N. Martin	East 1/2 SW 1/4 Sec. 4-86-20	520.00
W. W. Cook	West 1/2 SW 1/4 Sec. 4-86-20	390.00
New Providence Consolidated School	SW 1/4 - NW 1/4, SW 1/4 Sec. 3-86-20	520.00
State of Iowa		160.00
L. K. Reese	North 1/2, SW 1/4, NW 1/4, SW 1/4 Sec. 3-86-20	390.00

\$ 4,385.00

DD 167 Assessment History

Original Classification Amount \$4,480.50

Original Classification Date 10/05/1954

1962 – 3% - \$134.42

1967 – 3% - \$134.42

1975 – 16% - \$716.88

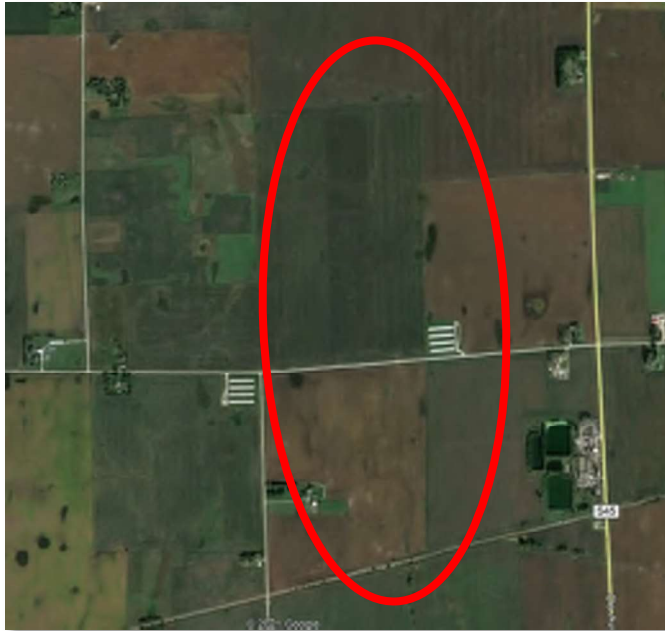
2001 – 18% - \$806.49

2010 – 35% - \$1568.18


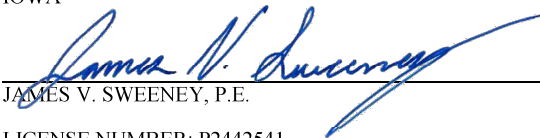
2012 – 100% - \$4,480.15

2018 – 55.797% - \$2499.99

2021 – 1339.136 % - \$60,000



**ENGINEER'S REPORT
ON IMPROVEMENTS TO
THE
MAIN TILES
DRAINAGE DISTRICT
NO. 120
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	
	 JAMES V. SWEENEY, P.E.	04/23/2021 DATE
LICENSE NUMBER: P2442541 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2021 PAGES OR SHEETS COVERED BY THIS SEAL: SHOWN ON TABLE OF CONTENTS		

Engineer's Report on Improvements to the Main Tiles, Drainage District No. 120 Hardin County, Iowa

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Engineer's Report on Improvements to Main Tiles, Drainage District No. 120 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 tiles of Drainage District No. 120 (Ext. No. 5). This report will detail the feasibility of said repairs or improvements, and present opinions of probable construction costs associated with said repairs or improvements. At the Landowner's Meeting held on June 24, 2020, the investigation summary for Work Order #298 was discussed and reviewed by the District Trustees. For reference, a copy of the meeting minutes is included in Appendix Q and a copy of the Investigation Summary for Work Order #298 is included in Appendix R. As a result of this meeting, the District Trustees requested Clapsaddle-Garber Associates to move ahead with an investigation and report concerning repairs or improvements to the Main tiles.
- **LOCATION** – The area of investigation was limited to the lower end of the original 1908 Main tile (Sta. 0+00 to Sta. 68+00) and the entirety of the 1922 Parallel Main tile (Sta. 12+73 to Sta. 76+00). The Stations listed for each of the Mains correspond with a relatively similar path and length, the exception of which being the lower end of the original main being shorter, and the upper end of the 1922 Main being straighter. Said Main tiles are located in Sections 4, 9 and 16, Township 89 North (T89N), Range 20 West (R20W), Hardin County, Iowa. Specifically, the downstream limit of investigation for both Main tiles is at their outlets at an open channel just south of the section line between Sections 9 and 16 at approximately ½ mile west of County Highway S45. Going upstream, the tiles then proceed north and enter Section 9 at approximately ½ mile west of County Highway S45. The tiles then proceed north, crossing 115th Street in the middle of Section 9 at approximately ¾ mile west of County Highway S45. Both tiles then proceed north, where the original Main arcs approximately 700 feet West and then back east, while the 1922 Main continues in a northerly direction. Both Main tiles meet again and travel northerly, with the upstream limits of investigation being at the ¼ section line at approximately 2/3 mile West of County Highway S45. For reference, a map showing the limits of investigation is included in Appendix S.

2.0 DISTRICT HISTORY – The following is a brief summary of the pertinent history of Drainage District No. 120 (Ext. No. 5) as obtained from the Hardin County Engineer’s Field Books and the Hardin County Auditor’s drainage minutes and records.

1908	Engineer’s records and maps contain notes for design and construction of the original district facilities, including the Main tile.
1922, Sep.	Engineer’s Report submitted for the construction of the parallel Main tile.
1922, Dec.	Pay estimates and Engineer’s letter show delivery of tile and beginning of construction of the parallel Main tile.
1924, Aug.	Final pay estimate shows the construction of the parallel Main tile being near completion.

3.0 INVESTIGATION – Most field investigation for this report was performed as part of the Investigation Summary for Work Order #298. Said investigation was limited to visual observation (without excavation) gathered during said investigation. For reference, a copy of the Investigation Summary is included in Appendix R. In addition, an observation of the tile outlet area was conducted to determine the condition of such. Said observation was limited to visual observation (without excavation) and picture recording. Those pictures are also included in Appendix R after the Investigation Summary. It should be noted that outlet is assumed to be to the downstream of the railroad crossing. This is due to the field observation finding an outlet at that location with a tile closely resembling the size and material of the recorded 1922 main tile, its orientation being downstream of the original main tile outlet, and the creek that is flowing through the remainder of the district facility path.

A limited review of district history was conducted to determine the dates, locations, and sizes of the two Main tiles as they were installed. A more detailed review of the district history was not completed as it was not within the limited scope of this report.

All other investigations were limited to office and records research as mentioned. Calculations were performed to determine the drainage coefficients and capacities for the length of the existing Main tiles. The drainage capacities of the tiles were calculated using historical maps of the tiles and not that of field observation or measurements. These drainage capacities may be negatively affected by several factors that were not included in this analysis including, but not limited to, breakages in the tile, improper installation, vegetative root infiltration, settling, sediment infiltration, and deposits.

4.0 DISCUSSION AND CONCLUSIONS – Based on the calculations conducted, it appears that for their combined capacity, the Main tiles were designed to provide a drainage coefficient of 0.1 to 0.36 inches per day, with the highest of these being at the outlet, and the lowest of these being located over the approximately 1100 feet upstream of 115th Street. Individually, the original Main tile varies in capacity from 0.06 to 0.12 inches per day, and the 1922 Main tile varies in capacity from 0.03 to 0.24 inches per day.

When conducting the field observation for Work Order #298, it was noted that the drainage performance of private tile located in the immediate upstream area of the upward limits of this investigation was lacking. Washouts and ponding were prevalent, which leads to the conclusion that there is a lack of drainage capacity in the downstream direction. More details from the Work Order #298 are included in Appendix R. During the additional site visit to the outlet, the original Main tile outlet was not found, but this is due to excess snow cover and lack of access to the railroad property, where it is historically located. Also, during said visit the lower approximately 200 feet of the 1922 Main tile was found to have been largely eroded, inundated with tree and brush growth, beavers have created a dam, and multiple tiles were found to be broken. Pictures from this observation are included in Appendix R.

Based on the above, it is obvious that the Main tiles have multiple issues that are contributing to the observed lack of drainage in the upstream reaches of the watershed. The area of poor capacity to the north of 115th Street creates a bottleneck for drainage coming from the upstream reaches of the Main tiles from the watershed. In addition, the significant amount of tree and brush growth within the lower 200 feet of the outlet are likely to have roots infiltrating the Main tile(s), further restricting drainage.

In addition to the current drainage issues being observed within the District, it should be noted that the newest of these tiles is nearly 100 years old. While there is no exact number of years that the VCP tile will last (due to the large number of variables affecting longevity), it is likely that the tile is nearing that time where more tile failures will begin to show up in the form of blowouts and sinkholes within the farmed fields.

Regardless of the cause of the lack of drainage performance, if improvements are not performed the Main tiles will continue to have poor drainage performance, and the upstream landowners will continue to experience overland flow and ponding. This will continue to affect productivity of the farmed ground upstream of these issues and may get worse as the tile ages and root plugging/infiltration worsens. When all these issues are combined, it will lead to further reduced drainage and liability exposure by the drainage district.

- 6.0 IMPROVEMENT METHODS – To improve the drainage capacity for the existing Main tiles, the following options are the most straightforward available:

Full Single Tile Upsizing

- For both of the Main tiles, remove and replace the existing tiles with a single new tile of greater capacity from the 1922 outlet to the upper limits of the investigation area following the route of the 1922 Main tile (Sta. 12+73 to Sta. 76+00). For reference, a chart with the required tile sizes and capacities is included in Appendix V.
- Typically, the replacement Main tile would be in the same location as the existing Main tile in order to locate and reconnect private tile and lateral connections. However, since two Main tiles exist, the private tile connections will need to be found by removing the original Main tile as work progresses in addition to the excavation of the 1922 Main tile. For reference, the general route is shown on the map included in Appendix T.
- The 700-foot arc would be left intact and attached to the new Main tile at the downstream end. The furthest upstream 40-feet of the arc would be abandoned and capped.

Partial Single Tile Upsizing

- For both of the Main tiles, remove and replace the existing tiles with a single new tile of equal or greater capacity following the route of the 1922 Main tile from the 1922 outlet to 115th Street (Sta. 12+73 to Sta. 47+00). For reference, a chart with the required tile sizes and capacities is included in Appendix V.
- It should be noted that this method would not fix the issue of the bottleneck north of 115th Street. However, it would ensure that said bottleneck area has a more freely flowing outlet downstream and would fix the issues that exist at the Main tile outlets.
- Typically, the replacement Main tile would be in the same location as the existing Main tile in order to locate and reconnect private tile and lateral connections. However, since two Main tile exist, the private tile connections will need to be found by removing the original Main tile as work progresses in addition to the excavation of the 1922 Main tile. For reference, the general route is shown on the map included in Appendix U.

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

- Due to the soil types and soil cover, all replacement tile will have rock bedding for additional stability and strength.
- The upsized Main tile may be shifted from its existing location or installed at a flatter grade to gain soil cover (if found to be lacking).
- The only tiles being improved are the tiles identified in Appendices T and U. The remainder of the tile(s) are not being repaired or modified in any manner.
- The proposed pipe sizes shown in Appendix V are those that are currently manufactured that meet or exceed the ½” or 1” drainage coefficient.
- The proposed and existing capacities shown in Appendix V are based on the assumptions that the existing Main tiles are both installed per their respective design and that they are functioning at full capacity (i.e. are not collapsed, broken, plugged, etc).
- The proposed and existing pipe sizes and capacities shown in Appendix V are those to serve the lands within the existing District boundaries and not any discharges from other lands outside the District boundaries.
- The stationing and distances shown in Appendices T, U, and V are based on the original district profiles. There is likely to be slight differences in quantities found as work progresses.

- 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.

- 6.0 **OPINION OF PROBABLE CONSTRUCTION COSTS** – Using the above methods of improvement, an itemized list of project quantities and associated opinions of probable construction cost for each option were compiled and are included in Appendices W, X, Y, and Z of this report. A summary of said costs are as follows:

METHOD	DRAINAGE COEFF.	DISTRICT CONSTRUCTION COST	ROAD COUNSTRUCTION COST
Full Single Tile Upsizing – Improvement (½")	½"	\$1,101,309.00	\$26,490.00
Full Single Tile Upsizing – Improvement (1")	1"	\$1,356,471.00	\$30,452.50
Partial Tile Upsizing – Improvement (½")	½"	\$701,523.00	\$28,697.50
Partial Tile Upsizing – Improvement (1")	1"	\$840,903.00	\$30,452.50

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

7.0 OWNERSHIP AND CLASSIFICATIONS – Any and all information concerning ownership of lands and classifications of said lands within Drainage District No. 120 can be obtained from the Hardin County Auditor’s office.

It should also be noted 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 . . .” Based on this, it appears that a reclassification separating laterals may be required if any of the above improvement options were to move forward, and the laterals had not already been separated. Since the proposed project does not involve the laterals, it is not clear if this portion of code is applicable and it is our recommendation that the District Trustees seek advice from their legal counsel.

8.0 RECOMMENDATIONS – There is a definite need to perform one of the above-mentioned actions if the upstream landowners wish to maintain productivity of their land by reducing erosion and excess stormwater. The improvements would remove the current restrictions and impediments to the Main tiles, increase the capacity of the District facilities, and extend the lifespan of the same. 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 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.

DD 120 LANDOWNERS MEETING MINUTES

Wednesday, June 24, 2020 11:00 AM

This meeting was held in-person and electronically due to Covid-19 concerns.

6/24/2020 - Minutes

1. Open Meeting

Hardin County Drainage Chairperson Lance Granzow opened the meeting. Also present were Trustee BJ Hoffman; Trustee Renee McClellan; Landowners Kent Picht, Jordan Picht, Kevin Vierkandt; Lee Gallentine of Clapsaddle-Garber Associates; Michael Pearce, Network Specialist and Denise Smith, Drainage Clerk.

2. Approve Agenda

Motion by McClellan to approve the agenda. Second by Hoffman. All ayes. Motion carried.

3. DD 120 - Discuss W Possible Action - Surcharged Intake Discharge

The issue of the private tile intake being surcharged during heavy rains and discharging onto neighboring property creating ponding issues was discussed. Gallentine stated in what he understands is Picht did private tiling and installed an intake, which he has the right to do, and as Kevin Vierkandt reported in last week's meeting, when we have heavy rains, water comes out of the intake, and follows the slope of the ground and ends up in Vierkandt's ground. Picht agreed that is what happens, Kent Picht stated his 150 acres above Vierkandt flows into that area and Picht has a pond there every year, in speaking with the contractor the contractor stated an intake could be installed that would take care of that. Picht stated he put the intake in the fenceline so he did not have to farm around them, and would gladly move it back to the middle of the pond, but the fenceline is part of that ponding area. Gallentine asked if the pond in Vierkandt's ground was big enough that it goes up into Picht's ground as well. Picht stated we both share the same pond, and Vierkandt's is a little bit higher, when Picht's ponds up a little bit, it is so high it goes into Vierkandt's place because there is a huge amount of surface water that goes in there. Picht stated if he took the intake out now, the tile would probably blow out because the tile is only 2' to 2-1/2' deep, it is a 7" tile in Picht's field, and when it goes into Vierkandt's field it goes into a 10" tile. Picht stated he had a map when the intake was installed and thought the 7" tile going into a 10" tile should handle that flow ok, either it may not be a 10" in Vierkandt's field or Picht has so much pressure coming down that it discharges out the intake.

Granzow stated that last week Vierkandt expressed we may need to increase the district tile size. Gallentine did calculations using the original design, and using the original design, the coefficient in that district varies from .23" per day to .03" per day, so the system is woefully undersized compared to what would be installed now. Granzow stated since Vierkandt is tenant on Jeff Hansen's land, the request for an improvement would have to come from a landowner. McClellan asked if a backflow preventer would be applicable in this case. Gallentine stated a backflow preventer has to have a certain amount of pressure to open it for the one way flow, so you would have to have some pressure to open it but the issue is if you have too much pressure in that system you will have blowouts. Gallentine stated Vierkandt acknowledged that but Vierkandt stated that is a sign we need a bigger tile. Gallentine stated if we put all that water through the tile, some of it goes by surface and leaves the district, it is still a coefficient of only 1/4" to .03" which is pretty slow. Picht stated he has two intakes west of his places in the ditch of HWY 57 that still has water coming out of them and creating ponds, and has two intakes east of his house, that are still discharging after several days of no rain, and is still receiving water from an intake blowing out on his neighbors, creating another pond for him. Picht has learned to live with it, if he takes an intake out, water seeps up out of the ground, if we put the intake in, at least it does drain and the ponds go out quicker, he does not like the ponding or the intakes, but if he does not put an intake in the ponds will sit there longer, there is no good solution other than huge drainage mains everywhere. Gallentine stated sometime they will put an intake in and shoot it off to the side of the main before coming up and that helps somewhat rather than being right up on top of the main but it will still discharge sometimes.

Gallentine stated if you do an upsized project, unless it is an open ditch, you will probably get 1/2" per day

max of coefficient, and with the heavy rains we have been having if you get 2" of rain, it will take 4 days to drain out. Vierkandt was called into the meeting and the original design coefficients were reviewed. Granzow stated if you would like to request an improvement or an upsize in tile, the request needs to come from a landowner. Vierkandt stated it definitely needs to be upsized. Granzow asked if Picht was willing to make that request. Picht stated he and Vierkandt had already discussed what Picht was willing to do, Picht stated he would upsize part of it to take the pressure of the upper end, possibly run a supplemental main beside of the old main that jumps up to a bigger tile, it is supposed to jump up to an 18" tile later. Gallentine stated you would jump up to a .2" coefficient with an 18" tile. Picht wouldn't mind sharing the cost on that just to take off the pressure on the top. Gallentine asked if Picht would go all the way down to the outlet. Picht stated it depends on what size the outlet is, and noted it is a long ways away. Gallentine stated yes it is a long way, and the the last little bit of tile before the outlet is a 20" which is running a .25" coefficient. Picht would be willing to help run supplemental private tile to the larger part of the main if that would help. Granzow stated that can be done without the Trustees. Picht agreed and stated that was what he had told Vierkandt, as the main is on Vierkandt's land. Granzow stated what would come from the Trustees is if a landowner would come forward with a request to do an improvement. Vierkandt stated if the outlet down on the bottom was only good for 1/4" a day and is way less on the upper end, he was unsure what the cost for an improvement would be, but he would like to know the cost for an improvement or to lay another main beside it to increase the capacity. Vierkandt asked if we can bring that excess water all the way down there, and the outlet is only good for 1/4" a day, Vierkandt does not think that will help us that much.

Picht stated he knew the land that would have to go through, and it gets really deep, and would also have to go under an active railroad track, and it would be a major project. Gallentine stated the original tile was planned at the railroad tracks for a depth of 7', Picht said there are places that are deeper than that. Gallentine stated with a tract excavator, 7' is not that bad. Gallentine did note it was a Canadian National line, and it is a 20" tile right before it goes under the railroad. Gallentine stated right at the railroad tracks is where it starts steeping up a bit to get to that 1/4" coefficient, upstream of the railroad tracks it flattens out and that is about .2" coefficient. Picht asked what it would cost for study on an improvement. Gallentine stated studies have been running \$5,000 to \$7,000. Picht asked if it would just be billed to these two landowners. Gallentine stated it would be billed to and split amongst all the landowners in the district. Picht asked if that was ok with Vierkandt. Vierkandt stated his landowner would be ok with that. Picht was ok with that as well.

Granzow stated we have to have a request from a landowner, and with this kind of drainage coefficient, thats not bad to just have a single landowner request. Gallentine stated he was surprised there has not been a request before when he saw the .03" coefficient, and it was no wonder they have ponding. Picht stated he would like to get rid of the ponding as they plant it and always get something out of it but would like the ponding gone and something done for the top end too, which would send more water down there. McClellan asked if Picht would submit a request in writing to the Drainage Clerk, Picht stated he would provide a written request to Smith today. McClellan stated we could act on the written request next week. Picht asked how long a study would take. Gallentine stated they usually take about a month, and once adopted the Engineer's Report is valid for 10 years, and it would cover multiple options, one option would be putting in one lager tile, one could be putting a new tile beside the old tile, the problem with that is you are still paying on the new tile while trying to maintain the old tile. Gallentine stated we would also include an open ditch option. Granzow stated the parallel tile option means the tile is flowing in both old and new tiles, but as soon as the 100 year old tile breaks, will we be putting in a new one, or build it once the first time the improvement is done. Gallentine stated it is tough to figure out how much life is left in a 100 year old system. Granzow stated it would be nice to say we abandoned the old system and built a new one, Gallentine stated we typically do remove the old tile. Granzow stated we need to understand that if abandoned it will no longer be district tile if it breaks. Gallentine stated the nice thing about removing the old district tile is that we can find and restore all the private connections when we remove the tile. Gallentine stated the report will provide several options with expected costs for each so you can have an idea of what costs may be. Picht asked if it was very expensive to remove the old tile. Gallentine stated we usually see costs of \$3 to \$5 per foot, it is pulled off and trucked out, sometimes it is used as fill in a road crossing.

Granzow stated so what we have so far is a request from landowner Picht for a report to do an improvement, along with that we are going to make sure the landowners have a wetland determination done by the NRCS. Granzow went on that the landowners are the only ones that can request a wetland determination, the

Trustees can not do this. Picht asked if the landowners would all be notified and come in and vote on the improvement. Granzow stated the Trustees are the only ones that vote, the Trustees will take a paper ballot as input from the landowners and try to come to a consensus, but the Trustees have the final say. Picht stated all the other landowners may not show interest as they have higher ground and drain fine. Gallentine stated once the report is done, it will be on file with the Drainage Clerk who will send out notifications of a hearing to discuss the improvement options in the report. Granzow stated the classifications may show what Picht describes as well. Gallentine stated that if the majority of the landowners who own 70% of the ground in the district file a Remonstrance, saying no, then nothing moves forward. Granzow stated then the Trustees are done and it becomes a dead issue. Hoffman stated if Picht would step up to the Drainage Clerk's office, he could submit a request in writing, Hoffman noted that the district could also submit a petition for Private Trustee control.

Hoffman stated it is hard for the Trustees to say that we have to tell you here is the report and classification and we are spending your money, and knowing the current commodity prices and the world's uncertainty, telling someone that they will have to spend this much money is difficult. Picht stated he will try and talk Vierkandt into putting in just a short supplemental tile to a bigger tile so that may help the blowout. Picht stated the blowout does not amount to that much when you look at the amount of surface water that Picht's land takes. Picht stated the blowout quits after you get to a certain level, when Picht has watched the blowout it goes out into Vierkandt's field about 100 yard, the water disappears and is soaking in somewhere. Picht stated he will try to work something out with Vierkandt. Granzow asked if he would like to do that before we request the report. Picht stated no he would request the report today, as they will not get it fixed before next year now that crops are in.

4. Other Business

5. Adjourn Meeting

Motion by Hoffman to adjourn. Second by McClellan. All ayes. Motion carried.

Drainage District:

#120

Investigation/Repair Summary:

- Tenant in the S½ SW¼ Section 4, Township 89 North Range 20 West and NW¼ Section 9, Township 89 North Range 20 West reported that an upstream landowner in N½ SW¼ Section 4, Township 89 North Range 20 West had installed an intake on district tile to act as a pressure relief point for the tile system and graded the area to “drain” to his field. As a result, water was flowing overland and collecting on the north side of 115th Street (no intake visible in the road ditches on either side of the 115th Street). At 115th Street and throughout the flow path, crops were either drown out or washed away.
- Visual observations (with and without tenant) found:
 - Drown out/washed out areas as tenant described (115th Street and flow paths).
 - Wet drown out area in neighbor’s field on the north side of tenant’s fenceline.
 - Woven portion of said fenceline appears to have cut.
 - Sod “fenceline hump” is no longer in place allowing the free flow of surface water.
 - Yellow wire topped intake is just north of fenceline on neighbor’s property and not in the low point of the neighbor’s wet area.
- A review of the original district maps (Drainage District 5) indicates that the tile at said fenceline is not district tile as the Main tile (highlighted yellow on the attached maps) runs northwest as it moves upstream through the S½ SW¼ Section 4, Township 89 North Range 20 West and never enters the N½ SW¼ Section 4, Township 89 North Range 20 West.
- A review of the reconstruction district map (Drainage District 120) shows multiple “lines” on the drawing, but the only one identified as the district tile is the Main tile (highlighted pink on the attached map) and it does not enter the N½ SW¼ Section 4, Township 89 North Range 20 West.

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

None recorded as only visual observation was performed.

Additional Actions Recommended:

The immediate problem at the fenceline between the S½ SW¼ Section 4, Township 89 North Range 20 West and the N½ SW¼ Section 4, Township 89 North Range 20 West appears to be on a private tile and not a district facility based on the above review. If desired, a detailed record search could be performed to verify that the maps accurately represent the district facilities. If the tile is private, then the primary solution that the district could offer for the immediate area would be to construct a lateral from the Main tile to the N½ SW¼ Section 4, Township 89 North Range 20 West.

A secondary issue is the ponding at 115th Street. Preliminary calculations indicate that the existing Main tile lacks drainage capacity at this point and there are no means for standing water to enter the Main tile. These both could be remedied by a drainage district project, but this would not prevent the crop loss along the flow paths from 115th Street to the N½ SW¼ Section 4, Township 89 North Range 20 West. Alternatively, secondary roads could be contacted to upsize the roadway culvert at 115th Street, but this would just push the problem to the south.





Drainage Work Order Request For Repair

Hardin County

Date: 7/6/2020

Work Order #: WO00000298

Drainage District: DDs\DD 120 (51135)

Sec-Twp-Rge: 09-89-20 Qtr Sec: NE NW

Location/GIS: 89-20-09-100-002

Requested By: Kevin Vierkandt

Contact Phone: (515) 689-3388

Contact Email: vierkandtfarms@windstream.net

Landowner (if different): Hansen Farms, Inc.

Description: DD 120 - Kevin Vierkandt reports issues with neighboring parcel's intake discharging onto his parcel (892009100002) when intake is surcharged. Intake is in fenceline about 8" above ground.

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: _____

7-8-2020

E end drawn spot @ 115th



W end drawn spot @ 115th

7-8-2020



middle down spot @ 115ft

7-15-2020
Wet spot in adjoiners field



7-15-2020
Yellow topped intake just
north of fence line



7-15-2020 W side of missing
soil "hump"

7-15-2020 middle of missing soil "hump"

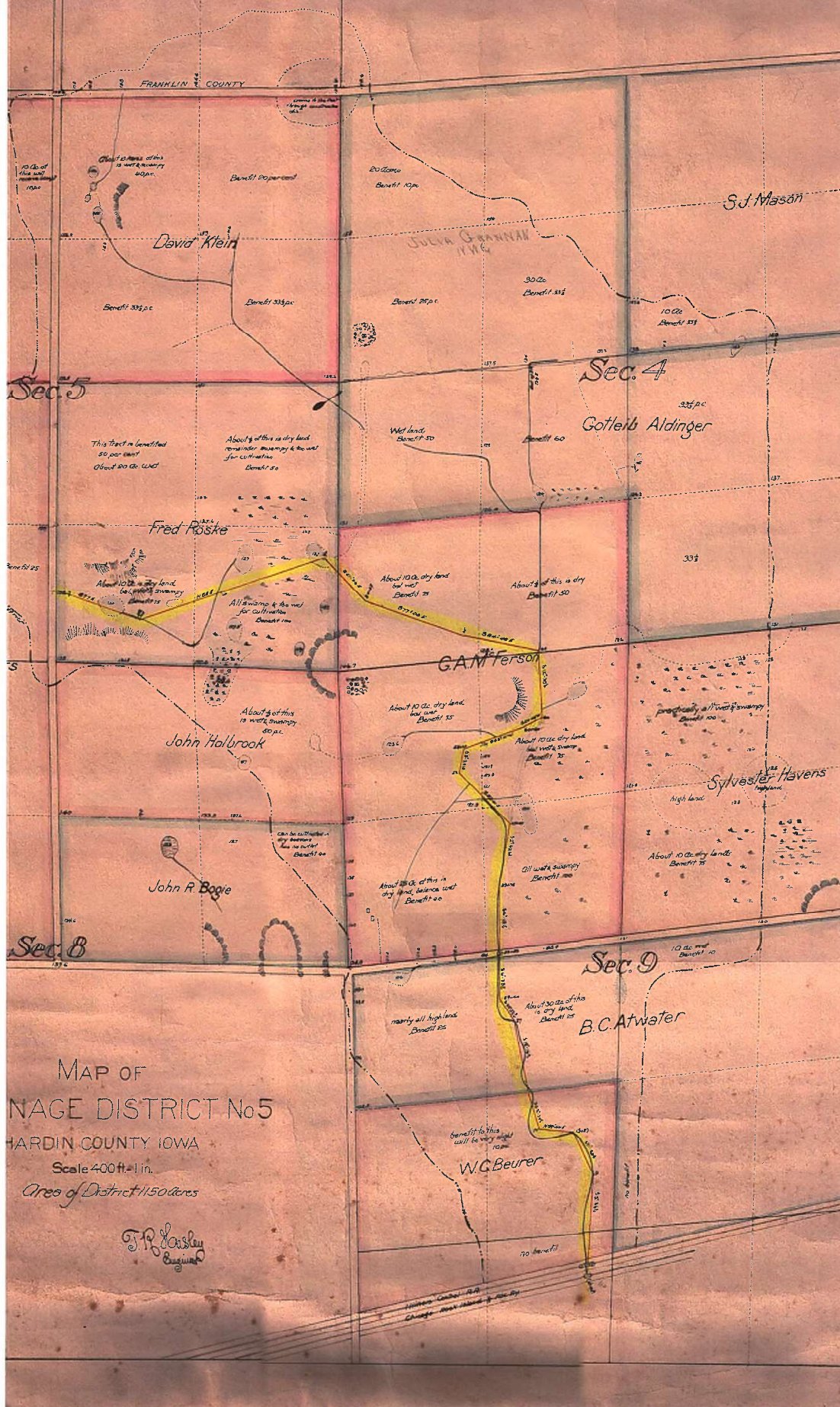


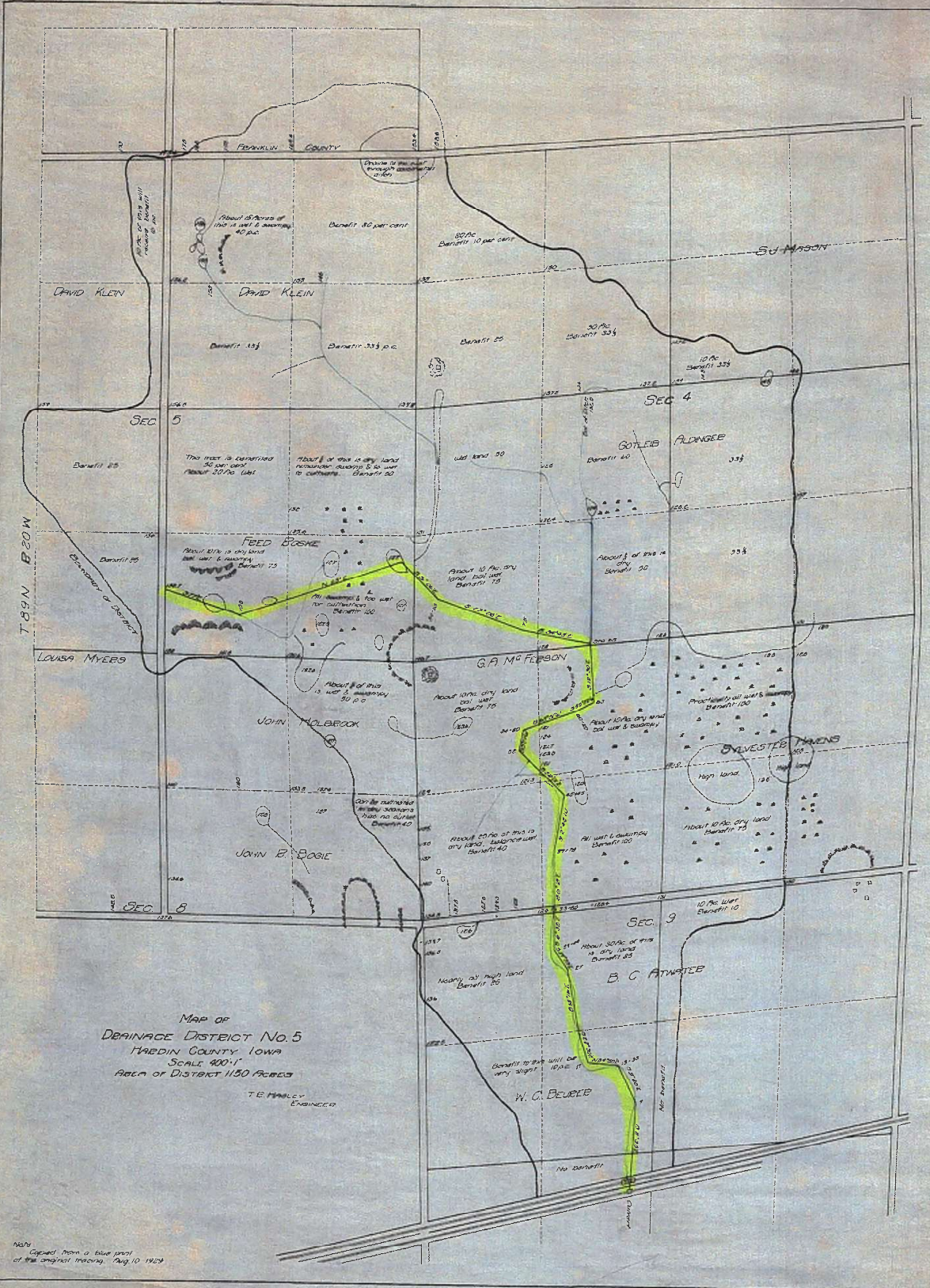
7-15-2020 East side of missing soil "hump"

7-15-2020



"Cat" woven wire fence





NOTE: Copied from a blue print of the original tracing Aug 10 1929

PLAT
DRAINAGE DISTRICT
NO 5
RECONSTRUCTION
DD CONTAINING 1220 ACRES 120
SCALE 1" = 800'

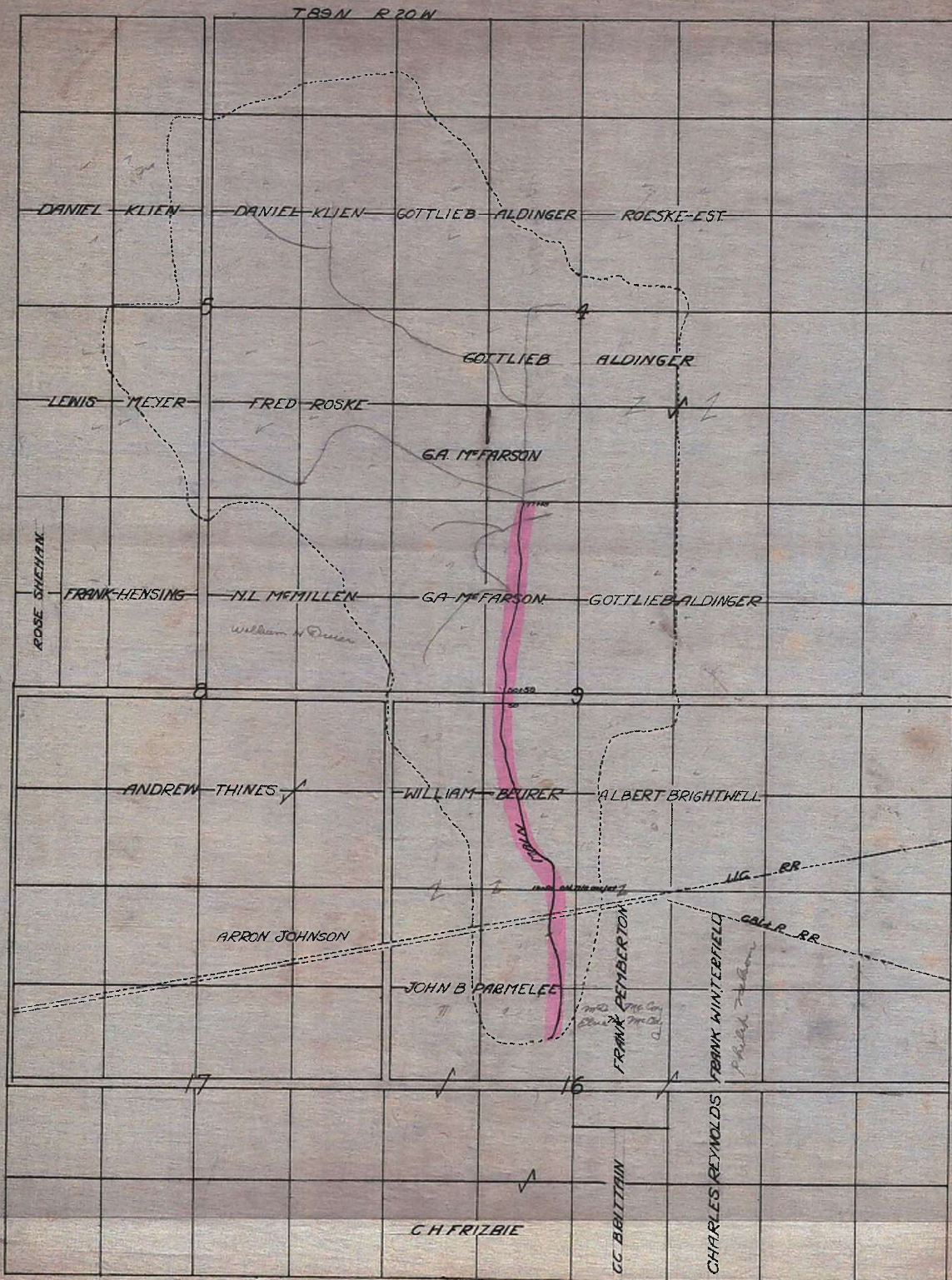




Figure 1: 1922 Main completely exposed and broken above outlet.



Figure 2: Lower 100 feet of 1922 Main.



Figure 3: Lower 100 feet of 1922 Main tile



Figure 4: Large trees and woody brush growing over the lower 200 feet of both Main tiles.



Figure 5: Trees and woody brush over lower 100 feet of 1922 Main tile.



Figure 6: Lower 200 feet of Main travels below bridge and then through heavily wooded area.



Figure 7: Beaver dam below the Main tile outlet.



Figure 8: Signs of beaver action.



Figure 9: Signs of beaver action.



Figure 10: Signs of beaver action.



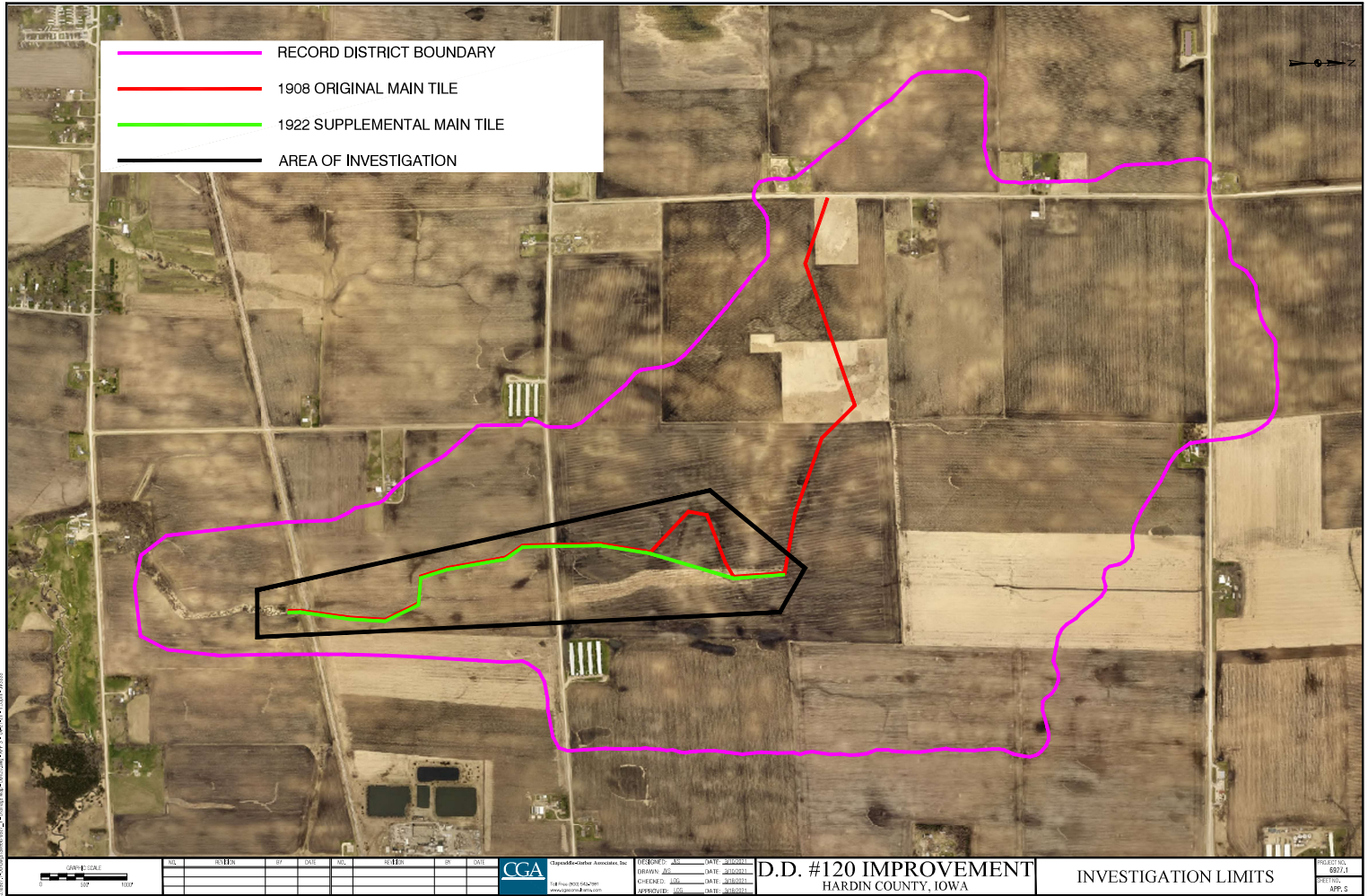
Figure 11: Pooling between beaver dam and 1922 Main tile outlet.



Figure 12: Pooling between beaver dam and 1922 Main tile outlet.



Figure 13: 1922 Main tile outlet.



RECORD DISTRICT BOUNDARY

1908 ORIGINAL MAIN TILE

1922 SUPPLEMENTAL MAIN TILE

AREA OF INVESTIGATION

GRAPHIC SCALE

0 100 200

NO.	SECTION	17	120E	NO.	SECTION	18	120E

CCA

Cooper & Co. Associates, Inc.

1000 West 10th Street

Des Moines, Iowa 50319

DESIGNED BY

DATE 10/15/2011

DRAWN BY

DATE 10/15/2011

CHECKED BY

DATE 10/15/2011

APPROVED BY

DATE 10/15/2011

D.D. #120 IMPROVEMENT

HARDIN COUNTY, IOWA

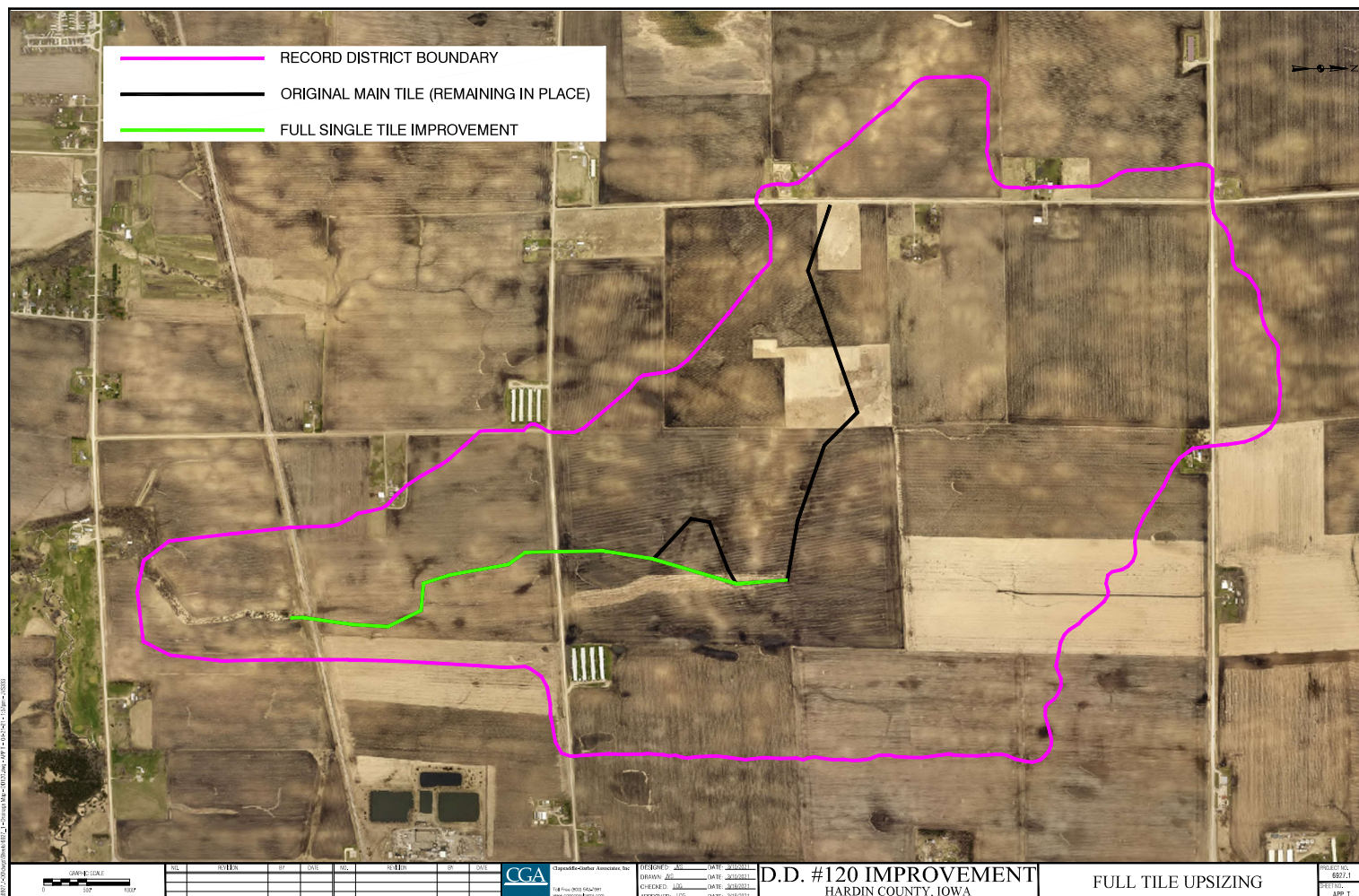
INVESTIGATION LIMITS

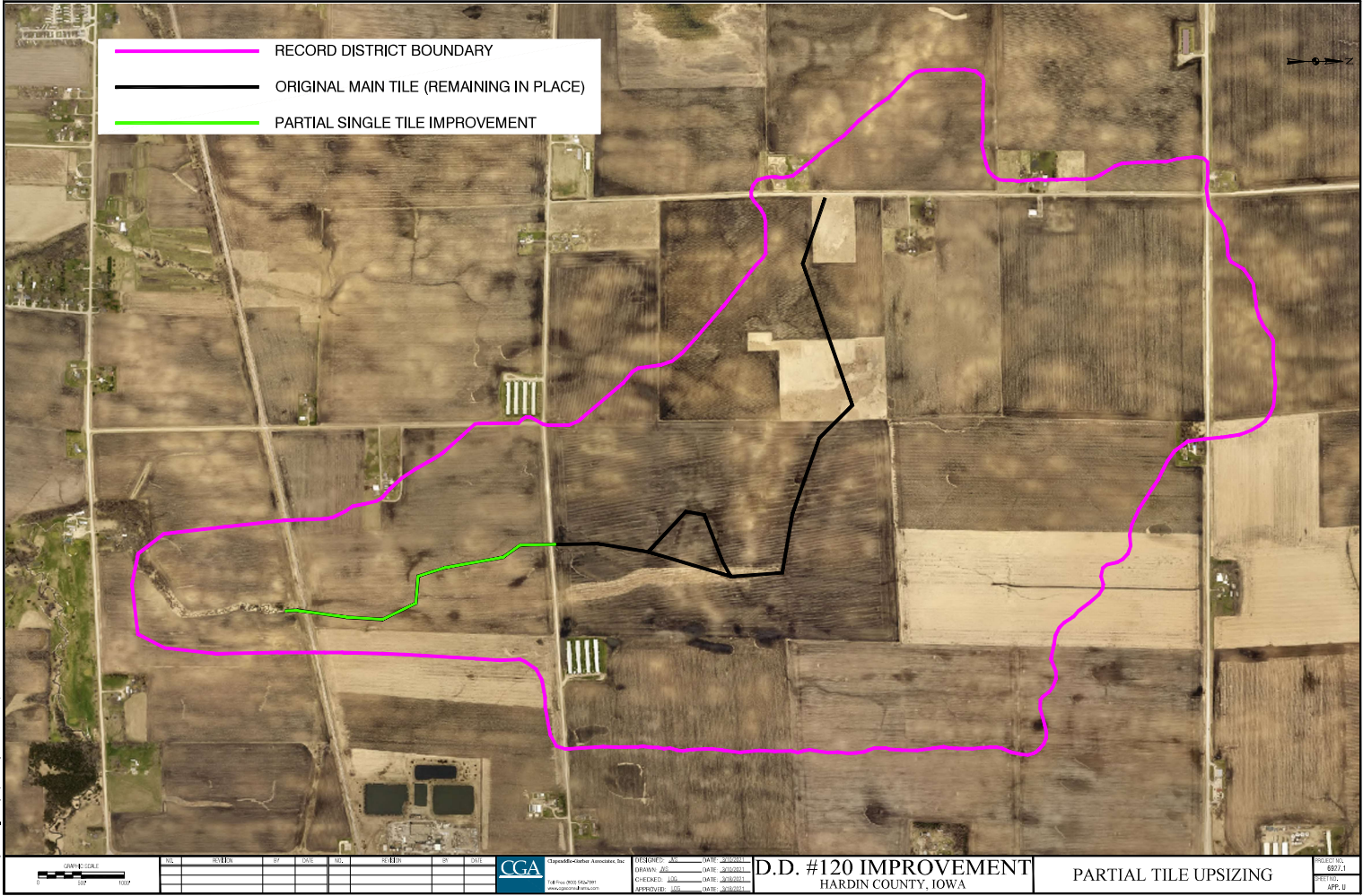
PROJECT NO.

ED07, 1

SHEET NO.

APP. 2







By: J.V.S.
 Date: 3/9/2021
 Checked By: L.O.G.
 Date: 4/21/2021

Engineer's Opinion of Main tile Capacities

Project: Single Tile Upsizing for D.D. #120

Location: Sections 9 & 16 T89N, R20W Hardin County, Iowa

		EXISTING				IMPROVED						
							1/2" DRAINAGE COEFFICIENT			1" DRAINAGE COEFFICIENT		
MAIN TILE UPSIZING (IMPROVEMENT)	STA. (Original, 1922)		INSTALLED TILE SIZE; Original, 1922 (in)	INSTALLED TILE CAPACITY (cfs)	INSTALLED TILE CAPACITY (in/day)		IMPROVED TILE SIZE (in)	IMPROVED TILE CAPACITY (cfs)	IMPROVED TILE CAPACITY (in/day)	IMPROVED TILE SIZE (in)	IMPROVED TILE CAPACITY (cfs)	IMPROVED TILE CAPACITY (in/day)
		EXISTING DESCRIPTION				PROPOSED DESCRIPTION						
	-1+50, 12+73	Tile empties into open channel	18, 20	17.44	0.36	Tile empties into open channel	36	56.0	1.1	42	84.4	1.7
	0+00, 14+00	Original Main tile outlet, 1922 grade change: 0.7% to 0.4%, Railroad	18, 20	17.44	0.36	Grade change from 0.7% to 0.3%	36	56.0	1.1	42	84.4	1.7
	20+00, 34+00	Original grade change: 0.3% to 0.06%	18, 20	14.59	0.30	Grade change from 0.3% to 0.18%	36	36.6	0.7	42	55.3	1.1
	22+00, 36+00	1922 size change: 20" to 16"	18, 20	11.40	0.26		36	28.4	0.6	42	42.8	1.0
	23+00, 37+00	1922 Grade change: 0.4% to 0.16%	18, 16	7.45	0.18		36	28.4	0.7	42	42.8	1.0
	33+00, 47+00	1922 size change: 16" to 12", 115th Street	18, 12	5.66	0.13		36	28.4	0.7	42	42.8	1.0
	49+00, 59+00	Original grade change: 0.06% to 0.16%	18, 12	4.01	0.10		36	28.4	0.7	42	42.8	1.0
	68+00, 76+00	Original grade change: 0.16% to 0.25%, Original size change: 18" to 16", 1922 end of tile	18, 12	5.64	0.15	End of Improvement	36	28.4	0.8	42	42.8	1.1
130+00	End of original Main tile	16	3.85	0.14								



By: J.V.S.
 Date: 3/9/2021
 Checked By: L.O.G.
 Date: 4/21/2021

Engineer's Opinion of Probable Construction Cost

Project: **Full Single Tile Upsizing** for D.D. #120

Location: Sections 9 & 16 T89N, R20W Hardin County, Iowa

FULL SINGLE TILE UPSIZING - IMPROVEMENT (1/2")

ITEM #	DESCRIPTION	Unit Cost	Units	Quantity	Units	Total Cost
DISTRICT CONSTRUCTION COSTS						
101	36" CMP TILE OUTLET	\$ 130.00	LF	40	LF	\$ 5,200.00
102	36" TRIPLE WALL PPE or RCP TILE	\$ 90.00	LF	6140	LF	\$ 552,600.00
103	36" DIP TILE W/ STEEL CASING (RAILROAD)	\$ 1,000.00	LF	100	LF	\$ 100,000.00
104	36" x 16" PPE or RCP REDUCER	\$ 2,000.00	EA	1	EA	\$ 2,000.00
105	36" RODENT GUARD	\$ 1,000.00	EA	1	EA	\$ 1,000.00
106	BANK STABILIZATION	\$ 60.00	TON	50	TON	\$ 3,000.00
107	RAILROAD FLAGGING & INSURANCE	\$ 30,000.00	EA	1	EA	\$ 30,000.00
108	CONCRETE COLLAR	\$ 1,000.00	EA	10	EA	\$ 10,000.00
109	PRIVATE TILE CONNECTIONS	\$ 500.00	EA	22	EA	\$ 11,000.00
110	HICKENBOTTOM INTAKE	\$ 1,500.00	EA	6	EA	\$ 9,000.00
111	TILE LOCATION	\$ 150.00	STA	63	STA	\$ 9,450.00
112	TREE REMOVAL	\$ 2,000.00	LS	1	LS	\$ 2,000.00
113	TILE REMOVAL	\$ 5.00	LF	12560	LF	\$ 62,800.00
DISTRICT CONSTRUCTION SUBTOTAL						\$ 798,050.00
Contingency (15%)						\$ 119,707.50
CONSTRUCTION TOTAL						\$ 917,757.50
Engr. & Const. Observation (20%)						\$ 183,551.50
DISTRICT TOTAL COST						\$ 1,101,309.00
ROAD CROSSING CONSTRUCTION COSTS						
114	36" TILE - OPEN CUT (115TH STREET)	\$ 135.00	LF	45	LF	\$ 6,075.00
115	TILE ABANDONMENT	\$ 100.00	LF	90	LF	\$ 9,000.00
116	HICKENBOTTOM INTAKE	\$ 1,500.00	EA	2	EA	\$ 3,000.00
117	PERMANENT SEEDING AND WARRANTY	\$ 2,000.00	LOC	1	LOC	\$ 2,000.00
118	TRAFFIC CONTROL	\$ 2,000.00	LOC	1	LOC	\$ 2,000.00
ROAD CONSTRUCTION SUBTOTAL						\$ 22,075.00
Contingency (10%)						\$ 2,207.50
ROAD CONSTRUCTION TOTAL						\$ 24,282.50
Engr. & Const. Observation (20%)						\$ 4,856.50
ROAD TOTAL COST						\$ 26,490.00
TOTAL PROJECT COST						\$ 1,127,799.00

Note: Per Iowa Code, road crossings (highlighted red) are not typically district expense



By: J.V.S.
 Date: 3/9/2021
 Checked By: L.O.G.
 Date: 4/21/2021

Engineer's Opinion of Probable Construction Cost

Project: **Full Single Tile Upsizing** for D.D. #120

Location: Sections 9 & 16 T89N, R20W Hardin County, Iowa

FULL SINGLE TILE UPSIZING - IMPROVEMENT (1")

ITEM #	DESCRIPTION	Unit Cost	Units	Quantity	Units	Total Cost
DISTRICT CONSTRUCTION COSTS						
201	42" CMP TILE OUTLET	\$ 140.00	LF	40	LF	\$ 5,600.00
202	42" TRIPLE WALL PPE or RCP TILE	\$ 120.00	LF	6140	LF	\$ 736,800.00
203	42" DIP TILE W/ STEEL CASING (RAILROAD)	\$ 1,000.00	LF	100	LF	\$ 100,000.00
204	42" x 16" PPE OR RCP REDUCER	\$ 2,200.00	EA	1	EA	\$ 2,200.00
205	42" RODENT GUARD	\$ 1,100.00	EA	1	EA	\$ 1,100.00
206	BANK STABILIZATION	\$ 60.00	TON	50	TON	\$ 3,000.00
207	RAILROAD FLAGGING & INSURANCE	\$ 30,000.00	EA	1	EA	\$ 30,000.00
208	CONCRETE COLLAR	\$ 1,000.00	EA	10	EA	\$ 10,000.00
209	PRIVATE TILE CONNECTIONS	\$ 500.00	EA	22	EA	\$ 11,000.00
210	HICKENBOTTOM INTAKE	\$ 1,500.00	EA	6	EA	\$ 9,000.00
211	TILE LOCATION	\$ 150.00	STA	63	STA	\$ 9,450.00
212	TREE REMOVAL	\$ 2,000.00	LS	1	LS	\$ 2,000.00
213	TILE REMOVAL	\$ 5.00	LF	12560	LF	\$ 62,800.00
DISTRICT CONSTRUCTION SUBTOTAL						\$ 982,950.00
Contingency (15%)						\$ 147,442.50
CONSTRUCTION TOTAL						\$ 1,130,392.50
Engr. & Const. Observation (20%)						\$ 226,078.50
DISTRICT TOTAL COST						\$ 1,356,471.00
ROAD CROSSING CONSTRUCTION COSTS						
214	42" TILE - OPEN CUT (115TH STREET)	\$ 165.00	LF	45	LF	\$ 7,425.00
215	TILE ABANDONMENT	\$ 100.00	LF	90	LF	\$ 9,000.00
216	HICKENBOTTOM INTAKE	\$ 1,500.00	EA	2	EA	\$ 3,000.00
217	PERMANENT SEEDING AND WARRANTY	\$ 2,000.00	LOC	1	LOC	\$ 2,000.00
218	TRAFFIC CONTROL	\$ 2,000.00	LOC	1	LOC	\$ 2,000.00
ROAD CONSTRUCTION SUBTOTAL						\$ 23,425.00
Contingency (15%)						\$ 3,513.75
ROAD CONSTRUCTION TOTAL						\$ 26,938.75
Engr. & Const. Observation (20%)						\$ 5,387.75
ROAD TOTAL COST						\$ 30,452.50
TOTAL PROJECT COST						\$ 1,386,923.50

Note: Per Iowa Code, road crossings (highlighted red) are not typically district expense



By: J.V.S.
 Date: 3/9/2021
 Checked By: L.O.G.
 Date: 4/21/2021

Engineer's Opinion of Probable Construction Cost

Project: **Partial Single Tile Upsizing** for D.D. #120

Location: Sections 9 & 16 T89N, R20W Hardin County, Iowa

PARTIAL SINGLE TILE UPSIZING - IMPROVEMENT (1/2")

ITEM #	DESCRIPTION	Unit Cost	Units	Quantity	Units	Total Cost
DISTRICT CONSTRUCTION COSTS						
301	36" CMP TILE OUTLET	\$ 130.00	LF	40	LF	\$ 5,200.00
302	36" TRIPLE WALL PPE or RCP TILE	\$ 90.00	LF	3340	LF	\$ 300,600.00
303	36" DIP TILE w/ STEEL CASING (RAILROAD)	\$ 1,000.00	LF	100	LF	\$ 100,000.00
304	36" x 18" PPE OR RCP REDUCER	\$ 2,100.00	EA	1	EA	\$ 2,100.00
305	36" x 12" PPE OR RCP REDUCER	\$ 1,800.00	EA	1	EA	\$ 1,800.00
306	36" RODENT GUARD	\$ 1,000.00	EA	1	EA	\$ 1,000.00
307	BANK STABILIZATION	\$ 60.00	TON	50	TON	\$ 3,000.00
308	RAILROAD FLAGGING & INSURANCE	\$ 30,000.00	EA	1	EA	\$ 30,000.00
309	CONCRETE COLLAR	\$ 1,000.00	EA	6	EA	\$ 6,000.00
310	PRIVATE TILE CONNECTIONS	\$ 500.00	EA	8	EA	\$ 4,000.00
311	HICKENBOTTOM INTAKE	\$ 1,500.00	EA	5	EA	\$ 7,500.00
312	TILE LOCATION	\$ 150.00	STA	69	STA	\$ 10,350.00
313	TREE REMOVAL	\$ 2,000.00	LS	1	LS	\$ 2,000.00
314	TILE REMOVAL	\$ 5.00	LF	6960	LF	\$ 34,800.00
DISTRICT CONSTRUCTION SUBTOTAL						\$ 508,350.00
Contingency (15%)						\$ 76,252.50
CONSTRUCTION TOTAL						\$ 584,602.50
Engr. & Const. Observation (20%)						\$ 116,920.50
DISTRICT TOTAL COST						\$ 701,523.00
ROAD CROSSING CONSTRUCTION COSTS						
315	36" TILE - OPEN CUT (115TH STREET)	\$ 135.00	LF	45	LF	\$ 6,075.00
316	TILE ABANDONMENT	\$ 100.00	LF	90	LF	\$ 9,000.00
317	HICKENBOTTOM INTAKE	\$ 1,500.00	EA	2	EA	\$ 3,000.00
318	PERMANENT SEEDING AND WARRANTY	\$ 2,000.00	LOC	1	LOC	\$ 2,000.00
319	TRAFFIC CONTROL	\$ 2,000.00	LOC	1	LOC	\$ 2,000.00
ROAD CONSTRUCTION SUBTOTAL						\$ 22,075.00
Contingency (15%)						\$ 3,311.25
ROAD CONSTRUCTION TOTAL						\$ 25,386.25
Engr. & Const. Observation (20%)						\$ 5,077.25
ROAD TOTAL COST						\$ 28,697.50
TOTAL PROJECT COST						\$ 730,220.50

Note: Per Iowa Code, road crossings (highlighted red) are not typically district expense



By: J.V.S.
 Date: 3/9/2021
 Checked By: L.O.G.
 Date: 4/21/2021

Engineer's Opinion of Probable Construction Cost

Project: **Partial Single Tile Upsizing** for D.D. #120

Location: Sections 9 & 16 T89N, R20W Hardin County, Iowa

PARTIAL SINGLE TILE UPSIZING - IMPROVEMENT (1")

ITEM #	DESCRIPTION	Unit Cost	Units	Quantity	Units	Total Cost
DISTRICT CONSTRUCTION COSTS						
401	42" CMP TILE OUTLET	\$ 140.00	LF	40	LF	\$ 5,600.00
402	42" TRIPLE WALL PPE or RCP TILE	\$ 120.00	LF	3340	LF	\$ 400,800.00
403	42" DIP TILE WITH STEEL CASING (RAILROAD)	\$ 1,000.00	LF	100	LF	\$ 100,000.00
404	42" x 18" PPE OR RCP REDUCER	\$ 2,300.00	EA	1	EA	\$ 2,300.00
405	42" x 12" PPE OR RCP REDUCER	\$ 1,900.00	EA	1	EA	\$ 1,900.00
406	42" RODENT GUARD	\$ 1,100.00	EA	1	EA	\$ 1,100.00
407	BANK STABILIZATION	\$ 60.00	TON	50	TON	\$ 3,000.00
408	RAILROAD FLAGGING & INSURANCE	\$ 30,000.00	EA	1	EA	\$ 30,000.00
409	CONCRETE COLLAR	\$ 1,000.00	EA	6	EA	\$ 6,000.00
410	PRIVATE TILE CONNECTIONS	\$ 500.00	EA	8	EA	\$ 4,000.00
411	HICKENBOTTOM INTAKE	\$ 1,500.00	EA	5	EA	\$ 7,500.00
412	TILE LOCATION	\$ 150.00	STA	69	STA	\$ 10,350.00
413	TREE REMOVAL	\$ 2,000.00	LS	1	LS	\$ 2,000.00
414	TILE REMOVAL	\$ 5.00	LF	6960	LF	\$ 34,800.00
DISTRICT CONSTRUCTION SUBTOTAL						\$ 609,350.00
Contingency (15%)						\$ 91,402.50
CONSTRUCTION TOTAL						\$ 700,752.50
Engr. & Const. Observation (20%)						\$ 140,150.50
DISTRICT TOTAL COST						\$ 840,903.00
ROAD CROSSING CONSTRUCTION COSTS						
415	36" TILE - OPEN CUT (115TH STREET)	\$ 165.00	LF	45	LF	\$ 7,425.00
416	TILE ABANDONMENT	\$ 100.00	LF	90	LF	\$ 9,000.00
417	HICKENBOTTOM INTAKE	\$ 1,500.00	EA	2	EA	\$ 3,000.00
418	PERMANENT SEEDING AND WARRANTY	\$ 2,000.00	LOC	1	LOC	\$ 2,000.00
419	TRAFFIC CONTROL	\$ 2,000.00	LOC	1	LOC	\$ 2,000.00
ROAD CONSTRUCTION SUBTOTAL						\$ 23,425.00
Contingency (15%)						\$ 3,513.75
ROAD CONSTRUCTION TOTAL						\$ 26,938.75
Engr. & Const. Observation (20%)						\$ 5,387.75
ROAD TOTAL COST						\$ 30,452.50
TOTAL PROJECT COST						\$ 871,355.50

Note: Per Iowa Code, road crossings (highlighted red) are not typically district expense

HARDIN COUNTY, IOWA

2021



**COMPLETION REPORT
ON
UPPER MAIN TILE
DIVERSION
DRAINAGE DISTRICT 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

Zeb J. Stanbrough PE
ZEB J. STANBROUGH, P.E.

4-21-2021
DATE

LICENSE NUMBER: 19957
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2021
PAGES OR SHEETS COVERED BY THIS SEAL:
SHOWN ON TABLE OF CONTENTS



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

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Project Timeline

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, Drainage District 9. As a result, Clapsaddle-Garber Associates generated an Engineer's Report dated April 30, 2019 summarizing past improvements and repairs, investigating the necessity and feasibility of repairs or improvements to the Main tile, and presenting opinions of construction costs associated with said repair or improvements. The Engineer's report was presented at a meeting with the District Trustees and a hearing concerning said report was conducted on May 22, 2019. As requested, Clapsaddle-Garber Associates generated a Supplement to Engineer's Report date June 3, 2019 on Repairs or Improvements to Main Tile, Drainage District 9. The Supplement to Engineer's report was presented at a meeting with the District Trustees and a hearing concerning said report was conducted on June 19, 2019. As a result, the Trustees authorized Clapsaddle-Garber Associates to proceed with completion of project plans and specifications for the Upper Main Tile Diversion option presented in said report and proceed with a bid letting.

Clapsaddle-Garber Associates completed the authorized plans and specifications and a bid letting date of March 25, 2020 was set. The project was advertised, and bids were received from qualified contractors. The following bids for said diversion (RCP alternate) to this district were received:

	Contractor	Bid Amount
1.	Gehrke Inc. of Osage	\$122,180.00
2.	Nettleton Excavating, Inc. of Joice	\$134,820.00
3.	Hall Backhoe & Tiling of Roland	\$178,274.60
4.	Mort's Water Company of Latimer	\$256,106.90
5.	Farm Tile Pro of Osage	\$---,---.---

The District Trustees identified Gehrke Inc. as the lowest responsible bidder for the joint project and awarded the project to them. The contract was signed on April 15, 2020. Construction activities were started on October 20, 2020. During the construction period, the weather was favorable for construction, and substantial completion was achieved on November 11, 2020 (approximately 7 weeks before the contract completion date).

Project Deviations

This project followed the authorized plans and specifications well, with the following deviations (for reference see as-built plan sheets included in Appendix V):

1. During construction, the contractor requested to use an agricultural style spoon installation method (where contractor feels soil conditions allow) instead of municipal style rock bedding and backfill installation method that are required by the project plan and specifications. The Board of Trustees agreed with this change. This resulted in a decrease of \$5,000 and no change to the substantial completion date.
2. During construction, the contractor discovered that the junction of the Main tile and Lateral tiles was not west of the existing railroad right of way, but was inside said right of way. Therefore, the Lateral tiles required approximately 90 feet to 110 feet of 8 inch dual wall HDPE tile rerouting to stay outside of said railroad right of way. This resulted in an increase of \$3,500.00 and no change to the substantial completion date.
3. During construction, it was found that the quantities needed for several items (i.e. private tile connections, locating private tile, tile removal, Rip-Rap, hickenbottom intake, exploratory excavation, plug existing tile, etc) were different than those anticipated in the estimated quantities for the project. This resulted in a decrease of \$3,111.60 and no change to the substantial completion date.

Final Project Costs

The final project costs for construction (for reference see final pay estimate included in Appendix W) and engineering (not including reports or reclassification) are estimated at \$154,568.40, which is approximately \$33,230.00 less than those presented at the hearing. These costs may vary depending upon any damage claims brought forth at the completion hearing. Pending no claims, the costs are as detailed below:

Upper Main Tile Diversion	Project as bid by Contractor	\$122,180.00
	Item #1 (above)	(-) \$5,000.00
	Item #2 (above)	(+) \$3,500.00
	Item #3 (above)	(-) \$3,111.60
	Engineering	(+) \$37,000.00
	TOTAL PROJECT COST	\$154,568.40

The total project cost is below those opinions of cost contained within said Engineer's Report, but so was the project scope. The jet cleaning and CCTV of the Main tile downstream of the project limits was not performed due to time constraints of railroad permitting. It should be noted that the above costs do not include any administrative costs, legal costs, interest on construction warrants, or damage claims.

Damages

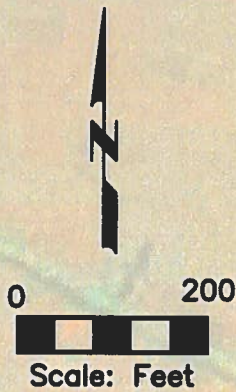
During construction, fences were removed at one location by the contractor. The contractor did not repair these as they indicated that the tenant did not want them repaired.

Property Owner	Fence Damage (feet)
Ronald Sailer	25
Tom & Sheryl Roberts, Trust	25

It should also be noted that in addition to the above, there may be additional landowners or tenants who file damage claims. It is our recommendation that those claims (if filed) be evaluated individually.

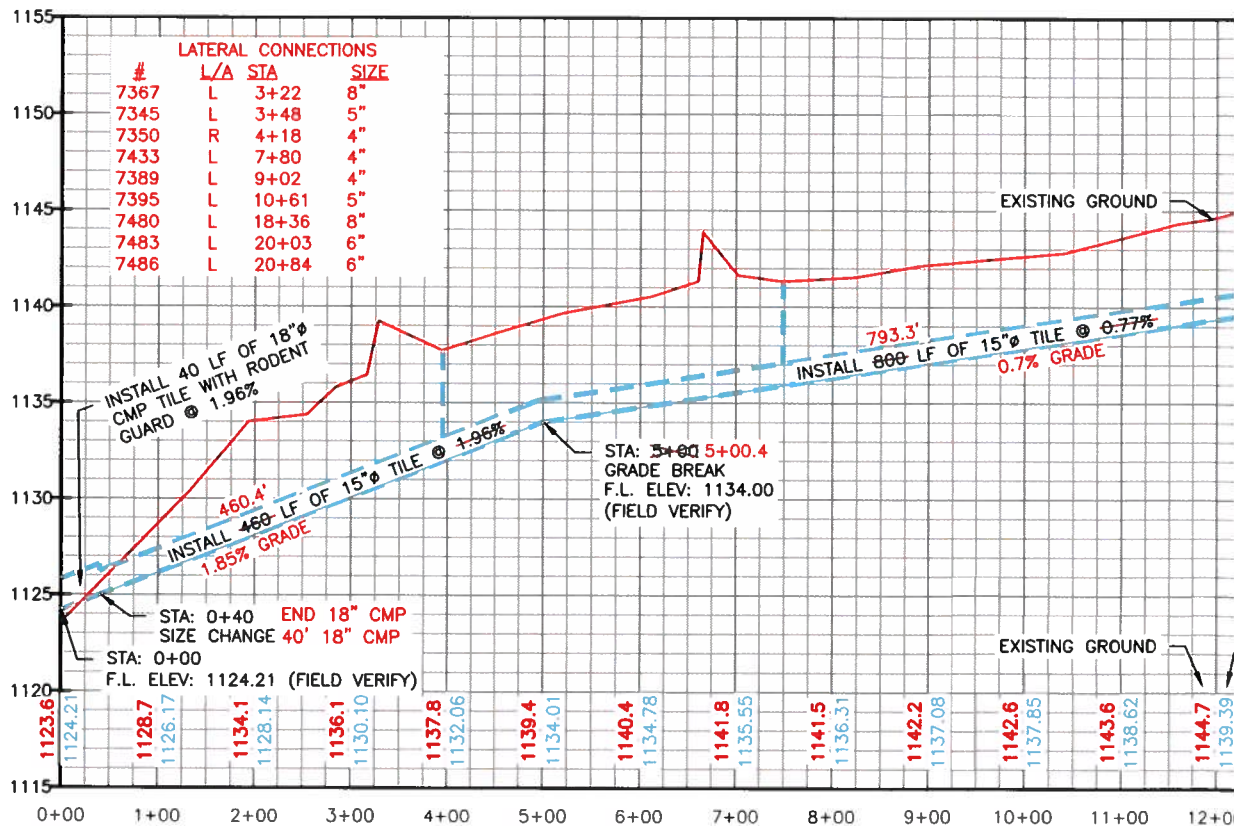
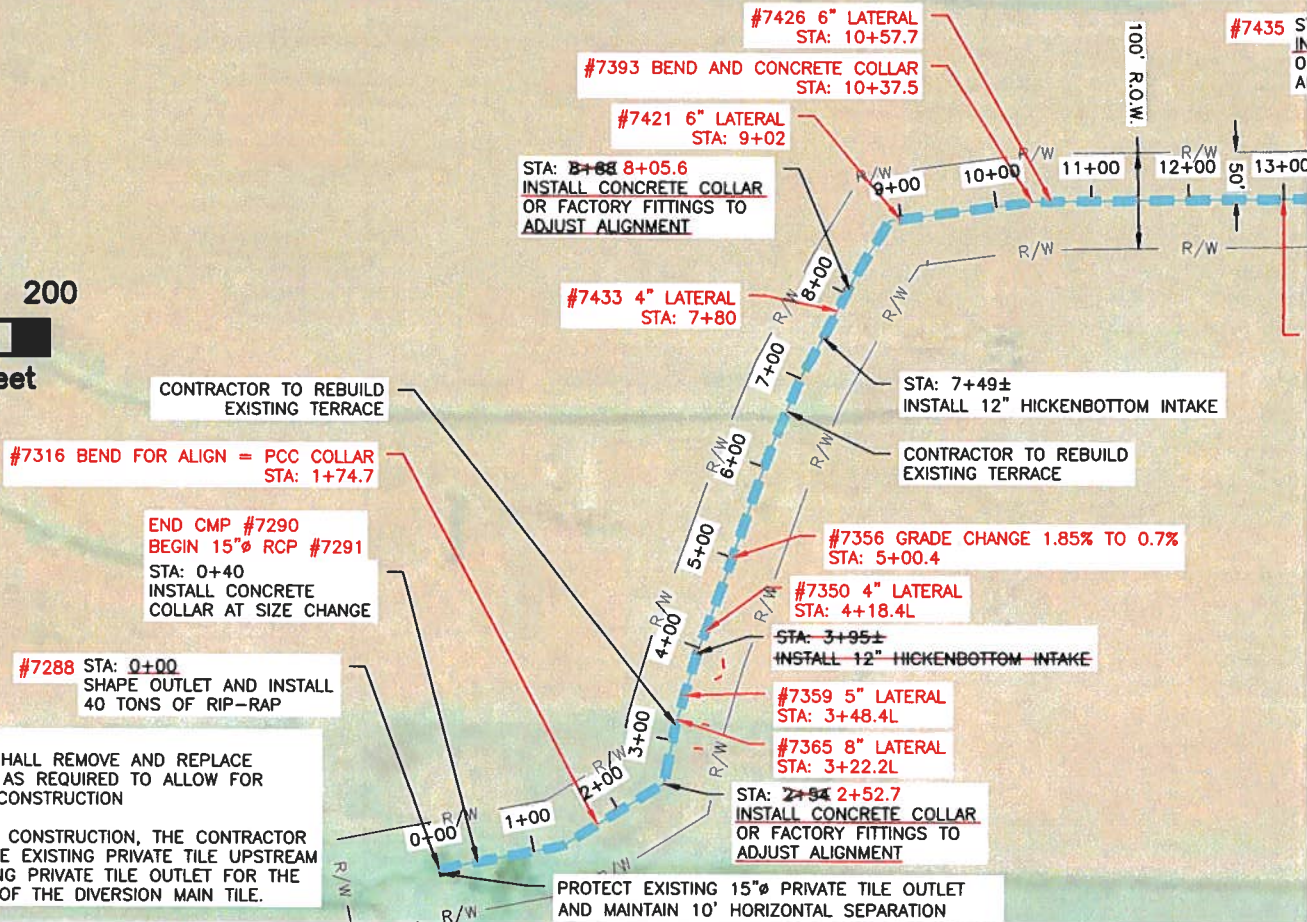
Pending Items

As of the writing of this report, this project is complete (including punchlist items) in general accordance with the authorized plans and specifications and lien waivers for suppliers have been submitted by the general contractor (for reference see Appendix X). After the completion hearing, final payment of \$16,346.84 needs to be authorized by the Trustees. It is our recommendation that the project be accepted. We also recommend that the entire project be walked and reviewed just prior to the expiration of the contract warranty period for any warranty items that may need to be remedied by the contractor. It should be noted that if the Trustees decide to have Clapsaddle-Garber Associates exercise this recommendation, there are no engineering fees included in the above Final Project Costs to cover this service. In addition it is our recommendation that for the portion of the Main tile in the railroad right of way at the downstream limits of investigation of the Engineers Report, that the Main tile is jet cleaned along with CCTV inspected to verify its condition and all trees inside the railroad right of way be remove.



NOTES:

1. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING FENCES AS REQUIRED TO ALLOW FOR DEMOLITION AND CONSTRUCTION
2. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL LOCATE THE EXISTING PRIVATE TILE OUTLET FROM THE EXISTING PRIVATE TILE OUTLET FOR THE ENTIRE REROUTE OF THE DIVERSION MAIN TILE.



DRAWN BY: ZJS APPROVED BY: LOG REVISIONS:
 DATE: 07-24-2019 PROJ. NO.: 6735.1
 FIELD BK: P:\6735.1\CADD\DESIGN\6735-EDF2 AS-BUILT 2021-01-25.DWG; 2/3/2021



Clapsaddle-Garber Associates, Inc
 Main Office: 16 East Main Street
 Marshalltown, Iowa 50158
 PH 641-752-6701
 www.cgaconsultants.com

ADDRESS:
 739 PARK AVEN
 ACKLEY, IOWA
 PH 641-847-322

PAY ESTIMATE NO. 2 (FINAL)
UPPER MAIN TILE DIVERSION DD #9, HARDIN COUNTY, IA
PROJECT NUMBER: 6735.1
DATE: 03-29-21

CONTRACTOR

Gehrke Inc.
1405 21st Ave.
Eldora, IA 50627

OWNER

Trustees of Drainage District #9
Hardin County Courthouse
1215 Edgington Ave., Suite 1
Eldora, Iowa 50627

ENGINEER

Clapsaddle-Garber Associates
739 Park Avenue
Ackley, Iowa 50601

DD 9 ALTERNATE BID

Item No.	Description	Estimated Quantity	Unit	Installed Quantity	Unit Price	Extended Price
1ALT*	15" Ø RCP Tile (rock bedding and backfill)	30	LF	251	\$ 34.00	\$ 8,534.00
2ALT	18" Ø CMP Tile Outlet	40	LF	40	\$ 129.00	\$ 5,160.00
3ALT	Junction Structure with Intake	1	EA	1	\$ 6,380.00	\$ 6,380.00
4ALT	Concrete Collar	4	EA	4	\$ 250.00	\$ 1,000.00
5ALT	Private Tile Connection	4	EA	9	\$ 450.00	\$ 4,050.00
6ALT	12" Ø Hickenbottom Intake	2	EA	0	\$ 775.00	\$ -
7ALT	Rip-Rap	40	TN	30.32	\$ 50.00	\$ 1,516.00
8ALT	Tile Removal	10	LF	8	\$ 24.00	\$ 192.00
9ALT	Fences	1	LS	1	\$ 1,500.00	\$ 1,500.00
10ALT	Rebuild Terrace	2	LS	2	\$ 1,500.00	\$ 3,000.00
11ALT	Outlet Shaping	1	LS	1	\$ 1,500.00	\$ 1,500.00
12ALT	Locate Private Tile	25	STA	12.39	\$ 260.00	\$ 3,221.40
13ALT	Exploratory Excavation	2	HR	3.5	\$ 580.00	\$ 2,030.00
14ALT	Plug Existing Tile	2	LOC	1	\$ 385.00	\$ 385.00
15ALT	Seeding	1	LS	1	\$ 3,500.00	\$ 3,500.00
16ALT	Seeding Warranty	1	LS	1	\$ 100.00	\$ 100.00
17ALT*	15" Ø RCP Tile (spoon installation)	2500	LF	2250	\$ 32.00	\$ 72,000.00
18ALT**	Rerouting and Modifying Lateral Tile	1	LS	1	\$ 3,500.00	\$ 3,500.00

I have reviewed the work claimed to be completed by the Contractor as reflected above and recommend payment of

\$ 16,346.84

to the Contractor.


Lee Gallentine, Project Engineer

Contractor

TOTAL WORK COMPLETED TO DATE	\$ 117,568.40
# RETENTION	\$ -
AMOUNT DUE LESS RETENTION	\$ 117,568.40
PREVIOUSLY PAID	\$ 101,221.56
AMOUNT DUE AT THIS TIME	\$ 16,346.84

* - Approved as part of Change Order #1

** - Approved as part of Change Order #2



UPPER MAIN TILE DIVERSION DD #9, HARDIN COUNTY, IA

PROJECT NUMBER: 6735.1

DATE: 03-29-21

CONTRACTOR

Gehrke Inc.
1405 21st Ave.
Eldora, IA 50627

OWNER

Trustees of Drainage District #9
Hardin County Courthouse
1215 Edgington Ave., Suite 1
Eldora, Iowa 50627

ENGINEER

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739 Park Avenue
Ackley, Iowa 50601

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Lee Gallentine, Project Engineer


Contractor

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# RETENTION	\$ -
AMOUNT DUE LESS RETENTION	\$ 117,568.40
PREVIOUSLY PAID	\$ 101,221.56
AMOUNT DUE AT THIS TIME	\$ 16,346.84

- * - Approved as part of Change Order #1
- ** - Approved as part of Change Order #2



WAIVER OF LIEN

State of Iowa

Date: 3-8-21

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as DD 9 Upper Main Tile Diversion, in Hardin County, State of Iowa.

Description of work or materials provided: RipRapAmount \$ 1,462.40 to date shown above. Final ☒ Partial ☐

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Eldora, Iowa, this 10th day of March 2021.

Gehrke Quarries
Company Name

[Signature]
By

Concrete Inc

WAIVER OF LIEN

State of Iowa

Date: 3-8-21

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as DD 9 Upper Main Tile Diversion, in Hardin County, State of Iowa.

Description of work or materials provided: ConcreteAmount \$ 1,684.63 to date shown above. Final ☒ Partial ☐

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Marshalltown, Iowa, this 9 day of March 2021.Concrete Inc.
Company Name[Signature]
By

Brown Supply

WAIVER OF LIEN

State of Iowa

Date: 3-8-21

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as DD 9 Upper Main Tile Diversion, in Hardin County, State of Iowa.

Description of work or materials provided: DW Pipe, Fittings, CMP Intake

Amount \$ 1,785.61 to date shown above. Final ☒ Partial ☐

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Ames, Iowa, this 8th day of March 2021.

Brown Supply Co.
Company Name

[Signature]
By

WAIVER OF LIEN

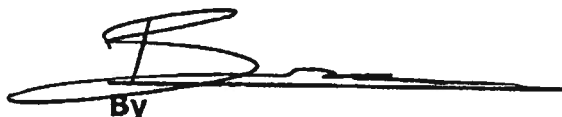
State of Iowa

Date: 3-8-21

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as DD 9 Upper Main Tile Diversion, in Hardin County, State of Iowa.

Description of work or materials provided: SeedingAmount \$ 3,500.00 to date shown above. Final ☒ Partial ☐

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Forest City, Iowa, this 8th day of March 2021.Lakeside Construction, Inc.
Company Name
By

Martin Marietta

WAIVER OF LIEN

State of Iowa

Date: 3-8-21

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as DD 9 Upper Main Tile Diversion, in Hardin County, State of Iowa.

Description of work or materials provided: Aggregates

Amount \$ 1,448.44 to date shown above. Final ☒ Partial ☐

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Dayton, Ohio, this 12 day of March, 2021

Martin Marietta
Company Name

Thomas C. Lowry
By Thomas C. Lowry
Sr. Credit Rep

forterra

WAIVER OF LIEN

State of Iowa

Date: 3-8-21

I/We, the undersigned, have been employed by Gehrke Inc. P.O. Box 228, Eldora, Iowa 50627 to furnish labor and/or materials as described below for the construction, repair or reconstruction of the property or improvements to the property known as DD 9 Upper Main Tile Diversion, in Hardin County, State of Iowa.

Description of work or materials provided: RCP Precast Intakes

Amount \$ 33,109.02 to date shown above. Final ☒ Partial ☐

For and in consideration of my/our employment to furnish said labor and/or materials. I/We do hereby waive and release any and all my/our rights, or claim of rights, to file and establish a mechanics lien against the above mentioned property, and improvements to the property, given to me/us under the provisions of the statutes and laws of the State of Iowa, relating to mechanic's liens on account of labor or materials, or both furnished, or which may be furnished by me/us for, and on, the above mentioned property and improvements to the same.

Executed at Maile Grace, mn, this 25 day of March 2021

Forterra
Company Name

By [Signature]

HARDIN COUNTY, IOWA

2021



**CONSTRUCTION OBSERVATION
REPORTS, PICTURES AND COORDINATES
OF THE MAIN TILE DIVERSION
DRAINAGE DISTRICT 9
HARDIN COUNTY, IOWA
PART 1 OF 1**



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

**Construction Observation Reports, Pictures, and Coordinates for
Construction of the Upper Main Tile Diversion,
Drainage District 9
Hardin County, Iowa**

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Pg. 1

Appendices

Construction Observation Reports and Pictures
Coordinates

App. E
App. F

Project Diary

Project: <u>HARDIN DD#9 UPPER MAIN TILE DIVERSION</u>			
CGA PN: <u>6735.1</u>	Days Charged: <u>1</u>	Report No. <u>1</u>	Proj. Mgr. <input checked="" type="checkbox"/> <u>LEE</u>
Contractor: <u>GEHRKE, INC.</u>		Date: <u>10/20/2020</u>	<u>GALLETINE</u>
Superintendent: <u>JUSTIN VAUGHN</u>	Weather Conditions: <u>CLOUDY WITH LIGHT RAIN/DRIZZLE/ MIST BY AFTERNOON & BREEZY</u>	Precip.: <u>NOT MEASURABLE</u>	Temp. Hi: <u>LOW 40°</u> Temp. Low: <u>MID 30°</u>
INSPECTOR:	Contractor:		
Time Arrived: <u>8:20</u>	Time Left: <u>3:30</u>	Time Arrived:	Time Left: <u>3:10</u>
<p>1. General Remarks and Work Accomplished:</p> <p><u>GEHRKE HAD 3 MAN CREW AND JOHN DEERE 350 G EXCAVATOR ON SITE AND WAS STARTING TO LOCATE PRIVATE TILE FROM 10" CMP OUTLET & 12" CMP OUTLET</u></p> <p><u>8:40 JEREMY MAAS WITH GEHRKE, INC STOPPED BY SITE TO SEE HOW THINGS WERE GOING.</u></p> <p><u>9:10 A.M. OBSERVER SET GPS BASE ON #4 3/4" Ø FROM REROD 0.3' DEEP IN EAST SHOULDER OF DEAD END GRAVEL ROAD (IAVE) 352.8' NORTH OF E OF 17938 IAVE ACREAGE DRIVE</u></p> <p><u>7:40 A.M. CHECKED INTO GPS #90 HARDIN COUNTY GPS MAN #8024 GOOD HORIZONTAL POSITION & WITHIN .04' VERTICAL POSITION.</u></p> <p><u>9:50 A.M. BACK ON SITE CREW WAS STILL LOCATING TILE</u></p> <p><u>10:35 A.M. CREW DONE LOCATING TILE FOR NOW. 3 SEMI LOADS OF 15" RCP ARRIVED ON SITE AND UNLOADING THEM, OBSERVER STARTED SHOOTING TILE LOCATES.</u></p> <p><u>GEHRKE'S DROPPED OFF A JOHN DEERE 350 D L EXCAVATOR</u></p> <p><u>12:00 P.M. CREW STOPPED FOR LUNCH. 12:30 P.M. CREW DONE WITH LUNCH</u></p> <p><u>OBSERVER STAKED OUT LOCATION WEST OF RAILROAD ROW BY PROJECTING LINE FROM GPS SHOTS ON EAST SIDE OF RR ROW (GPS #344 FL 15" CLAY TILE TO GPS #359 TILE LOCATE TO GIVE CREW A LOCATION TO START EXCAVATING FOR</u></p>			
<p>2. Changes or Extra Work Ordered:</p> <p><u>THE MAIN, LAT1, LAT2 CONNECTION</u> (CONTINUED)</p>			
<p>3. Test Samples Taken:</p>			
<p>4. Visitors to Site:</p>			
<p>5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:</p> <p><u>3 SEMI LOADS OF 15" RCP HAULED INTO SITE</u></p>			
<p>6. Attachments (total sheets attached <u>0</u>):</p>			

Project Diary (continued)

CGA PN:

6735.1
6735 DD9 H. SURVEY

Report
No. 1

Date: 10/20/2020

1. General Remarks and Work Accomplished (Continued):

12:35 P.M. GEHRKE 3 MAN CREW & 350D LC EXCAVATOR HEADED TO
EXPLORE FOR MAIN, LAT 1, & LAT 2 CONNECTION

12:45 P.M. CREW STARTED EXPLORATORY EXCAVATION, CREW EXCAVATED
TRENCH 4.0' DEEP PARALLEL WITH RR TRACKS 30' NE & 30' SW
FROM LOCATION OBSERVER STAKED OUT. CREW NEVER FOUND
ANYTHING OR EVEN EVIDENCE OF A TRENCH. CREW WAS PROBING
FOR TILE WITH NO LUCK. CREW STARTED EXCAVATING DEEPER
NEAR LOCATION PROJECTED TILE FROM EAST OF TRACKS.

1:25 P.M. CREW HAD 8" CLAY TILE MAIN EXPOSED AFTER 40 MINUTES
OF EXPLORATION. CREW STARTED LOCATING 8" MAIN. OBSERVER
SHOT LOCATES.

1:45 P.M. SITE RECEIVING HEAVY MIST / LIGHT RAIN

1:50 P.M. CREW STARTED EXCAVATING ABOVE 8" MAIN FROM GPS# 7237 17.2' OFF
WEST ROW RR TRACKS TO FIND LAT 1 & LAT 2 TIE IN CONNECTION. CREW CLEANED OFF TOP
OF TILE & PROBED SIDE OF 8" MAIN TO FIND CONNECTIONS.

2:20 P.M. CREW HAD 42.6' AN STOPPED WITH BOTH CREW & OBSERVER
THINKING IT SHOULDNT BE ANY FURTHER WEST. IT COULD
BE IN RR ROW OR 12.5' ± NOT EXPOSED UP TO RR ROW.
OBSERVER SHOT TOP OF EXPOSED 8" MAIN. CREW HAD
30 MINUTES OF EXPLORATION.

3:10 P.M. CREW, DECIDED TO STOP FOR DAY DUE TO THE WEATHER
AND START AGAIN TOMORROW MORNING.

GEHRKE DROPPED OFF JOHN DEERE 850J DOZER
AND JUNCTION STRUCTURE ON SITE

3:30 P.M. OBSERVER TOOK DOWN GPS AND LEFT SITE.

7130, 3630324.467, 4960910.507, 1128.207, 323
 7131, 3630314.992, 4960909.272, 1122.291, 321
 7132, 3630314.455, 4960963.297, 1125.404, 513 15
 7133, 3630315.352, 4960962.932, 1123.242, 321
 7134, 3630322.023, 4960778.404, 1127.047, 323
 7135, 3630313.418, 4960778.747, 1121.089, 321
 7136, 3630323.519, 4960705.887, 1126.459, 323
 7137, 3630311.627, 4960706.207, 1120.803, 323
 7200, 3630318.481, 4960963.009, 1125.105, 960 10" spiral 0.87'toptofl
 7201, 3630331.474, 4960973.740, 1129.299, 300 tile locate
 7202, 3630353.846, 4960988.449, 1129.257, 300 tile locate
 7203, 3630371.614, 4961015.927, 1130.037, 300 tile locate
 7204, 3630386.157, 4961060.869, 1132.443, 300 tile locate
 7205, 3630399.510, 4961111.980, 1134.938, 300 tile locate
 7206, 3630418.294, 4961147.401, 1136.395, 300 tile locate
 7207, 3630465.141, 4961180.567, 1137.244, 300 tile locate
 7208, 3630512.773, 4961188.414, 1138.467, 300 tile locate
 7209, 3630480.485, 4961182.338, 1139.323, 300 field/terrace
 7210, 3630551.787, 4961190.102, 1138.029, 300 tile locate
 7211, 3630311.645, 4960961.487, 1122.786, 507 ditch BY OUTLET
 7212, 3630314.260, 4960963.263, 1125.430, 960 12" spiral 1.07'toptofl
 7213, 3630330.961, 4960979.466, 1129.358, 300 tile locate
 7214, 3630341.934, 4960991.367, 1128.936, 300 tile locate
 7215, 3630353.697, 4961009.941, 1129.627, 300 tile locate
 7216, 3630357.498, 4961032.596, 1130.259, 300 tile locate
 7217, 3630366.135, 4961054.900, 1131.121, 300 tile locate
 7218, 3630373.286, 4961087.302, 1132.591, 300 tile locate
 7219, 3630370.575, 4961131.688, 1132.868, 300 tile locate
 7220, 3630370.210, 4961157.733, 1132.621, 300 tile locate
 7221, 3630368.085, 4961177.370, 1133.395, 300 tile locate
 7222, 3630386.888, 4961196.715, 1134.154, 300 tile locate
 7223, 3630422.109, 4961213.068, 1134.906, 300 tile locate
 7224, 3630481.269, 4961222.149, 1139.344, 300 tile locate
 7225, 3630523.029, 4961220.663, 1138.063, 300 tile locate
 7226, 3630478.478, 4961221.290, 1139.269, 300 top terrace
 7227, 3630373.644, 4961087.280, 1132.594, 300
 7228, 3630371.966, 4961086.010, 1128.955, 513 se 10" 0.92'toptofl
 7229, 3630373.485, 4961085.856, 1128.808, 513 e 10" 0.92'toptofl
 7230, 3630354.331, 4961093.545, 1131.283, 300 tile locate
 7231, 3630342.343, 4961106.939, 1130.652, 300 tile locate
 7232, 3630346.301, 4961123.957, 1131.185, 300 tile locate
 7233, 3630357.397, 4961153.918, 1132.366, 300
 7234, 3630358.024, 4961155.758, 1130.302, 962 10" 0.94'toptofl
 7235, 3630321.280, 4961250.170, 1138.296, 324 e-w
 7236, 3630325.407, 4961054.173, 1131.408, 324 e
 7237, 3631087.556, 4963082.915, 1142.478, 963 8"
 7238, 3631084.412, 4963086.408, 1142.458, 963 8"
 7239, 3631183.374, 4963026.932, 1148.082, 300 tile locate
 7240, 3631237.183, 4963014.828, 1148.351, 300 tile locate
 7241, 3631095.442, 4963073.700, 1143.257, 962 8" 0.73'toptofl
 7242, 3631099.644, 4963068.995, 1143.342, 962 8" 0.73'toptofl
 7243, 3631103.220, 4963065.228, 1143.367, 962 8" 0.73'toptofl
 7244, 3631106.331, 4963062.336, 1143.449, 962 8" 0.73'toptofl
 7245, 3631111.984, 4963057.780, 1143.553, 962 8" 0.73'toptofl
 7246, 3631117.896, 4963053.287, 1143.572, 962 8" 0.73'toptofl
 7247, 3631249.567, 4962662.998, 1150.612, 324 n side cut
 7248, 3631214.897, 4962662.932, 1150.544, 324 s side cut
 8016, 3618659.060, 4946889.650, 1169.720, GPS MON
 8016_GNSS, 3618659.060, 4946889.650, 1169.720, Autonomous Setup

TILE LOCATE 10" SPIRAL CAMP PRIVATE OUTLET

TILE LOCATE 12" SPIRAL CAMP PRIVATE OUTLET

PRIVATE 12" OUTLET TILE TO USHAPPE TILE CONNECTION

PRIVATE ON USHAPPE TILE SOUTH PRIVATE TILE

8" MAIN BY R TRACKS

MAIN BY R TRACKS

PICTURE #4666 IS LOOKING WEST FROM GPS#7221 AT PRIVATE
TILE WYE CONNECTION LOCATES.



GPS# 7221
PRIVATE TILE
WYE CONNECTION
10" CONGTILE
WEST TO 12"
CAP SPIRAL
OUTLET &
10" CLAY TILE
SW IN AN
SHAPE &
TIES BACK
INTO 10"
CONGTILE
RUNNING E-W

10/20/2020
11:36



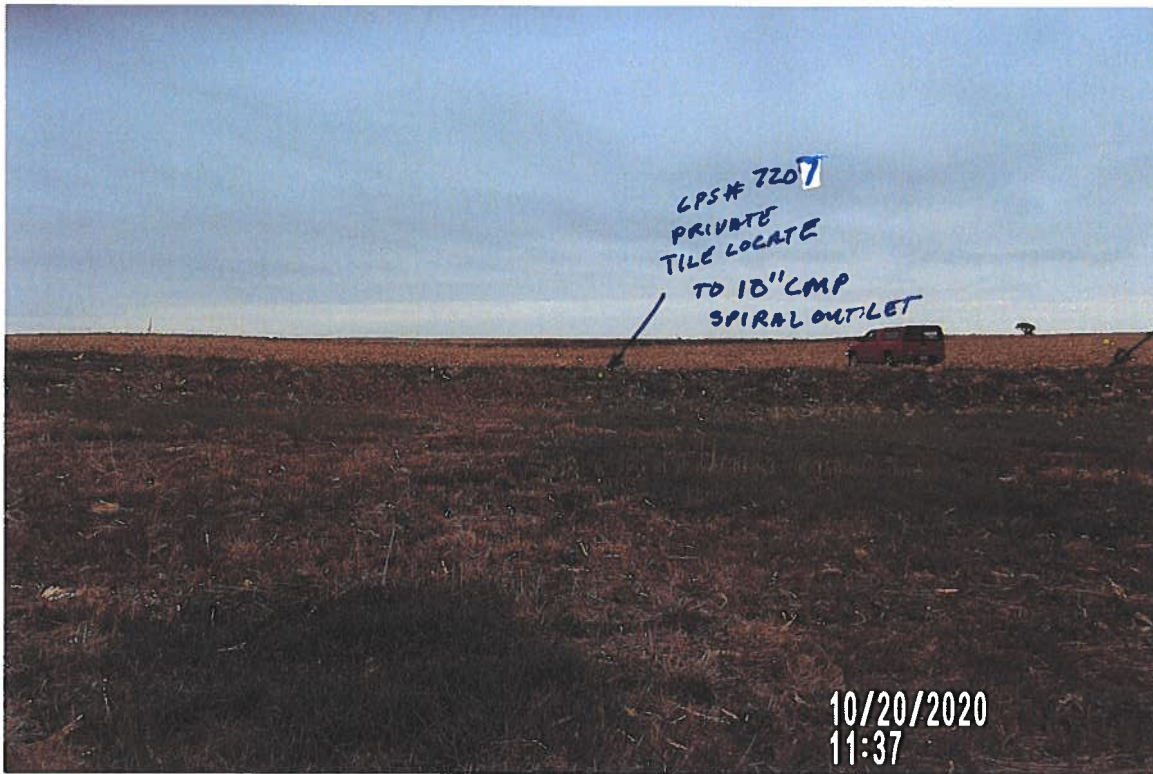
PRIVATE
CLAY TILE
LOCATE
TO
CONNECTION
AT GPS#
7221

PRIVATE
TILE LOCATE
TO 10" CAP
SPIRAL
OUTLET
NORTH OF
THIS LOCATE
IS A
8" HDPE
SW TILE

10/20/2020
11:36

PICTURE #4667 IS LOOKING NORTH OF GPS#7221 CONNECTION
SHOWING BOTH PRIVATE TILE LOCATES GOING NORTH TO
1ST TERRACE.

PICTURE # 4668 IS LOOKING NE AT PRIVATE TILE LOCATES
NORTH OF TERRACE



GPS# 7224
PRIVATE
TILE
LOCATE
TO WYE
@ GPS#
7221

10/20/2020
11:37



10/20/2020
11:37

PICTURE # 4669 LOOKING SW SHOWING NORTH TILE LOCATES (FROM 10" SPIRAL OUTLET)
- & SOIL PILE
- WHERE 10" CONCRETE TILE (FROM 12" SPIRAL CMP OUTLET)
HAS CONNECTION WITH U SHAPED TILE ROUTE SOUTH OF 10" CONCRETE

PICTURE# 4670 IS LOOKING NE SHOWING PRIVATE TILE
OUTLETS INTO CREEK



PICTURE# 4671 IS LOOKING NE SHOWING TILE LOCATES
FOR BOTH PRIVATE TILE NE OF OUTLETS TO CREEK

PICTURE # 4672 IS LOOKING EAST SHOWING FENCE
REMOVED TO ENTER. NEXT FIELD TO EAST
TO EXPOSE MAIN, LAT1, LAT2 CONNECTION WEST RR
TRACKS

CPS# 7247
NORTH END
OF FENCE
REMOVED

CPS# 7248
SOUTH
END
OF FENCE
REMOVED



PICTURE # 4673 IS LOOKING SW SHOWING CREW EXCAVATING
TRENCH NEAR WHERE TILE LOCATES PROJECT ACROSS
TRACKS & ABOUT 12.5' WEST O.F WEST RR ROW FENCE

PICTURE # 4674 IS LOOKING SW SHOWING CREW RUNNING
LOCATE CABLE UPSTREAM TO LOCATE WHERE 8" MAIN
RUNS UP STREAM. CREW EXCAVATED AT TRENCH 38'. SW &
22.0' NE OF PROTECTED TILE LOCATES 3.5' DEEP BUT NEVER FOUND

GPS # 7236

TOP 8"
CLAY
TILE
5.3' ±
DEEP



TRENCH.
EXCAVATED
5.0' DEEP AT
PROTECTED
LINE AREA.
AGAIN AND HIT
TILE.

GPS # 7237
TOP 8" CLAY
TILE 5.3' DEEP



GPS # 7237 TOP 8" CLAY TILE.

PICTURE # 4675 IS LOOKING NW SHOWING CREW
EXCAVATING ABOVE 8" MAIN AND SPADING OFF TOP OF TILE.
CREW PROBED ON EACH SIDE OF TILE TO FIND LAT 1 & LAT 2

PICTURE #4676 IS LOOKING SE SHOWING 42.5' OF 8" CLAY TILE MAIN EXPOSED AND SIDES PROBED BUT NEVER FOUND LAT1 OR LAT2 CONNECTION,

6PS# 7237 TOP 8" CLAY TILE MAIN



10/20/2020
14:37

6PS# 7246 TOP 8" CLAY TILE
(4.5' ± DEEP)

6PS# 7229
TOP 10" CONCRETE
TILE
(0.92' TOP TO FL)
(3.8' ± DEEP)



6PS# 7228
TOP 10" CONCRETE
TILE
(0.92' TOP TO FL)
3.6' ± DEEP

10/20/2020
15:11

PICTURE # 4677 IS LOOKING EAST SHOWING 10" CONCRETE TILE FROM 12" SPIRAL OUTLET WITH 8" CLAY TILE CONNECTION FROM

PICTURE #4678 IS LOOKING NE SHOWING 10" CLAY TILE
IN U-SHAPED ROUTE BETWEEN UPSTREAM AND DOWNSTREAM,
CONNECTION TO 16" CONCRETE TILE,



GPS #3234
TOP 10"
CLAY TILE
0.94' TOP
TO FL
(2.0' ± DEEP)

Project Diary

Project: <u>HARDIN DD# 9 UPPER MAINTILE DIVERSION</u>			
CGA PN: <u>6735.1</u>	Days Charged: <u>2</u>	Report No. <u>2</u>	Proj. Mgr. <input checked="" type="checkbox"/> <u>LEE</u>
Contractor: <u>GEHRKE, INC.</u>		Date: <u>10/21/2020</u>	<u>WEDNESDAY</u> <u>CALLENTINE</u>
Superintendent: <u>JUSTIN VAUGHN</u>	Weather Conditions: <u>CLOUDY TO PARTLY CLOUDY WINDS</u>	Precip.: <u>N.A.</u>	Temp. Hi: <u>UPPER 40</u> ° Temp. Low: <u>MID 30</u> °
INSPECTOR:	Contractor:		
Time Arrived: <u>8:20 A.M.</u>	Time Left: <u>7:00 P.M.</u>	Time Arrived:	Time Left: <u>6:00 P.M.</u>
<p>1. General Remarks and Work Accomplished:</p> <p>8:20 A.M. OBSERVER ON SITE. 3 MAN CREW AND JEREMY ON SITE. GEHRKES HAD JD 624 L LOADER ON SITE. JUSTIN SAID CMP WOULD BE ON SITE THIS AFTER NOON FOR FIRST 40' FROM OUTLET. CREW WAS RUNNING LOCATOR THROUGH TILE TO VERIFY LOCATION & TO LOCATE TILE FROM TERRACE #1 TO PAST TERRACE #2. CREW WAS REQUESTING LOCATION OF TILE TO UNLOAD TILE AT 8:30 A.M. PAUL WITH WILLIAMS UNDERGROUND SERVICES ARRIVED ON SITE TO TELEVIEW B" MAIN BY RR TRACKS TO FIND LAT 1 & LAT 2 CONNECTION. JEREMY CALLED HIM TO TELEVIEW FOR CONNECTION WITHOUT CHECKING WITH LEE ABOUT IT. PAUL TELEVIEWED 12.3' DOWNSTREAM FOUND LAT 1 CONNECTION BUT COULD NOT MAKE IT ANY FURTHER. TELEVIEWED UPSTREAM FROM 40' DOWNSTREAM FROM GPS #7246 & COULD NOT LOCATE ANY TIE IN CONNECTION.</p> <p>10:00 A.M. PAUL DONE TELEVIEWING BUT COULD NOT LOCATE LAT 2 CONNECTION.</p> <p>10:20 A.M. PAUL LEFT SITE 10:30 A.M. JEREMY LEFT SITE</p> <p>10:30 A.M. OBSERVER SET BASE ON 3/4" FROM REROD AT GPS #4</p> <p>10:35 A.M. CHRIS ON SITE TO SET PLAN & OF TILE REPAIR FOR CURB TO STRING OUT TILE</p> <p>11:00 A.M. OBSERVER CHECKED INTO GPS #9 HARDIN C/S MONUMENT #8024 GOOD HORIZONTAL F+0.03' TO .04' VERTICAL (CONTINUED)</p>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site:			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
<p>PAUL WITH WILLIAMS UNDERGROUND SERVICES & TELEVIEWING EQUIPMENT ON SITE 8:30 AND LEFT SITE 10:20 A.M. TELEVIEWED DOWNSTREAM FROM GPS #7238 12.3' TO FIND LAT #1 AND COULD NOT GET ANY TRACTION TO GO FURTHER, TELEVIEWED UPSTREAM FROM 40' SE OF GPS #7246 85.3' BUT NEVER FOUND LAT #2 CONNECTION.</p>			
6. Attachments (total sheets attached <u>0</u>):			

Project Diary (continued)

CGA PN:

6735.1
6735 009 H, SURVEY

Report
No.

2

Date: 10/21/20

1. General Remarks and Work Accomplished (Continued):

11:20 A.M. OBSERVER SHOT EXPOSED TILE & LOCATES FROM TERRACE 1 TO PAST TERRACE #2

11:30 A.M. TO 12:00 P.M. CREW STOPPED FOR LUNCH.

12:20 P.M. CREW EXCAVATED AT CONNECTION OF 10" CONCRETE TILE TO 10" CLAY TILE

12:55 P.M. CREW HAD CONNECTION EXPOSED AND HEADED TO WEST OF RR TRACKS ROW TO FIND LAT #1 & LAT #2 TILE IN FIELD WEST OF WEST RR ROW

1:20 P.M. CHRIS DONE STAKING E OF TILE REPAIR AND LEFT SITE,

1:25 P.M. CREW HAD BOTH LAT #2 & LAT #1 LOCATED WEST OF WEST RR ROW

1:30 P.M. CREW HEADED BACK TO BEGINNING OF PROJECT TO STRING OUT

PIPE & SET UP TRENCH BOX GEMKE HAD 3 SEMILOADS OF ROCK

HAULED TO SITE. OBSERVER SHOT LAT #1 & LAT #2 TILE EXPOSED

2:30 P.M. OBSERVER ADJUSTED ALIGNMENT UP TO STATION 2+50 SINCE ORIGINAL PLAN RAN THROUGH PRIVATE TILE AT BEGINNING.

3:30 P.M. OBSERVER STARTED STAKING NEW E TILE REPAIR AND SET HUB WITH CUT TO PROPOSED FLOWLINE FOR NEW TILE REPAIR.

4:30 P.M. OBSERVER ADJUSTED ALIGNMENT FROM 2+50 TO 5+42.8 WHERE IT BLENDS BACK INTO ORIGINAL PROPOSED E FOR TILE REPAIR.

Inspector's Project Diary

Project: <u>HARDIN DD9 REPAIR</u>		Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
CGA PN: <u>6735 DD9 H. SURVEY</u> <u>6735.1 DD9 H</u>				LEE
Contractor: <u>GEHRKE, INC</u>		WEDNESDAY	Date: <u>10/21/2020</u>	GALENTINE
Superintendent: <u>JUSTIN VAUGHAN</u>	Weather Conditions: <u>CLOUDY LIGHT WINDS</u>	Precip.: <u>0.0 "</u>	Temp. Hi: <u>UPPER 40</u>	Temp. Low: <u>UPPER 30</u>
INSPECTOR: Time Arrived: <u>8:20 A.M.</u> Time Left: <u>6:45 P.M.</u>		Contractor: Time Arrived: <u>7:30 A.M.</u> Time Left: <u>6:00 P.M.</u>		
<p>1. General Remarks and Work Accomplished:</p> <p>8:20 A.M. OBSERVER ARRIVED ON SITE WITH JEREMY MAAS AND JUSTIN VAUGHAN ON SITE WITH JOHN DEERE 850J DOZER AND JOHN DEERE 324L LOADER AND 350G LOADER ON SITE FOR EQUIPMENT. 2 EMPLOYEES LOCATING AND EXPOSING PRIVATE TILE FROM TERRACE 1 NORTH TO TERRACE #2.</p> <p>8:35 A.M. PAUL ON SITE WITH CAMERA TO LOCATE LAT #1 & LAT #2 TIE IN CONNECTIONS BY RR TRACKS.</p> <p>9:18 A.M. START TELEVISE DOWNSTREAM. FROM GPS # 7238 8" CLAY 0.0' 14.56' DOWNSTREAM LEFT MARKED & SHOT LOCATION OF LAT 1 TIE TIE IN GPS # 7310.</p> <p>9:45 A.M. CAMERA TRACTOR COULD NOT GET ANY FURTHER DOWNSTREAM AND ABANDONED TELEVISING.</p> <p>9:50 A.M. TELEVISED UP STREAM IN 8" CLAY TILE FROM GPS # 7237 TELEVISED 85.3' UP STREAM & COULD NOT FIND LAT 2 TIE IN FROM SOUTH OR OTHER LATERAL TIE INS.</p>				
2. Changes or Extra Work Ordered:				
3. Test Samples Taken:				
4. Visitors to Site:				
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done: <u>PAUL WILLIAMS WITH WILLIAMS UNDERGROUND SERVICE ON SITE TO TELEVISE IN 8" CLAY TILE BY RR TRACKS TO FIND LAT 1 & LAT 2 TILE CONNECTION BY RR TRACKS.</u>				
6. Attachments (total sheets attached <u>3</u>):				

Inspector's Project Diary (continued)

CGA PN: 6735 DD 9 H. SURVEY
6735.1 DD #9 H

Report
No.

Date: 10/21/2020

1. General Remarks and Work Accomplished (Continued):

10:20 A.M. PAUL LEFT SITE & OBSERVER CHECKED ON CREW LOCATING PRIVATE TILE BY TERRACES.

10:30 A.M. JEREMY LEFT SITE.

10:35 A.M. OBSERVER SET GPS BASE ON #4 3/4" IRON ROD 0.5' DOWN

353' ± NORTH OF E 17938 I AVE DRIVE 6.5' EAST OF ROAD EDGE.

10:35 A.M. CHRIS ON SITE TO STAKE PROPOSED TILE ALIGNMENT TO END OF JOB.

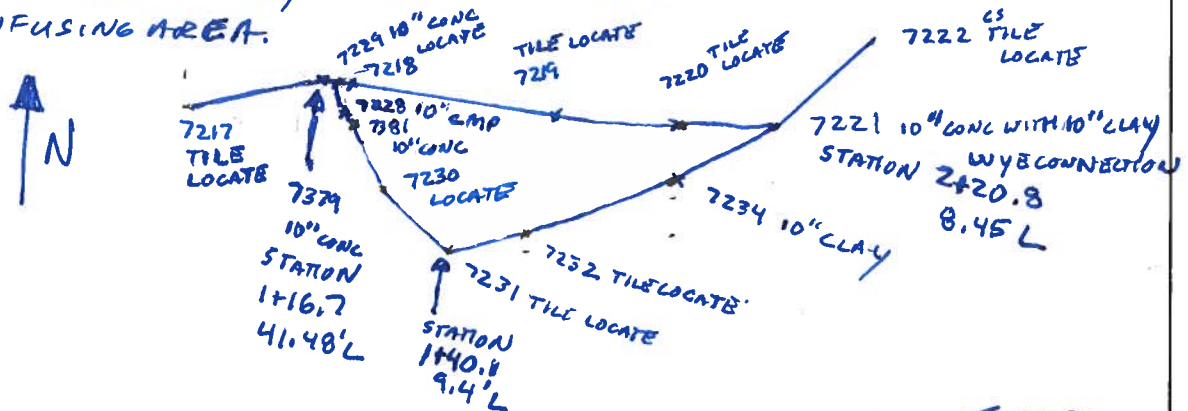
11:00 A.M. GPS BASE SETUP AND CHECKED INTO GPS #90 HARDIN COUNTY GPS MONUMENT #8024, 2000 HORIZONTAL & VERTICAL.

11:20 A.M. OBSERVER SHOT LOCATES & EXPOSED PRIVATE TILE NORTH OF TERRACE #1 TO TERRACE #2.

11:30 A.M. TO 12:00 P.M. CREW STOPPED FOR LUNCH.

12:00 P.M. CREW EXPOSED EXISTING PRIVATE TILE @ SOUTH END BEND, LITTLE CONFUSING ON WHAT WAS THERE.

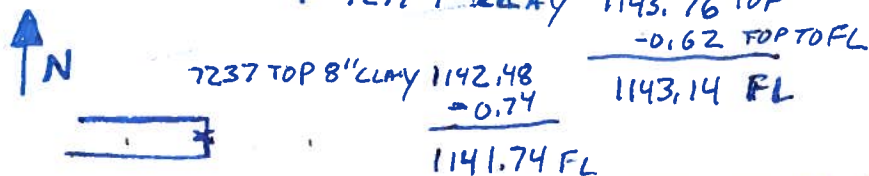
12:50 P.M. CREW HAD WYE CONNECTION EXPOSED ON EAST END OF CONFUSING AREA.



12:55 P.M. CREW HEADED TO EXCAVATE FOR LAT #1 IN FIELD.

1:25 P.M. CREW HAD BOTH LAT 1 & LAT 2 TILE EXPOSED IN FIELD

1:30 P.M. OBSERVER SHOT EXPOSED LAT #1 & 2 TILE.



OBSERVER TALKED TO LEE
& WILL USE 1141.54'
FOR FL OR NEW 15" RCP
OUTLET AT THIS LOCATION

Inspector's Project Diary (continued)

CGA PN:

6735 DD9 H. SURVEY
6735.1 DD#9H

Report
No.

Date: 10/21/2020

1. General Remarks and Work Accomplished (Continued):

2:40 P.M. CREW WAS STRING OUT PIPE & SETTING UP TRENCH BOX. CREW ALSO BACK FILLED SOME OF EXCAVATED HOLES THAT WERE STILL OPEN.

2:45 P.M. OBSERVER WAS ADJUSTING ALIGNMENT TO HIT E CREEK & MISS PRIVATE LATERALS.

FIGURED GRADE & STAKED UP TO STATION 2+00.

PROPOSED FL
0+00 FL 1124.21
GRADE BREAK 5+00 FL 1133.46
GRADE 13+00 1139.09
BREAK
NEW 15" OUTLET 25+91.79 FL 1141.54
FL @ STRUCTURE

1.85%
0.704%
0.19%

	HUB ELEV GPS #	PROPOSED FL TILE	CUT TO FL TILE
0+00	7281 1129.20	1124.21	C - 4.99'
1+00	7280 1130.50	1126.06	C - 4.44'
2+00	7279 1132.40	1127.91	C - 4.49'

6:00 P.M. CREW LEFT SITE AFTER LAYING OUT TILE.

6:45 P.M. OBSERVER LEFT AFTER ADJUSTING ALIGNMENT RESTAKING ALIGNMENT, ADJUSTING GRADES, STAKING UP TO STATION 2+00 & MARKING GRADES ON LATH.

PICTURE # 4679 IS LOOKING NORTH @ GPS# 7260
STATION 3+99.5 38.9' LEFT OF PROPOSED TILE 10" CLAY
PRIVATE TILE 4.3' DEEP (NORTH 1ST TERRACE)



PICTURE # 4680 IS LOOKING NORTH @ GPS# 7249 STATION 3+88.7
67' L 8" SW PERF PRIVATE TILE 4.4' DEEP (NORTH 1ST TERRACE)

PICTURE #4681 IS LOOKING SOUTH AT PRIVATE TILE
 LOCATES & EXPOSED TILE HOLES SHOWING ALIGNMENT
 THROUGH PRIVATE TILE SOUTH OF 1ST TERRACE
 PROPOSED TILE LOCATION

N
↓



WEST
PRIVATE
TILE
LOCATE
FLAG 10" DIA
— EAST
PRIVATE
TILE
LOCATE
FLAG



WEST PRIVATE
TILE LOCATES
— EAST PRIVATE
TILE
LOCATES

N
↓

PICTURE #4682 IS LOOKING SW SHOWING NEW TILE
 ALIGNMENT GOING THROUGH PRIVATE TILE.

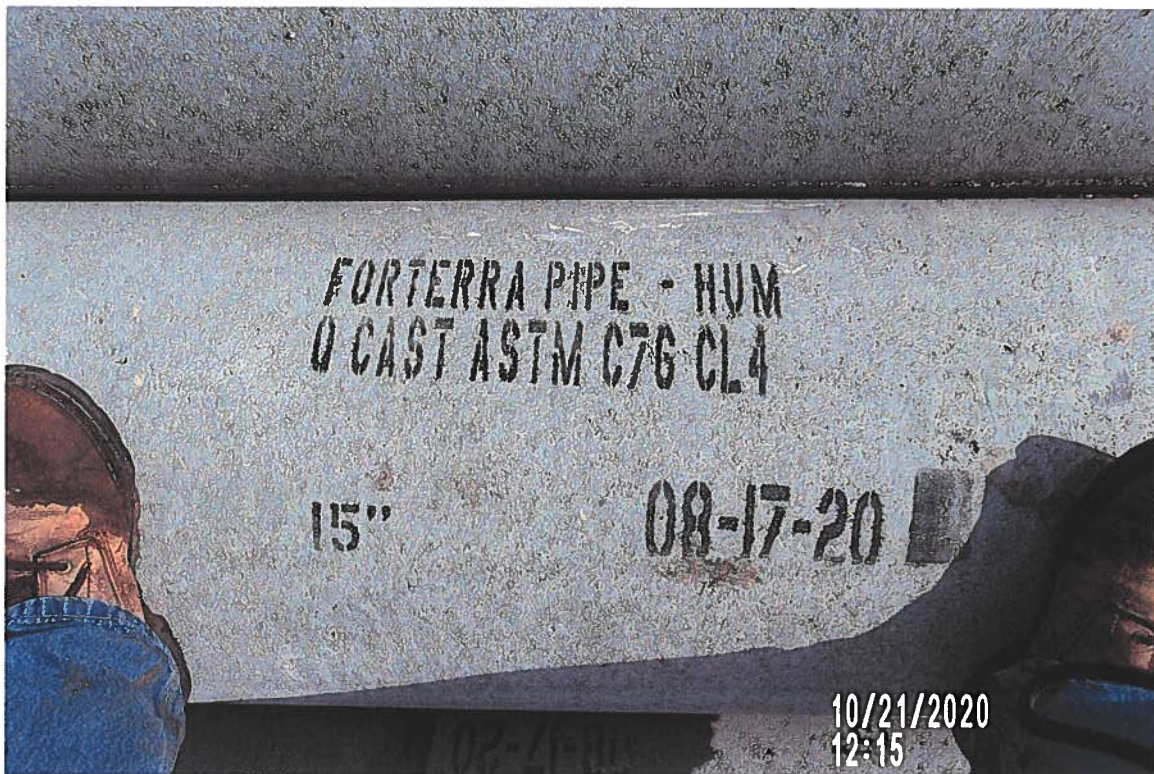
PICTURE# 4683 IS LOOKING SOUTH @ PROPOSED NEW TILE ALIGNMENT
 @ EXPOSED PRIVATE TILE HOLES SOUTH TERRACE #1



WEST PRIVATE
 TILE
 LOCATES
 SOUTH
 OF TERRACE
 #1

PICTURE# 4684 LOOKING SOUTH FROM 2ND TERRACE NORTH
 AT PRIVATE TILE LOCATES

PICTURE# 4685 SHOWING CLASS IV 15" RCP WILL BE USED
FOR JOB.



PICTURE# 4686 SHOWING CLASS IV 15" RCP WILL BE USED
FOR JOB

PICTURE # 4687 ^{LOOK NORTH} SHOWING CREW PLACED CHUNK PLASTIC TILE OVER HOLE IN TOP OF EXPOSED 8" PERF TILE @ GPS# 7249.



↑ N



7274
7" CLAY

7" CLAY 4.4' DEEP 7275
PICTURE # 4688 IS LOOKING NE TOWARD MAIN TILE TIE IN SHOWING 7" CLAY TILE WITH CHUNK OF TILE BLOCKING DOWNSTREAM END.

PICTURE # 4689 IS LOOKING SOUTH AT LAT 1 TILE EXPOSED
IN FIELD



7276 TOP 7" CLAY 4.0' DEEP

N
↓

7277 TOP 7" CLAY 4.10' DEEP



GPS # 7310 LOCATE LAT 1 TIE IN
LOCATION

N
↓

PICTURE # 4690 IS LOOKING SOUTH AT EXPOSED LAT #1 IN FIELD
TO LOCATE TIE IN @ WEST RR ROW

PICTURE # 4691 IS LOOKING NE AT LAT 2 TILE EXPOSED
 LOOKING TOWARDS WEST RR ROW

7310 LAT 1 TIE IN LOCATE



PICTURE # 4693 IS LOOKING UPSTREAM INSIDE 7" CLAY
 LAT 2 FROM GPS # 7275 SHOWING TILE CLEAN &
 NO ROOTS

PICTURE #4694 IS LOOKING DOWNSTREAM INSIDE 7" CLAY
TILE LAT#2 FROM GPS# 7274. SHOWING TILE CLEAN
AND GOOD SHAPE.



↓
N



↓
N

PICTURE #4695 IS LOOKING SOUTH DOWNSTREAM
INSIDE 7" CLAY^{LAT#1} FROM GPS# 7276 TILE CLEAN AND IN GOOD
SHAPE.

PICTURE #4696 IS LOOKING NORTH UPSTREAM INSIDE
7" CLAY LAT #1 FROM GPS #7277 SHOWING TILE CLEAN
& IN GOOD SHAPE



↑ N



↑ N

PICTURE #4697 IS LOOKING SE SHOWING NEW OUTLET
ALIGNMENT WITH TREES GRUBBED OUT TO HIT & CREEK TO WEST
& MISS OTHER OUTLET TILE.

PICTURE #4698 IS LOOKING EAST AT NEW ALIGNMENT
STAKED & MISSES CMP OUTLETS FROM NORTH & HITS
CREEK TO WEST



Project Diary

Project: <u>HARDIN DD#9 UPPER MAIN TILE DIVERSION</u>			
CGA PN: <u>6735.1</u>	Days Charged: <u>2</u>	Report No. <u>3</u>	Proj. Mgr. <input checked="" type="checkbox"/> <u>LEE GALLENTINE</u>
Contractor: <u>GEHRKE INC.</u>		Date: <u>10/22/2020</u>	<u>THURSDAY</u>
Superintendent: <u>JUSTIN VAUGHN</u>	Weather Conditions:	Precip.: <u>"</u>	Temp. Hi: <u>°</u> Temp. Low: <u>°</u>
INSPECTOR: Time Arrived: <u>N.A.</u> Time Left: <u>N.A.</u>		Contractor: Time Arrived: <u>N.A.</u> Time Left: <u>N.A.</u>	
1. General Remarks and Work Accomplished: <u>JUSTIN CALLED OBSERVER. AT 6:30 A.M. CREW NOT WORKING TODAY DUE TO WEATHER.</u>			
2. Changes or Extra Work Ordered: <u>/</u>			
3. Test Samples Taken:			
4. Visitors to Site:			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

Project Diary

Project: <u>NARROW DD#9 UPPER MAIN TILE DIVERSION</u>			
CGA PN: <u>6735:1</u>	Days Charged:	Report No. <u>4</u>	Proj. Mgr. <input checked="" type="checkbox"/> <u>LEE</u>
Contractor: <u>GEHRKE, INC.</u>		Date: <u>10/23/2020</u>	<u>GALLETINE</u>
Superintendent: <u>JUSTIN VAUGHN</u>	Weather Conditions:	Precip.: <u>"</u>	Temp. Hi: <u>°</u> Temp. Low: <u>°</u>
INSPECTOR: Time Arrived: <u>N.A.</u> Time Left: <u>N.A.</u>		Contractor: Time Arrived: <u>N.A.</u> Time Left: <u>N.A.</u>	
1. General Remarks and Work Accomplished: <u>6:20 A.M. JUSTIN CALLED OBSERVER THAT CREW WILL NOT BE WORKING TODAY BUT ARE PLANNING ON WORKING AGAIN ON MONDAY.</u>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site:			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

Project Diary (continued)

CGA PN:

Report
No.

Date:

1. General Remarks and Work Accomplished (Continued):

Project Diary

Project: HARDIN DD#9 UPPER MAIN TILE DIVERSION			
CGA PN: 6735.1	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/> LEE GALLENTINE
Contractor: 6735 DD#9 H. SURVEY	GEHRKE, INC	Date: 10/26/2020	
Superintendent: JUSTIN VAUGHN	Weather Conditions: (LIGHT DUSTING SNOW NIGHT IN EARLY MORNING HOURS) PARTLY CLOUDY WITH LIGHT WINDS	Precip.: NOT MEASURABLE	Temp. Hi: LOW 30°
INSPECTOR:		Contractor:	Temp. Low: LOW 20°
Time Arrived: 7:50	Time Left: 6:00	Time Arrived: 7:00	Time Left: 5:20
<p>1. General Remarks and Work Accomplished:</p> <p>7:50 A.M. OBSERVER ON SITE. CREW WAS GETTING LASER SETUP WITH 4 MAN CREW ON SITE 2 JOHN DEERE 3506 EXCAVATORS, JOHN DEERE 624L LOADER, JOHN DEERE 1850 JOOPER FOR EQUIPMENT. TALKED TO JUSTIN ABOUT GRADE.</p> <p>8:00 A.M. CREW WAS JUST STARTING TO EXCAVATE FOR 18" CMP OUTLET @ CREEK. OBSERVER LEFT SITE TO SETUP GPS BASE ON GPS#4 3/4" IRON ROD 0.3' ± DEEP (2.5' ± EAST OF EAST EDGE DEAD END I AVE (352.8' W OF 4 DRIVE OF ACREAGE @ 17938 I AVE) OR 29.5' SOUTH OF 1ST PP WITH TRANSFORMER NORTH OF 17938 I AVE IN WEST SIDE OF T AVE ROW)</p> <p>8:45 A.M. CHECKED INTO GPS#90 HARDIN COUNTY GPS MON 8024 GOOD HORIZONTAL POSITION WITH F+0.03' TO +0.04' VERTICAL POSITION (WITHIN REASON)</p> <p>8:50 A.M. CREW HAD 40' OF CMP IN PLACE AND STARTING TO SET 1ST 15" RCP. (SEE SHEET FOR GRADE CHECKS) CREW HAD 4" BEDDING ROCK UNDER CMP WITH 18" CMP BAND BETWEEN SECTIONS AND ROCK BEDDED TO SRRING LINE OF TILE.</p> <p>9:20 A.M. CREW APPLIED SEALANT AROUND SPIGOT END OF 15" RCP BEFORE INSTALLATION INTO 18" CMP. CREW IS USING SPOON BUCKET ON BOTTOM OF TRENCH WITH GOOD SOIL FOR TILE TO SIT IN. SEALING BOTTOM 2/3 OF TILE & WRAPPING JOINT WITH FABRIC.</p> <p>2. Changes or Extra Work Ordered:</p> <p>3. Test Samples Taken:</p> <p>4. Visitors to Site: KEVIN VIERKANT AND HIS SON MIKE WERE ON SITE FROM 2:10 P.M. TO 2:30 P.M. THEY TOLD OBSERVER NOT TO PUT HICKEN BOTTOMS IN. IF IT NEEDS A HICKEN BOTTOM THEY WILL PUT A BURIED ONE WITH ROCK THEMSELVES. ALSO BROUGHT UP THAT DEPENDING ON HOW MANY LATERALS WE FIND THROUGH WET AREA MAY HAVE TO RUN A LATERAL THROUGH THAT WET AREA.</p> <p>5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done: USLC ON SITE AROUND 12:15 TO LOCATE FIBER OPTIC CABLE IN EAST DITCH OF RAILROAD ROW. 12:50 P.M. USLC HAD LOCATES DONE & LEFT SITE.</p> <p>6. Attachments (total sheets attached <u>0</u>):</p>			

Project Diary (continued)

CGA PN: 6735.1
6735 DD9H SURVEY

Report
No.

Date: 10/26/2020

1. General Remarks and Work Accomplished (Continued):

11:50 A.M. CREW STOPPED FOR LUNCH. OBSERVER SET 15' HUBS. AT STATION 3+00, 3+95, 25+00, FIGURED GRADES AND MARKED CUTS ON LATH

12:30 P.M. CREW BACK ON SITE FROM LUNCH

1:00 P.M. CREW WAS CUTTING 15" RCP TILE FOR BEND AT GPS# 7316

1:10 P.M. OBSERVER SHOT LOCATE FOR WHERE LAT 1 TILE CONNECTED INTO 8" CLAY TILE

1:45 P.M. CREW WAS DONE CUTTING ANGLE FOR TILE PIPE AND STARTED

LAYING TILE AGAIN.

2:40 P.M. JUSTIN WITH GEHRKES SAID THERE IS A TILE BLOWOUT SECTION IN EAST ROW OF OF RAILROAD WHERE TILE IS MISSING WHERE FIBER OPTIC LINE RAN THROUGH.

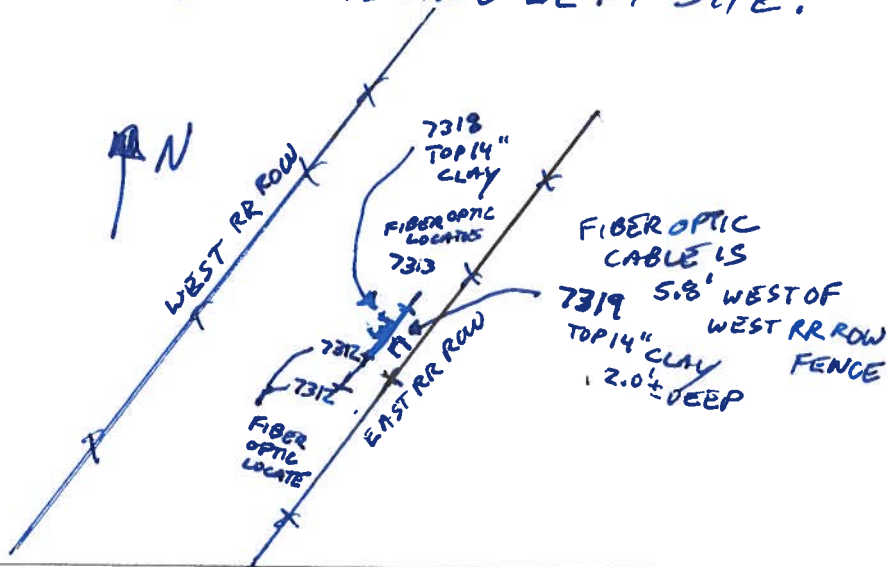
3:20 P.M. SHOT FIBER OPTIC LOCATES THAT WENT THROUGH 14" CLAY TILE, THAT HAS SECTION MISSING

4:35 P.M. CREW WAS DONE INSTALLING 15" RCP TILE FOR DAY AND GROUTED WIDE JOINTS ON TILE WITH PLUG HYDRAULIC CEMENT. @ GPS# 7307, #7315, #7295 TO #7298

5:30 P.M. SHOT TOP OF 14" CLAY TILE THAT IS EXPOSED

5:50 P.M. GPS# 7320 WITH SECTION MISSING EAST RR DITCH, SET NEW CONTROL POINT 3/4" IRON ROD 0.3' DEEP 2.0' NORTH OF 2ND WOOD FENCE POST EAST OF GAVE IN FENCE LINE E-W 808.5' NORTH OF HWY

6:00 P.M. CREW LEFT SITE AND OBSERVER TORE DOWN GPS AND LEFT SITE.



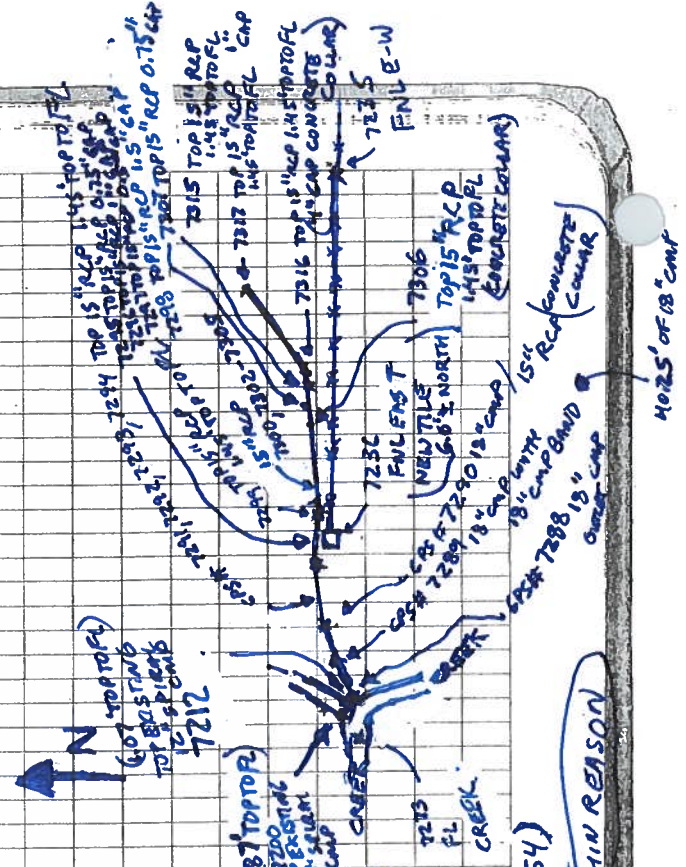
10:00 AM

	PLAN FL	1124.21'
CPS # 7288 TOP 18" CMP OUTLET	-1.51 1124.26	TO 18" CMP TOP TO FL FL 18" CMP OUTLET
10:10 A.M. CPS # 7290 TOP 18" CMP 18" CMP / 15" RCP	1126.49 -1.51 1124.98	TOP 18" CMP TOP TO FL FL 18" CMP
10:30 A.M. CPS # 7291 TOP 15" RCP @ 18" CMP	1126.52 -1.45 1125.07	AVERAGE TOP TO FL FOR 15" RCP FL 15" RCP .11" HIGH SPIGOT END SET INSIDE CMP (LITTLE HIGH)
10:20 A.M. CPS # 7294 TOP 15" RCP	1126.78 -1.45 1125.33	PLAN FL = 1124.21 + (.0185 x 63.3) = 1125.38 .05' LOW (WITHIN REASON)
11:15 A.M. CPS # 7300 TOP 15" RCP	1127.65 -1.45 1126.20	PLAN FL = 1124.21 + (.0185 x 111.78) = 1126.28' = .08' LOW (STARTING TO GET LOW)
11:57 A.M. CPS # 7307 TOP 15" RCP	1128.26 -1.45 1127.21	PLAN FL = 1124.21 + (.0185 x 159.88) = 1127.17 = .04' HIGH (LITTLE HIGH WITHIN REASON)
4:16 P.M. CPS # 7316 TOP 15" RCP	1128.90 -1.45 1127.45	PLAN FL = 1124.21 + (.0185 x 174.65) = 1127.44 = .01' LOW (WITHIN REASON)

$$\text{PLAN FL} = 1124.21 + (0.085 \times 228.54)$$

0.44' LOW WITHIN REASON

NOTE: 50 WTS 7295 (0.75" GAP), 7296 (1" GAP)
7297 (0.5" GAP), 7298 (1.5" GAP)
7307 (0.75" GAP), 7315 (1" GAP)
THESE JOINTS WERE ALIGNED
WITH PLUG HYDRULIC CEMENT
CONCRETE COLLAR 7290, 7306,
7316



PICTURE# 4699 IS LOOKING NE AT 18" CMP OUTLET
WITH BEDDING ROCK 4" BELOW CMP AND UP TO HAUNCH
OF TILE



GPS#7298

TOP 18"
CMP OUTLET
1.51 TOP TO FL

10/26/2020
09:12



GPS#7299

TOP 18"
CMP
METAL
BAND

10/26/2020
09:13

PICTURE# 4700 IS LOOKING NE SHOWING 18" CMP BAND BETWEEN
THE 2 FULL SECTIONS OF 18" CMP TILE

PICTURE #4701 IS LOOKING NE SHOWING CREW SEALED
 SPIGOT END OF 15" RCP BEFORE INSTALLING IT INTO
 18" CMP TILE



PICTURE # 4702 IS LOOKING NE SHOWING CREW USING A
 SPOON BUCKET TO LEAVE A BOWL UP TO HAUNCH OF
 TILE FOR IT TO SIT IN

PICTURE# 4703 IS LOOKING WEST FROM GPS# 7298
SHOWING WIDER THAN NORMAL JOINTS THAT NEED
SEALED.



PICTURE# 4704 IS LOOKING AT SPIGOT END OF 15" RCP WITH
SEALANT PLACED AROUND IT BEFORE IT IS PUT IN PLACE

PICTURE #4705 IS LOOKING WEST SHOWING SPOONED BUCKET
TROUGH IN BOTTOM OF DITCH FOR TILE TO SET IN WITH
JOINTS WRAPPED WITH FABBRIL & STILL SEALING JOINTS



PICTURE #4706

LATERAL #1 CONNECTION TO
8" CLAY MAIN GPS#7310

IS LOOKING NW SHOWING LOCATION WHERE
LAT 1 & MAIN MAKE CONNECTION 2.0' INTO RAILROAD ROW

PICTURE # 4707 IS LOOKING NORTH SHOWING LATERAL #1
TIE IN CONNECTION INTO 8" CLAY MAIN 2.0' INTO RAILROAD
ROW



SOIL IS
STILL
IN GOOD
CONDITION

GPS# 7316

TOP 15" RCP
@ BEWD

PICTURE # 4710 IS LOOKING NE SHOWING 15" RCP TILE CUT FOR
BEND & CREW USING SPOONED BUCKET TO MAKE
TROUGH IN BOTTOM OF TRENCH FOR TILE TO SIT IN;

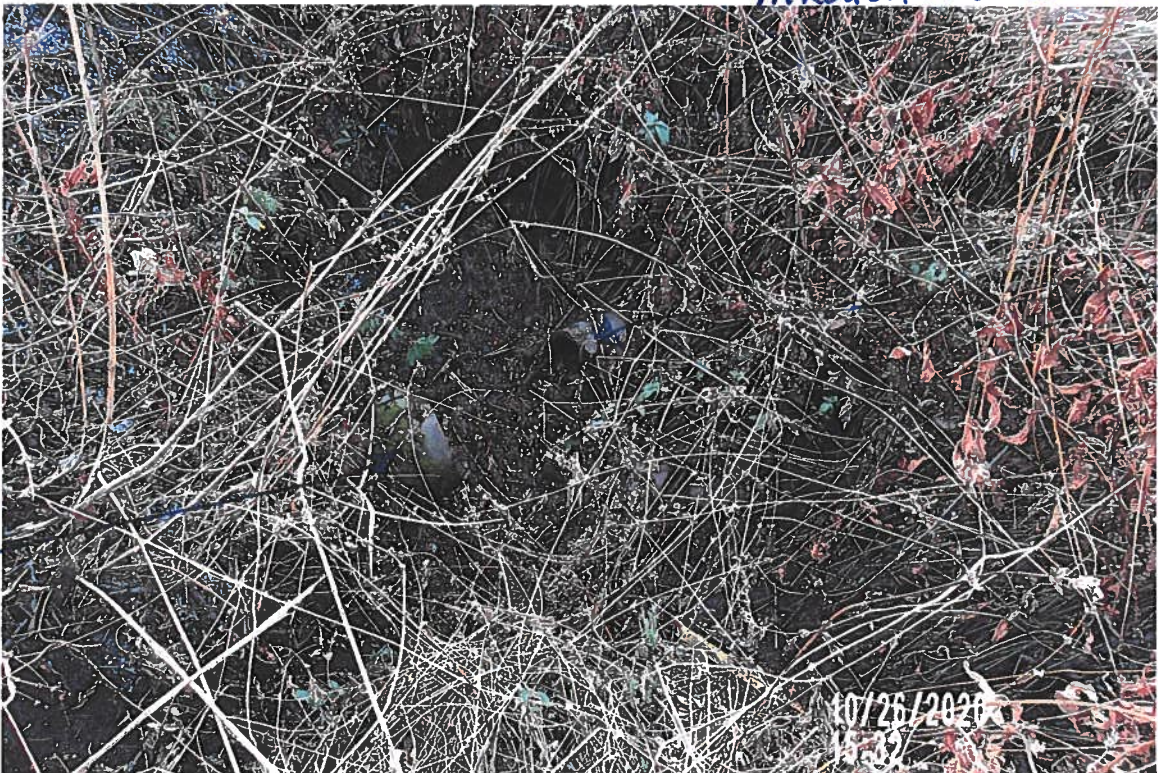
PICTURE# 4711 EAST RR DITCH WITH SECTION OF 14" CLAY MISSING. USLC MARKED CENTURY LINK FIBER OPTIC CABLE.



CPS# 7311 FIBER OPTIC LOCATE
CPS# 7312 CLAY TILE SECTION MISSING



CPS# 7313 FIBER OPTIC LOCATE
CENTURY LINK LOCATE GOING THROUGH MISSING SECTION



CPS# 7319
TOP 14" CLAY

CPS# 7318
TOP 14" CLAY

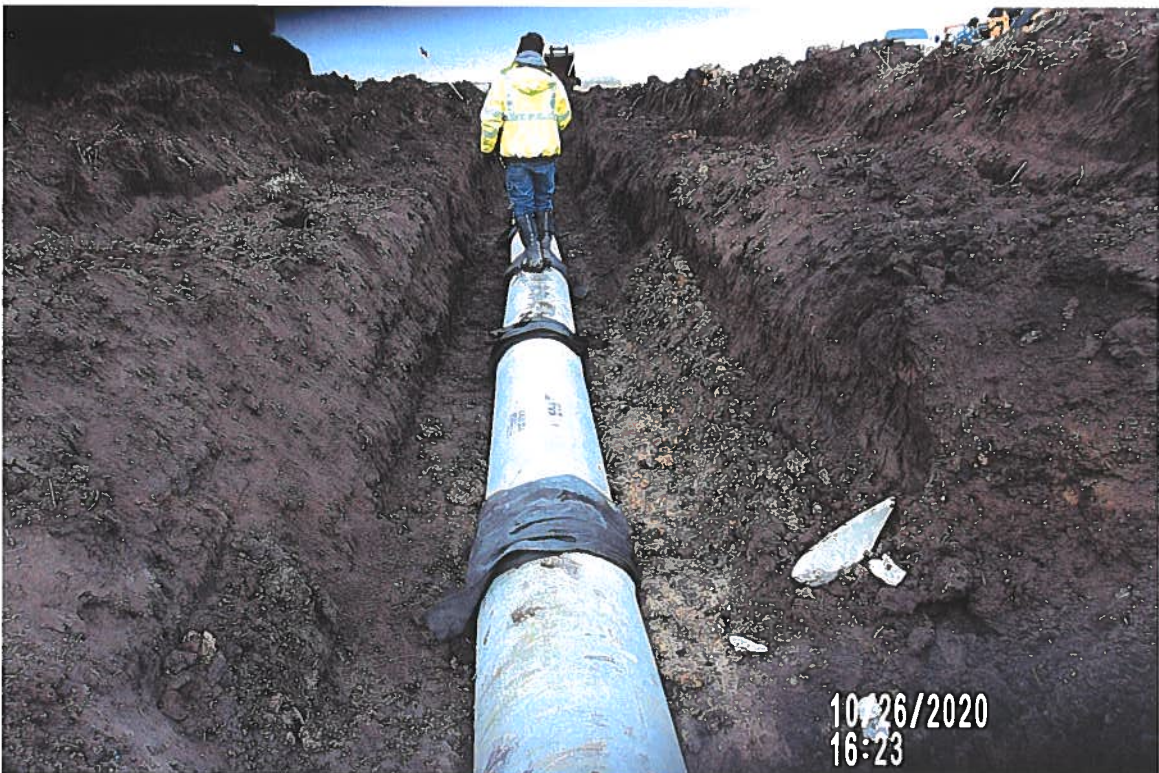


PICTURE# 4712 LOOKING SW AT 14" CLAY TILE SECTION MISSING WHERE CENTURY LINK FIBER OPTIC CABLE LOCATE GOES THROUGH

PICTURE#4713 IS LOOKING AT 15" RCP JOINT CONNECTION
AT GPS# 7316 BEND



GPS# 7316
TOP 15"
RCP
TILE
@ BEND



PICTURE#4714 IS LOOKING NE SHOWING 15" RCP TILE
IN PLACE. SITING IN TROUGH UP TO HAUNCH WITH FABRIC OVER JOINT
FROM BEND AT GPS# 7316

PICTURE # 4715 IS LOOKING SW SHOWING 15" RCP END
OF TILE FOR DAY SITTING IN TROUGH FROM SPON
BUCKET WITH TRENCH BACK FILLED ABOVE TILE.



N

GPS# 7317



N

PICTURE # 4717 IS LOOKING SE SHOWING WIDE JOINTS
ON 15" RCP GROUTED WITH PLUG HYDRAULIC CEMENT
FROM GPS# 7295 TO GPS# 7298.

PICTURE# 4718 CREW USED THIS TO GROUT
WIDE JOINTS ON 15" RCP TILE.



PICTURE# 4719 IS LOOKING EAST SHOWING TILE
WITH JOINTS WRAPPED & SITING IN TROUGH FROM
SPOON BUCKET EAST OF GPS # 7298

PICTURE # 4720 IS LOOKING WEST FROM GPS # 7298
SHOWING TILE SITING IN SPOON BUCKET TROUGH WITH JOINTS
WRAPPED WITH FABRIC.



PICTURE # 4721 IS LOOKING SW SHOWING 15" RCP TILE
SITING IN TROUGH FROM SPOON BUCKET OUT TO 18" CMP OUTLET

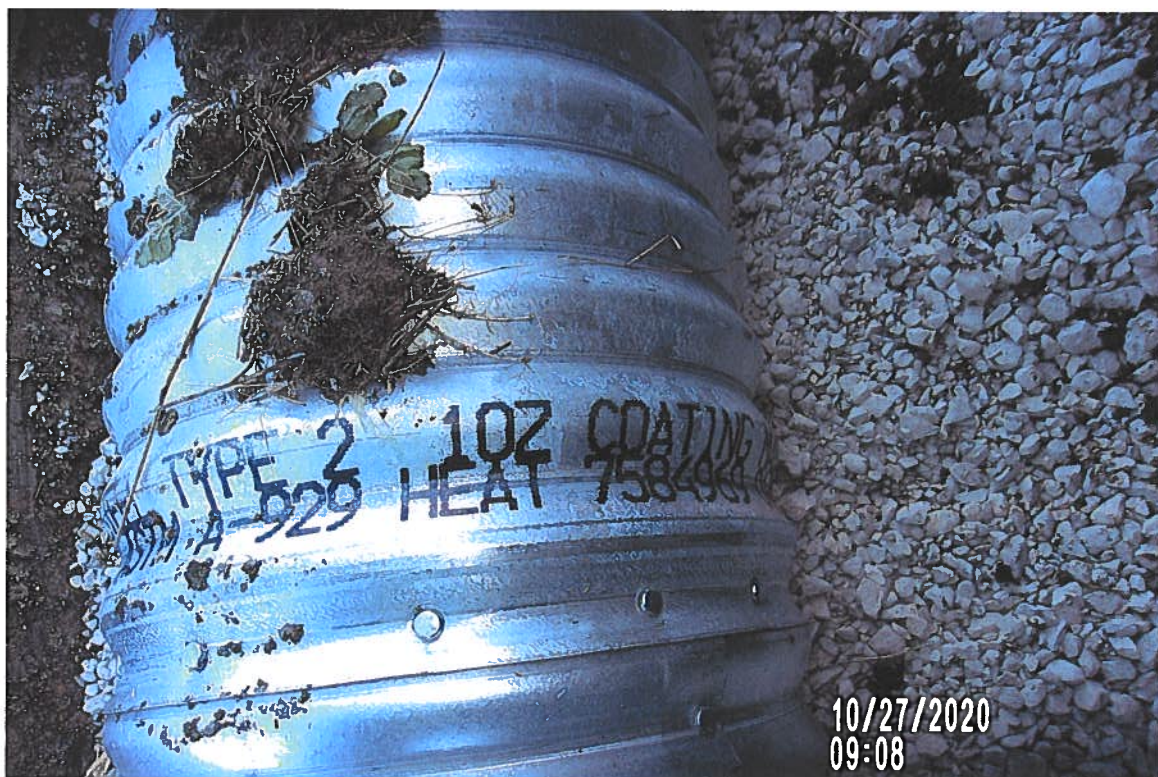
Project Diary

Project: <u>HARDIN DD #9 UPPER MAIN TILE DIVERSION</u>			
CGA PN: <u>6735.1</u> <u>6735 DD 9 SURVEY</u>	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/> <u>LEE CALLENTINE</u>
Contractor: <u>GEHRKE, INC</u>	<u>TUESDAY</u>	Date: <u>10/27/2020</u>	
Superintendent: <u>JUSTIN VAUGHN</u>	Weather Conditions: <u>SUNNY WITH LIGHT WINDS</u>	Precip.: <u>NONE</u>	Temp. Hi: <u>LOW 40°</u> Temp. Low: <u>UPPER 10°</u>
INSPECTOR:	Contractor:		
Time Arrived: <u>7:50</u> Time Left: <u>6:00</u>	Time Arrived: <u>7:00</u> Time Left: <u>6:00</u>		
1. General Remarks and Work Accomplished: <u>7:50 A.M. OBSERVER ARRIVED ON SITE AND SET GPS BASE ON GPS # 7320 3/4" IRON ROD 0.3'± DEEP 2.0' NORTH OF 2ND WPP EAST OF CAVERNE IN FENCE LINE E-W 808.5' NORTH OF CO HWY D-25.</u> <u>8:15 A.M. CHECKED INTO GPS # 90 HARDIN COUNTY GPS MON 8024 6000 HORIZONTAL & 6000 VERTICAL.</u> <u>8:20 A.M. OBSERVER ON SITE WITH 3 MAN CREW WITH JOHN DEERE 3506 & 3500 LC EXCAVATOR, JOHN DEERE 624L LOADER, & JOHN DEERE 850T DOZER ON SITE FOR EQUIPMENT CREW INSTALLING 15" RC TILE. CREW STILL USING GRADE LASER</u>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site:			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

Project Diary

Project: <u>Hardin County DP #9</u>			
CGA PN: <u>6735.1</u>	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
Contractor: <u>Gehrke Construction</u>		Date: <u>10-27-20</u>	<u>Lee G.</u>
Superintendent:	Weather Conditions:	Precip.: "	Temp. Hi: ° Temp. Low: °
INSPECTOR: Time Arrived: <u>7:50 a.m.</u> Time Left:		Contractor: Time Arrived: Time Left:	
1. General Remarks and Work Accomplished:			
<p>7:50 a.m. = set up GPS on CPT # 7320 8:20 a.m. = Back at job site after checking into Pt # 90 (good). 9:12 a.m. = Talked to Project manager about straightening tile route per contractors request. P.M. okayed this. 10:20 a.m. = Grade check. Pt # 7326 F_h 15" RCP = 1128.83 Plan F_h = 1128.88 10:55 a.m. = Concrete arrived on-site for concrete collar station = 2+53 3:30 p.m. = Crew was done laying pipe for day. Grade check's</p> <p># 7335 = F_h 15" RCP = 1129.78 Plan F_h = 1129.92 station = 3+09 # 7332 = F_h 15" RCP = 1129.59 Plan F_h = 1129.63 station = 2+93 # 7343 = F_h 15" RCP = 1130.49 Plan F_h = 1130.51 station = 3+41 # 7349 = F_h 15" RCP = 1131.30 Plan F_h = 1131.41 station = 3+89 # 7352 = F_h 15" RCP = 1131.58 Plan F_h = 1131.70 station = 4+05</p>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site:			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

PICTURE# 4722



PICTURE# 4723

PICTURE #4724



PICTURE #4725

PICTURE# 4726



PICTURE# 4727

PICTURE# 4728



PICTURE# 4729

PICTURE # 4731



PICTURE # 4732

PICTURE# 4733



PICTURE# 4734

PICTURE #4735



PICTURE #4736

PICTURE # 4737



PICTURE # 4738

PICTURE # 4740

E



w



PICTURE # 4741

PICTURE# 4742



PICTURE# 4743

PICTURE# 4744



PICTURE 4746

PICTURE # 4747



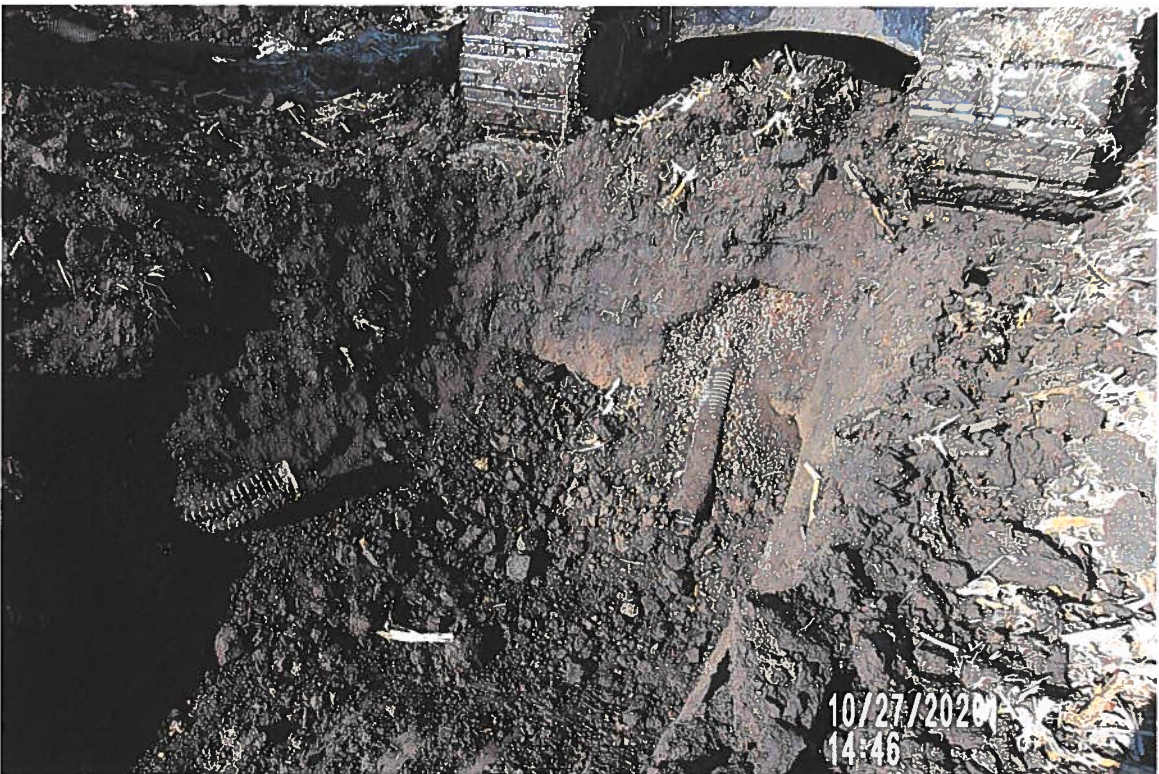
W SIDE



E SIDE

PICTURE # 4748

PICTURE# 4749



PICTURE# 4750

PICTURE # 4751



PICTURE # 4752

PICTURE # 4753



PICTURE # 4754

PICTURE #4756



PICTURE 4757

PICTURE#4758



PICTURE#4759

Project Diary

Project: <u>Hardin County PD # 9</u>			
CGA PN: <u>6735.1</u>		Days Charged:	Report No.
Contractor: <u>Gehrke Construction</u>		Date: <u>10-22-20</u>	Proj. Mgr. <input checked="" type="checkbox"/> <u>Lee G.</u>
Superintendent: <u>Justin Vaughn</u>		Weather Conditions: <u>Sunny</u>	Precip.: <u>-</u> " Temp. Hi: <u>°</u>
INSPECTOR:		Contractor:	Temp. Low: <u>°</u>
Time Arrived: <u>8:00</u> Time Left: <u>7:00 p.m.</u>		Time Arrived: Time Left: <u>6:00 p.m.</u>	
1. General Remarks and Work Accomplished:			
<p>8:00 a.m. = Set up G.P.S on CPT # 7320 and checked into GPS mon. # 90. (good)</p> <p>8:25 a.m. = Returned to job site, crew was laying pipe.</p> <p>Grade check # 7355 $F_H = 1133.23$ 0.10 low per plan grade 1.85'</p> <p>9:40 a.m. = Grade check # 7356 = $F_H = 1133.25$ 0.22' low per plan grade = 1.85'</p> <p>Foremen inquired if they could connect 8" Dual wall to 15" RCP w/out inserta Tee's. Construction observer told them no.</p> <p>10:20 A.M. = Jim U.H. was onsite to familiarize himself with project.</p> <p>10:30 a.m. = Crew bent spoon on bucket of Excavator.</p> <p>Grade check = # 7357 $F_H = 1133.64$ 0.16' low per plan grade = 1.85'</p> <p>11:10 a.m. = Jim U.H. left job site.</p> <p>Crew was working on connecting 6" concrete tile # 7365</p> <p>also connected a 5" clay tile # 7359</p>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site:			
<p>10:20 a.m. = Jim U.H.</p> <p>12:50 p.m. = Jeremy G. on site</p>			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

Inspector's Project Diary (continued)

CGA PN: 6735.1

Report
No.

Date: 10-28-20

1. General Remarks and Work Accomplished (Continued):

1:50 p.m. = Crew began laying tile again.
2:35 p.m. = Grade check # 7370 $F_h = 1134.12$ 0.13 low per plan grade 0.78
3:47 p.m. = Grade check # 7374 $F_h = 1134.60$ 0.10 low per plan grade.
4:20 p.m. = Crew was done laying Pipe for day.
grade check # 7378 $F_h = 1134.83$ 0.21 low per plan grade.
6:00 p.m. = C.O. staked offset hubs to 13+00.

PICTURE # 4760



PICTURE # 4761

PICTURE# 4762



PICTURE# 4763

PICTURE # 4764



PICTURE # 4765

PICTURE# 4766



PICTURE# 4767

PICTURE # 4768



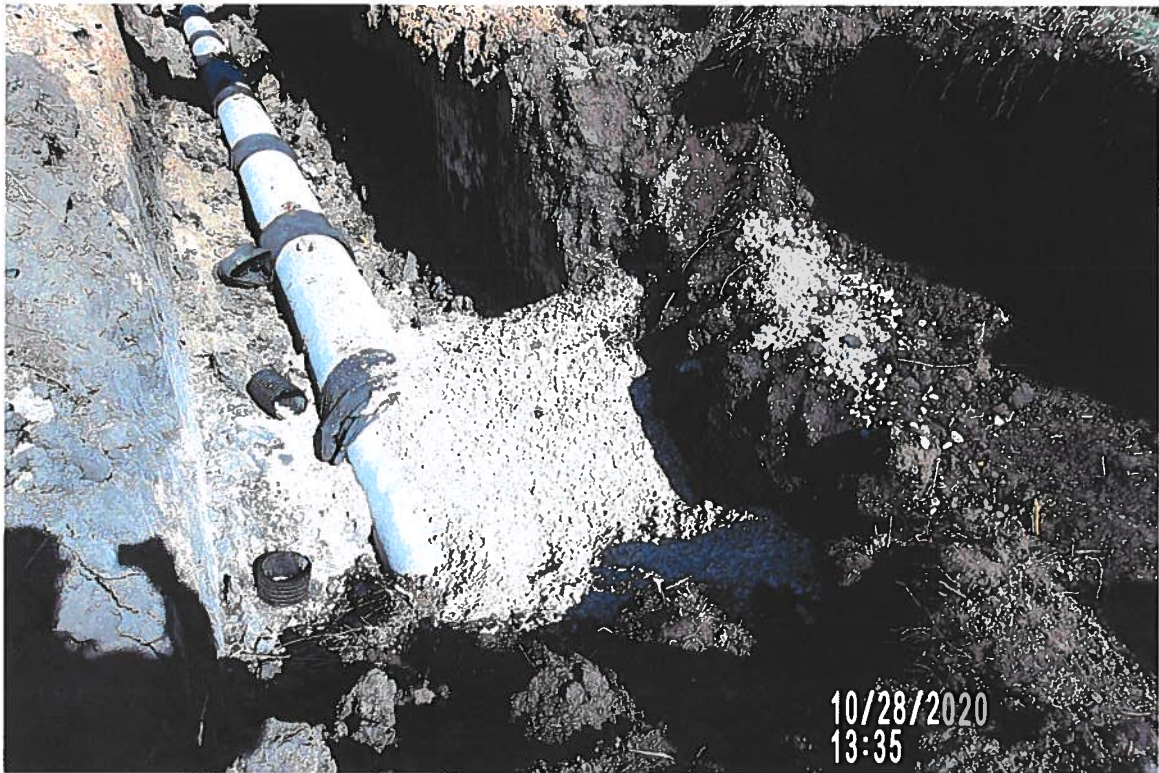
PICTURE# 4769

PICTURE# 4770



PICTURE# 4771

PICTURE# 4772



PICTURE# 4773

PICTURE # 4774



PICTURE # 4775

PICTURE # 4776



PICTURE # 4777

PICTURE #4778



PICTURE #4779

PICTURE# 4780



PICTURE# 4781

PICTURE# 4782



PICTURE # 4783

PICTURE # 4784



PICTURE # 4785

PICTURE # 4786



PICTURE # 4787

PICTURE # 4788



PICTURE # 4789

PICTURE # 4790



PICTURE # 4791

Project Diary

Project: <u>Hardin County DD# 9</u>		Days Charged:		Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
CGA PN: <u>6735.1</u>				Date: <u>10-29-20</u>	<u>Lee G.</u>
Contractor: <u>Gehrke Construction</u>		Weather Conditions: <u>Cloudy - Windy</u>		Precip.: <u>"</u>	Temp. Hi: <u>36</u> °
Superintendent: <u>Justin Vaughn</u>					Temp. Low: <u></u> °
INSPECTOR:		Contractor:			
Time Arrived: <u>8:13 a.m.</u>		Time Left: <u>4:50 p.m.</u>		Time Arrived: <u>7:30 a.m.</u> Time Left:	
1. General Remarks and Work Accomplished:					
<p>8:13 a.m. = Set up GPS on CPT # 7320 and checked into # 90 (good). <u>6.79' grade</u></p> <p>8:50 a.m. = Returned to job site. Shot top of 15" ^{#7383} 15" RCP. 0.16' low per plans.</p> <p>9:20 a.m. = Crew hit a 10" VCP tile while excavating for new main. Crew will repair 10" VCP with dual wall HDPE and concrete collars at a later date.</p> <p>#7383 and #7384 are top of 10" VCP. 10" VCP will not be connected to new 15" RCP as this turns before crossing 10" VCP.</p> <p>9:40 a.m. = at station 8+05, crew will cut pipe at a angle to fit bend as staked. Crew will collar bend.</p> <p>10:12 a.m. = Shot top of 4" plastic tile # 7385.</p> <p>10:13 a.m. = Crew installed angled section of 15" RCP for bend.</p> <p>10:36 a.m. = Shot top pipe at Bend # 7368 station = 8+05.6 Shot Top Pipe 1st joint post bend # 7387 station = 8+12.7</p>					
2. Changes or Extra Work Ordered:					
3. Test Samples Taken:					
4. Visitors to Site:					
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:					
6. Attachments (total sheets attached <u>0</u>):					

Project Diary (continued)

CGA PN: 6735.1

Report
No.

Date: 10-29-20

1. General Remarks and Work Accomplished (Continued):

7386 grade check. 0.10 low per plan grade of 0.7'.

12:05 p.m. # 7388 grade check. 0.15 low per plan grade of 0.7'.

1:30 p.m. # 7390 grade check. 0.00 per plan grade of 0.7'.

shot top of 4" plastic tile # 7389 (# 7385 & # 7389 same tile).

1:50 p.m. # 7391 grade check. 0.12 low per plan grade of 0.7'.

2:30 p.m. # 7392 grade check. 0.25 low (Possible bad shot).

2:57 p.m. # 7393 grade check 0.15 low per plan grade of 0.7'.

shot top of 5" plastic tile # 7394 and # 7395

7396 top of 15" RCP past bend.

4:25 pm # 7397 grade check = 0.18 Low per plan grade of 0.7'.

4:27 pm # 7398 grade check = 0.17 Low per plan

Pipe laid today Beginning Pt # 7378 station 7+25.5

Ending Pt # 7398 station 11+01.1

Total # = 375.6'



Laying last section of pipe before bend

2020/10/29

10:02



Crew preparing to install bend in 15" rcp

2020/10/29
10:02

Bend cut and installed in 15" rcp

2020/10/29
10:37



Backfilling over new 15" rcp

2020/10/29
12:53

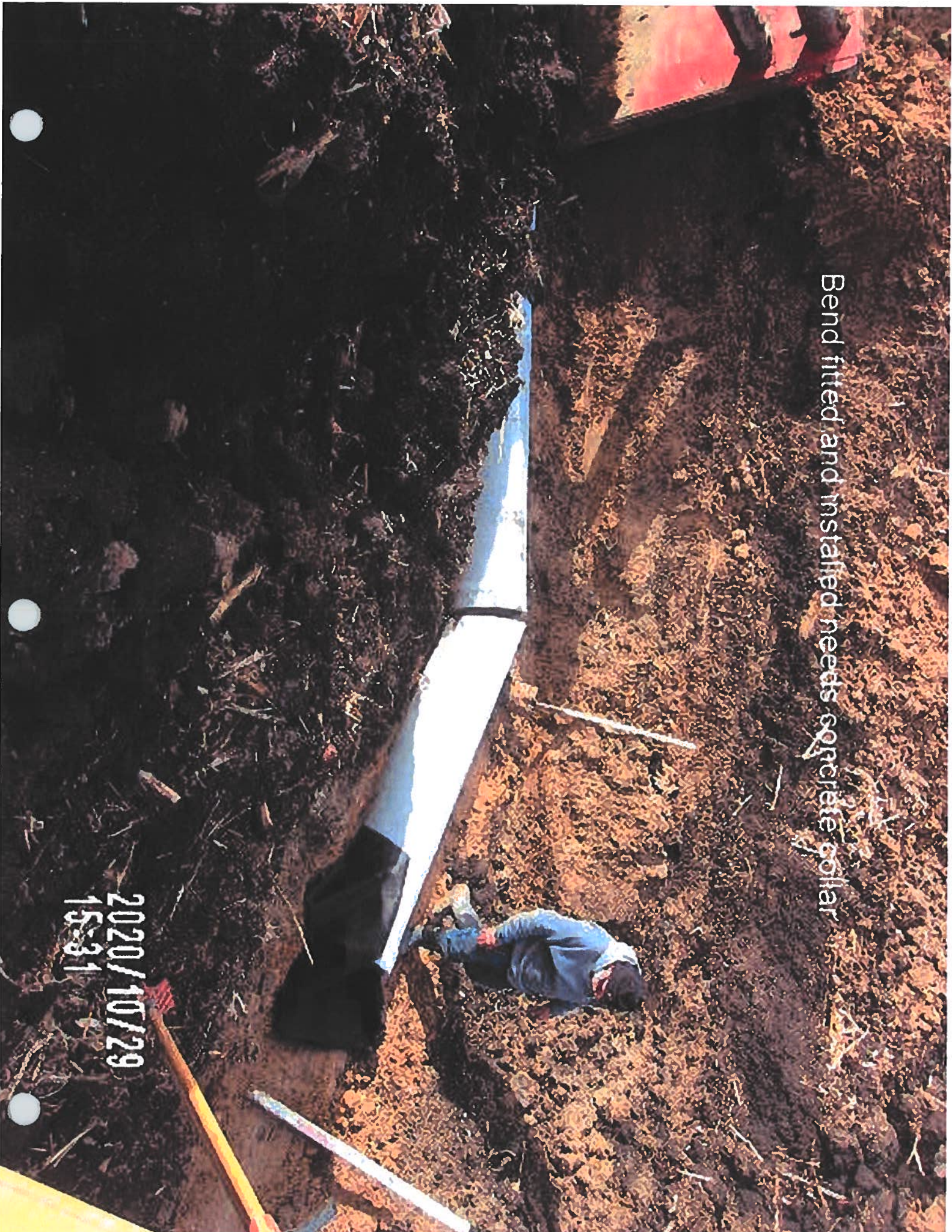


Pulling trench box to install 15" rcp

2020/10/29
14:44

Bend fitted and installed needs concrete collar

2020/10/29
15:31



Installing pipe past bend

2020/10/29
16:26



Inspector's Project Diary

Project: <u>Hardin County DD # 9</u>			
CGA PN: <u>6735.1</u>	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
Contractor: <u>Gehrke Construction</u>		Date: <u>10-30-20</u>	<u>Lee G.</u>
Superintendent: <u>Justin Vaughn</u>	Weather Conditions:	Precip.: "	Temp. Hi: ° Temp. Low: °
INSPECTOR: Time Arrived: <u>7:50 a.m.</u> Time Left: <u>6:30 p.m.</u>		Contractor: Time Arrived: Time Left: <u>5:00 p.m.</u>	
1. General Remarks and Work Accomplished:			
<p>7:50 a.m. = Set up GPS on CPT # 7320 and checked into # 90 (good).</p> <p>8:15 a.m. = Returned to job site. 4 man crew installing 15" RCP.</p> <p>grade check # 7399 \bar{H} 15" rcp = 1137.85 Plan \bar{H} = 1138.11 station = 11 + 65</p> <p>crew is getting into clay/sand mixture. Dirt at pipe haunch still standing up.</p> <p>grade check # 7400 \bar{H} 15" rcp = 1138.10 Plan \bar{H} = 1138.34 station = 11 + 97</p> <p>grade check # 7402 \bar{H} 15" rcp = 1138.48 Plan \bar{H} = 1138.73 station = 12 + 53</p> <p>11:35 a.m. = concrete for collars arrived. Poured collars on 15" rcp at points # 7386 and # 7393 and collars on 10" tile</p> <p>12:00 p.m. = Done with concrete collars.</p> <p>1:15 p.m. = Foreman inquired if crew could tar all of pipe and place fabric on top only. Contacted Project Manager and he wants fabric all the way around pipe and tar on bottom $\frac{1}{2}$ of pipe.</p> <p>grade check = # 7406 \bar{H} 15" rcp = 1138.74 Plan \bar{H} = 1139.01 station = 12 + 94</p>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site:			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

Inspector's Project Diary (continued)

CGA PN: 6735.1

Report
No.

Date: 10-30-20

1. General Remarks and Work Accomplished (Continued):

Grade check = # 7412 \overline{H} 15" RCP = 1139.4 Plan \overline{H} = 1139.19 Station = 13+66

3:15 p.m. = Jeremy G. on-site, discussed rcp cap at outlet and if he should have

3:22 p.m. = Crew moved trench box. Lat 1, Lat 2, and main into structure

Grade check = # 7413 \overline{H} 15" RCP = 1139.45 Plan \overline{H} = 1139.44 Station = 13+89.

4:40 p.m. = Crew laid last section of 15" rcp for day.

grade check = # 7418 \overline{H} 15" rcp = 1139.49 Plan \overline{H} = 1139.52 Station = 14+38

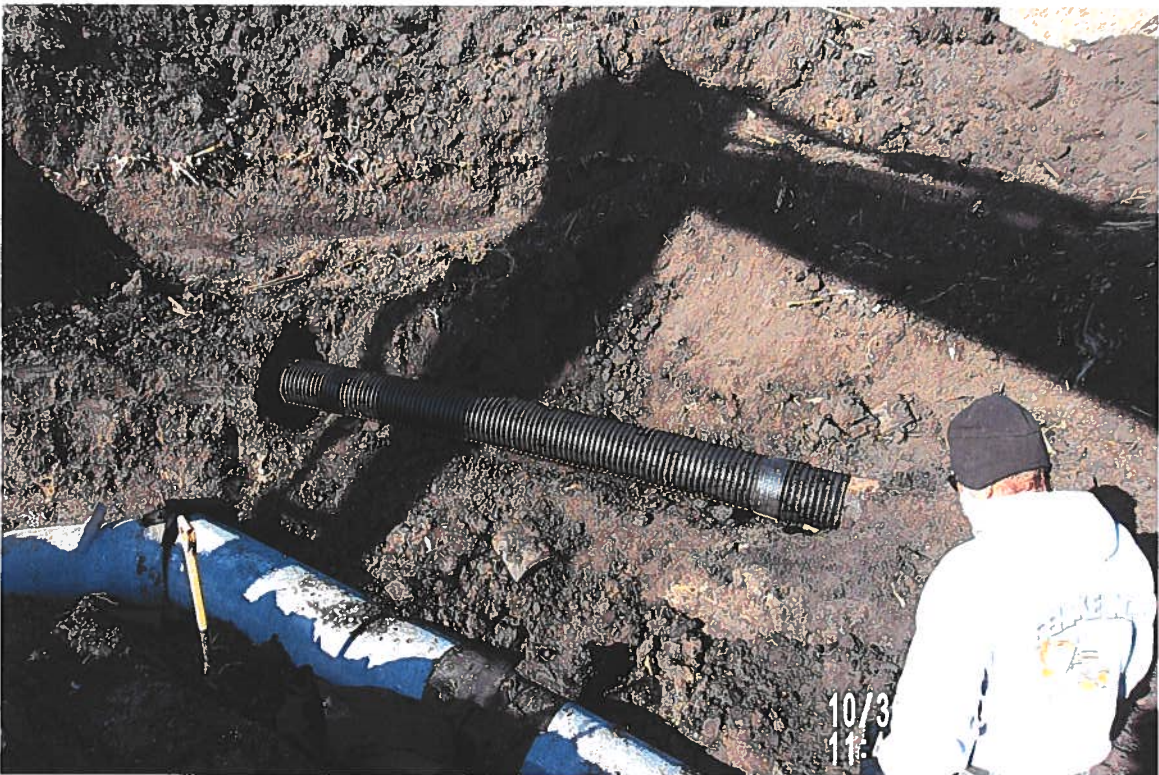
staked Station 19+00 and 20+00

PICTURE# 4805



PICTURE# 4806

PICTURE# 4807



PICTURE# 4808

PICTURE # 4809



PICTURE # 4810

PICTURE #4813



PICTURE# 4814

PICTURE# 4815



PICTURE# 4816

PICTURE# 4817



PICTURE# 4819

PICTURE# 4820



PICTURE # 4821

PICTURE#4822



PICTURE#4823

PICTURE # 4824



PICTURE # 4826

PICTURE# 4827



PICTURE# 4804

ACCOUNTING OFFICE
1710 EAST MAIN STREET
MARSHALLTOWN, IOWA 50158
PHONE: (641) 752-3696
FAX: (641) 752-8644



SOLD TO:

CONCRETE INC.

GEHRKE INC

B AVE
ALDEN

TIME	FORMULA	LOAD SIZE	YARDS ORDERED		DRIVER/TRUCK	P.O. NUMBER	PLANT/TRANSACTION#
10:38:00	M40	4.00	4.00	OPEN	49I		08
DATE		LOAD #	YARDS DEL.	BATCH #	WATER TRIM	SLUMP	TICKET NUMBER
10/30/20		1	4.00	28082	0.00	4.00 in	27646

WARNING
IRRITATING TO THE SKIN AND EYES
Contains Portland Cement. Wear Rubber Boots and Gloves. PRO-
LONGED CONTACT MAY CAUSE BURNS. Avoid Contact With Eyes and
Prolonged Contact With Skin. In Case of Contact With Skin or Eyes,
Flush Thoroughly With Water. If Irritation Persists, Get Medical Attention.
KEEP CHILDREN AWAY. See back for additional warning information.

CONCRETE is a PERISHABLE COMMODITY and BECOMES the PROPERTY of the PURCHASER
UPON LEAVING the PLANT. ANY CHANGES OR CANCELLATION of ORIGINAL INSTRUCTIONS
MUST be TELEPHONED to the OFFICE BEFORE LOADING STARTS.
The undersigned promises to pay all costs, including reasonable attorney's fees, incurred in col-
lecting any sums owed.
All accounts not paid within 30 days of delivery will bear interest at the rate of 18% per annum.
Not Responsible for Reactive Aggregate or Color Quality. No Claim Allowed Unless Made at Time
Material is Delivered.
A \$15.00 Service Charge and Loss of the Cash Discount will be Collected on all Returned Checks.
Excess Delay Time Charged at \$70.00/HR.

PROPERTY DAMAGE RELEASE
(TO BE SIGNED IF DELIVERY TO BE MADE INSIDE CURB LINE)
Dear Customer: The driver of this truck in presenting this
RELEASE to you for your signature is of the option that the size
and weight of his truck may possibly cause damage to the prem-
ises and/or adjacent property. If he places the material in this load
where you desired. It is our wish to help you in every way that we
can, but in order to do this the driver is requesting that you sign
this RELEASE relieving him and this supplier from any responsi-
bility from any damage that may occur to the premises and/or
adjacent property, buildings, sidewalks, drive-ways, curbs, etc., by
the delivery of this material, and that you also agree to help him
remove mud from the wheels of his vehicle so that he will not lit-
ter the public street. Further, as additional consideration, the
undersigned agrees to indemnify and hold harmless the driver of
this truck and this supplier for any and all damage to the prem-
ises and/or adjacent property which may be claimed by anyone to
have arisen out of delivery of this order.
SIGNED
X

Excessive Water is Detrimental to Concrete Performance
H₂O Added By Request/Authorized By

GAL X

WEIGHMASTER

NOTICE MY SIGNATURE BELOW INDICATES THAT I HAVE READ THE HEALTH WARNING
NOTICE AND SUPPLIER WILL NOT BE RESPONSIBLE FOR ANY DAMAGE CAUSED WHEN
DELIVERING INSIDE CURB LINE.

LOAD RECEIVED BY:

X

QUANTITY	CODE	DESCRIPTION	UNIT PRICE	EXTENDED PRICE
4.00 CY	M40	TRUCKING 4000WRC100AE TRUCK INCHARGE (NONTAXABLE)		

RETURNED TO PLANT	LEFT JOB	FINISH UNLOADING	DELAY EXPLANATION/CYLINDER TEST TAKEN	TIME ALLOWED
			1. JOB NOT READY 2. SLOW POUR OR PUMP 3. TRUCK AHEAD ON JOB 4. CONTRACTOR BROKE DOWN 5. ADDED WATER	
LEFT PLANT	ARRIVED JOB	START UNLOADING	6. TRUCK BROKE DOWN 7. ACCIDENT 8. CITATION 9. OTHER	TIME DUE
TOTAL ROUND TRIP	TOTAL AT JOB	UNLOADING TIME		DELAY TIME

ADDITIONAL CHARGE 1

ADDITIONAL CHARGE 2

GRAND TOTAL ▶▶

Project Diary

Project: <u>Hardin County DP # 9</u>			
CGA PN: <u>6735.1</u>	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
Contractor: <u>Behlke Construction</u>		Date: <u>10-31-20</u>	<u>hce G.</u>
Superintendent: <u>Justin Vaughn</u>	Weather Conditions: <u>Sunshine</u>	Precip.: <u>"</u>	Temp. Hi: <u>°</u>
INSPECTOR:		Temp. Low: <u>°</u>	
Time Arrived: <u>8:45 a.m.</u>	Time Left: <u>1:00 p.m.</u>	Contractor:	Time Left: <u>1:00 p.m.</u>
1. General Remarks and Work Accomplished: <u>8:45 a.m. = Set up G.P.S on CPT # 7320 and checked into # 90 (good).</u> <u>9:15 a.m. = Back at job site.</u> <u>grade check = # 7419 15" rcp FL = 1139.72 Plan FL = 1139.74 station = 15+66</u> <u>9:59 a.m. = Ditch man reported there was one soft spot, that needed a</u> <u>small amount of gravel. side walls of trench are standing up good.</u> <u>10:14 a.m. = Grade check GPS # 7420 FL = 1139.76 0.03 Low per plan grade 0.17</u> <u>crew was done laying pipe for day.</u> <u>10:50 a.m. = Crew was working on 5" HDPE connection GPS # 7389</u> <u>connected 5" HDPE GPS # 7394</u>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site:			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

PICTURE 4828



PICTURE # 4829

PICTURE# 4830



PICTURE# 4832

PICTURE # 4833



PICTURE 4834

PICTURE # 4836



PICTURE # 4840

PICTURE # 4841



PICTURE# 4843

PICTURE #4844



PICTURE # 4845

PICTURE #4846



PICTURE #4847

PICTURE #4848



PICTURE #4849

PICTURE #4850



PICTURE# 4851

PICTURE # 4852



PICTURE # 4853

PICTURE # 4854



Project Diary

Project: <u>Hardin County DD # 9</u>			
CGA PN: <u>6735.1</u>	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/> <u>Lee G.</u>
Contractor: <u>Gehrke Construction</u>		Date: <u>11-2-20</u>	
Superintendent: <u>Justin Vaughn</u>	Weather Conditions: <u>Sunny</u>	Precip.: <u>- "</u>	Temp. Hi: <u>°</u>
			Temp. Low: <u>°</u>
INSPECTOR:		Contractor:	
Time Arrived: <u>8:35 a.m.</u> Time Left: <u>5:20 p.m.</u>		Time Arrived: Time Left: <u>5:00 p.m.</u>	
1. General Remarks and Work Accomplished:			
<p>8:35 a.m. = Setup G.P.S on CPT # 7320 and checked into GPS Mon # 90 (good).</p> <p>9:16 a.m. = Back at job site. 3 man crew, installing 15" RCP.</p> <p>9:21 a.m. = Grade check # 7434 $F_h = 1139.97$ 0.01 High per plan grade 0.17 & 4th crew member on-site.</p> <p>9:25 a.m. = Foreman left job site, crew worked on 10" PCC tile connection GPS pt # 7379 → # 7380 Part of 10" PCC tile repair.</p> <p>10:15 a.m. = Foreman returned to job site.</p> <p>12:43 p.m. = Grade check # 7435 $F_h = 1140.00$ 0.04 low per plan grade 0.17</p> <p>1:30 p.m. = Concrete Inc. truck on-site. Poured collar at # 7435</p> <p>1:50 p.m. = Concrete truck left site. Crew moved trench box to other side of bend.</p>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site:			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

Inspector's Project Diary (continued)

CGA PN: 6735.1

Report
No.

Date: 11-2-20

1. General Remarks and Work Accomplished (Continued):

Grade check # 7437 $F_L = 1140.03$ 0.09 low per plan grade 0.17⁸

Grade check # 7436 $F_L = 1140.13$ 0.05 low per plan grade 0.17⁸

4:30 p.m. = Grew quit laying pipe for day.

Grade check # 7439 $F_L = 1140.25$, 0.02 High per plan grade. 0.17⁸

PICTURE# 4855



PICTURE# 4856

PICTURE # 4857



PICTURE # 4858

PICTURE# 4859



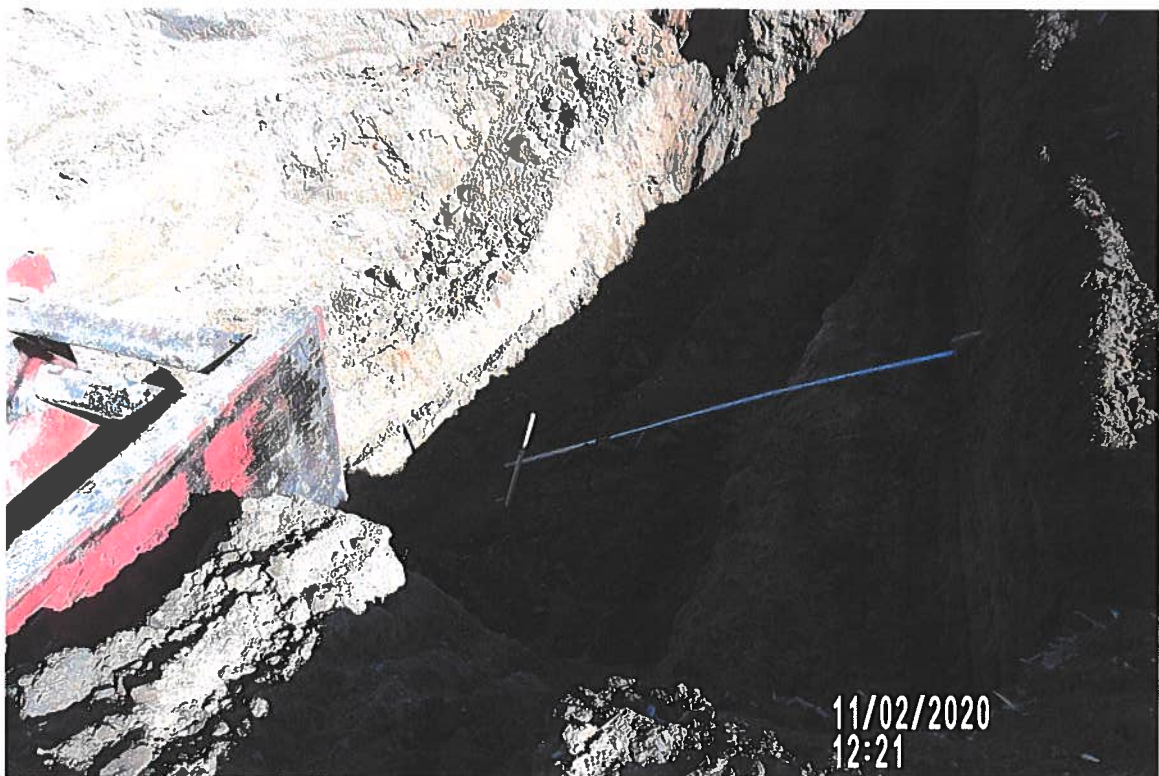
PICTURE# 4860

PICTURE # 4861



PICTURE # 4862

PICTURE# 4863



PICTURE# 4864

PICTURE #4865



PICTURE # 4866

PICTURE# 4867



PICTURE# 4869

11/02/2020
13:44

picture # 4872

PICTURE# 4874



PICTURE# 4875

PICTURE # 4876



PICTURE # 4877

PICTURE# 4879



PICTURE# 4880

PICTURE # 4881



PICTURE # 4882

PICTURE # 4883



Project Diary

Project: <u>Hardin County DD # 9</u>		Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
CGA PN: <u>6735.1</u>			Date: <u>11-3-20</u>	<u>LCC G.</u>
Contractor: <u>Vehe/KC Construction</u>		Weather Conditions:	Precip.: <u>"</u>	Temp. Hi: <u>76</u> °
Superintendent: <u>Justin Vaughn</u>		<u>Clear - Sunny</u>		Temp. Low: <u>40</u> °
INSPECTOR:		Contractor:		
Time Arrived: <u>8:55 a.m.</u> Time Left: <u>3:00 p.m.</u>		Time Arrived: <u>7:30 a.m.</u> Time Left:		
<p>1. General Remarks and Work Accomplished:</p> <p>Set up GPS on CPT # 7320 and checked into Hub at 21+00 # 7432</p> <p>9:30 a.m. = # 7441 grade check. 0.02 High per plan grade of 0.17'.</p> <p># 7442 = Top of 8" plastic tile. Station = 18+36 (N. side trench).</p> <p># 7444 = Top of 6" VCP. Station 19+98.6</p> <p># 7445 = grade check = on plan grade.</p> <p># 7447 = grade check = .05 low per plan grade of 0.17'.</p> <p># 7449 = grade check = .02 low per plan grade.</p> <p># 7450 = ground shot above a 6" VCP.</p> <p># 7451 = grade check = 0.09 low per plan grade of 0.17'.</p> <p>Bedding gravel used, station = 19+68 to 20+12 = 44'</p> <p>21+54.8 to 22+43.4 = 88.6'</p>				
<p>2. Changes or Extra Work Ordered: Begin installing 15" rcp = # 7439 Station = 18+54.8</p> <p>End installing 15" rcp = # 7451 Station = 21+76</p> <p style="text-align: right;"><u>321.2</u></p>				
3. Test Samples Taken:				
4. Visitors to Site:				
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:				
6. Attachments (total sheets attached <u>0</u>):				

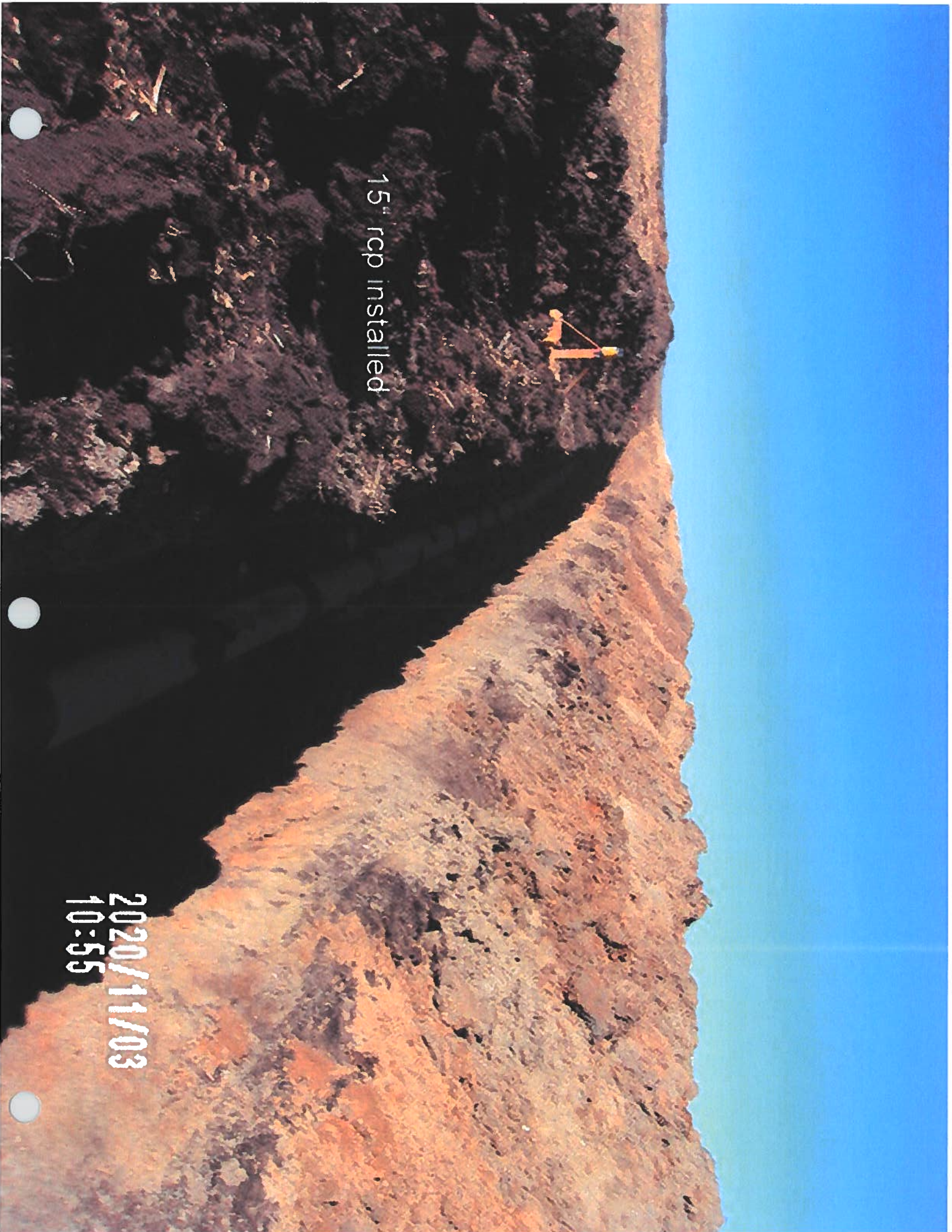


15 rcp laid out for installation

2020/11/03
10:55

15" rcp installed

2020/11/03
10:55





gravel bedding installed

2020/11/03
10:56



Leveling gravel bedding

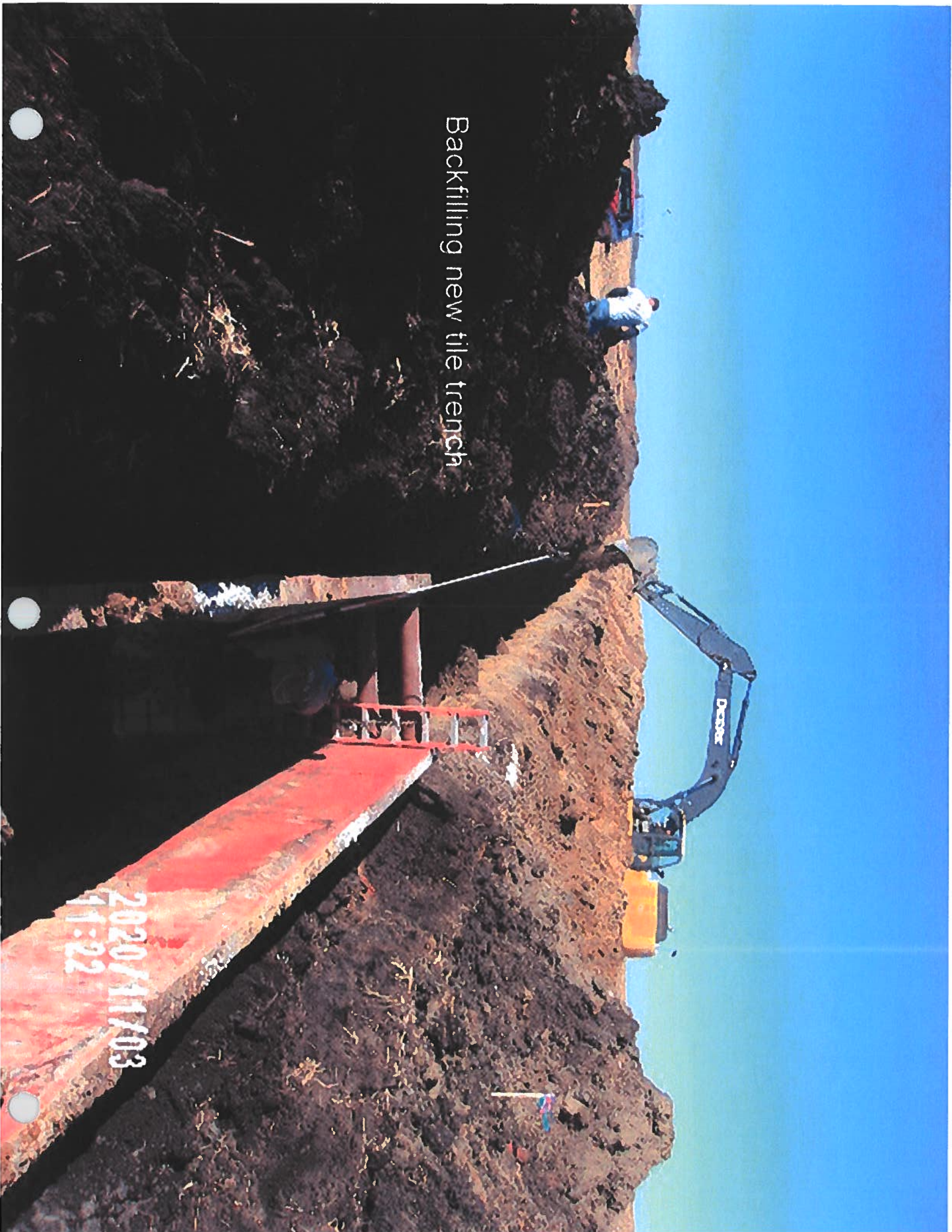
2020/11/03
11:06

Pulling trench box

2020/11/03
11:22



Backfilling new tile trench



Project Diary

Project: <u>Hardin County DD # 9</u>			
CGA PN: <u>6735.1</u>	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/> <u>Lee G.</u>
Contractor: <u>Gehrke Construction</u>		Date: <u>11-4-20</u>	
Superintendent: <u>Justin Vaughn</u>	Weather Conditions: <u>Clear - Sunny</u>	Precip.: <u>- "</u>	Temp. Hi: <u>°</u> Temp. Low: <u>60 °</u>
INSPECTOR: Time Arrived: <u>8:30 a.m.</u> Time Left: <u>4:55 p.m.</u>		Contractor: Time Arrived: <u>7:30 a.m.</u> Time Left:	
<p>1. General Remarks and Work Accomplished:</p> <p>8:30 a.m. = set up GPS on CPT # 7320. checked into Hub at 24+00 8:53 a.m. = # 7453 grade check. 0.03' High per plan grade 0.178 9:18 a.m. = Crew hit a sand pocket and began using bedding rock. 10:12 a.m. = # 7456 grade check. 0.08' High per plan grade of 0.178. 10:46 a.m. = Crew hit a sand pocket, began using bedding rock. 11:02 a.m. = # 7459 grade check. 0.04' high per plan grade of 0.178. 12:46 p.m. = crew hit a sand pocket. Began using bedding rock. 12:53 p.m. = # 7462 grade check. 0.01' high per plan grade of 0.178 2:47 p.m. = # 7464 grade check. 0.02' low per plan grade of 0.178 3:45 p.m. = Crew plugged down stream side of Existing main tile, existing lateral #1 and # 2 on west side of railroad with water stop grout. 4:00 p.m. = Crew continued excavating for new 15" RCP. Foreman had</p> <p>2. Changes or Extra Work Ordered: to cover already exposed laterals to be able to excavate for new 15" RCP. 4:50 pm = # 7465 grade check (last Pt. for day). on plan grade. Last Pt # from previous day = # 7451 station 21+76</p> <p>3. Test Samples Taken: Last Pt # shot today = # 7465 station <u>25+29.3</u> <u>353.3</u></p> <p>4. Visitors to Site:</p> <p>5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:</p> <p>6. Attachments (total sheets attached <u>0</u>):</p>			



Ran into sand pocket
while laying new 15" rcp

2020/11/04
10:38



Placing bedding rock

2020/11/04
11:07



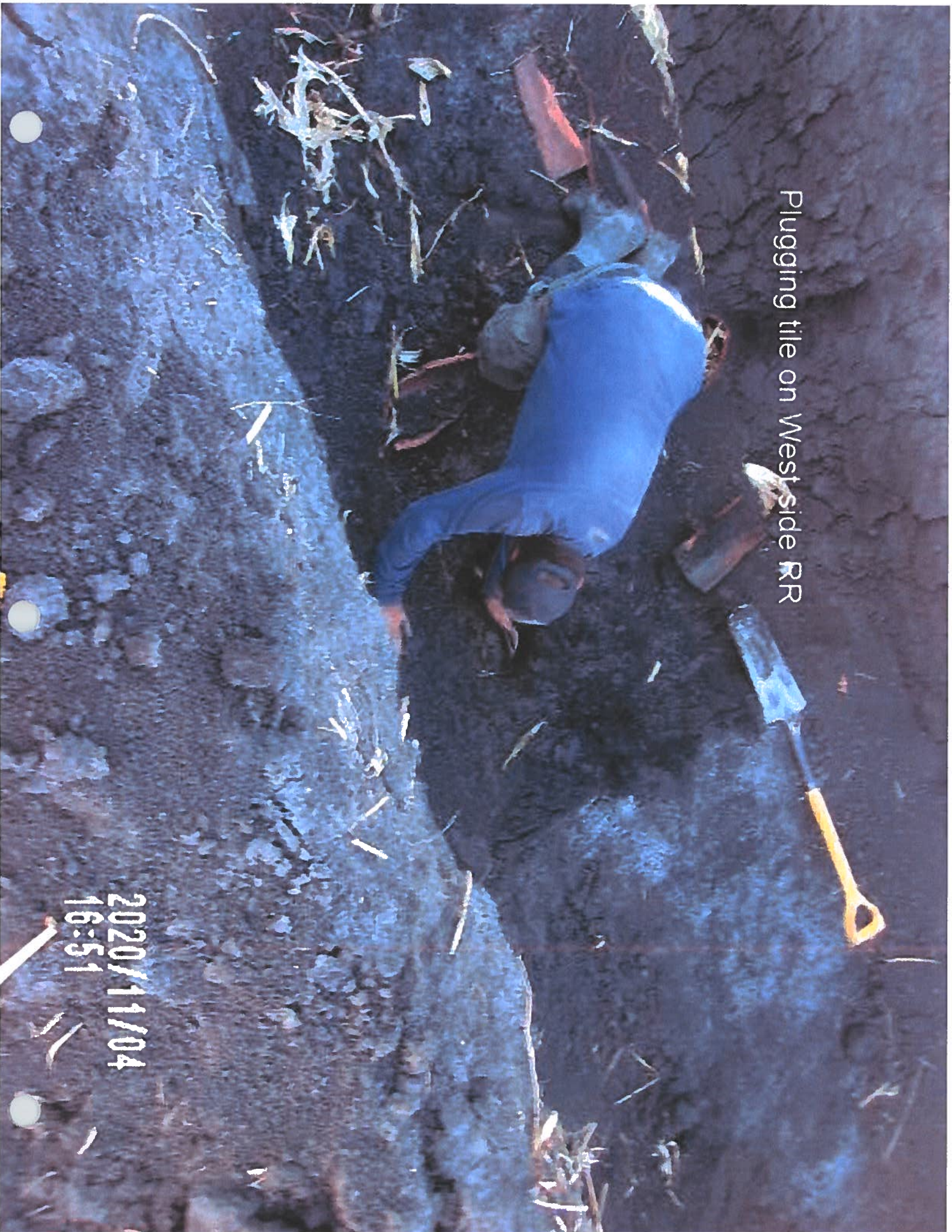
Bedding rock placed in bottom trench

2020/11/04
14:47

Tile plugged on West side RR

2020/11/04
16:48

Plugging tile on Westside RR



2020/11/04
16:51

Tile plugged

2020/11/04
16:55





Backfilling previous excavations
to continue placing 15" rcp to structure location

2020/11/04
17:23

Project Diary

Project:			
CGA PN: 6735.1	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
Contractor:		Date: 11-5-2020	
Superintendent:	Weather Conditions: Sunny	Precip.: 0 "	Temp. Hi: 85 ° Temp. Low: °
INSPECTOR: Time Arrived: 9:30 Time Left: 5:00		Contractor: Time Arrived: 7:00 Time Left:	
<p>1. General Remarks and Work Accomplished:</p> <p>9:30 - arrived at site, contractor had set Junction structure, Approx 23' west of RR Fence.</p> <p>10:30 - plugged existing VCP tile on east side of RR tracks</p> <p>10:35 - talked to Lee, adjust J.S. to be buried with Bolted down MH.</p> <p>1:00pm - concrete truck showed up poured CONC. collar at J.S. and band.</p> <p>4:00pm - connected Lot 1, 2 + main to J.S.</p>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site: None			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

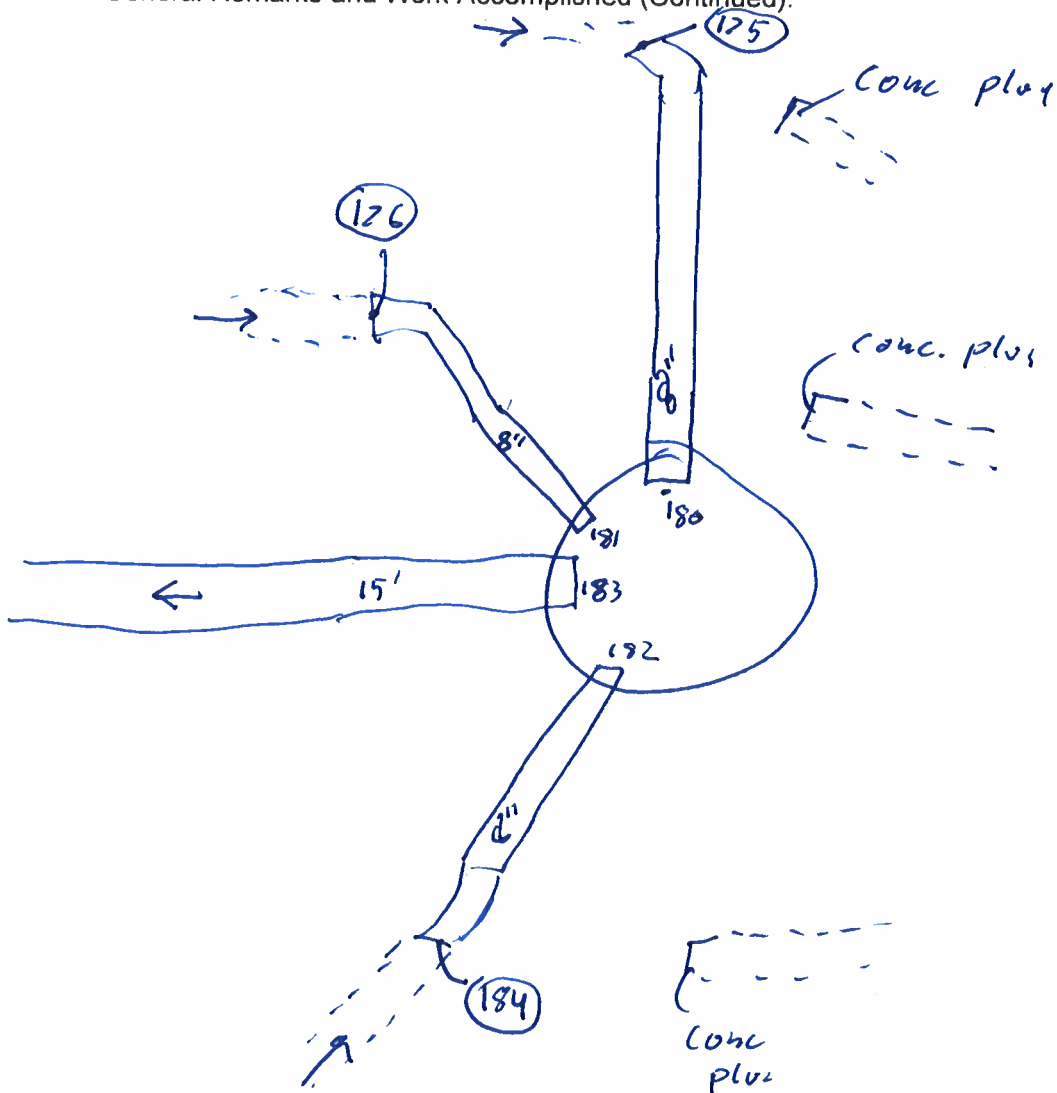
Project Diary (continued)

CGA PN: 6335.1

Report
No.

Date: 11-5-20

1. General Remarks and Work Accomplished (Continued):











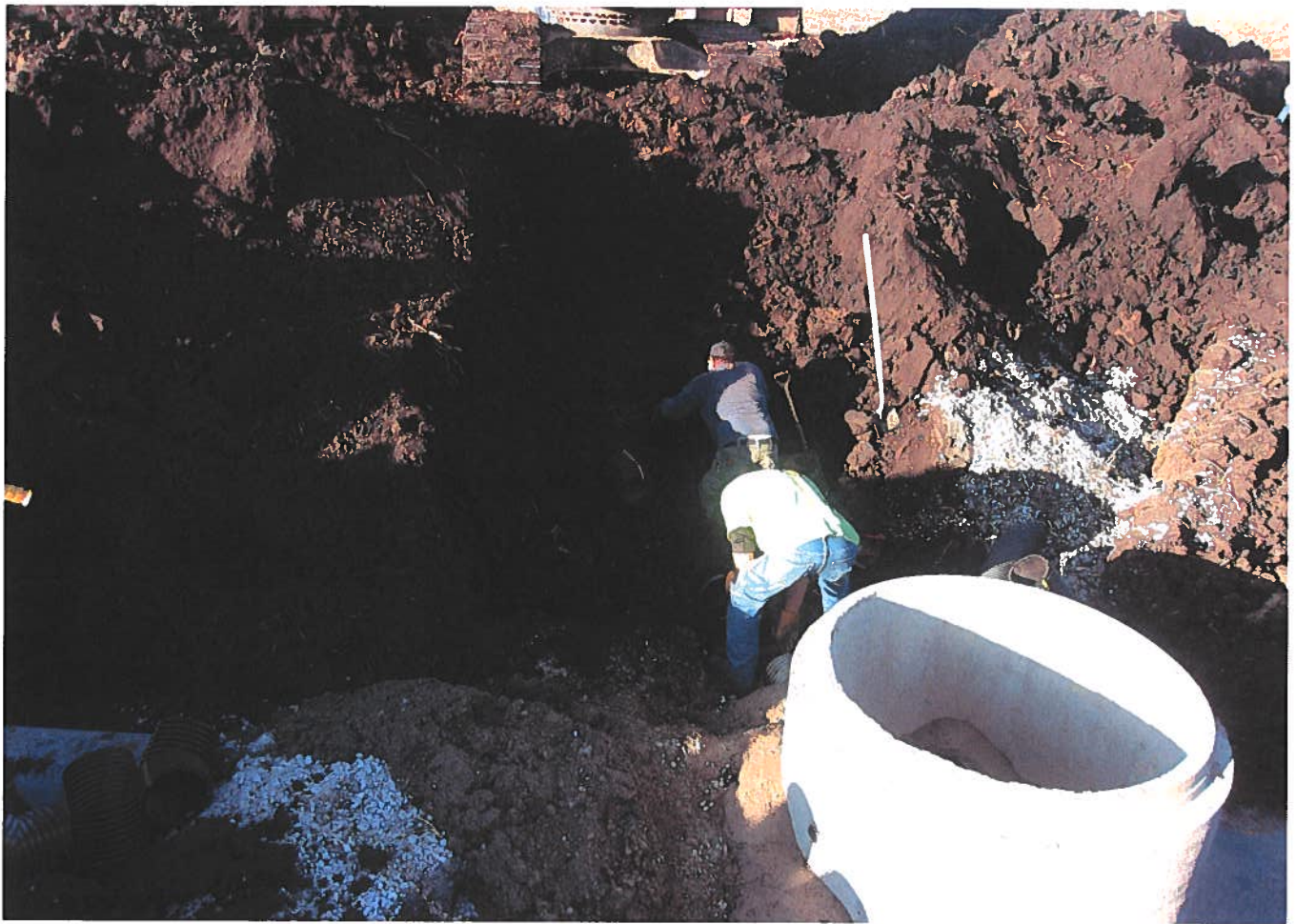
















Project Diary

Project:			
CGA PN: 6735.1	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
Contractor:		Date: 11-6-20	
Superintendent:	Weather Conditions: Sunny, windy	Precip.: "	Temp. Hi: 85 ° Temp. Low: 62 °
INSPECTOR: Time Arrived: 9:45 Time Left: 3:15		Contractor: Time Arrived: 9:45 Time Left:	
<p>1. General Remarks and Work Accomplished:</p> <p>arrived on site, contractor was had already placed manhole on J.S. and Bolted down H.H. lid to O.G.</p> <p>connected 3 tile to new main tile, 8" SW HDPE (7480), VCP 6" tile (7484) 6" VCP (7486), plus 3 conc. pluv. (7488), (7485), & (7482)</p> <p>contractor started to place Rip-Rap at out let. placed geo fabric down first</p>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site:			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

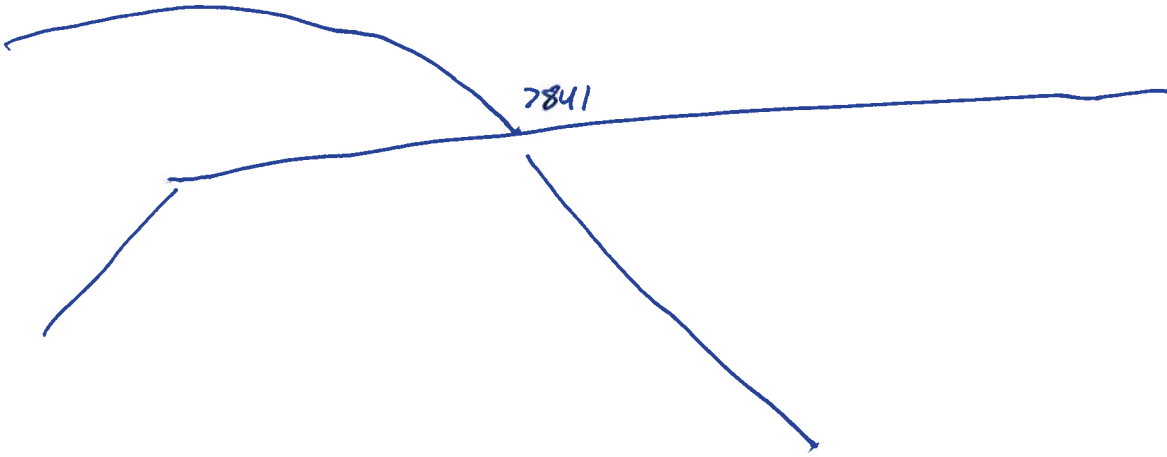
Project Diary (continued)

CGA PN: 67351

Report
No.

Date:

1. General Remarks and Work Accomplished (Continued):





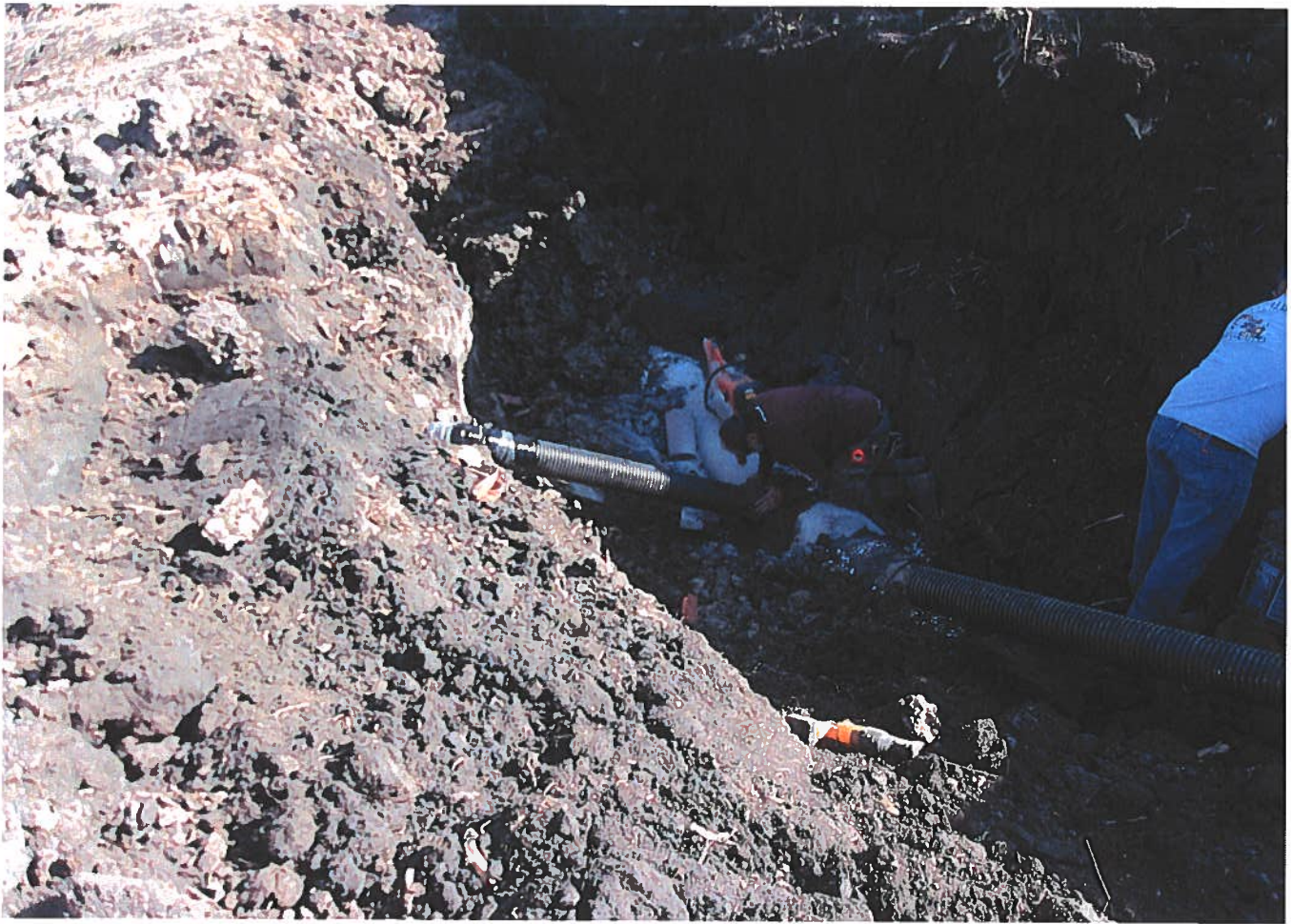


















Project Diary

Project: <u>Hardin County DD #9</u>		Days Charged:		Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
CGA PN: <u>6735.1</u>				Date: <u>11-9-20</u>	<u>Lee G.</u>
Contractor: <u>Gehrke Construction</u>		Weather Conditions:		Precip.: <u>"</u>	Temp. Hi: <u>°</u>
Superintendent: <u>Justin Vaughn</u>					Temp. Low: <u>°</u>
INSPECTOR:		Contractor:			
Time Arrived: <u>9:13 a.m.</u>		Time Left: <u>9:50 a.m.</u>		Time Arrived: <u>-</u> Time Left: <u>-</u>	
1. General Remarks and Work Accomplished:					
<p><u>9:13 a.m. = Entire job site had been ripped.</u></p> <p><u>Took pictures of rebuilt terraces and outlet.</u></p> <p><u>Punch list.</u></p> <p><u>1. Seed Terraces</u></p> <p><u>2. Repair Fence</u></p> <p><u>Rodent guard was installed.</u></p> <p><u>Rip Rap at outlet placed</u></p> <p><u>Returned to office</u></p>					
2. Changes or Extra Work Ordered:					
3. Test Samples Taken:					
4. Visitors to Site:					
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:					
6. Attachments (total sheets attached <u>0</u>):					



Reshaped terrace

2020/11/09
10:35



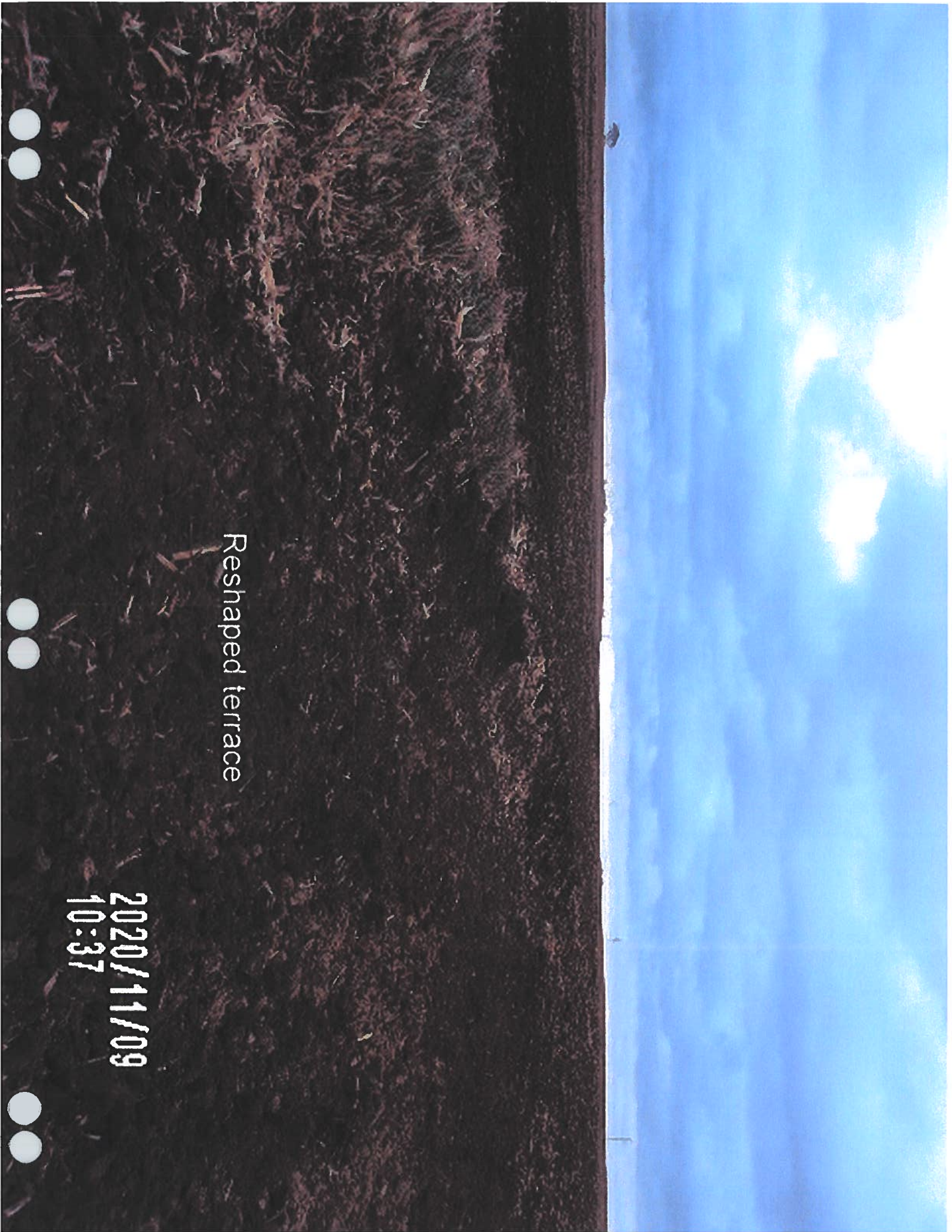
Reshaped terrace

2020/11/09
10:35



Reshaped terrace

2020/11/09
10:36

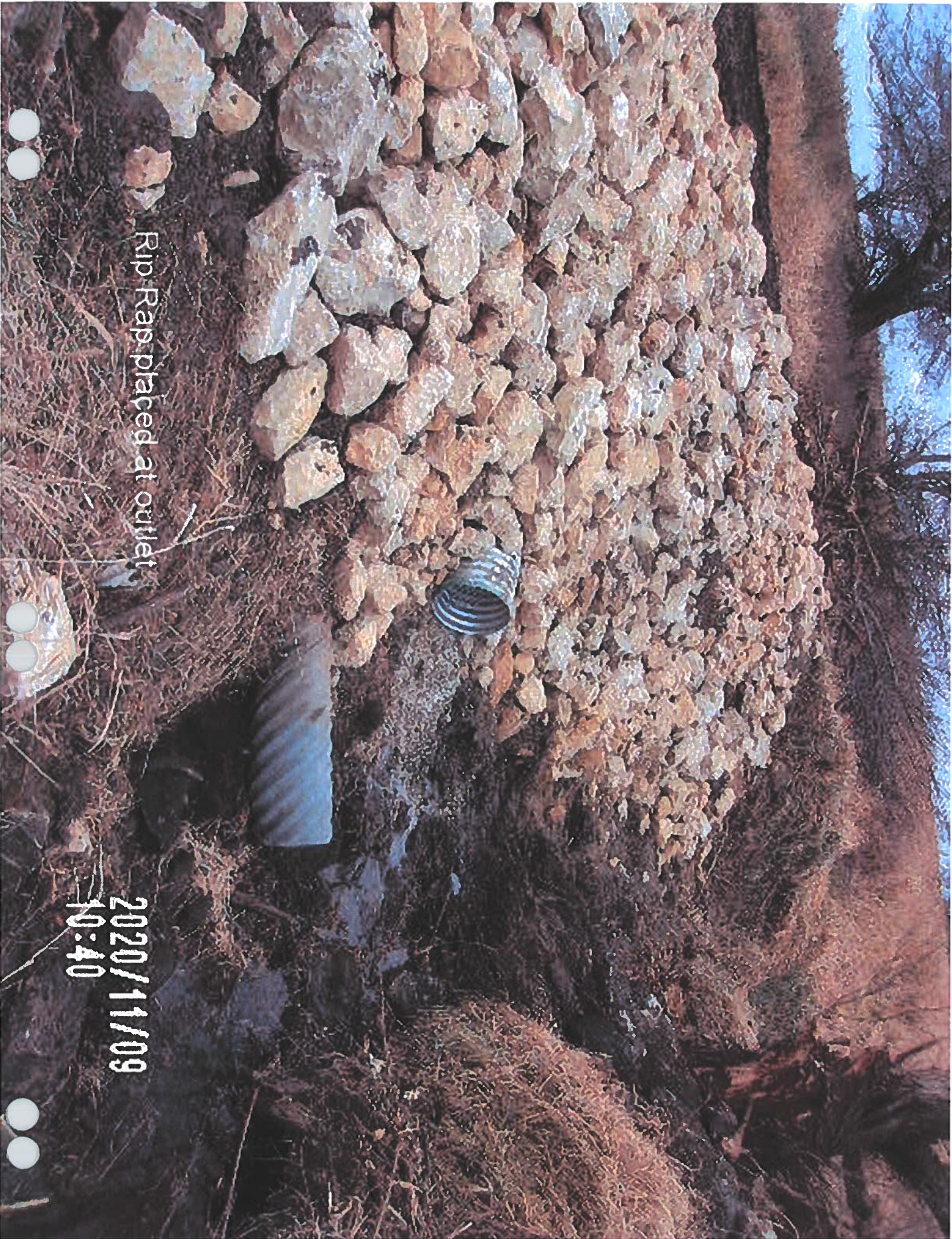


Reshaped terrace

2020/11/09
10:37

Rip Rap placed at outlet

2020/11/09
10:40





Rip Rap placed at outlet

2020/11/09
10:40

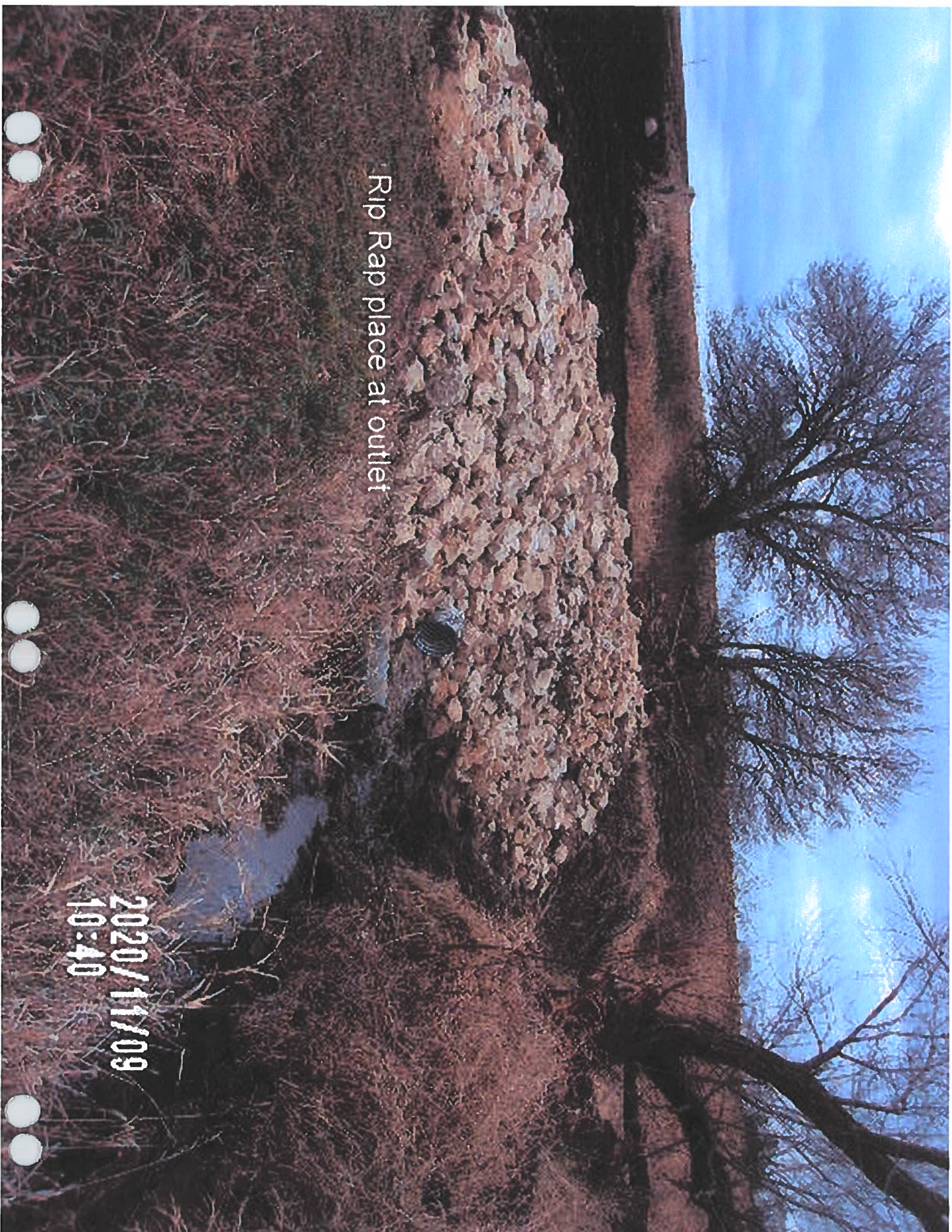


Rip Rap placed at outlet

2020/11/09
10:40

Rip Rap place at outlet

2020/11/09
10:40



Project Diary

Project: <u>Hardin County DD # 9</u>			
CGA PN: <u>6735.1</u>	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
Contractor: <u>Oehrke Construction</u>		Date: <u>12-15-20</u>	<u>Lee G.</u>
Superintendent: <u>Justin Vaughn</u>	Weather Conditions: <u>cloudy - Cool</u>	Precip.: <u>- "</u>	Temp. Hi: <u>°</u> Temp. Low: <u>°</u>
INSPECTOR: Time Arrived: <u>10:51 a.m.</u>	Time Left:	Contractor: Time Arrived: <u>-</u>	Time Left: <u>-</u>
1. General Remarks and Work Accomplished: <u>Punch list.</u> <u>10:51 a.m. : Drove out to 1st East fenceline. Fence had not been replaced where new tile crossed fenceline.</u> <u>seeding of back slope of terraces needs to be done.</u>			
2. Changes or Extra Work Ordered:			
3. Test Samples Taken:			
4. Visitors to Site:			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done:			
6. Attachments (total sheets attached <u>0</u>):			

1,3618658.288,4931347.715,1162.486,PP
2,3618728.603,4931303.576,1162.106,FE
3,3618723.499,4931323.978,1161.577,COMMON 8005
4,3624567.908,4967262.956,1167.807,CP 3/4 .5DOWN
5,3624592.686,4967215.376,1167.362,PP +1.00
6,3624567.564,4967256.476,1168.164,EOG
7,3624569.317,4967234.534,1167.844,EOG
8,3625622.767,4965936.349,1136.883,FL BEEHIVE
9,3625620.790,4965936.681,1136.827,FL BEEHIVE
10,3625613.566,4965935.578,1133.136,FL MAIN
11,3625619.398,4965935.964,1134.391,FL 12"
12,3625560.195,4965862.448,1132.883,FL MAIN
13,3625557.027,4965857.455,1132.956,FL MAIN
14,3625532.228,4965820.687,1132.959,FL MAIN
15,3625531.158,4965819.038,1133.012,FL MAIN
16,3625030.486,4961879.554,1119.906,fl 24" cmp
17,3625081.210,4961887.016,1126.795,gs locate above tile
18,3625116.496,4961907.064,1127.124,gs locate above tile
19,3625150.791,4961931.117,1127.720,gs locate above tile
20,3625182.225,4961950.965,1127.790,gs locate above tile
21,3625212.638,4961972.261,1128.024,gs locate above tile
22,3625235.068,4961995.831,1127.330,gs locate above tile
23,3625255.952,4962025.290,1127.166,gs locate above tile
24,3625258.726,4962030.369,1127.287,gs locate end camera tile collapse
25,3625222.644,4961979.792,1123.802,gs 2.0' dia blow out
26,3625261.916,4962032.767,1125.027,gs 4.0' dia blow out
27,3625029.867,4961960.328,1131.506,fence e
28,3625021.107,4961961.555,1131.254,fence e-w
29,3625032.016,4961959.460,1131.713,fence s&w
30,3625043.159,4961889.932,1126.970,fence e-w
31,3625045.173,4961877.371,1125.552,fence e-w
32,3625045.319,4961877.300,1129.047,top wood weir
33,3625046.440,4961867.243,1129.007,top wood weir
34,3625046.663,4961868.365,1125.304,top wood weir
35,3625051.487,4961847.681,1125.224,top wood weir
36,3625051.178,4961848.007,1129.003,top wood weir
37,3625053.323,4961835.321,1129.093,top wood weir
38,3625284.333,4962063.671,1127.878,gs above tile locate
39,3625316.492,4962092.148,1128.231,gs above tile locate
40,3625347.685,4962114.195,1128.701,gs above tile locate
41,3625382.117,4962134.464,1129.286,gs above tile locate
42,3625412.738,4962161.505,1129.912,gs above tile locate
43,3625432.631,4962193.584,1130.305,gs above tile locate
44,3625436.858,4962234.667,1129.889,gs above tile locate
45,3625430.389,4962277.497,1130.429,gs above tile locate
46,3625422.136,4962318.822,1130.768,gs above tile locate
47,3625429.313,4962359.213,1131.153,gs above tile locate
48,3625441.416,4962397.650,1131.495,gs above tile locate
49,3625454.298,4962435.835,1131.879,gs above tile locate

50,3625467.017,4962475.009,1132.493,gs above tile locate
51,3625479.868,4962512.713,1132.536,gs above tile locate
52,3625491.930,4962551.113,1133.062,gs above tile locate
53,3625494.430,4962593.152,1133.834,gs above tile locate
54,3625492.429,4962607.731,1133.665,n side 4" pvc stand pipe
55,3625490.903,4962628.612,1136.272,gs above tile locate
56,3625487.722,4962665.483,1139.367,gs above tile locate
57,3625483.602,4962704.768,1134.578,gs above tile locate
58,3625482.510,4962711.988,1135.475,n side 4" pvc stand pipe
59,3625478.034,4962738.971,1135.586,gs tile locate end camera protruding tile
60,3625482.141,4962712.517,1135.576,gs field edge
61,3625484.325,4962703.270,1134.338,gs ditch
62,3625485.978,4962698.637,1133.600,fl ditch
63,3625487.228,4962693.659,1134.373,gs ditch
64,3625486.069,4962678.952,1138.670,gs shoulder
65,3625486.704,4962672.626,1139.089,eog
66,3625490.273,4962642.413,1139.036,eog
67,3625489.045,4962658.054,1139.419,clr gravel
68,3625490.154,4962637.388,1138.613,gs shoulder
69,3625490.273,4962623.379,1134.415,gs ditch
70,3625490.986,4962616.252,1133.600,fl ditch
71,3625491.844,4962611.484,1134.046,gs @ row
72,3625488.653,4962599.729,1134.498,gs field
73,3625491.931,4962598.215,1134.238,gs grasswaterway
74,3625488.947,4962563.165,1133.854,gs grasswaterway
75,3625522.055,4962557.786,1132.944,gs grasswaterway
76,3625531.242,4962594.974,1133.285,gs grasswaterway/field/ditch
77,3625461.585,4962176.455,1129.118,gs 2.0' dia blow out
78,3625264.093,4962038.818,1122.259,fl 18" clay tile
79,3625260.859,4962033.304,1122.157,fl 18" clay tile
80,3625268.680,4962045.122,1127.568,gs above tile
81,3625258.500,4962029.158,1127.281,gs above tile
82,3625476.902,4962742.890,1135.593,gs above tile
83,3625474.421,4962754.741,1135.880,gs above tile
84,3625475.702,4962747.447,1131.128,top 18" clay tile (1.62'toptofl)
85,3625476.098,4962745.458,1131.106,top 18" clay tile (1.60'toptofl)
86,3625018.202,4962610.669,1144.963,fence w&s
87,3626305.209,4962681.126,1162.146,34 IR 0.3'D
88,3624215.093,4967258.425,1164.084,CL DRIVE 17938 I AVE EOG
89,3625462.386,4962829.187,1136.836,GS TILE LOCATE END CAMERA
90,3634553.729,4968728.662,1181.518,HC GPS MON 8024
91,3625116.368,4961910.976,1127.365,GS
92,3625029.114,4961885.705,1119.622,GS
93,3625068.815,4961894.798,1122.000,RCP TOP18"
94,3625076.031,4961896.825,1122.067,RCP TOP18"
95,3625068.288,4961902.829,1127.171,GS
96,3625083.785,4961898.912,1122.128,RCP TOP18"
97,3625091.351,4961901.097,1122.279,RCP TOP18"
98,3625099.190,4961903.337,1122.311,RCP TOP18"

99,3625107.010,4961905.720,1122.371,RCP TOP18"BEND
 100,3625113.367,4961909.498,1122.477,RCP TOP18"
 101,3625118.220,4961907.787,1122.281,TOP 6"CONC LAT LT
 102,3625119.419,4961914.902,1122.508,RCP TOP18"
 103,3625125.313,4961920.261,1122.486,RCP TOP18"
 104,3625131.421,4961925.535,1122.588,RCP TOP18"
 105,3625133.060,4961920.271,1122.394,TILE TOPOLDCLAY
 106,3625137.502,4961930.752,1122.699,RCP TOP18"
 107,3625143.677,4961935.903,1122.729,RCP TOP18"
 108,3625149.889,4961940.955,1122.843,RCP TOP18"
 109,3625156.091,4961945.957,1122.857,RCP TOP18"
 110,3625150.394,4961931.446,1122.033,TILE TOP6"CLAY
 111,3625162.580,4961950.643,1122.987,RCP TOP18"
 112,3625164.044,4961951.580,1121.234,FL
 113,3625166.016,4961940.618,1121.043, FL CLAY
 114,3625168.940,4961955.657,1123.045,RCP TOP18"
 115,3625175.304,4961960.550,1123.020,RCP TOP18"
 116,3625181.653,4961965.401,1122.959,RCP TOP18"
 117,3625187.973,4961970.255,1123.042,RCP TOP18"
 118,3625194.464,4961975.207,1123.142,RCP TOP18"
 119,3625200.749,4961979.962,1123.213,RCP TOP18"
 120,3625207.134,4961984.828,1123.193,RCP TOP18"
 121,3625213.638,4961989.672,1123.294,RCP TOP18"
 122,3625219.967,4961994.688,1123.320,RCP TOP18"
 123,3625226.127,4961999.676,1123.357,RCP TOP18"
 124,3625029.797,4961884.918,1119.760,FL 24"ALUM CMP
 125,3625030.128,4961885.081,1121.783,CMP TOP 24"ALUM
 126,3625068.995,4961894.803,1122.078,CMP TOP 24"ALUM
 127,3625232.763,4962005.346,1123.408,RCP TOP18"
 128,3625238.895,4962010.616,1123.415,RCP TOP18"
 129,3625244.274,4962015.565,1123.529,RCP TOP18"
 130,3625249.398,4962022.714,1123.541,RCP TOP18"
 131,3625253.937,4962029.435,1123.591,RCP TOP18"
 132,3625258.553,4962036.140,1123.659,RCP TOP18"
 133,3625262.525,4962042.644,1123.809,RCP TOP18"
 134,3625269.125,4962058.877,1125.283,CLAY 12" TILE
 135,3625434.242,4962209.242,1119.906,5+40.000 C
 136,3625435.266,4962219.189,1119.906,5+50.000 C
 137,3625469.009,4962480.855,1119.906,8+20.000 C
 138,3625481.769,4962518.763,1119.906,8+60.000 C
 139,3625268.618,4962048.585,1123.934,RCP TOP18"
 140,3625274.227,4962054.185,1123.952,RCP TOP18"
 141,3625279.822,4962059.603,1124.083,RCP TOP18"
 142,3625068.779,4961895.608,1122.611,CONC COLLAR
 143,3625115.993,4961910.155,1122.741,CONC COLLAR
 144,3625119.129,4961906.619,1122.684,CONC COLLAR
 145,3625146.349,4961936.519,1122.414,CONC COLLAR
 146,3625151.894,4961930.818,1122.576,CONC COLLAR
 147,3625244.660,4962016.297,1123.989,CONC COLLAR

148,3625262.591,4962042.320,1124.365,CONC COLLAR
149,3625265.712,4962047.111,1124.216,CONC COLLAR
150,3625280.013,4962059.790,1125.149,CONC COLLAR
151,3625435.336,4962205.622,1124.989,fl 18" clay tile
152,3625437.369,4962217.044,1125.080,fl 18" clay tile
153,3625435.283,4962205.633,1126.710,RCP TOP18"
154,3625436.572,4962212.779,1126.725,RCP TOP18"
155,3625437.225,4962217.301,1126.750,RCP TOP18"
156,3625468.572,4962480.840,1127.398,fl 18" clay tile
157,3625482.195,4962521.230,1129.316,top 18" clay tile
158,3625477.723,4962739.981,1131.433,cmp top 20" -1.97 tfl
159,3625468.566,4962480.691,1129.056,RCP TOP18"
160,3625471.055,4962487.584,1129.176,RCP TOP18"
161,3625473.554,4962495.203,1129.290,RCP TOP18"
162,3625475.977,4962502.853,1129.401,RCP TOP18"
163,3625478.420,4962510.586,1129.388,RCP TOP18"
164,3625481.055,4962518.128,1129.401,RCP TOP18"
165,3625480.100,4962742.675,1130.836,hdpe top 12"
166,3625478.064,4962741.973,1130.582,tee lat north 12" hdpe top
167,3625264.283,4962048.102,1123.608,hdpe top 12"
168,3625262.798,4962049.981,1123.891,hdpe top 12"
169,3625263.620,4962051.981,1124.117,hdpe top 12"
170,3625269.463,4962059.667,1125.194,hdpe top 12" clay joint
171,3631013.132,4963175.102,1143.314,VCP PLUGGED
172,3631092.282,4963073.058,1142.349,HDP TOP 2
173,3631110.011,4963084.217,1142.894,HDP TOP 2
174,3631125.739,4963096.483,1143.580,HDP TOP 2
175,3631151.370,4963109.998,1144.116,VCP 7 TOP
176,3631100.411,4963068.042,1143.358,VCP 7 TOP
177,3631099.600,4963068.602,1143.319,HDPE 8 TOP
178,3631091.461,4963070.453,1142.424,HDPE 8 TOP
179,3631084.484,4963068.376,1142.627,HDPE 8 TOP
180,3631089.339,4963072.383,1141.624,HDPE 8 FL
181,3631088.926,4963071.441,1141.558,HDPE 8 FL
182,3631087.286,4963071.190,1141.702,HDPE 8 FL
183,3631088.216,4963071.039,1141.561,500 CONC 15 FL
184,3631066.421,4963049.713,1143.328,500 VCP 7 TOP
200,3631027.074,4963187.729,1145.774,gs wet spot
201,3630982.859,4963184.455,1146.159,gs wet spot
202,3630879.514,4963109.305,1146.853,gs wet spot
203,3630811.320,4963078.699,1146.150,gs wet spot
204,3630782.239,4963053.556,1146.082,gs wet spot
205,3630727.161,4962974.326,1147.250,gs wet spot
206,3630737.474,4962970.220,1148.240,fnl ne-sw
207,3630633.962,4962773.918,1151.424,fnl ne-sw
208,3630831.021,4962918.194,1149.150,fnl ne-sw
209,3631088.004,4963104.415,1147.846,fnl ne-sw
210,3631554.920,4963441.449,1151.313,fnl ne-sw
211,3632712.005,4964270.091,1164.104,gs wet spot

212,3632673.240,4964141.666,1162.044,gs wet spot
213,3632593.669,4964103.743,1160.592,gs wet spot
214,3632413.740,4963993.122,1158.076,gs wet spot
215,3632286.537,4963910.875,1157.067,gs wet spot
216,3632092.781,4963770.365,1155.748,gs wet spot
217,3631989.576,4963691.485,1155.031,gs wet spot
218,3631906.883,4963577.623,1153.958,gs wet spot
219,3631865.652,4963480.962,1153.624,gs wet spot
220,3631773.808,4963390.080,1152.367,gs wet spot
221,3631682.719,4963312.285,1151.587,gs wet spot
222,3631583.212,4963304.414,1150.992,gs wet spot
223,3631504.820,4963257.259,1150.570,gs wet spot
224,3631499.534,4963172.304,1150.262,gs wet spot
225,3631508.880,4963080.410,1150.449,gs wet spot
226,3631552.129,4962993.690,1149.857,gs wet spot
227,3631571.696,4962890.277,1151.158,gs wet spot
228,3631493.104,4962875.245,1151.208,gs wet spot
229,3631393.439,4962833.282,1149.851,gs wet spot
230,3631375.198,4962764.643,1149.949,gs wet spot
231,3631486.584,4962727.153,1150.673,gs wet spot
232,3631572.453,4962706.699,1150.885,gs wet spot
233,3631647.571,4962714.408,1151.434,gs wet spot
234,3631678.861,4962745.830,1151.519,gs wet spot
235,3631734.539,4962720.451,1151.354,gs wet spot
236,3631723.136,4962670.689,1151.362,gs wet spot
237,3631649.168,4962604.672,1150.678,gs wet spot
238,3631518.485,4962589.726,1150.454,gs wet spot
239,3631351.070,4962596.382,1150.135,gs wet spot
240,3631265.821,4962559.494,1150.130,gs wet spot
241,3631190.044,4962424.380,1150.164,gs wet spot
242,3631123.824,4962342.360,1150.069,gs wet spot
243,3631018.717,4962289.979,1150.699,gs wet spot
244,3630890.074,4962274.364,1151.332,gs wet spot
245,3630781.638,4962245.816,1152.480,gs wet spot
246,3630714.315,4962249.089,1152.007,gs wet spot
247,3630594.848,4962275.712,1151.381,gs wet spot
248,3630489.304,4962279.710,1151.237,gs wet spot
249,3630426.029,4962268.557,1151.401,gs wet spot
250,3630366.003,4962232.347,1151.954,gs wet spot
251,3630304.644,4962190.629,1153.296,gs wet spot
252,3630300.226,4962189.208,1153.355,fnl e-w
253,3630289.482,4962525.227,1149.042,fnl w-sw-ne
254,3630477.367,4962661.698,1150.160,fnl n-sw-ne
255,3631079.138,4963090.814,1147.852,gs prop ditch
256,3630982.194,4963023.074,1147.559,gs prop ditch
257,3630901.656,4962960.349,1147.630,gs prop ditch
258,3630802.180,4962880.534,1148.986,gs prop ditch
259,3630708.289,4962809.912,1149.480,gs prop ditch
260,3630755.519,4962757.769,1147.494,eow

261,3630618.360,4962742.832,1150.220,gs prop ditch
262,3630475.679,4962643.763,1149.377,gs prop ditch
263,3630383.364,4962572.529,1148.441,gs prop ditch
264,3630305.397,4962520.424,1148.651,gs prop ditch
265,3630258.527,4962484.423,1147.657,gs prop ditch
266,3630140.864,4962399.643,1148.731,gs prop ditch
267,3630096.119,4962366.967,1149.329,gs prop ditch
268,3629995.663,4962292.510,1148.757,gs prop ditch
269,3629883.515,4962213.501,1150.340,gs prop ditch
270,3629809.960,4962155.533,1147.410,gs prop ditch
271,3629760.472,4962118.977,1145.120,gs prop ditch
272,3629701.615,4962079.025,1144.265,gs prop ditch
273,3629634.098,4962031.485,1144.459,gs prop ditch
274,3629546.481,4961971.114,1143.303,gs prop ditch
275,3629458.992,4961908.670,1142.190,gs prop ditch
276,3629355.472,4961833.168,1141.060,gs prop ditch
277,3629288.077,4961784.327,1141.415,gs prop ditch
278,3629032.472,4961613.905,1147.825,fnl w-ne
279,3629377.935,4961865.411,1142.907,fnl sw-ne
280,3629586.543,4962014.477,1146.086,fnl sw-ne
281,3629834.180,4962194.767,1149.621,fnl sw-ne
282,3630003.407,4962318.082,1148.832,fnl sw-ne
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
 346,3630614.913,4963420.609,1145.835,GS TILE LOCATE
 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
 500,3630319.455,4960963.297,0.000,BEGIN TILE
 501,3630344.234,4961092.577,0.000,BEND
 502,3630409.169,4961196.450,0.000,BEND
 503,3630470.076,4961208.285,0.000,BEND
 504,3630544.528,4961230.310,0.000,BEND
 505,3630596.989,4961249.721,0.000,BEND
 506,3630664.031,4961273.580,0.000,BEND
 507,3630749.279,4961303.528,0.000,BEND
 508,3630794.479,4961322.000,0.000,BEND
 509,3630832.897,4961338.614,0.000,BEND
 510,3630873.005,4961361.299,0.000,BEND
 511,3630939.991,4961396.190,0.000,BEND
 512,3630995.298,4961430.039,0.000,BEND
 513,3631015.652,4961580.745,0.000,BEND
 514,3631020.416,4961924.501,0.000,BEND
 515,3631068.740,4962099.421,0.000,BEND

516,3631116.671,4962200.210,0.000,BEND
 517,3631154.417,4962279.105,0.000,BEND
 518,3631133.056,4962646.033,0.000,BEND
 519,3631082.553,4963080.673,0.000,END DRAIN TILE
 1000,3625017.390,4962657.209,1146.049,210 3/4IR .05DOWN
 1001,3625029.954,4961960.714,1131.714,546
 1002,3625031.685,4961958.973,1131.727,546
 1003,3625030.154,4961969.560,1131.797,324
 1004,3625029.548,4961995.440,1132.776,324
 1005,3625021.816,4961961.601,1131.443,324
 1006,3624993.540,4961967.562,1130.916,324
 1007,3625034.307,4961949.091,1130.282,324
 1008,3625040.798,4961908.694,1127.164,324
 1009,3625045.079,4961877.505,1125.553,324
 1010,3625045.238,4961877.064,1125.546,522 GS
 1011,3625045.360,4961877.180,1129.087,522 TOP WOOD
 1012,3625046.719,4961867.818,1129.045,522 TOP WOOD
 1013,3625046.759,4961867.029,1125.334,522 TOP WOOD
 1014,3625048.903,4961856.231,1125.174,522 TOP WOOD
 1015,3625050.675,4961848.412,1125.133,522 TOP WOOD
 1016,3625050.605,4961848.305,1129.065,522 TOP WOOD
 1017,3625053.053,4961836.093,1129.096,522 TOP WOOD
 1018,3625046.265,4961845.899,1128.735,522 TOP WOOD
 1019,3625051.946,4961831.063,1128.995,300
 1020,3625036.159,4961826.003,1127.640,300
 1021,3625032.893,4961816.643,1130.131,546
 1022,3625033.131,4961805.200,1131.143,324
 1023,3625034.215,4961803.838,1131.245,500 LN TO W
 1024,3625065.298,4961805.818,1130.506,300 CROPLN
 1025,3625050.827,4961785.674,1132.267,300 CROPLN
 1026,3625065.323,4961833.135,1127.581,300
 1027,3625063.685,4961852.471,1126.345,300
 1028,3625062.737,4961861.292,1125.598,300
 1029,3625060.437,4961877.899,1126.782,300
 1030,3625056.858,4961911.171,1127.334,300
 1031,3625054.506,4961936.730,1128.102,300
 1032,3625042.421,4961936.403,1129.784,300
 1033,3625066.022,4961957.856,1129.430,300 CROPLN
 1034,3625071.131,4961938.233,1128.573,300 CROPLN
 1035,3625091.944,4961940.716,1128.557,300 CROPLN
 1036,3625094.514,4961902.854,1127.290,300
 1037,3625098.332,4961877.286,1126.587,300
 1038,3625105.391,4961836.457,1128.477,300 CROPLN
 1039,3625152.592,4961845.593,1128.169,300 CROPLN
 1040,3625149.172,4961882.424,1126.971,300
 1041,3625147.197,4961902.390,1126.956,300
 1042,3625144.060,4961928.112,1127.700,300
 1043,3625140.677,4961956.790,1128.526,300 CROPLN
 1044,3625137.511,4961991.216,1129.160,300

1045,3625175.859,4962021.699,1129.639,300
1046,3625201.548,4961991.205,1128.607,300 CROPLN
1047,3625216.504,4961975.226,1127.974,300
1048,3625228.920,4961963.105,1127.553,300
1049,3625245.053,4961950.015,1128.842,300 CROPLN
1050,3625243.389,4961918.221,1128.971,300 CROPLN
1051,3625249.300,4961890.033,1128.958,300 CROPLN
1052,3625239.795,4961872.892,1127.719,300
1053,3625226.470,4961854.520,1128.009,300
1054,3625211.928,4961833.142,1128.821,300 CROPLN
1055,3625181.643,4961841.742,1128.459,300 CROPLN
1056,3625187.740,4961880.298,1127.414,300
1057,3625189.870,4961905.311,1127.250,300
1058,3625188.112,4961932.354,1127.424,300
1059,3625182.700,4961970.855,1128.478,300 CROPLN
1060,3625220.554,4962012.987,1128.478,300 CROPLN
1061,3625203.574,4962030.457,1129.422,300
1062,3625232.734,4962002.292,1127.476,300
1063,3625246.443,4961990.797,1127.601,300
1064,3625254.355,4961985.477,1128.590,300 CROPLN
1065,3625283.906,4961965.049,1129.512,300
1066,3625319.618,4962003.137,1130.244,300
1067,3625292.247,4962034.480,1128.656,300 CROPLN
1068,3625285.011,4962044.932,1127.872,300
1069,3625278.990,4962053.031,1127.745,300
1070,3625268.286,4962065.806,1128.650,300 CROPLN
1071,3625241.814,4962098.537,1130.291,300
1072,3625283.311,4962133.302,1130.040,300
1073,3625304.874,4962100.811,1128.922,300 CROPLN
1074,3625313.669,4962088.395,1128.258,300
1075,3625319.762,4962079.022,1128.229,300
1076,3625326.999,4962069.430,1129.115,300 CROPLN
1077,3625352.361,4962040.679,1130.772,300
1078,3625403.197,4962064.532,1131.494,300
1079,3625387.263,4962105.535,1129.688,300 CROPLN
1080,3625383.734,4962115.072,1128.715,300
1081,3625380.796,4962124.371,1128.711,300
1082,3625373.255,4962139.797,1129.546,300 CROPLN
1083,3625362.241,4962171.079,1130.807,300
1084,3625405.987,4962187.361,1130.846,300
1085,3625427.342,4962174.083,1130.205,300 CROPLN
1086,3625412.094,4962165.171,1130.193,300 CROPLN
1087,3625428.631,4962190.919,1130.629,300 CROPLN
1088,3625442.926,4962165.234,1129.616,300
1089,3625450.104,4962155.144,1129.400,300
1090,3625459.070,4962139.185,1130.424,300 CROPLN
1091,3625471.127,4962120.498,1131.182,300
1092,3625506.947,4962139.522,1131.595,300
1093,3625504.408,4962156.951,1131.374,300 CROPLN

1094,3625501.249,4962172.971,1130.919,300
 1095,3625499.380,4962184.387,1130.939,300
 1096,3625496.840,4962201.126,1131.324,300 CROPLN
 1097,3625477.678,4962200.871,1131.189,300 CROPLN
 1098,3625462.985,4962209.042,1130.855,300 CROPLN
 1099,3625450.680,4962209.493,1130.077,300
 1100,3625442.673,4962209.667,1129.961,300
 1101,3625429.582,4962210.879,1130.340,300 CROPLN
 1102,3625396.783,4962211.407,1131.647,300
 1103,3625389.531,4962257.060,1132.694,300
 1104,3625418.586,4962256.434,1131.086,300 CROPLN
 1105,3625431.851,4962255.964,1130.367,300
 1106,3625443.780,4962254.879,1130.284,300
 1107,3625455.841,4962254.465,1130.800,300 CROPLN
 1108,3625475.117,4962180.275,1130.473,300
 1109,3625456.064,4962166.152,1129.576,300
 1110,3625038.702,4961899.156,1126.709,323
 1111,3625028.376,4961911.768,1127.645,323
 1112,3625012.954,4961926.466,1128.494,323
 1113,3625024.427,4961939.847,1129.436,300
 1114,3625002.904,4961912.883,1124.044,300
 1115,3624997.377,4961902.236,1119.948,321
 1116,3625012.492,4961898.289,1120.901,321
 1117,3625024.025,4961890.041,1120.760,321
 1118,3625023.593,4961895.089,1121.866,501 DEAD ELM12"
 1119,3625027.229,4961888.003,1120.937,501 12"CHERRY
 1120,3625027.176,4961887.569,1120.891,501 6"HACK
 1121,3625032.737,4961885.744,1122.754,501 6"HACK
 1122,3625036.356,4961878.065,1121.826,501 6"BUCKBRUSH
 1123,3625032.853,4961874.267,1119.960,501 6"BUCKBRUSH
 1124,3625027.355,4961875.058,1118.839,300
 1125,3625030.583,4961879.567,1119.850,514
 1126,3625030.763,4961879.376,1121.819,513
 1127,3625026.271,4961880.796,1119.221,501 12"BOXELDER
 1128,3625035.735,4961880.384,1121.834,513
 1129,3625040.207,4961881.865,1123.161,300 BROKENCONC
 1130,3625042.005,4961876.993,1124.295,300 BROKENCONC
 1131,3625042.056,4961874.632,1123.927,501 4"PLUM
 1132,3625006.893,4961880.262,1120.119,323
 1133,3625005.989,4961878.933,1118.329,507
 1134,3625006.402,4961876.190,1118.520,507
 1135,3625007.047,4961874.462,1119.682,323
 1136,3625006.917,4961861.475,1120.869,300
 1137,3625007.488,4961851.771,1121.626,321
 1138,3625027.561,4961849.520,1121.067,321
 1139,3625032.456,4961856.381,1121.391,300
 1140,3625037.923,4961863.025,1119.851,507
 1141,3625025.544,4961872.966,1118.919,507
 1142,3625025.689,4961871.725,1120.463,323

1143,3625019.901,4961885.150,1120.728,323
 1144,3625020.722,4961883.214,1118.768,507
 1145,3624998.032,4961901.682,1120.037,321
 1146,3624991.133,4961900.109,1119.367,323
 1147,3624989.847,4961899.615,1117.602,507
 1148,3624987.905,4961898.047,1117.525,507
 1149,3624985.902,4961897.094,1119.989,323
 1150,3624975.358,4961884.166,1119.879,300
 1151,3624971.811,4961870.951,1120.625,321
 1152,3624993.900,4961880.364,1120.276,323
 1153,3624995.464,4961881.229,1118.000,507
 1154,3624996.433,4961882.837,1117.926,507
 1155,3624999.656,4961885.254,1119.702,323
 1156,3624988.591,4961849.135,1123.700,300 WASHOUT
 1157,3624995.000,4961839.058,1128.060,323
 1158,3625015.358,4961825.799,1129.489,323
 1159,3625028.616,4961819.055,1129.928,323
 1160,3625000.369,4961807.428,1130.218,300
 1161,3625043.096,4961867.316,1129.282,522 TOP WOOD
 2000,3625434.754,4962214.215,1119.906,5+45.000 C
 2001,3625473.849,4962495.053,1119.906,8+35.000 C
 3000,3628242.374,4967262.461,1148.695,300 FL
 3001,3628242.829,4967269.666,1151.366,323
 3002,3628237.525,4967317.174,1152.082,300
 3003,3628233.569,4967360.358,1152.601,300
 3004,3628229.782,4967402.579,1153.197,300
 3005,3628225.761,4967447.448,1152.698,300
 3006,3628220.842,4967498.458,1151.599,300
 3007,3628293.633,4967508.507,1149.866,300
 3008,3628298.793,4967458.092,1151.147,300
 3009,3628304.280,4967411.675,1152.526,300
 3010,3628306.507,4967364.337,1152.372,300
 3011,3628308.876,4967306.641,1150.603,300
 3012,3628310.444,4967270.432,1150.288,323
 3013,3628310.810,4967260.798,1147.046,300 FL
 3014,3628385.979,4967259.564,1146.537,300 FL
 3015,3628385.011,4967270.177,1149.225,323
 3016,3628383.521,4967300.503,1149.701,300
 3017,3628378.511,4967350.692,1151.484,300
 3018,3628376.068,4967378.454,1152.086,300
 3019,3628372.920,4967425.533,1150.919,300
 3020,3628368.749,4967471.141,1149.543,300
 3021,3628441.888,4967481.570,1148.687,300
 3022,3628448.192,4967419.000,1151.109,300
 3023,3628451.824,4967381.943,1152.765,300
 3024,3628453.935,4967363.091,1153.060,300
 3025,3628455.694,4967339.100,1152.443,300
 3026,3628457.857,4967295.857,1150.108,300
 3027,3628459.346,4967270.314,1149.643,323

3028,3628460.226,4967260.418,1145.903,300 FL
3029,3628541.443,4967259.632,1145.974,300 FL
3030,3628540.525,4967270.324,1149.596,323
3031,3628540.871,4967282.478,1149.595,300
3032,3628536.749,4967331.416,1151.678,300
3033,3628533.750,4967360.616,1152.352,300
3034,3628531.145,4967385.662,1151.702,300
3035,3628525.362,4967445.198,1148.412,300
3036,3628521.134,4967487.190,1147.024,300
3037,3628602.345,4967521.463,1145.232,300
3038,3628609.544,4967463.748,1146.685,300
3039,3628616.078,4967407.768,1148.698,300
3040,3628620.281,4967366.677,1149.968,300
3041,3628622.917,4967339.964,1150.043,300
3042,3628625.756,4967309.145,1149.267,300
3043,3628626.336,4967278.491,1148.224,300
3044,3628626.542,4967269.493,1148.367,323
3045,3628626.891,4967258.598,1145.090,300 FL
3046,3628700.516,4967258.676,1144.425,300 FL
3047,3628699.992,4967269.174,1146.599,323
3048,3628699.454,4967285.131,1146.594,300
3049,3628697.203,4967328.355,1147.259,300
3050,3628691.143,4967381.041,1147.375,300
3051,3628687.713,4967423.424,1146.981,300
3052,3628682.020,4967465.399,1146.239,300
3053,3628675.609,4967531.124,1145.035,300
3054,3628755.638,4967568.892,1145.087,300
3055,3628760.966,4967525.882,1145.774,300
3056,3628766.533,4967479.305,1146.859,300
3057,3628773.277,4967420.874,1147.045,300
3058,3628779.306,4967364.699,1146.242,300
3059,3628781.777,4967312.660,1145.866,300
3060,3628782.627,4967286.133,1145.731,300
3061,3628782.945,4967269.538,1145.963,323
3062,3628783.642,4967259.246,1144.292,300 FL
3063,3628852.536,4967259.830,1144.696,300 FL
3064,3628851.790,4967267.190,1146.424,323
3065,3628851.749,4967280.562,1145.833,300
3066,3628848.185,4967333.880,1145.703,300
3067,3628843.282,4967388.511,1146.108,300
3068,3628836.738,4967447.219,1146.918,300
3069,3628830.744,4967503.456,1147.201,300
3070,3628824.823,4967562.085,1146.464,300
3071,3628818.607,4967621.746,1145.959,300
3072,3628881.677,4967682.675,1145.797,300
3073,3628887.665,4967620.841,1146.212,300
3074,3628893.614,4967560.479,1146.751,300
3075,3628900.347,4967497.526,1146.874,300
3076,3628906.655,4967440.485,1146.465,300

3077,3628912.408,4967384.138,1146.431,300
3078,3628915.617,4967345.749,1146.429,300
3079,3628916.633,4967296.719,1146.964,300
3080,3628917.814,4967268.518,1147.978,323
3081,3628918.110,4967261.377,1146.036,300 FL
3082,3628979.590,4967261.730,1148.907,300 FL
3083,3628979.764,4967267.974,1150.565,323
3084,3628993.367,4967267.979,1151.936,323
3085,3628998.375,4967265.096,1151.324,300 FL
3086,3629000.207,4967292.128,1150.533,300 FL
3087,3628992.801,4967293.624,1151.220,323
3088,3628976.441,4967295.575,1149.134,300
3089,3628976.427,4967369.316,1148.405,300
3090,3628995.855,4967369.215,1150.479,323
3091,3629001.059,4967369.477,1149.545,300 FL
3092,3629001.226,4967455.668,1148.719,300 FL
3093,3628995.311,4967455.853,1150.089,323
3094,3628972.820,4967456.352,1148.317,300
3095,3628972.863,4967533.692,1148.392,300
3096,3628994.511,4967534.230,1149.826,323
3097,3629000.781,4967533.746,1147.976,300 FL
3098,3628751.221,4967209.942,1143.432,300 FL
3099,3628751.355,4967204.683,1144.851,323
3100,3628744.201,4967179.925,1144.629,300
3101,3628722.632,4967209.276,1143.122, TOP BEEHIVE
3102,3628210.812,4967262.879,1151.489, IRS 1/2 .3DEEP
3103,3628755.457,4967255.657,1143.780, FL RCP 18"
3104,3628756.054,4967218.116,1144.772, TOP RCP BURIED
3105,3628200.357,4967280.094,1151.117,300
3106,3628156.897,4967281.684,1150.971,300
3107,3628084.724,4967283.182,1150.835,300
3108,3628008.422,4967282.784,1150.805,300
3109,3627935.406,4967281.880,1150.636,300
3110,3627869.793,4967282.546,1151.173,300
3111,3627802.934,4967282.577,1151.464,300
3112,3627725.828,4967282.909,1151.299,300
3113,3627648.863,4967284.154,1151.209,300
3114,3627570.544,4967285.447,1151.665,300
3115,3627530.648,4967285.444,1151.850,300
3116,3627458.248,4967284.875,1151.622,300
3117,3627383.465,4967285.213,1151.414,300
3118,3627310.316,4967284.874,1150.836,300
3119,3627235.083,4967285.241,1149.532,300
3120,3627158.954,4967283.798,1148.409,300
3121,3627085.118,4967284.982,1147.391,300
3122,3627007.445,4967286.241,1146.364,300
3123,3626930.523,4967286.451,1145.798,300
3124,3626849.700,4967286.441,1145.830,300
3125,3626770.887,4967286.058,1146.522,300

3126,3626692.516,4967286.297,1147.862,300
3127,3626655.822,4967287.052,1148.192,300
3128,3626616.913,4967291.202,1147.767,300
3129,3626612.089,4967324.136,1147.534,300
3130,3626670.551,4967326.101,1147.881,300
3131,3626714.606,4967325.884,1147.279,300
3132,3626797.729,4967326.205,1146.286,300
3133,3626892.807,4967326.261,1145.879,300
3134,3626975.213,4967326.221,1146.083,300
3135,3627046.407,4967325.042,1146.891,300
3136,3627116.848,4967324.305,1148.097,300
3137,3627157.714,4967323.925,1148.781,300
3138,3627235.390,4967324.584,1150.196,300
3139,3627309.026,4967324.230,1151.647,300
3140,3627385.398,4967324.204,1152.170,300
3141,3627444.766,4967323.797,1152.247,300
3142,3627512.638,4967324.399,1152.678,300
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5125,3625166.413,4967260.143,1145.498,323 CL DR
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7200,3630318.481,4960963.009,1125.105,960 10" spiral 0.87'toptofl
7201,3630331.474,4960973.740,1129.299,300 tile locate
7202,3630353.846,4960988.449,1129.257,300 tile locate
7203,3630371.614,4961015.927,1130.037,300 tile locate
7204,3630386.157,4961060.869,1132.443,300 tile locate
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7206,3630418.294,4961147.401,1136.395,300 tile locate
7207,3630465.141,4961180.567,1137.244,300 tile locate
7208,3630512.773,4961188.414,1138.467,300 tile locate
7209,3630480.485,4961182.338,1139.323,300 field/terrace
7210,3630551.787,4961190.102,1138.029,300 tile locate
7211,3630311.645,4960961.487,1122.786,507 ditch
7212,3630314.260,4960963.263,1125.430,960 12" spiral 1.07'toptofl
7213,3630330.961,4960979.466,1129.358,300 tile locate
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7219,3630370.575,4961131.688,1132.868,300 tile locate
7220,3630370.210,4961157.733,1132.621,300 tile locate
7221,3630368.085,4961177.370,1133.395,300 tile locate wye connection 10" conc with
10"clay sw-ne
7222,3630386.808,4961196.715,1134.154,300 tile locate
7223,3630422.109,4961213.068,1134.906,300 tile locate
7224,3630481.269,4961222.149,1139.344,300 tile locate
7225,3630523.029,4961220.663,1138.063,300 tile locate
7226,3630478.478,4961221.290,1139.269,300 top terrace
7227,3630373.644,4961087.280,1132.594,300
7228,3630371.966,4961086.010,1128.955,513 se 10" 0.92'toptofl
7229,3630373.485,4961085.856,1128.808,513 e 10" 0.92'toptofl
7230,3630354.331,4961093.545,1131.283,300 tile locate
7231,3630342.343,4961106.939,1130.652,300 tile locate
7232,3630346.301,4961123.957,1131.185,300 tile locate
7233,3630357.397,4961153.918,1132.366,300
7234,3630358.024,4961155.758,1130.302,962 10" 0.94'toptofl
7235,3630321.280,4961250.170,1138.296,324 e-w
7236,3630325.407,4961054.173,1131.408,324 e
7237,3631087.556,4963082.915,1142.478,963 8" 0.74'TOPTOFL
7238,3631084.412,4963086.408,1142.458,963 8"
7239,3631183.374,4963026.932,1148.082,300 tile locate
7240,3631237.183,4963014.828,1148.351,300 tile locate
7241,3631095.442,4963073.700,1143.257,962 8" 0.73'toptofl
7242,3631099.644,4963068.995,1143.342,962 8" 0.73'toptofl
7243,3631103.220,4963065.228,1143.367,962 8" 0.73'toptofl

7244,3631106.331,4963062.336,1143.449,962 8" 0.73'toptofl
7245,3631111.984,4963057.780,1143.553,962 8" 0.73'toptofl
7246,3631117.896,4963053.287,1143.572,962 8" 0.73'toptofl
7247,3631249.567,4962662.998,1150.612,324 n side cut
7248,3631214.897,4962662.932,1150.544,324 s side cut
7249,3630532.112,4961189.744,1133.284,422 8" SWALL
7250,3630564.543,4961192.889,1137.916,300 tile locate
7251,3630540.482,4961190.473,1137.959,300
7252,3630610.065,4961196.354,1138.181,300 TILE LOCATE
7253,3630649.453,4961198.320,1138.669,300 TILE LOCATE
7254,3630688.295,4961200.917,1138.684,300 TILE LOCATE
7255,3630715.780,4961204.308,1139.002,300 TILE LOCATE
7256,3630753.839,4961209.788,1139.441,300 TILE LOCATE
7257,3630797.465,4961222.020,1142.433,300 TILE LOCATE
7258,3630799.750,4961223.118,1143.676,300 TOP TERRACE
7259,3630811.588,4961227.448,1142.617,300 TILE LOCATE
7260,3630533.379,4961219.833,1133.435,TILE TOP 10" CLAY 0.94'TOPTOFL
7261,3630557.030,4961221.387,1137.818,300 TILE LOCATE
7262,3630589.553,4961219.252,1138.026,300 TILE LOCATE
7263,3630621.631,4961217.593,1138.314,300 TILE LOCATE
7264,3630797.563,4961323.028,1143.546,300 TOP TERRACE
7266,3630338.306,4961136.723,1132.576,300 PROPOSED NEW TILE
7267,3630356.004,4961176.326,1133.734,300 PROPOSED NEW TILE
7268,3630380.246,4961204.293,1134.659,300 PROPOSED NEW TILE
7269,3630419.232,4961222.552,1135.086,300 PROPOSED NEW TILE
7270,3630332.919,4961107.762,1131.533,300 PROPOSED NEW TILE
7271,3630330.424,4961053.999,1129.801,300 PROPOSED NEW TILE
7272,3630313.858,4960970.489,1124.658,300 PROPOSED OUTLET
7273,3630311.800,4960952.455,1122.780,507 CREEK
7274,3631067.579,4963073.582,1143.168,962 7" 0.62'TOPTOFL
7275,3631067.258,4963066.286,1143.213,962 7" 0.62'TOPTOFL
7276,3631116.054,4963103.802,1143.780,962 7" 0.63'TOPTOFL
7277,3631120.315,4963104.348,1143.763,962 7" 0.62'TOPTOFL
7278,3630318.394,4961010.231,1124.658,300 PROPOSED NEW TILE END CMP
7279,3630364.741,4961159.201,1132.404,2+00 HUB
7280,3630346.097,4961067.884,1130.498,1+00 HUB
7281,3630328.807,4960968.746,1129.196,0+00 HUB
7282,3630596.409,4961252.945,1138.647,300 PROPOSED NEW TILE
7283,3630545.208,4961240.220,1137.669,300 PROPOSED NEW TILE
7284,3630479.600,4961231.881,1139.465,300 PROPOSED NEW TILE TOP TERRACE
7286,3630319.984,4961010.049,1124.658,300 FIELD/GRASS
7287,3630315.448,4960970.307,1124.658,300 FIELD/GRASS
7288,3630312.960,4960970.520,1125.774,513 18" 1.51'toptofl outlet
7289,3630317.905,4960990.133,1126.256,513 18"band 1.51'toptofl
7290,3630323.005,4961009.503,1126.494,513 18" 1.51'toptofl
7291,3630323.047,4961009.560,1126.520,510 15" 1.45'toptofl
7292,3630324.794,4961016.595,1126.515,510 15" 1.45'toptofl
7293,3630326.586,4961024.447,1126.630,510 15" 1.45'toptofl
7294,3630328.074,4961031.982,1126.779,510 15" 1.45'toptofl

7295,3630329.855,4961040.225,1126.930,510 15" 1.45'toptofl .75" gap
7296,3630330.996,4961048.121,1126.992,510 15" 1.45'toptofl 1" gap
7297,3630331.737,4961056.198,1127.156,510 15" 1.45'toptofl .5" gap
7298,3630332.433,4961064.199,1127.396,510 15" 1.45'toptofl 1.5" gap
7299,3630332.615,4961072.153,1127.416,510 15" 1.45'toptofl
7300,3630332.817,4961080.109,1127.653,510 15" 1.45'toptofl
7301,3630429.340,4961208.870,1135.103,3+00 hub
7302,3630332.868,4961087.750,1127.959,510 15" 1.45'toptofl
7303,3630332.864,4961096.073,1128.124,510 15" 1.45'toptofl
7304,3630333.078,4961103.946,1128.227,510 15" 1.45'toptofl
7305,3630333.349,4961112.161,1128.394,510 15" 1.45'toptofl
7306,3630333.574,4961120.245,1128.396,510 15" 1.45'toptofl
7307,3630333.818,4961128.190,1128.656,510 15" 1.45'toptofl .75" gap
7308,3630522.980,4961222.246,1138.027,3+95 hub
7309,3630621.135,4961274.414,1139.510,5+00 hub
7310,3631074.896,4963097.425,1147.594,300 locate lat 1 connection
7311,3630995.878,4963147.861,1145.870,700 locate
7312,3631011.901,4963160.900,1145.602,700 locate
7313,3631026.444,4963172.455,1145.789,700 locate
7315,3630333.851,4961136.229,1128.735,510 15" 1.45'toptofl 1" gap
7316,3630334.004,4961142.958,1128.902,510 15" 1.45'toptofl 4" gap bend collar
7317,3630367.836,4961184.917,1129.901,510 15" 1.45'toptofl
7318,3631020.437,4963167.219,1143.627,962 14"
7319,3631019.235,4963168.649,1143.729,962 14"
7320,3629833.288,4958947.762,1154.036,CPT 3/4IRS .3DEEP
7321,3630715.888,4961306.247,1140.839,6+00 hub
7322,3630474.383,4961239.784,1137.349,300 PROPOSED TILE
7323,3630521.833,4961255.774,1138.144,300 PROPOSED TILE
7324,3630569.126,4961271.750,1138.751,300 PROPOSED TILE
7325,3630616.518,4961287.777,1139.703,300 PROPOSED TILE
7326,3630382.778,4961203.880,1130.276,510 15" 1.45'toptofl 1" W 2.5" E gap collar
7327,3630389.031,4961208.740,1130.420,510 15" 1.45'toptofl 1" gap
7328,3630395.638,4961213.228,1130.564,510 15" 1.45'toptofl 2" gap
7329,3630402.723,4961217.099,1130.630,510 15" 1.45'toptofl 2.5" gap COLLAR
7330,3630410.226,4961220.074,1130.853,510 15" 1.45'toptofl 1" gap
7331,3630478.081,4961242.364,1139.482,300 top terrace
7332,3630417.924,4961222.612,1131.035,510 15" 1.45'toptofl
7333,3630445.105,4961236.290,1132.737,510 6" 0.54'toptofl
7334,3630445.597,4961228.211,1132.342,510 6" 0.54'toptofl
7335,3630433.224,4961227.430,1131.232,510 15" 1.45'toptofl
7336,3630663.704,4961304.613,1141.222,300 PROPOSED TILE
7337,3630711.102,4961320.466,1141.423,300 PROPOSED TILE
7338,3630758.540,4961336.400,1141.423,300 PROPOSED TILE
7339,3630806.086,4961352.401,1143.004,300 PROPOSED TILE
7340,3630798.568,4961349.944,1143.818,300 top terrace
7341,3630853.374,4961368.150,1141.558,300 PROPOSED TILE
7342,3630900.725,4961384.083,1141.282,300 PROPOSED TILE
7343,3630463.519,4961237.291,1131.939,510 15" 1.45'toptofl
7344,3630471.111,4961236.400,1132.821,962 5" 0.46'toptofl

7345,3630469.826,4961242.766,1133.134,962 5" 0.46'toptofl
7346,3630523.322,4961257.766,1135.506,421 4" sw perf squatted
7347,3630517.698,4961250.595,1135.111,421 4" sw perf squatted
7348,3630529.186,4961258.060,1135.453,421 4" sw perf
7349,3630509.426,4961251.907,1132.747,510 15" 1.45'toptofl
7350,3630538.667,4961257.023,1135.325,421 4" sw perf 0.3'toptofl
7351,3630517.709,4961249.705,1134.955,421 6" sw perf 0.53'toptofl
7352,3630524.601,4961257.005,1133.033,510 15" 1.45'toptofl
7353,3630810.767,4961338.069,1142.706,7+00 hub
7354,3630905.521,4961369.868,1141.509,8+00 hub
7355,3630607.855,4961286.311,1134.676,510 15" 1.45'toptofl
7356,3630614.675,4961288.665,1134.702,510 15" 1.45'toptofl grade change 1.85 TO .70
7357,3630660.639,4961304.790,1135.090,510 15" 1.45'toptofl
7358,3630469.741,4961242.449,1133.163,421 6" 45 snap coupler
7359,3630470.702,4961239.995,1132.021,421 8" inserta tee
7360,3630445.092,4961236.467,1132.894,421 8" dw nonperf
7361,3630924.596,4961424.848,1141.705,300 PROPOSED TILE
7362,3630951.247,4961470.415,1142.126,300 PROPOSED TILE
7363,3630976.340,4961513.664,1142.553,300 PROPOSED TILE
7364,3631001.535,4961556.807,1142.889,300 PROPOSED TILE
7365,3630445.869,4961231.522,1131.575,top lateral tie in hole in 15" rcp
7366,3630445.670,4961231.910,1132.004,421 8" 45 bend
7367,3630445.592,4961232.631,1132.183,421 8" split band coupler
7368,3630964.119,4961462.798,1142.048,9+00 hub
7369,3631014.601,4961549.222,1142.722,10+00 hub
7370,3630721.143,4961324.716,1135.571,510 15" 1.45'toptofl
7371,3630534.017,4961257.598,1135.299,421 4" sw perf
7372,3630526.923,4961257.161,1135.171,421 4" sw perf
7373,3630521.133,4961255.370,1135.040,421 4" sw perf
7374,3630782.368,4961344.815,1136.052,510 15" 1.45'toptofl
7375,3631034.380,4961852.763,1146.133,13+00 hub
7376,3631033.030,4961752.821,1144.990,12+00 hub
7377,3631031.605,4961652.842,1143.682,11+00 hub
7378,3630828.068,4961360.139,1136.265,510 15" 1.45'toptofl
7379,3630373.308,4961083.365,1128.731,510 10" 0.89'toptofl
7380,3630373.390,4961087.438,1128.847,510 10" 0.89'toptofl
7381,3630368.249,4961088.084,1129.278,510 10" 0.89'toptofl
7382,3630873.418,4961376.027,1136.667,510 15" 1.45'toptofl
7383,3630914.566,4961392.259,1138.243,962 10"
7384,3630907.303,4961383.619,1138.175,962 10"
7385,3630891.780,4961386.650,1139.016,421 4" sw perf
7386,3630903.796,4961386.434,1136.952,510 15" 1.45'toptofl COLLAR
7387,3630907.832,4961392.256,1136.944,510 15" 1.45'toptofl
7388,3630930.538,4961434.528,1137.257,510 15" 1.45'toptofl
7389,3630954.058,4961469.165,1139.636,421 4" sw perf
7390,3630953.625,4961477.172,1137.751,510 15" 1.45'toptofl
7391,3630976.286,4961519.126,1137.991,510 15" 1.45'toptofl
7392,3630999.881,4961561.319,1138.193,510 15" 1.45'toptofl
7393,3631015.677,4961589.220,1138.489,510 15" 1.45'toptofl collar

7394,3631023.123,4961591.340,1140.183,421 5" sw perf plugged
 7395,3631012.360,4961612.541,1140.447,421 5" sw perf
 7396,3631016.243,4961604.853,1138.583,510 15" 1.45'toptofl
 7397,3631016.453,4961637.119,1138.821,510 15" 1.45'toptofl
 7398,3631016.588,4961653.033,1138.946,510 15" 1.45'toptofl
 7399,3631016.716,4961717.139,1139.301,510 15" 1.45'toptofl
 7400,3631017.118,4961749.301,1139.548,510 15" 1.45'toptofl
 7401,3631079.800,4962039.340,1148.553,15+00 hub
 7402,3631017.804,4961805.365,1139.925,510 15" 1.45'toptofl
 7403,3631042.441,4961947.910,1147.324,14+00 hub
 7404,3631115.224,4962132.925,1149.741,16+00 hub
 7405,3630373.244,4961084.177,1128.755,421 dw 10"*10"*10" wye
 7406,3631018.246,4961845.588,1140.186,510 15" 1.45'top to fl grade change .7% to
 .19%
 7407,3631105.534,4962824.756,1147.810,300
 7408,3631096.569,4962924.432,1148.008,300
 7409,3631087.621,4963023.977,1148.625,300
 7410,3631085.306,4963047.444,1147.562,300
 7411,3631083.052,4963074.673,1148.052,300
 7412,3631018.650,4961917.821,1140.853,510 15" 1.45'top to fl collar
 7413,3631024.595,4961940.585,1140.899,510 15" 1.45'top to fl
 7414,3631150.552,4962226.456,1151.950,17+00 hub
 7415,3631164.984,4962329.657,1150.971,18+00 hub
 7416,3631156.035,4962429.238,1149.214,19+00 hub
 7417,3631147.076,4962528.836,1148.443,20+00 hub
 7418,3631040.812,4961986.144,1140.937,510 15" 1.45'top to fl
 7419,3631087.242,4962105.672,1141.175,510 15" 1.45'top to fl
 7420,3631099.148,4962135.628,1141.210,510 15" 1.45'top to fl
 7421,3630949.332,4961468.404,1137.444,421 8" inserta tee
 7422,3630949.802,4961468.136,1137.644,421 6" 45 bend
 7423,3630953.680,4961468.883,1139.741,421 6"/5"/4" reducer
 7424,3630953.246,4961468.615,1139.609,421 6" 45 bend
 7425,3631012.792,4961611.775,1140.424,421 5"/6" reducer
 7426,3631016.019,4961609.642,1138.543,421 8" inserta tee
 7427,3631015.265,4961609.729,1139.177,421 6" 45 bend
 7428,3631102.435,4963026.851,1147.726,25+00 hub
 7429,3631111.408,4962927.223,1148.109,24+00 hub
 7430,3631120.295,4962827.630,1148.280,23+00 hub
 7431,3631129.216,4962728.032,1148.120,22+00 hub
 7432,3631138.172,4962628.444,1148.519,21+00 hub
 7433,3630881.541,4961373.384,1141.268,300 2.7'to top 4"sw perrf tie approx
 7434,3631133.620,4962225.314,1141.418,510 15" 1.45'top to fl
 7435,3631150.700,4962269.982,1141.447,510 15" 1.45'top to fl BEND COLLAR
 7436,3631150.496,4962350.583,1141.582,510 15" 1.45'top to fl
 7437,3631151.394,4962318.564,1141.500,510 15" 1.45'top to fl
 7438,3631143.984,4962365.347,1149.808,300 START ROCK S SIDE TRENCH
 7439,3631148.514,4962382.589,1141.702,510 15" 1.45'top to fl
 7440,3631141.049,4962403.888,1148.956,300 END ROCK S SIDE TRENCH
 7441,3631138.054,4962494.620,1141.893,510 15" 1.45'top to fl

7442,3631154.307,4962364.488,1142.401,TOP 8" HDPE
 7443,3631132.003,4962494.604,1148.294,GS STARTED GRAEL BED
 7444,3631129.858,4962523.077,1145.054,TOP 6" CLAY
 7445,3631133.982,4962526.293,1141.934,510 15" 1.45'top to fl
 7446,3631126.433,4962538.057,1147.330,GS END BEDDING
 7447,3631122.615,4962613.916,1142.075,510 15" 1.45'top to fl
 7448,3631118.119,4962661.880,1142.181,510 15" 1.45'top to fl
 7449,3631108.449,4962680.188,1148.105,GS STARTED GRAVEL BED
 7450,3631117.254,4962609.635,1148.340,GS CUT TILE UNKOWN
 7451,3631114.912,4962701.923,1142.316,510 15" 1.45'top to fl
 7452,3631103.076,4962768.535,1148.018,GS END BEDDING
 7453,3631103.599,4962829.748,1142.408,510 15" 1.45'top to fl
 7454,3631093.947,4962854.153,1148.081,GS STARTED GRAVEL BED
 7455,3631093.614,4962877.879,1148.310,GS END BEDDING
 7456,3631098.135,4962893.433,1142.655,510 15" 1.45'top to fl
 7457,3631091.986,4962902.158,1147.815,BEGIN GRAVEL BEDDNG
 7458,3631086.368,4963084.282,1142.553,FL 8" VCP
 7459,3631096.264,4962918.061,1142.641,510 15" 1.45'top to fl
 7460,3631089.725,4962921.325,1148.249,GS END BEDDING
 7461,3631089.006,4962963.984,1147.666,BEGIN GRAVEL BEDDNG
 7462,3631093.873,4962966.056,1142.692,510 15" 1.45'top to fl
 7463,3631083.836,4963039.881,1147.614,GS END BEDDING
 7464,3631089.778,4963038.272,1142.819,510 15" 1.45'top to fl
 7465,3631088.748,4963054.184,1142.823,510 15" 1.45'top to fl
 7466,3631087.869,4963072.452,1146.210,JUNCTION STRUCTURE RIM
 7467,3631016.186,4962479.206,1147.096,GS TILE LOCATE
 7468,3631041.100,4962460.769,1147.208,GS TILE LOCATE
 7469,3631062.671,4962445.587,1147.338,GS TILE LOCATE
 7470,3631088.816,4962422.367,1147.917,GS TILE LOCATE
 7471,3631116.562,4962401.154,1148.547,GS TILE LOCATE
 7472,3631205.523,4962144.301,1149.885,GS TILE LOCATE
 7473,3631206.781,4962174.866,1150.078,GS TILE LOCATE
 7474,3631209.169,4962205.394,1150.226,GS TILE LOCATE
 7475,3631210.175,4962231.129,1150.511,GS TILE LOCATE
 7476,3631212.083,4962254.898,1150.901,GS TILE LOCATE
 7477,3631207.948,4962282.979,1151.320,GS TILE LOCATE
 7478,3631193.777,4962313.291,1151.249,GS TILE LOCATE
 7479,3631180.836,4962329.764,1150.782,GS TILE LOCATE
 7480,3631154.134,4962364.503,1142.456,500 HDPE 8 TOP
 7481,3631149.707,4962367.616,1141.597,500 CONC 15 TOP
 7482,3631146.066,4962374.585,1142.425,500 CONC PLUG
 7483,3631139.212,4962530.832,1145.198,VCP 6 TILE
 7484,3631133.359,4962529.114,1141.973,500 TOP 15 CONC
 7485,3631129.083,4962522.095,1145.306,CONC PLUG
 7486,3631126.759,4962611.213,1144.590,HDPE 6 TOP
 7487,3631123.046,4962610.392,1142.117,500 CONC 15 TOP
 7488,3631120.154,4962611.365,1144.561,CONC PLUG
 8016,3618659.060,4946889.650,1169.720,GPS MON
 8016_GNSS,3618659.060,4946889.650,1169.720,Autonomous Setup

HARDIN COUNTY, IOWA

2021



**COMPLETION REPORT
ON REPAIRS TO
MAIN TILE &
LATERAL 3 TILE,
DRAINAGE DISTRICT 25
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, 2022

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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

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Project Timeline

The Hardin County Board of Supervisors, acting as District Trustees, requested Ryken Engineering to investigate and report concerning repairs and improvements to the Lateral 3 tile, Drainage District No. 25. As a result, Ryken Engineering generated an Engineer's Report dated April 21, 2015 summarizing past improvements and repairs, investigating the necessity and feasibility of repairs or improvements to the Lateral 3 tile, and presenting opinions of construction costs associated with said repairs and improvements. The Engineer's Report was presented at the June 17, 2015 hearing with the District Trustees and landowners. At this hearing, action was tabled until an Engineer's Report concerning improvements to the Main tile could be completed. An Engineer's Report dated April 12, 2016 summarizing past improvements and repairs, investigating the necessity and feasibility of improvements to the Main tile, and presenting opinions of construction costs associated with said improvements. At the hearing conducted on June 8, 2016, a remonstrance was filed stopping the improvement portion of the reports. However, at this hearing there was support for the repairs of the Lateral 3 tile and Main tile. As a result, the Trustees authorized Ryken Engineering to proceed with completion of project plans and specifications for the repair portions of the project (as presented in said reports and discussed at the hearings) and proceed with a bid letting.

Ryken Engineering completed the authorized plans and specifications and a bid letting of March 8, 2017 was set. Bids were received and a contract was entered into. However, a permit to cross the UPRR was never approved by the UPRR due to their lack of response and shifting review comments. Therefore, this contract was canceled. After finally receiving an approved permit from the UPRR, Clapsaddle Garber Associates revised the plans and specifications, the project was combined with a repair in Drainage District 1, and a bid letting date of February 13, 2019 was set. The project was advertised, and bids were received from qualified contractors. The following bids for said repairs for this district were received:

	Contractor	Bid Amount
1.	McDowell and Sons Contractors Inc	\$194,931.30
2.	Gehrke Inc	\$383,821.25

The District Trustees identified McDowell and Sons Contractors Inc as the lowest responsible bidder for the joint project and awarded the project to them. The contract was signed on March 18, 2019. Construction activities for the entire contract were started on September 16, 2019. During the construction period, the weather was primarily favorable for construction, but several project scope changes and additional UPRR permitting requirements occurred. However, substantial completion for the entire contract was achieved on August 13, 2020 (approximately 2 weeks before the latest contract completion date).

Project Deviations

This project followed the authorized plans and specifications, with the following deviations (for reference see as-built plan sheets included in Appendix M):

1. During construction of the Lateral 3 tile, the casing pipe under the UPRR right of way required changes due to UPRR comments. This resulted in no change in the contract price, but a change in the substantial completion date to April 1, 2020.
2. During construction of the Lateral 3 tile, it was discovered that there were actually 2 tiles (1 private and 1 district) crossing the UPRR in the vicinity of construction. As a result, the proposed crossing was upsized to accommodate both tiles. This resulted in an increase of \$25,605.00 and a change in the substantial completion date to June 30, 2020.
3. During construction of the Lateral 3 tile, it was discovered that the deeper tile (described above) did not have an outlet and was not connected to the Main tile. As a result, an outlet to the Main tile at the correct elevation had to be constructed. This resulted in an increase of \$45,223.75 and no change to the substantial completion date.
4. For a brief period during construction of the Lateral 3 tile, the weather conditions were not favorable for construction and the additional pipe footage required additional time to install. This resulted in no change in the contract price, but a change in the substantial completion date to July 31, 2020.
5. During construction of the Lateral 3 tile, the boring contractor was delayed and the additional pipe footage required additional time to install. This resulted in no change in the contract price, but a change in the substantial completion date to August 31, 2020.
6. During construction of the Lateral 3 tile, CCTV was not able to be performed east of the UPRR and the tenant/landowner of the same requested that the existing tile not be removed. This resulted in a decrease of \$2,976.00 and no change to the substantial completion date.
7. After construction of the Lateral 3 tile, small discrepancies between the bid/change order quantities and the actual construction were rectified. This resulted in a decrease of \$4,204.55 and no change to the substantial completion date.

Final Project Costs

The final project costs for construction (for reference see DD 25 sections on the final pay estimate included in Appendix N) and engineering (not including reports or reclassification) are estimated at \$368,579.50, which is approximately \$172,829.50 more than those presented at the hearing. These costs may vary depending upon any damage claims brought forth at the completion hearing. Pending no claims, the costs are as detailed below:

Main tile and Lat 3 tile	Project as bid by Contractor	\$194,931.30
	Item #2 (above)	(+) \$25,605.00
	Item #3 (above)	(+) \$45,223.75
	Item #6 (above)	(-) \$2,976.00
	Item #7 (above)	(-) \$4,204.55
	Engineering	(+) \$110,000.00
	TOTAL PROJECT COST	\$368,579.50

The total project cost is above those opinions of cost contained within said Engineer's Report. However, the scope of the final project far exceeded those discussed at the hearings (i.e. upsized Lateral 3 crossing, installation of outlet for Lateral 3 tile to Main tile, spot repairs to Main tile, enhanced UPRR crossing requirements, prolonged UPRR crossing review, etc) and all these costs were approved/acknowledged by the District Trustees as they occurred. It should be noted that the above costs do not include any permit fees, administrative costs, legal costs, interest on construction warrants, or damage claims.

Damages

During construction, some damages were incurred by the three property owners crossed with construction of the Lateral 3 tile on this project. These damages consisted of actual damage of standing crops. The landowners and areas are as follows:

Property Owner	Crop Damage Area (ac)
Leland A and Karen S Coburn Trust	0.7
David A Fincham	2.2
Torgeson Farms Inc	2.0

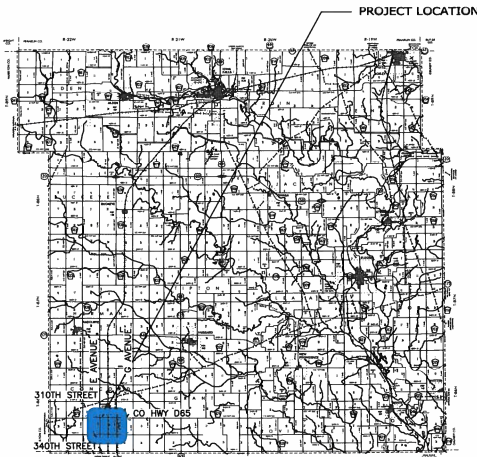
Also during construction, some the fence between David A Fincham and Torgeson Farms Inc was removed and was not replaced. However, the contractor supplied a statement (for reference see Appendix O) from David A Fincham's tenant that the fence did not need replaced. It is our recommendation that landowners or their tenants be paid for crop damage claims consistent with the above acres and any other damage claims filed be evaluated on an individual basis by the District Trustees.

Pending Items

As of the writing of this report, this project is complete (including punchlist items) in general accordance with the authorized plans and specifications and lien waivers for suppliers have been submitted by the general contractor (for reference see Appendix P). After the completion hearing, final payment of \$25,830.95 needs to be authorized by the Trustees highlighted orange on the final pay estimate. It is our recommendation that the project be accepted. We also recommend that the entire project be walked and reviewed just prior to the expiration of the contract warranty period for any warranty items that may need to be remedied by the contractor. It should be noted that if the Trustees decide to have Clapsaddle-Garber Associates exercise this recommendation, there are no engineering fees included in the above Final Project Costs to cover this service.

REPAIRS TO MAIN TILE AND LATERAL 3 TILE DRAINAGE DISTRICT 25 HARDIN COUNTY, IOWA 2019

AS-BUILT

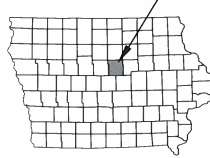


HARDIN COUNTY,
IOWA VICINITY MAP
NOT TO SCALE

NOTES:

1. THE PLANS AND SPECIFICATIONS PREPARED BY CLAPSADDLE-GARBER ASSOCIATES SHALL GOVERN. ALL WORK SHALL COMPLY WITH THE DETAILS AND SPECIFICATIONS REFERENCED.
2. ALL ELEVATIONS SHOWN ON THESE PLANS ARE BASED ON 2010 SURVEY. FOR CONVERSION TO OTHER PROJECT DATUMS, SEE "BENCHMARKS" ON PAGE 2.
3. THE APPLICANT/CONTRACTOR IS NOT APPROVED TO GO TO WORK UNTIL THE APPLICANT/CONTRACTOR HAS NOTIFIED THE RAILROAD AND SECURED A CURRENT "CALL BEFORE YOU DIG" DIG TICKET AT 1-800-336-9163

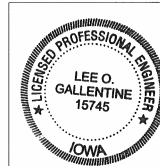
PROJECT LOCATION



SHEET INDEX

SHEET NUMBER	SHEET TITLE
1	COVER
2	LEGEND - NOTES - ABBREVIATIONS - VISUAL INDEX - BENCHMARKS
3	DEMO PLAN
4	LATERAL 3 PLAN
5	PROFILE - ABANDONMENT
6	LATERAL 3 PROFILE
7	ENLARGED CROSSING PLAN
8	MAIN SPOT REPAIRS PLAN
9	DETAILS
10	DETAILS
11	UPRR GENERAL NOTES

12 SOUTH PORTION PLAN + PROFILE



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 12/25/2019

P.E. LICENSE NUMBER: 15745
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2022
PAGES OR SHEETS COVERED BY THIS SEAL: 1-11

DESIGN BY: ZJS	APPROVED BY: LOG	REVISION: 5/28/17 UPRR COMMENTS
DATE: 01/20/2017	FILE NO.: 8501	2/7/18 UPRR COMMENTS
FILE NO.: 10/20/18 UPRR COMMENTS		



Clapsaddle-Garber Associates, Inc.
Main Office: 18 East Main Street
Mendota, Iowa 50658
PH 641-752-4701
www.cga-inc.com

739 PARK AVENUE
ACKLEY, IOWA 50601
PH 641-847-3273 FAX 641-847-2303

PROJECT: REPAIRS TO MAIN AND LAT 3 DD 25
HARDIN COUNTY, IOWA
2019

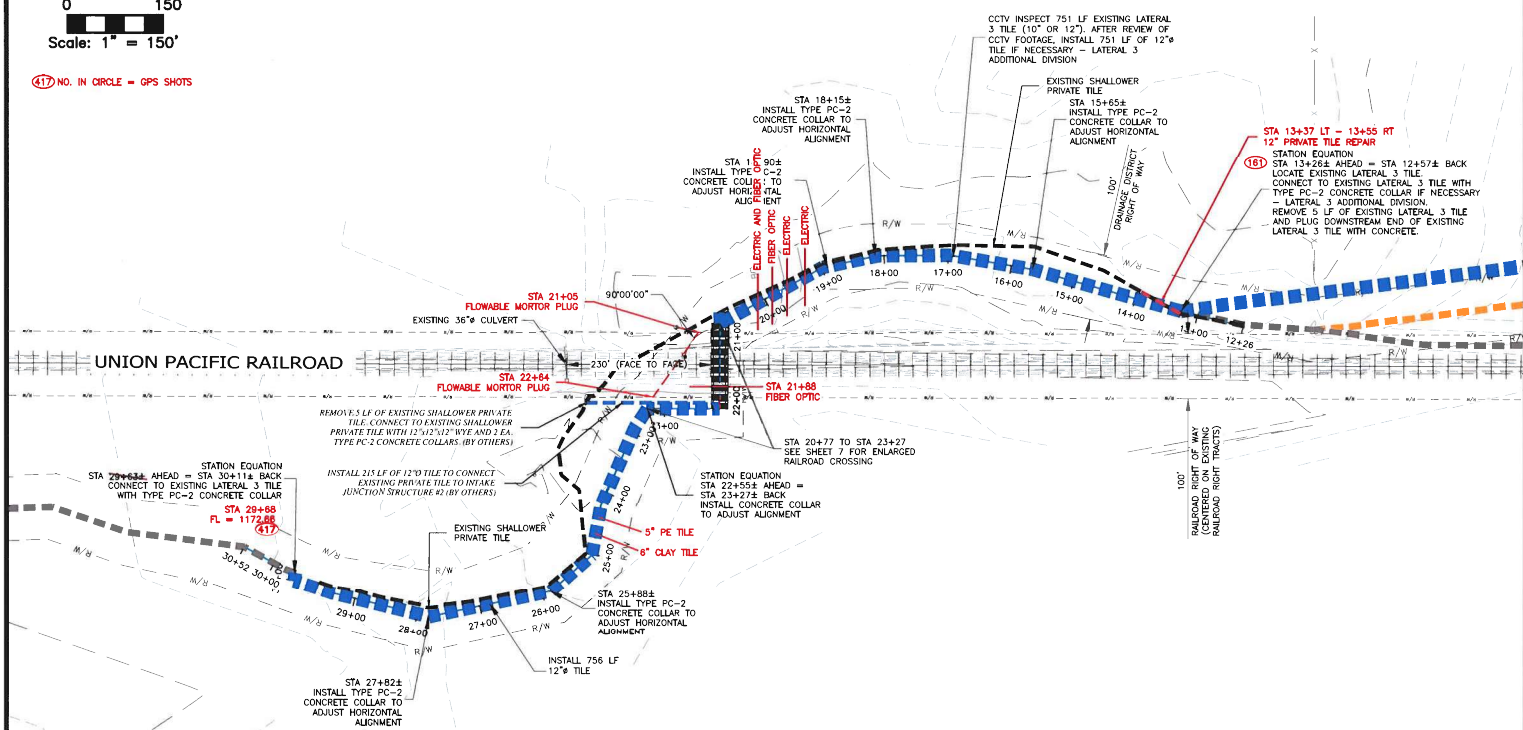
SHEET NAME:

COVER SHEET

1 OF 11

0 150
Scale: 1" = 150'

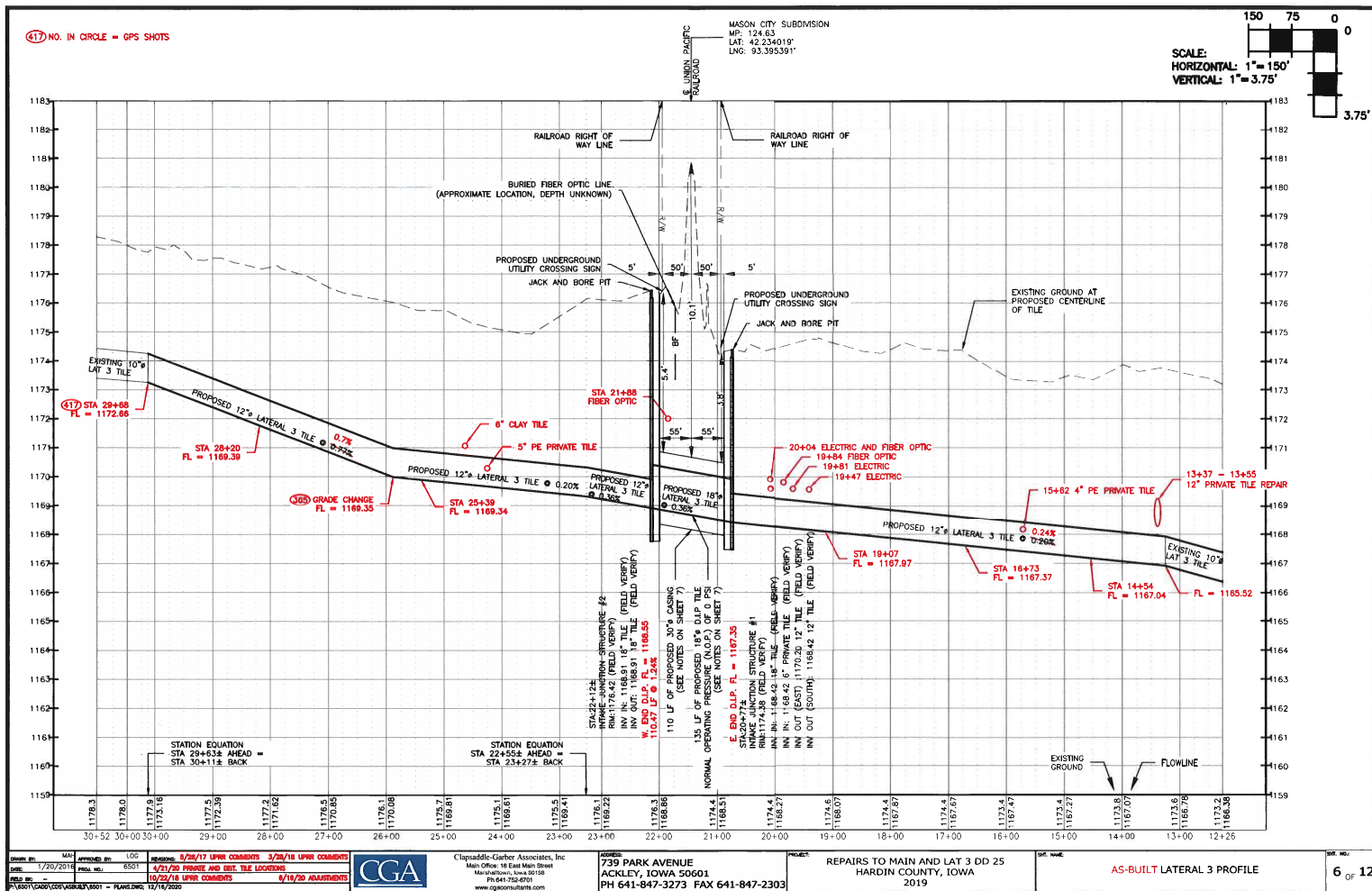
(17) NO. IN CIRCLE = GPS SHOTS

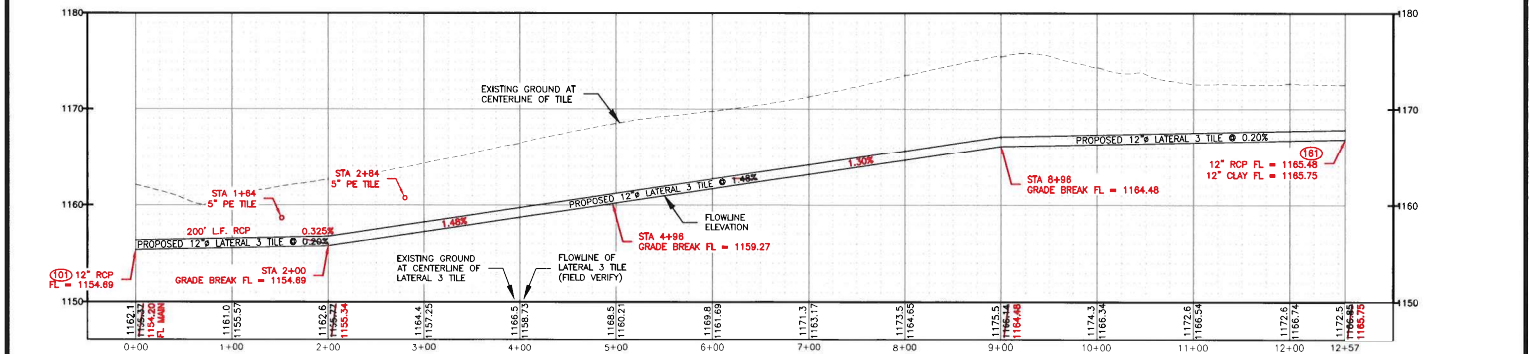
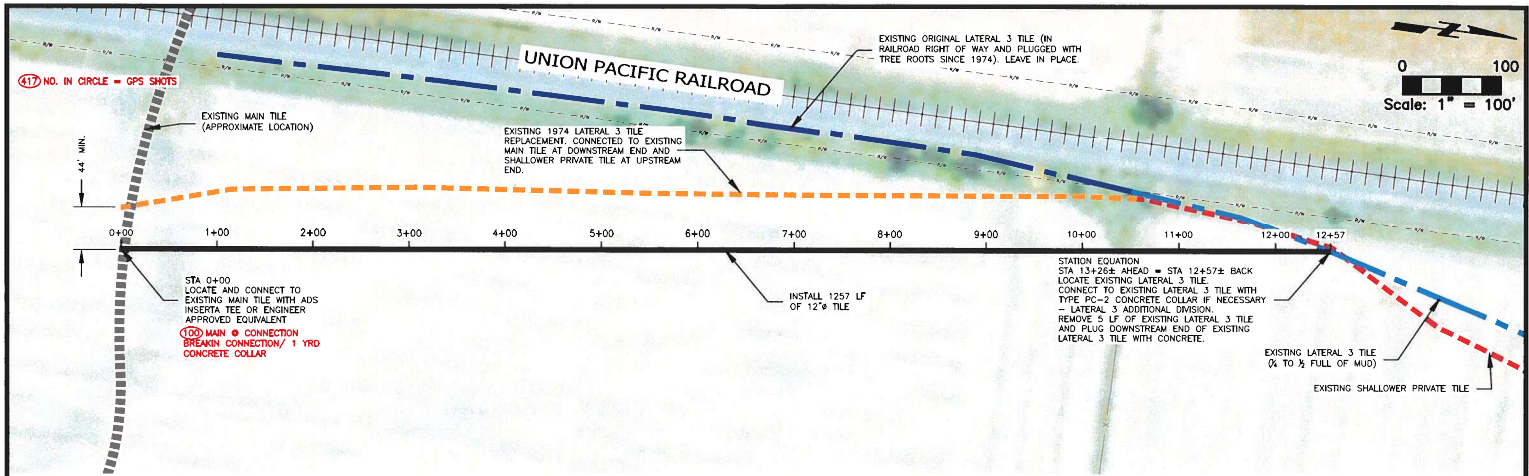


SEE NOTES ON SHEET 7
FOR TILE CROSSING:

DRAWN BY: MJA CHECKED BY: 17/23/2016 DATE: 17/23/2016 PROJECT: 17/23/2016	REVISIONS: 5/24/17 UPR COMMENTS 10/22/18 UPR COMMENTS 4/21/20 FINISH AND DET. TILE LOCATIONS 12/8/2020 ADJUSTMENTS	Clippacade-Carrier Associates, Inc. Main Office: 18 East Main Street Marshalltown, Iowa 50158 PH 641-752-8701 www.cgaassociates.com	ADDRESS: 739 PARK AVENUE ACKLEY, IOWA 50601 PH 641-847-3273 FAX 641-847-2303	PROJECT: REPAIRS TO MAIN AND LAT 3 DD 25 HARDIN COUNTY, IOWA 2019	DATE: 12/8/2020 AS-BUILT LATERAL 3 PLAN	SHEET NO.: 4 OF 12
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SCALE:
HORIZONTAL: 1"=150'
VERTICAL: 1"=3.75'





sheet no. 12 date 2020-03-31 project name SOUTH PORTION LATERAL 3 project no. 641-847-2303	Clapsaddle-Garber Associates, Inc. Main Office: 18 East Main Street Marshalltown, Iowa 50601 PH 641-752-6701 www.cgaconsultants.com	739 PARK AVENUE ACKLEY, IOWA 50601 PH 641-847-3273 FAX 641-847-2303	PROJECT REPAIRS TO MAIN AND LAT 3 DD 25 HARDIN COUNTY, IOWA 2020	SHEET NAME SOUTH PORTION LATERAL 3 AS-BUILT PLAN AND PROFILE	SHEET NO. 12 OF 12
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PAY ESTIMATE NO. 7
REPAIRS TO MAIN TILE AND LATERAL 3 DD#25 & REPAIRS TO MAIN TILE DD#1, HARDIN CO.
PROJECT NUMBER: 6501
DATE: 4-2-21

CONTRACTOR
 McDowell and Sons Contractors, Inc.
 10214 Hwy 65
 Iowa Falls, Iowa 50126

OWNER
 Trustees of Drainage District #25 & DD#1
 Hardin County Courthouse
 1215 Edgington Ave., Suite 1
 Eldora, Iowa 50627

ENGINEER
 Clapsaddle-Garber Associates
 739 Park Avenue
 Ackley, Iowa 50601

Item No.	Description	Estimated Quantity	Unit	Installed Quantity	Unit Price	Extended Price
DISTRICT BASE BID ITEMS						
1	24" Ø RCP Tile	260	LF	260	\$ 70.00	\$ 18,200.00
2	Type PC-2 Concrete Collar	14	EA	14	\$ 500.00	\$ 7,000.00
3	Private Tile Connection	2	EA	2	\$ 600.00	\$ 1,200.00
4	Tile Removal	260	LF	260	\$ 10.00	\$ 2,600.00
5	Permanent Seeding	0.3	AC	0.3	\$ 3,500.00	\$ 1,050.00
6	Seeding Warranty	1	LS	1	\$ 1,000.00	\$ 1,000.00
LATERAL 3 DIVISION ALTERNATE BID						
101ALT	12" Ø RCP Tile	780	LF	819.9	\$ 38.00	\$ 31,156.20
102ALT*	24" Ø Steel Casing (Jack & Bore)	0	LF	0	\$ 380.00	\$ -
103ALT*	12" Ø DIP Tile	0	LF	0	\$ 77.00	\$ -
104ALT^^	Intake Junction Structure	2	EA	2	\$ 1,750.00	\$ 3,500.00
105ALT^^	CCTV Tile Inspection	0	LF	0	\$ 3.25	\$ -
106ALT	Type PC-2 Concrete Collar	4	EA	3	\$ 350.00	\$ 1,050.00
107ALT	Private Tile Connection	4	EA	3	\$ 600.00	\$ 1,800.00
108ALT^^	Grading	1	STA	1	\$ 350.00	\$ 350.00
109ALT^^	Tile Removal	363	LF	363	\$ 6.00	\$ 2,178.00
110ALT^^	Tile Abandonment	100	LF	100	\$ 14.00	\$ 1,400.00
111ALT^^	12" Ø Hickenbottom Intake	0	EA	0	\$ 1,000.00	\$ -
112ALT	RR Permitting, Flagging, Insurance, Coordination	1	LS	1	\$ 6,500.00	\$ 6,500.00
113ALT^^	Locate Existing	14.74	STA	14.74	\$ 90.00	\$ 1,326.60
114ALT^^	Intake Removal	0	EA	0	\$ 300.00	\$ -
115ALT^^	30" Ø Steel Casing (Jack & Bore)	110.5	LF	110.5	\$ 560.00	\$ 61,880.00
116ALT^^	18" Ø DIP Tile	135.2	LF	135.2	\$ 120.00	\$ 16,224.00
117ALT^^	10" Ø Private Tile Repair	27.8	LF	27.8	\$ 25.00	\$ 695.00
LATERAL 3 DIVISION ADDITIONAL ALTERNATE BID						
201ALT***	12" Ø RCP Tile	756.3	LF	756.3	\$ 38.00	\$ 28,739.40
202ALT	Type PC-2 Concrete Collar	4	EA	4	\$ 350.00	\$ 1,400.00
203ALT^^	Private Tile Connection	3	EA	2	\$ 600.00	\$ 1,200.00
204ALT	Grading	1	STA	0.5	\$ 350.00	\$ 175.00
205ALT***	Tile Removal	0	LF	0	\$ 6.00	\$ -
206ALT^^	12" Ø Hickenbottom Intake	0	EA	0	\$ 1,000.00	\$ -
207ALT^^	Locate Existing Lateral Tile	21.2	STA	21.2	\$ 90.00	\$ 1,908.00
208ALT^	CCTV Mobilization	1	LS	1	\$ 1,530.00	\$ 1,530.00
209ALT^^	10" Ø Private Tile Repair	75.2	LF	75.2	\$ 25.00	\$ 1,880.00
LATERAL 3 DIVISION SOUTH PORTION BID						
401ALT**	12" Ø RCP Tile	1257	LF	1257	\$ 47.00	\$ 59,079.00
402ALT***	Type PC-2 Concrete Collar	1	EA	1	\$ 350.00	\$ 350.00
403ALT**	Tile Removal	5	LF	5	\$ 9.00	\$ 45.00
404ALT^^	5" Ø Private Tile Repair	18.7	LF	18.7	\$ 10.00	\$ 187.00
405ALT^^	Locate Existing Lateral Tile	12.57	STA	12.57	\$ 90.00	\$ 1,131.30
MAIN 1 DIVISION BID						
301	24" Ø Polypropylene Tile	123	LF	123	\$ 55.00	\$ 6,765.00
302	34" Ø Steel Casing (Jack & Bore)	50	LF	50	\$ 707.00	\$ 35,350.00
303	22 1/2" x 24" Ø Polypropylene Bend	3	EA	3	\$ 450.00	\$ 1,350.00
304	11 1/4" x 24" Ø Polypropylene Bend	1	EA	1	\$ 450.00	\$ 450.00
305	Intake Junction Structure	1	EA	1	\$ 1,750.00	\$ 1,750.00
306	Type PC-2 Concrete Collar	1	EA	1	\$ 350.00	\$ 350.00
307	Private Tile Connection	1	EA	1	\$ 600.00	\$ 600.00
308	Grading	2	STA	2	\$ 350.00	\$ 700.00
309	Tile Removal	49	LF	49	\$ 10.00	\$ 490.00
310^^	Tile Abandonment	58.5	LF	58.5	\$ 25.00	\$ 1,462.50
311	Traffic Control	1	LS	1	\$ 1,650.00	\$ 1,650.00
312	Seeding	0.3	AC	0.3	\$ 3,500.00	\$ 1,050.00
313	Seeding Warranty	1	LS	1	\$ 1,000.00	\$ 1,000.00
314	12" Ø Hickenbottom Intake	1	EA	1	\$ 1,000.00	\$ 1,000.00

I have reviewed the work claimed to be completed by the Contractor as reflected above and recommend payment of \$ 31,857.70 to the Contractor.

Lee Gallentine, Project Engineer

Contractor

TOTAL WORK COMPLETED TO DATE \$ 310,702.00
 10% RETENTION \$ -
 AMOUNT DUE LESS RETENTION \$ 310,702.00
 PREVIOUSLY PAID \$ 278,844.30
 AMOUNT DUE AT THIS TIME \$ 31,857.70

Note: For pay estimate #1, \$26,696.97 was for DD 25.
 For pay estimate #2, \$1,845.00 was for DD 25.
 For pay estimate #3, \$46,095.75 was for DD 1.
 For pay estimate #4, \$56,584.17 was for DD 25.
 For pay estimate #5, \$143,781.84 was for DD 25.
 For pay estimate #6, \$3,840.57 was for DD 25.
 For pay estimate #7, \$25,830.95 was for DD 25 and \$6,026.75 was for DD 1.

* - Approved as part of Change Order #2
 ** - Approved as part of Change Order #3
 ^ - Approved as part of Change Order #6
 ^^ - Approved as part of Change Order #7



McDowell & Sons Contractors Inc.

10214 Hwy 65 ~ PO Box 664 ~ Iowa Falls, IA 50126

Phone: 641-648-5071 ~ Fax: 641-648-3639

January 11th, 2021

David Fincham or
Alvin Clark
32786 County Hwy S27
Garden City, IA

RE: Construction of DD#25 Fence Line

I ALVIN CLARK understand and agree to the following:

The fence line that was removed during the construction of DD#25 does not need to be replaced.

Alvin Clark
Signature

1-11-21
Date

McDowell & Sons Contractors Inc.

10214 Hwy 65 ~ PO Box 664 ~ Iowa Falls, IA 50126

Phone: 641-648-5071 ~ Fax: 641-648-3639

WAIVER AND RELEASE OF LIEN

The undersigned acknowledges full payment from McDowell and Sons Contractors, Inc.

Whereas, the undersigned has furnished material and perform labor at the property known as:

Job Name: Repairs to Main Tile and Lateral 3 Tile, DD #25 and Repairs to
Main Tile DD #1
Hardin County, Iowa Projects: 6501 and 6749.5

The undersigned acknowledges further that said amount: Six hundred forty-three dollars and 50/100th dollars (\$643.50) is full payment for all labor, skill or material provided by the undersigned at said premises for invoices #20-2278, 20-2049, and 20-2442.

Except to the extent of any additional amount set for in the preceding space, the undersigned will waive and release any and all lien, or claim or right to lien, on said above described property.

The undersigned further acknowledges that, except to the extent set forth above, it has paid all of its subcontractors and has paid all of its providers of labor, skill or material furnished at said above described property.

Vendor: KAHN TILE SUPPLY LLC

By:

Title:

Subscribed and sworn to before me this 16 day of October, 2020

Notary Public:

My Commission expires:

Please sign and return to:
McDowell and Sons Contractors, Inc.
P.O. Box 664
Iowa Falls, IA 50126



McDowell & Sons Contractors Inc.

10214 Hwy 65 ~ PO Box 664 ~ Iowa Falls, IA 50126

Phone: 641-648-5071 ~ Fax: 641-648-3639

WAIVER AND RELEASE OF LIEN

The undersigned acknowledges full payment from McDowell and Sons Contractors, Inc.

Whereas, the undersigned has furnished material and perform labor at the property known as:

Job Name: Repairs to Main Tile and Lateral 3 Tile, DD #25 and Repairs to
Main Tile DD #1
Hardin County, Iowa Projects 6501 and 6749.5

The undersigned acknowledges further that said amount: Seven thousand ninety-nine and 21/100th dollars (\$7,099.21) is full payment for all labor, skill or material provided by the undersigned at said premises for invoices #26901531, 27166554, 27271248, 28178326, 28221740, 28926400, 29150696, 29051514, 29087588, 29202843, 29239707, 29373136, 29511146, 29540696, 29577248.

Except to the extent of any additional amount set for in the preceding space, the undersigned will waive and release any and all lien, or claim or right to lien, on said above described property.


The undersigned further acknowledges that, except to the extent set forth above, it has paid all of its subcontractors and has paid all of its providers of labor, skill or material furnished at said above described property.

Vendor: MARTIN MARIETTA MATERIALS

By: 

Title: SR CREDIT REP.

Subscribed and sworn to before me this 13th day of OCTOBER, 2020

Notary Public: 

My Commission expires



Please sign and return to:
McDowell and Sons Contractors, Inc.
P.O. Box 664
Iowa Falls, IA 50126

McDowell & Sons Contractors Inc.

10214 Hwy 65 ~ PO Box 664 ~ Iowa Falls, IA 50126
Phone: 641-648-5071 ~ Fax: 641-648-3639

WAIVER AND RELEASE OF LIEN

The undersigned acknowledges full payment from McDowell and Sons Contractors, Inc.

Whereas, the undersigned has furnished material and perform labor at the property known as:

Job Name: Repairs to Main Tile and Lateral 3 Tile, DD #25 and Repairs to
Main Tile DD #1
Hardin County, Iowa Projects: 6501 and 6749.6

The undersigned acknowledges further that said amount: Forty-five thousand forty dollars and 68/100th dollars (\$45,040.68) is full payment for all labor, skill or material provided by the undersigned at said premises for invoices #HU00006308, HU00006324, HU00006759, HU00006770, HU00006780, HU00008134, CDE0001159, DE00008148, HU00006864, HU00006882, HU00006956, CHU0001372, HU00006962.

Except to the extent of any additional amount set for in the preceding space, the undersigned will waive and release any and all lien, or claim or right to lien, on said above described property.

The undersigned further acknowledges that, except to the extent set forth above, it has paid all of its subcontractors and has paid all of its providers of labor, skill or material furnished at said above described property.

Vendor: FORTERRA PIPE & PRECAST

By: *W. H. S.*

Title: *Genl Mgr.*

Subscribed and sworn to before me this 23 day of October, 2020

Notary Public: *Stacy Clermont*

My Commission expires

1/31/2024



STACY ELAINE CLERMONT
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2024



STACY ELAINE CLERMONT
NOTARY PUBLIC - MINNESOTA
My Commission Expires
January 31, 2024

Please sign and return to:
McDowell and Sons Contractors, Inc.
P.O. Box 664
Iowa Falls, IA 50126

McDowell & Sons Contractors Inc.

10214 Hwy 65 ~ PO Box 664 ~ Iowa Falls, IA 50126

Phone: 641-648-5071 ~ Fax: 641-648-3639

WAIVER AND RELEASE OF LIEN

The undersigned acknowledges full payment from McDowell and Sons Contractors, Inc.

Whereas, the undersigned has furnished material and perform labor at the property known as:

Job Name: Repairs to Main Tile and Lateral 3 Tile, DD #25 and Repairs to
Main Tile DD #1
Hardin County, Iowa Projects: 6501 and 6749.5

The undersigned acknowledges further that said amount: One thousand one hundred thirty dollars and 00/100th dollars (\$1,130.00) is full payment for all labor, skill or material provided by the undersigned at said premises for invoice #1820.

Except to the extent of any additional amount set for in the preceding space, the undersigned will waive and release any and all lien, or claim or right to lien, on said above described property.

The undersigned further acknowledges that, except to the extent set forth above, it has paid all of its subcontractors and has paid all of its providers of labor, skill or material furnished at said above described property.

Vendor: WILLIAMS EXCAVATION & DIRECTIONAL BORING

By: *Paul R. Wheel*

Title: owner

Subscribed and sworn to before me this 23rd day of October, 2020

Notary Public: *Stefanie Abkes*

My Commission expires:



Please sign and return to:
McDowell and Sons Contractors, Inc.
P.O. Box 664
Iowa Falls, IA 50126

McDowell & Sons Contractors Inc.

10214 Hwy 65 ~ PO Box 664 ~ Iowa Falls, IA 50126
Phone: 641-648-5071 ~ Fax: 641-648-3639

WAIVER AND RELEASE OF LIEN

The undersigned acknowledges full payment from McDowell and Sons Contractors, Inc.

Whereas, the undersigned has furnished material and perform labor at the property known as:

Job Name: Repairs to Main Tile and Lateral 3 Tile, DD #25 and Repairs to
Main Tile DD #1
Hardin County, Iowa Projects: 6501 and 6749.5

The undersigned acknowledges further that said amount: Nineteen thousand five hundred forty-four dollars and 83/100th dollars (\$19,544.83) is full payment for all labor, skill or material provided by the undersigned at said premises for invoices #96597, 96904, 97482, 97862, 100890, 103538.

Except to the extent of any additional amount set for in the preceding space, the undersigned will waive and release any and all lien, or claim or right to lien, on said above described property.

The undersigned further acknowledges that, except to the extent set forth above, it has paid all of its subcontractors and has paid all of its providers of labor, skill or material furnished at said above described property.

Vendor: BROWN SUPPLY CO

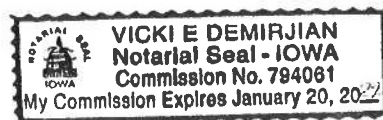
By: 

Title: 

Subscribed and sworn to before me this 6th day of November, 2020

Notary Public: 

My Commission expires: Jan 20, 2022



Please sign and return to:
McDowell and Sons Contractors, Inc.
P.O. Box 664
Iowa Falls, IA 50126

McDowell & Sons Contractors Inc.

10214 Hwy 65 ~ PO Box 664 ~ Iowa Falls, IA 50126

Phone: 641-648-5071 ~ Fax: 641-648-3639

WAIVER AND RELEASE OF LIEN

The undersigned acknowledges full payment from McDowell and Sons Contractors, Inc.

Whereas, the undersigned has furnished material and perform labor at the property known as:

Job Name: Repairs to Main Tile and Lateral 3 Tile, DD #25 and Repairs to
Main Tile DD #1
Hardin County, Iowa Projects: 6501 and 6749.5

The undersigned acknowledges further that said amount: Two thousand one hundred eighty-four and 33/100th dollars (\$2,184.33) is full payment for all labor, skill or material provided by the undersigned at said premises for invoices #184106, 184314, 186377, 186378, 187961

Except to the extent of any additional amount set for in the preceding space, the undersigned will waive and release any and all lien, or claim or right to lien, on said above described property.

The undersigned further acknowledges that, except to the extent set forth above, it has paid all of its subcontractors and has paid all of its providers of labor, skill or material furnished at said above described property.

Vendor: CONCRETE INC.

By: 
Title: Office Manager

Subscribed and sworn to before me this 13th day of Oct., 2020

Notary Public: 

My Commission expires:

10/17/23

Please sign and return to:

McDowell and Sons Contractors, Inc.
P.O. Box 664
Iowa Falls, IA 50126

10/17/23

McDowell & Sons Contractors Inc.

10214 Hwy 65 ~ PO Box 664 ~ Iowa Falls, IA 50126
Phone: 641-648-5071 ~ Fax: 641-648-3639

WAIVER AND RELEASE OF LIEN

The undersigned acknowledges full payment from McDowell and Sons Contractors, Inc.

Whereas, the undersigned has furnished material and perform labor at the property known as:

Job Name: Repairs to Main Tile and Lateral 3 Tile, DD #25 and Repairs to
Main Tile DD #1
Hardin County, Iowa Projects: 6501 and 6749.5

The undersigned acknowledges further that said amount: Sixty thousand two hundred and twenty-two and 00/100th dollars (\$60,220.00) is full payment for all labor, skill or material provided by the undersigned at said premises for invoice #2480

Except to the extent of any additional amount set for in the preceding space, the undersigned will waive and release any and all lien, or claim or right to lien, on said above described property.

The undersigned further acknowledges that, except to the extent set forth above, it has paid all of its subcontractors and has paid all of its providers of labor, skill or material furnished at said above described property.

Vendor: Boomerang

By:

Donley Pambon

Title:

Controller

Subscribed and sworn to before me this 16th day of December, 2020

Notary Public:

Cindy Behrends

My Commission expires: 3/16/23



Please sign and return to:
McDowell and Sons Contractors, Inc.
P.O. Box 664
Iowa Falls, IA 50126