

AGENDA
REGULAR DRAINAGE MEETING
Wednesday, December 30, 2020 9:30 AM
Large Conference Room

Due to Covid-19 health concerns, this meeting is open to the public via conference call only. The meeting date and time will remain the same. You may call at that time to access the meeting by following the instructions below:

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

Documents:

[12-23-20 - DRAINAGE MINUTES.PDF](#)

4. Approve Claims For Payment

Documents:

[PAYABLES-DRAINAGE PUBLICATION 12_31_20.PDF](#)

5. DD 14 WO 291 - Discuss W Possible Action - Investigation Summary

Documents:

[DD 14 WO 291 INVESTIGATION AND REPAIR SUMMARY 10_07_20.PDF](#)
[DD 14 WO 291 INVESTIGATION SUMMARY 05_11_20.PDF](#)

6. Other Business
7. Adjourn Meeting

REGULAR DRAINAGE MEETING
Wednesday, December 23, 2020 9:30 AM

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

12/23/2020 - Minutes

1. Open Meeting

Hardin County Drainage Board Chairperson Lance Granzow opened the meeting. Also present were Trustee BJ Hoffman; Trustee Renee McClellan; Jolene Pieters; Bernie Oleksa, Alliant Energy; Lee Gallentine, Clapsaddle-Garber Associates (CGA); Michael Pearce, Network Specialist; and Denise Smith, Drainage Clerk.

2. Approve Agenda

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

3. Approve Minutes

Motion by McClellan to approve the minutes of the Drainage Meeting dated 12-16-2020. Second by Hoffman. All ayes. Motion carried.

4. DD 42 WO 297 - Discuss W Possible Action - Contractor Update

Smith stated she had a conversation with Gallentine earlier this week, contractor Adam Seward, who was out in the field, had reached out for some direction, and Smith will let Gallentine cover that. Gallentine stated this was a sinkhole on Cindy loerger's field, and Seward went out there and started excavating, what Seward found was a collapsed tile at the excavation. We believe it is either 10" or 12", it is hard to tell with the shape that the tile is in, at the downstream end they did find a corrugated metal pipe, which was in ok condition, not great condition but stable enough to connect to. Gallentine stated on the upstream end when they hit 50' Gallentine told them to stop, because it looked like we were chasing this, it is a tile that has quite a bit of silt in it and it is starting to crush down. Seward did some walking around and found another sinkhole about 100' upstream from where they had excavated, and he dug that one up, it was a previous repair that someone had done with plastic tile without a concrete collar, so that joint was sucking in dirt between the two tile in the previous repair. Gallentine stated it sounds like at that spot, it is probably about 1/4 to 1/2 full of dirt, we are going to try to televise it with that much dirt, but if the tile is crushed I don't know how successful we will be, but contractor Paul Williams will be able to do that next week from the sounds of it. Granzow stated do you need a motion to televise. Gallentine stated it wouldn't hurt, this is for the same group of landowners, loerger, Ron Vierkandt, Jack Runge, and Gallentine feels bad for these folks, it is all happening at once on their land. Granzow asked do we have a landowner that turned this in, Gallentine stated it was Dave Sweeney or Jim Sweeney that turned this in, and I don't know if they have land in this district or if they manage Cindy loerger's land, you would have to look at the work order for sure, a lot of times tenants turn them in not the landowners. Smith stated she could pull the work order and find out. Granzow stated and make sure they are a landowner or that they have ground in the district, Smith stated David Sweeney turned in the work order.

Gallentine stated that is Dave & Annette's place right there on the south of S27, right there across the road. Smith stated that Dave and James Sweeney turned in the work order and Cynthia loerger is the landowner. Hoffman stated right across the road is Sweeney's place, Granzow did not want to get into one of these Gary Sindelar programs where a non-owner or tenant is reporting, we take action and didn't have the authority to do that. Hoffman asked, with all the emails, is this the proper time and Paul Williams goes out there and investigates, is this something we need to go out there and authorize Seward to back out and repair up to a certain dollar amount and get this done and over with or is this something we can go back and forth or we are back into March and April before we get anything done. Granzow stated we will lose the work due to weather. Hoffman wondered if we could have two separate motions. Granzow stated he was fine with that.

Motion by Hoffman to instruct Paul Williams to televise the tile as best he can with the circumstances and condition of the tile. Second by McClellan. All ayes. Motion carried.

Hoffman asked do we assign this to the lottery or do we have Seward do the work to maintain the continuity since he was already in process. Granzow stated he would have Seward do it to maintain the continuity otherwise you end up paying someone else to do the work. Gallentine stated, just so the Trustees are aware, Seward is the only one currently doing lottery work right now, Paul Williams will come in when televising is needed, but Seward is the only contractor doing lottery work right now.

Motion by Hoffman to instruct the Drainage Clerk to contact Honey Creek Land Improvements to go out and repair, not to exceed the \$50,000 mark, based on the televising results and Williams and CGA determines are required repairs. Second by Granzow.

In additional discussion on the motion, Granzow understands the \$50,000, and if you can get that repair done for under \$50,000 as part of that investigation, that is what Hoffman is asking. Hoffman stated yes. Granzow stated which we will repair, regardless, without a threshold, the second we break that threshold, if you investigate it and you know it will be a \$100,000 repair, don't do anything and bring it back. Hoffman stated he does not want to go up to that amount if it is something that CGA determines can be done under that threshold otherwise if it will be a \$75,000 or \$80,000 repair, stop it and bring it back, and we will do an engineering report. Granzow stated he just wanted to make sure he heard that part, Hoffman stated yes, that is the intention. Granzow asked if Gallentine had all that. Gallentine stated let me repeat it so he understands it, after televising, whether it is successful or not, if we deem it can be repaired for under \$50,000 for Honey Creek's bill, we can go ahead and do it. Granzow stated he thinks that is \$50,000 for total project, Hoffman stated yes, \$50,000 for total project, he should have clarified it. Gallentine asked so that is Honey Creek and CGA's fee correct, Granzow stated yes and televising costs. Smith asked if the Trustees want televising to come back first for review before we authorize repair. Granzow stated they may only televise and go 100' and they might be done.

Hoffman stated he did not want to get into supplanting, but does the second blowout, could we get more done if we created a second work order. Gallentine stated no, because code specifically prohibits you from splitting projects to avoid thresholds, and that is essentially what that would be doing. Hoffman stated that is the supplanting part, but didn't know if Seward would not have walked around out there and found it would and the would have done some repairs, and Dave Sweeney went out and found another blowout and then it is another work order. Granzow asked if the intent with or without the televising. Hoffman stated without the televising, and asked does it have to be, is it investigation compared to repair. Gallentine stated the \$50,000 threshold applies to construction cost only. Hoffman asked if it does not apply to investigation costs. Gallentine stated it does not, but on the flip side if we spend \$50,000 in construction for just Honey Creek and then we got televising and CGA's fee on top of that, you are going to have some very unhappy landowners. McClellan stated she thought the results of the televising should be brought back, Hoffman stated that was fine, Hoffman called for the vote.

All nays. Motion failed.

Gallentine anticipates if they get that done on Monday or even Tuesday, we can have that for you next week. Granzow asked about breaking up projects like that, and stated Kossuth County has a huge project like that, if you are doing a repair on one side of the district and another repair on the far other side of the district, are they two projects or one, that is like doing two repairs on Big 4. Gallentine stated if you are doing two repairs on the open ditch of Big 4 and they are both within the same mile, they are one project, if you have one on Franklin County and one in Hardin County on the main open ditch of Big 4 maybe not, if you have one on the Lateral of Big 4 and one that is on the main of Big 4, probably not. Gallentine stated he thinks it is more horizontal separation and if it is on different mains and laterals versus just a main or lateral. Granzow was just curious as it was brought up to him, and was just seeing if he could get some verification. Gallentine stated that is his interpretation of it, but Gallentine is not an attorney. McClellan stated we should not use that as legal advice, we should get our own legal advice. Granzow stated he thinks we and Gallentine should pay attention to see how that turns out, they have already had legal advice on this. Gallentine noted the interesting thing is you can actually spend more than \$50,000 without having a report as long as on the front end we didn't think it was going to cost more than \$50,000, so if someone thought it would be \$45,000 and you end up spending \$51,000, you are still okay because you thought it would not be over \$50,000. McClellan stated you may run into something else while in the midst of repair. Gallentine stated you don't want to say let's do \$45,000 on the front end and then get a \$200,000 bill, that would be a stretch.

5. DD 128 - WO 2020-4 - Discuss W Possible Action - Utility Crossing Summary

Granzow moved this ahead of Item 4 on the agenda as we have Bernie Oleksa on the line with us. Gallentine stated he had spoken with Dean Bright, and he did not answer, and talked to the tenant and he did not answer, they both said to talk to landowner Sandy Trampe, Granzow stated he spoke with Trampe this morning and she said she was interested in doing an investigation to see what it was. Granzow asked when Heart of Iowa was out there, did they say the tile was in bad shape or crushed. Gallentine stated if he recalled correctly, where we saw it when it was exposed it was crushed and had silt in it. Granzow stated so it was not flowing, Gallentine stated you might as well consider it plugged because by the time it is half full of silt and falls down and crushed it is plugged. Granzow stated Trampe understands and is ok with an investigation to see what it is, if it is plugged, it may just be the short jog under the road, but she does want to know what is going on before going forward with any large repair process, Granzow asked that was Lateral 1 correct, Gallentine stated no that was Lateral 3 was the one that they found, Lateral 1 the one to the south was the one they never found. Gallentine stated his big question was if there was even anything hooked to them, if there is anything hooked to them, does it really matter. Granzow stated he knows Lateral 3 is a wet spot, Trampe also said she just did a ton of tiling right there on Lateral 1. McClellan

asked if that was on the west side of the road. Granzow stated that was correct, it was on the west side of the road, and Trampe said Jeremy Maas did it and did hook to something right there.

Gallentine asked if Granzow wanted Gallentine to reach out to Gehrke for those maps, Granzow stated if they would give it, yes. Granzow stated Trampe pointed out the terraces she put in for Conservation practices, but you can see that wet spot as it goes down hill right to that corner. Gallentine can reach out to Gehrke, usually he is ok giving those maps out to let us know where district tile is. Granzow stated okay, as far as Lat 3 goes, we need to find out why it is crushed and maybe that is why she doesn't have drainage over there, so an investigation she was okay with at this point. Gallentine stated his first step if he were to investigate was to get a hold of Gehrke and see what their map shows.

Motion by McClellan to have Gallentine contact Gehrke, to review the maps for possible location of District tile in DD 120 on Drainage Utility Permit #2020-4. Second by Hoffman.

In additional discussion on the motion, Hoffman stated also gather a history of what work was performed, McClellan and Granzow agreed. Gallentine stated he will gather that information and bring it back to the Trustees to make a decision.

All ayes. Motion carried.

Granzow addressed Oleksa and stated we do not have anything for you yet, and asked if Oleksa had any additional questions. Oleksa stated you will do an investigation on Lateral 3 and Gallentine is going to reach out to Gehrke to get the maps, and review those and see where Lateral 1's potential location is. Gallentine stated yes, and to see if Lateral 1 and to see if anything is even hooked into Lateral 3 or not. Granzow stated and then the investigation will come in later. Gallentine stated we will gather that before we do any field investigation or anything of that nature, we will try to keep it simple to start with, and conserve costs for everybody. Granzow asked for any other questions. Oleksa had none at this time.

6. DD Big 4 Lat 2 - Discuss W Possible Action - Joint DD Work Order From Hamilton County

Smith stated she had received a work order from Hamilton County in this joint district, Hamilton County reports a slough in the side of the road ditch, and they have sent some pictures and the reason Smith brought it to your attention is if you were interested in approving the work order, for Hamilton County to go ahead and send a contractor out, we could include our minutes and send that over to Hamilton County for their records. Granzow stated he was interested, but asked what is the responsibility of their contractors they are going to hire, Granzow thinks they are fine, but it is worth asking. McClellan stated if it is a ditch slough, would that be their Engineer's Office that would do that. Granzow stated this would be an open ditch repair, Smith concurred it was on the open ditch. Granzow does not have a problem with them doing the work with their contractors, just that their contractors fall under the same guidelines ours fall under for insurance, liability, and can give a rate sheet. Smith stated that may be a question Gallentine can answer for us, he may be more familiar with Hamilton County than Smith is. Gallentine stated he is not familiar with Hamilton County's repair process, as they don't have an engineer involved with that, Gallentine believes they just call a contractor in for repair, and go out and do what feels necessary. Smith asked if the Trustees would like to give a dollar amount guideline on this, this is the first work order we have had with Hamilton County on this joint district, we don't get very many from them. Granzow is fine with them doing it with their contractors, Granzow just wants to make sure their contractors fall under the same guidelines as ours do, insurance is the big one. Smith can reach out to the Hamilton County drainage clerk and find that information out if you would like. Granzow stated he thought we could go ahead and approve it with the stipulation that their contractors fall under the same guidelines as ours do and let them hire, Granzow asked what Hoffman thinks. Hoffman agrees as long as it is a responsible bidder. Hoffman asked Gallentine if that location was in a place he could drive by and take a look on his way into the office as well. Gallentine can do that, Hoffman stated if they are not engaging an engineer, he would like an experts eyes on it, if he is going to drive by there. Gallentine stated he does believe Ingraham has a long stick, and they are in Hamilton County, so it is nice they have a long stick contractor in their county. Granzow stated Ingraham is insured, Smith stated she has a copy of Ingraham's Certificate of Insurance. Granzow stated he would entertain a motion.

Motion by McClellan to approve the work order for the Joint District from Hamilton County as it appears. Second by Hoffman.

In additional discussion on the motion, Granzow stated he would include that Hamilton County hire a responsible, licensed and insured contractor, and we are giving them the authority to do the work. Granzow asked do we want a record of what a responsible contractor they hired is. Hoffman stated it would be nice if they would provide proof of insurance and all the requirements that we require and what Iowa code says a responsible contractor is, and provide that to our Clerk to put in the file on our side. Granzow stated it is great that they are going to do it, he just

wants to make sure we are on the same playing field,s because we are giving up our authority to them to do it. Smith can communicate that to them. Granzow is sure they have that, it is just a lot of paperwork.

All ayes. Motion carried.

7. Other Business

Granzow stated he wants Gallentine's opinion on Senate File 2175, and asked if Gallentine has looked at that. Granzow gave the summary of the file: that this Bill amends provisions requiring a County Board Supervisors to provide Notice of a Hearing regarding a report to classify tracts of land within a drainage or levee district as established or proposed to be established by the board. The notice is required to be delivered to each owner of land within the district and also by publication in a newspaper of general circulation in the county where the district is located. Granzow stated Gallentine should look this one up. Hoffman stated Gallentine may not be able to find it, Hoffman will give a copy to Smith who can scan it and send it to Gallentine, Smith stated she would do that. Hoffman stated this ia a pre-filed bill. Granzow just wants a review, is this good/bad, or is Granzow missing something. Gallentine will take a look at it and give Granzow his thoughts on it. Granzow stated if Gallentine could give him a call back on it right away that would be great, it is not a Board action on our side of it, Granzow is just after anyone's opinion. Smith asked if the Trustees would like this on the agenda next week. Granzow stated no. McClellan asked who introduced this, Granzow stated Annette Sweeney did, Granzow is just looking for information if this would/would not hurt us in our process. Gallentine stated he does not know if this involves that, but some counties really like the \$50,000 threshold and they like to keep landowners informed and other counties think that the threshold is too low and they would like to be able to do \$100,000 worth of work without telling any landowners. Granzow stated that was in there too, Gallentine stated that seemed a little excessive to him, but he is basing that off of the calls the Drainage Clerk gets after assessments for even \$20,000. Granzow stated they just changed from \$20,000 to \$50,000 to do the same type of repairs, it didn't jump from \$20,000 to \$100,000 due to inflation, it is just a way of saving a lot of publication costs. Granzow stated we do landowner meetings and does not know if other counties do that, some have never even heard of it or calling landowners in. Hoffman stated we are overly open and transparent with landowners because spending the kind of money we are spending anymore is kind of a slap in people's face if you are not asking them for input, as long as they know you are ordered to maintain the facilities. Hoffman stated something has to be done, and would rather know something is going to be done up front and that there is going to be a bill, and can plan accordingly, whereas some counties just spend and ask for forgiveness later, Granzow stated or just dictate.

Gallentine stated part of the other issue starts to become that publications in newspapers are not cheap, and there is a real question with the amount of people that read newspaper, what value comes out of that anymore, not just for hearing notices but for bid lettings, and that is something the legislature is going to have to tackle long term to figure out how we do something a little different because if I am doing a million dollar water main project in Ackley, Iowa and I publish a bid notice in the newspaper in Ackley, Iowa I may pick up one contractor that may be interested, it is not like it was 100 years ago where there is a lot of these guys around local. Granzow agreed, and just wanted to get some eyes on it. Gallentine stated he would look at it and let Granzow know his thoughts on it.

8. Adjourn Meeting

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



Hardin County

Drainage Claims with Pay Date of 12/31/2020

DD 20 WO 302 - Tile repair, parts, labor, equip	Honey Creek Land Improvement, LLC	4,007.94
DD 41 WO 299 - Tile repair, parts, labor, equip	Honey Creek Land Improvement, LLC	3,858.04
DD Big 4 Main - Tile repair, rock, riprap, clay	Ingraham Construction Inc	2,176.48

Total Regular Payables: 0.00
Total Stamped Warrants: 10,042.46



Drainage Work Order Request For Repair Hardin County

Date: 4/15/2020

Work Order #: W000000291

Drainage District: DDs\DD 14 (51027)

Sec-Twp-Rge: 34-88-22 **Qtr Sec:** E1/2 NE NE

Location/GIS: 88-22-34-200-003

Requested By: James Sweeney/Cynthia Ioger/Jim & Ron Vierkandt

Contact Phone: (641) 847-3273

Contact Email: jsweeney@cgaconsultants.com

Landowner (if different): Ron/Jim Vierkandt/Cynthia Ioger 641-323-4051 ^{Ron}

Description:

DD 14- Sweeney reports plugged main tile in Jim & Ron's parcels, Sheldahl called in to pothole/explore tile on S side of D41, likely main tile. Intake further E of D41 & S27 intersection where tile goes under road needs repair. See Add'l Req in docs- lack of drg downstream of intersection of Lat 2/main tile. Last 3 years, Lat 2 has lacked enough drg to effectively farm area it should drain. Potholes dug by landowners in Sects 34/35 do not drain. Also, broken intake @ Lat 2 intersection w D41 in Sect. 35.

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:** _____



Drainage Work Order Request For Repair

Hardin County

Date 4/20/2020

Work Order # _____

District # #14

Lateral Lat 2 & Main

Fund # _____

Township _____

Section 27, 34, 35wp 88

Rge 22 Qtr Sec _____

Repair Requested By Cynthia Iorger, Ronald Vierkandt, James Vierkandt

Address 15898 Co Hwy D41 Phone _____

Landowner Same

Address Same Phone _____

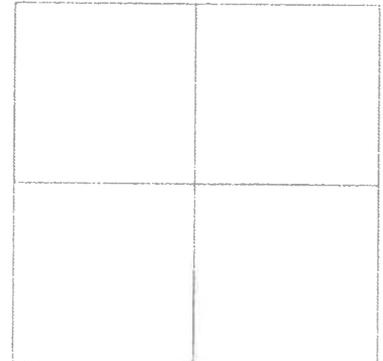
Request Taken By _____

Available for Repair Now? Yes

Date Available _____

Problem Description **There is a lack of drainage somewhere downstream of the intersection of Lateral 2 and the main tile. Last three or so years the Lateral 2 tile has lacked enough drainage effectively farm the area it is supposed to drain. Pot-holes were dug by the landowners in sections 34 and 35, and water just sits in said holes without draining.**

Also, there is a broken intake where Lateral 2 intersects D41 in section 35



Repair labor, materials and equipment _____

Potential Wetlands? Yes-Repair existing tile only

No-Repair and maintain tile

Repaired By: _____

Date: _____

Please send statement for services to:

Hardin County Auditor's Office

Attn: Tina Schlemme

1215 Edgington Ave, Suite 1

Eldora, IA 50627

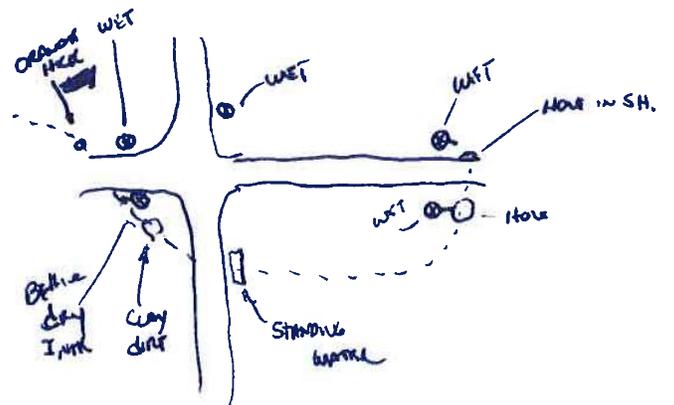
Phone (641) 939-8111

Fax (641) 939-8245

For Office Use Only

Approved: _____

Date: _____



226300002

D. No. 42

235100002

2351

235100004

Drainage District:

#14 Main and Lateral 2

Investigation and Repair Summary:

- Per the earlier recommendations and authorization of the previous Investigation Summary, inspected the Main Tile and Lateral 2 Tile in the NE¼ of Section 34 and NW¼ of Section 35, Township 88 North, Range 22 West.
- Used beehive intake located approximately 300 ft west of County Highway S27 and in the south ditch of County Highway D41, inserted tile locator and hit obstruction approximately 180 ft downstream from said intake. Excavated hole at said obstruction and found nothing, water was flowing good. Drainage problem is farther upstream from beehive intake.
- Excavated on Lateral 2 Tile where the Iowa Rural Water Associations (IRWA) watermain crosses drainage district tile approximately 400 ft west of County Highway S27 on the north side of County Highway D41. Found 14" VCP flowing with no obstructions. However, watermain only clears the Lateral 2 Tile by approximately 1/4 feet. Repaired tile with 15" DW HDPE and concrete collars. Drainage problem is farther upstream.
- Visually observed standing water on the east side County Highway S27 approximately 330 ft south of County Highway D41. Excavated a hole on west side of County Highway S27, found Lateral 2 Tile – 4" SW HDPE tile to inspect condition of tile and water started surcharging into hole. Problem is farther downstream. Repaired tile with 2 HDPE couplers.
- Found Lateral 2 Tile on the south side of County Highway D41 at approximately 32 ft from the centerline of said County Highway D41. Removed section of 8" VCP Lateral 2 tile, used push tile locator to locate tile. Hit obstruction approximately 21 ft upstream from inspection hole. CCTV upstream from inspection hole and found two 5" HDPE private laterals directly across from each other protruding into Lateral 2 Tile 19 ft from said inspection hole. The private laterals are completely blocking the flow in the Lateral 2 Tile. Permanently repaired private tile connections to Lateral 2 tile with two 5"x8"x8" HDPE tees, one 4"x5"x5" HDPE tee, 3 HDPE couplers of varies sizes, 4" SW HDPE, 5" SW HDPE, and 8" DW HDPE. Rock bedding was used and concrete collars at all connections.
- Also, CCTV downstream from inspection hole on south side of County Highway D41 for approximately 70 ft to the Lateral 2 Tile connection with the Main Tile. Lateral 2 Tile appears to be in adequate physical condition.
- Inspected beehive intake approximately 540 ft east of County Highways S27 and on the south side of County Highway D41. Intake appears to be near the end of Lateral 2 Tile and has a sinkhole on the east side between intake and Lateral 2 tile. Excavated at sinkhole and found 6" VCP tile from intake to 6" HDPE tee on Lateral 2 tile. VCP tile connection with Lateral 2 Tile appears to be damaged. Replaced damaged VCP tile connection tile with 6" SW HDPE tile and concrete collars at both ends.
- There also appears to be another sinkhole by County Highway D41, but it appears to be caused by the 18" RCP culvert under the road.
- Also, the hickenbottom intake on the north side of County Highway D41 at approximately 375 ft from County Highway S27 appears to be full of dirt/debris and was not repaired at this time.
- After all repairs where done, the water on the east side of County Highway S27 appears to have down gone now that the restriction has been removed.



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

See attached Tabulated Contractor Time and Materials sheet.

Additional Actions Recommended:

1. Verify that contractor performed fine grading and seeding of the south and north ditch of County Highway D41, the west ditch of County Highway S27, and wetland area that was disturbed by these repairs.
2. Inform Secondary Roads that the hickenbottom intake on the north side of County Highway D47 may need to be repaired as it currently has dirt/ debris in it.
3. Inform Secondary Roads that the sink hole over the 18" Culver needs repaired.
4. If desired by the District Trustees, inform IRUA that their watermain appears not to meet the original permit requirements.
5. As noted on the Tabulated Contractor Time and Materials, Crop damage was incurred. It is recommended that the District Trustees pay any damage claim brought forth.



Tabulated Contractor Time and Materials

Date	Totals	7/7/2020	7/8/2020	7/9/2020	7/13/2020
Workman (hrs)	82 2/3	20	21 3/4	36 1/4	4 2/3
Mini Excavator (hrs)	25 1/3	6 1/3	7	9	3
Skidloader (hrs)	26	6 1/3	7 3/4	9	3
CCTV inspection (ft.)	90		90		
4" Single Wall HDPE Tile (ft.)	162/5			162/5	
5" Single Wall HDPE Tile (ft.)	82/3			82/3	
6" Single Wall HDPE Tile (ft.)	2 2/5				2 2/5
8" Dual Wall HDPE Tile (ft.)	7 1/2			7 1/2	
15" Dual Wall HDPE Tile (ft.)	2 3/5			2 3/5	
4"x5"x5" HDPE Tee (ea.)	1			1	
5"x8"x8" HDPE Tee (ea.)	2			2	
4" Coupler (ea.)	3			3	
5" Coupler (ea.)	2			2	
6" Coupler (ea.)	1				1
Rock Bedding	Yes				
Concrete Collars	Yes				
Rock Bedding	Yes				
Crop Damage (ac.)	1/2			1/2	



Tabulated Defects

	Total	GPS #254 UPSTREAM	GPS #255 DOWNSTREAM	GPS #255 UPSTREAM
Total Length Televised (ft)	69.9	18.5	9.5	41.9
Date:		7/8/2020	7/8/2020	7/8/2020
Top crack (ft)	2.1	0.8	0	1.3
Side crack (ft)	0	0	0	0
Bottom crack (ft)	0	0	0	0
Partial or imminent collapse (#)	0	0	0	0
Full collapse (#)	0	0	0	0
Debris (ft)	5	4	0	1
Offset Joint (#)	21	7	3	11
Soil/voids visible in offset joint (#)	9	7	2	0
Single Wall HDPE (non-deformed) (ft)	1.5	1.5	0	0
Dual Wall HDPE (ft)	0	0	0	0
CMP (rusty) (ft)	0	0	0	0
Holes (non-fixed) (#)	0	0	0	0
Holes (fixed) (#)	0	0	0	0
Alligator Cracks (ft)	0	0	0	0
Radial Cracks (# of tile)	0	0	0	0



CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/07/2020

PROJECT NUMBER:

HARDIN DD WO # 292

DAYS OF WEEK:

S M W T F S

COUNTY, ROUTE, ROAD:

6844.5 / DD # 14
INTERSECTION OF CO HWY
S-27 & CO HWY D41

SHEET NO.

1 OF 4

LOCATION:

SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 34-88-22,
& NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD 14 MAIN OR LAT 2

LOW 70'S TO LOW 90'S SUNNY
WITH LIGHT WINDS

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

JOB # 6844 DD 14 SURVEY

2:40 P.M. OBSERVER AND CREW ARRIVED
ON SITE. CREW STARTED UNLOADING EQUIPMENT WITH ADAM,
PERRY, & DYLAN ON SITE AND KOLBELCO SK85CS MINI EXCAVATOR
& CASE TR 340 TRACKED SKIDLOADER FOR EQUIPMENT. OBSERVER
SET GPS BASE ON GPS # 23 3/4" ϕ IRON REOD 0.2' \pm DEEP
SW CORNER OF FIELD DRIVE IN SE QUADRANT OF CO HWY D-41 &
CO HWY S-27.

3:00 P.M. GPS BASE WAS SET UP WITH OBSERVER LOOKING OVER
INFORMATION FOR A GOOD PLACE TO START CHECKING.
CREW WAS NOW @ INTERSECTION OF ^{CO HWY D41} & CO HWY S27 WITH EQUIPMENT.
OBSERVER TOLD CREW TO CHECK INTAKES TO SEE IF THEY ARE DRY OR
WET & THEN START RUNNING LOCATOR CABLE THROUGH
INTAKES TO FIND OBSTRUCTION.

3:10 P.M. RON VIERKANDT STOPPED AND CHECKED HOW INVESTIGATION
WAS GOING, OBSERVER TOLD RON THAT WE JUST ARRIVED ON SITE
AND WERE CHECKING WHICH INTAKES ARE STILL WET THEN TRY
RUNNING LOCATE CABLE DOWN INTAKES TO FIND POSSIBLE
OBSTRUCTION.

3:20 P.M. FOUND BEE HIVE INTAKE IN SOUTH DITCH OF CO HWY D-41
297' \pm WEST OF ϕ CO HWY S-27 WITH 6" CLAY TILE OUTLET TO WEST
WAS DRY. CREW WILL TRY RUNNING LOCATE CABLE INTO
TILE FROM THIS LOCATION.

3:30 P.M. OBSERVER CHECKED GPS INTO GPS # 21 SURVEY MARK NAIL
FLUSH IN AGE IN CO HWY S-27 ABOUT 2632' \pm SOUTH OF ϕ CO HWY D41 WITH
BOTH HORIZONTAL AND VERTICAL POSITION CHECKING GOOD.

3:35 P.M. OBSERVER NOTICED A HOLE STILL OPEN ON EAST SIDE OF EAST
ROW FENCE FOR CO HWY S-27 322' \pm SOUTH OF CO HWY D-41. EXCAVATED

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

Observer's Signature:

Dean Penning

Date Prepared:

07/07/2020

Reviewed by:

Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE: 07/07/2020

PROJECT NUMBER: HARDIN DD WO# 292
6844.5 / DD#14
COUNTY, ROUTE, ROAD: INTERSECTION OF CO HWY
S-27 & CO HWY D41
LOCATION: SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 34-88-22,
& NW 1/4 NW 1/4 35-88-22. INVESTIGATE
FOR PLUGGED TILE DD 14 MAIN OR LAT 2

DAYS OF WEEK:

S	M	W	T	F	S
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SHEET NO. 2 OF 4

LOW 70'S TO LOW 90'S SUNNY WITH
LIGHT WINDS

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

JOB# 6844 DD14, SURVEY
HOLE HAS 2.0' TO 2.5' OF WATER SITING IN
HOLE. OBSERVER ALSO NOTICED THAT FL OF DITCH ON BOTH EAST
& WEST SIDES OF CO HWY S27 IN SAME AREA WAS SATURATED
BUT NO WATER STANDING IN DITCH. OBSERVER CALLED ADAM
THAT HOLE THAT SOMEONE PREVIOUSLY EXCAVATED HAS
WATER SITING IN IT AND BOTH DITCHES ARE SATURATED. SO
I WOULD SAY TILE IS PLUGGED DOWN STREAM.
3:44 P.M. PICTURE #404B SEE PICTURE FOR DETAILS.
3:50 P.M. OBSERVER AND CREW STARTED PUSHING LOCATE CABLE
THROUGH BEEHIVE INTAKE. LOCATE CABLE HIT A SPOT WHILE
PUSHING WITH SOME RESISTENCE BUT PUSHED THROUGH THIS
AREA (GPS# 235 @ 65.7') (OFFSET JOINT?). OBSERVER LOCATED
THIS SPOT FOR DOCUMENTATION, OBSERVER CONTINUED TO
PUSH LOCATE CABLE UNTIL IT HIT SOMETHING HARD. THIS TIME
CABLE COULD NOT PUSH ANY FURTHER DOWNSTREAM.
5:20 P.M. OBSERVER HAD LOCATING DEVICE HOOKED UP AGAIN AND STARTED
TO LOCATE TILE IN FIELD AND SHOOTING WITH GPS. SINCE
LOCATING END WAS NOT CABLE OBSERVER GUESSED WHERE HEAD
WAS LOCATED BY SIGNAL STRENGTH, OBSERVER TAPED CABLE AT
INSIDE EDGE OF INTAKE ABOUT TOP OF 6" CLAY TILE OUTLET AND
PULLED CABLE OUT OF TILE. OBSERVER LAYED CABLE ALONG
GRAVEL SHOULDER AND SHOT LENGTH WITH GPS FROM TAPE
TO END OF CABLE. OBSERVER CREATED A POINT ON POLYLINE
AT THIS FOOTAGE.
6:00 P.M. CREW ASKED OBSERVER WHICH WAY WAS SHORTER TO GET
OUT IN FIELD TO EXCAVATE AT OBSTRUCTION. OBSERVER SAID
ALONG LOCATES FROM N ROW OF CO HWY D-41. OBSERVER

I Certify that the work described in this report was incorporated into this contract unless otherwise noted.
Observer's Signature: Dean Penning Date Prepared: 07/07/2020
Reviewed by: _____ Engineer _____
Date Reviewed: _____

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE: 07/07/2020

PROJECT NUMBER: HARDIN DD WO# 292
6844.5 / DD#14
COUNTY, ROUTE, ROAD: INTERSECTION OF CO HWY
S-27 & CO HWY D41
LOCATION: SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 34-88-22,
& NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD 14 MAIN OR LAT 2

DAYS OF WEEK:

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

SHEET NO. 3 OF 4

LOW 70'S TO LOW 90'S SUNNY WITH
LIGHT WINDS

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

JOB# 6844 DD14 SURVEY
HELD UP POLE ABOVE CORN FOR THEM TO
SEE WHERE CABLE LOCATE ENDED, RON VIERKANDT ALREADY
TOLD CONTRACTOR HE COULD MAKE A PATH IN CORN TO FIX TILE
SINCE IT NEEDS TO BE FIXED, CREW CAME THROUGH FROM JIM VIERKANDT.
DRIVE OFF CO HWY D-41. OBSERVER ASKED THE REASON FOR
THIS WAY (DAMAGED A LOT MORE CROPS) WAS IT WOULD BE
BETTER TO GET ROCK OUT TO REPAIR.

6:30 P.M. CREW STARTED EXCAVATING TO EXPOSE TILE @
OBSTRUCTION (GPS#246) 159.1' INTO FIELD.

7:10 P.M. CREW HAD TILE EXPOSED AT POSSIBLE OBSTRUCTION.
TILE LOOKED GOOD UPSTREAM AND DOWNSTREAM WITH 3"
OF GOOD FLOW. TILE LOCATE CABLE MUST HAVE HIT AN OFFSET JOINT.

7:15 P.M. PICTURE # 4049 & PICTURE # 4050 SEE PICTURE FOR DETAIL

7:30 P.M. FINISHED REELING LOCATE CABLES BACK ONTO REEL.

8:00 P.M. PERRY AND DYLAN LEFT SITE FOR DAY.

8:15 P.M. OBSERVER & ADAM PUSHED LOCATE CABLE 100" DOWNSTREAM
FROM GPS#247 & 100' UPSTREAM FROM GPS#248 WITH NO OBSTRUCTIONS
SINCE TILE IS FLOWING GOOD THEN OBSTRUCTION MUST BE FURTHER UPSTREAM.

8:20 P.M. ADAM STARTED EXCAVATING IN NORTH DITCH OF CO HWY D-41 TO
FIND TILE AND EXCAVATED AROUND 6" HICKEN BOTTOM. ADAM FOUND
6" CLAY TILE ^{OUTLET WAS} BROKEN & COMPLETELY FULL OF SOIL (BOTTOM OF HICKEN BOTTO
WAS COMPLETELY FULL OF SOIL TOO.

8:50 P.M. ADAM STARTED EXCAVATING FOR TILE NEAR WM/TILE CROSSING
BUT IRUA WILL NOT BE ON SITE UNTIL TOMORROW @ 8:00AM. TO CHECK
IF WATER MAIN IS CAUSING AN ISSUE, PROBED DOWN TO TILE BY WATER MAIN AND THIS
IS IN GOOD SHAPE.

9:00 P.M. OBSERVER AND ADAM LEFT SITE.

QUANTITIES ADAM 2:40 - 9 6 1/3 HOURS KOLBELO SK85 CS MINI EXCAVATOR 6 1/3 HOURS
PERRY 2:40 - 8 5 1/3 HOURS CASE TR-340 TRACKED SKIDLOADER 6 1/3 HOURS
DYLAN 2:40 - 8 5 1/3 HOURS

I Certify that the work described in this report was incorporated into this contract unless otherwise noted.
Observer's Signature: Dean Penning Date Prepared: 07/07/2020
Reviewed by: _____ Engineer
Date Reviewed: _____

PICTURE # 4048 IS LOOKING NORTH ALONG EAST ROW FENCE
322'± SOUTH OF CO HWY D-41 SHOWING WATER SITING IN HOLE



PICTURE # 4049 IS LOOKING NW UPSTREAM INSIDE 14" CLAY
TILE (GPS# 248 1.28' TOPTOFL). TILE IS IN GOOD SHAPE
WITH 3" FLOW (5.1" DEEP)

PICTURE # 4050 IS LOOKING NW. DOWN STREAM INSIDE 14" CLAY
(5.1'±DEEP)
TILE (GPS# 247 1.24' TO TOP FL) TILE IN GOOD SHAPE
WITH 3" FLOW TILE HAS A LONGITUDINAL CRACK @ 12 O'CLOCK BUT

NOT
CAVING
DOWN



07/07/2020
19:15

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE: 07/08/2020

PROJECT NUMBER: HARDIN DD WO# 292
6844.5 / DD#14
COUNTY, ROUTE, ROAD: INTERSECTION OF CO HWY
S-27 & CO HWY D41
LOCATION: SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 34-88-22,
& NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD14 MAIN OR LAT 2

DAYS OF WEEK: S M T W T F S

SHEET NO. 1 OF 5

LOW 70'S TO MID 90'S SUNNY
WITH LIGHT WINDS

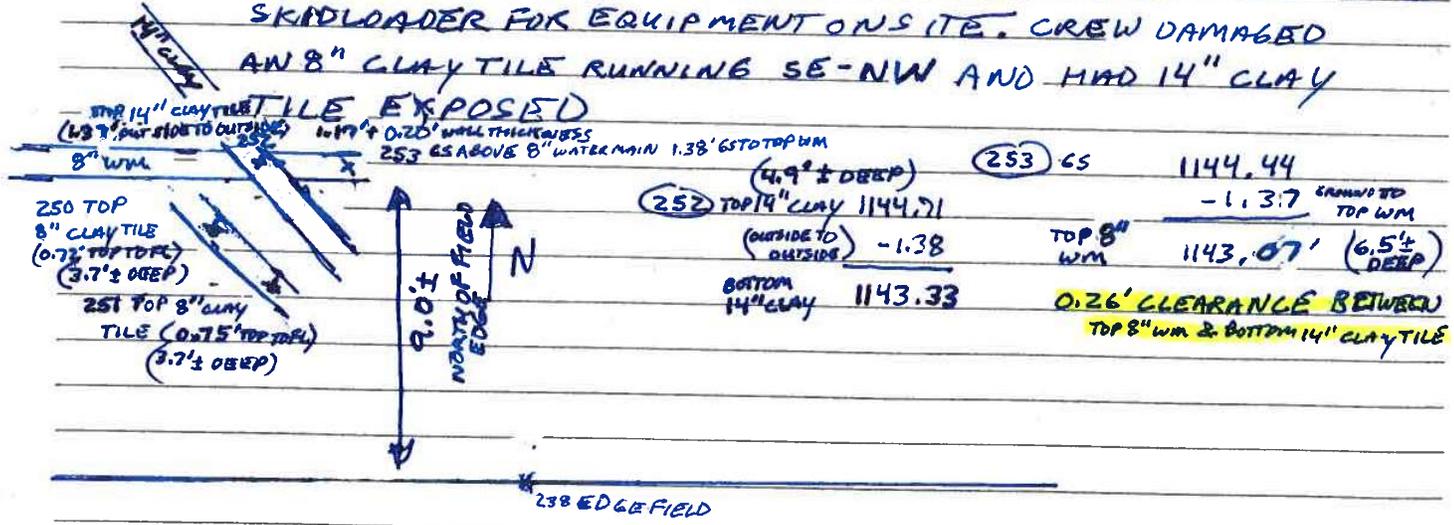
DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUB
NAME, ITEM NO. AND LOCATION JOB# 6844 DD14, SURVEY

7:35 A.M. OBSERVER LEFT OFFICE FOR JOBSITE.
8:05 A.M. ADAM CALLED THAT JASON WITH IOWA RURAL UTILITIES ASSOCIATION
WAS ON SITE AND WANTED TO START DIGGING FOR TILE. OBSERVER
SAID GO AHEAD SINCE I AM ABOUT 7 MINUTES AWAY FROM
SITE.

8:12 A.M. OBSERVER ARRIVED ON SITE AND SET GPS BASE ON GPS#23
3/4" IRON ROD 0.02'± DEEP SW CORNER FIELD DRIVE IN SE QUADRANT OF
CO HWY D-41 & CO HWY S-27.

8:30 A.M. OBSERVER HAD GPS BASE SET UP AND CHECKED INTO GPS#21 SURVEY
MARK NAIL FLUSH IN ACC IN CO HWY S-27 ABOUT 2682'± SOUTH OF
CO HWY D-41 WITH BOTH HORIZONTAL AND VERTICAL POSITION CHECKING
GOOD

8:35 A.M. OBSERVER ARRIVED AT WATERMAIN/TILE CROSSING WITH
RON WERKANDT, JASON WITH IOWA, ADAM, DYLAN, PERRY ON SITE
AND KOLBEL CO SK 85 CS MINI EXCAVATOR & CASE TR340 TRACKED
SKIDLOADER FOR EQUIPMENT ON SITE. CREW DAMAGED
AN 8" CLAY TILE RUNNING SE-NW AND HAD 14" CLAY



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

Observer's Signature: Dean Penning Date Prepared: 07/08/2020

Reviewed by: _____ Engineer Date Reviewed: _____

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/08/2020

PROJECT NUMBER:

NARROW DOWNS # 292

DAYS OF WEEK:

S M T **W** T F S

COUNTY, ROUTE, ROAD:

6844.5 / DD#14

SHEET NO.

2 OF 5

LOCATION:

SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 34-88-22,
S 1/4 NW 1/4 35-88-22. INVESTIGATE
FOR PLUGGED TILE DD14 MAIN OR LATE 2

LOW 70'S TO MID 90'S SUNNY WITH LIGHT
WINDS

JOB# 6844 DD14, SURVEY

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

8:51 A.M. PICTURE # 4051, 8:52 A.M. PICTURE # 4052
& PICTURE # 4053 SEE PICTURES FOR DETAILS.

9:00 AM. OBSERVER THOUGHTS ARE HOLE SHOULD HAVE FILLED UP
WITH WATER IF TILE WAS PLUGGED DOWN. TREAM FURTHER & NW
HOLE WHERE TILE EXPOSED FLOW IS GOOD. OBSERVER WILL
CHECK BEEHIVE INTAKE IN DITCH NORTH OF HWY D-41 & WEST
OF S-27. THIS BEEHIVE INTAKE OUTLET TILE TO SOUTH WAS
DRY. OBSERVER WILL HAVE CREW EXCAVATE & EXPOSE
TILE WEST OF BEEHIVE INTAKE SO LOCATE CABLE CAN
BE RAN UPSTREAM IN TILE TO SEE TO CHECK IF PLUGGED

9:56 A.M. PICTURE # 4054 SEE PICTURE FOR DETAILS.

10:15 A.M. LATERAL # 2 8" CLAY TILE WAS EXPOSED NW
OF BEEHIVE INTAKE WITH A SECTION OF 8" TILE REMOVED.

10:16 AM. PICTURE # 4055 & PICTURE # 4056 SEE PICTURE FOR DETAILS.

10:25 A.M. CREW RAN LOCATE CABLE UPSTREAM INSIDE 8" CLAY TILE
FROM GPS # 254 UNTIL IT HIT SOMETHING IN TILE @ 21.3'±
CABLE IS UNABLE TO PUSH THROUGH THIS LOCATION.

10:35 A.M. CREW WAS HEADING TO WEST DITCH OF CO HWY 527
330'± SOUTH OF S CO HWY D41 TO CHECK CONDITION & FLOW
IN TILE BEFORE EXCAVATING IN FIELD IN CASE JUST A JOINT
OFFSET.

10:40 A.M. MID COUNTRY EQUIPMENT ON SITE & OBSERVER TRYING
TO RUN LOCATOR CABLE THROUGH INTAKE TO FIND OBSTRUCTION
IN LATERAL # 2. OBSERVER IS UNABLE TO MAKE BEND WITH
LOCATE CABLE INTO LATERAL # 2. CREW WILL EXCAVATE TO
FIND LATERAL # 2 TO RUN LOCATE CABLE DOWNSTREAM
TO PLUG. ADAM

11:03 A.M. PICTURE # 4058 SEE PICTURE FOR DETAILS.

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

Observer's Signature:

Dean Penning

Date Prepared:

7/08/2020

Reviewed by:

Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/08/2020

PROJECT NUMBER:

HARDEN DOWNS # 252

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD:

6844.5 / DD#14
INTERSECTION OF HWY
5-27 & CO HWY 041

SHEET NO.

3 OF 5

LOCATION:

SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 34-88-22
& NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD14 MAIN OR LAT 2

LOW 70's TO MID 90's SUNNY WITH LIGHT
WINDS

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

JOB# 6844 DD14, SURVEY

11:15 A.M. BEFORE CREW COULD GET DOWN TO
TILE WATER WAS SQUIRTING OUT OF CRACK IN SOIL & FILLING HOLE UP.
CREW DECIDED TO CHECK TILE ON WEST SIDE OF WATER MAIN /
TILE CROSSING.

11:26 A.M. PICTURE # 4059 SEE PICTURE FOR DETAILS.

11:35 A.M. CREW CUT A 4" HOPE SW PERF TILE RUNNING N-S
IN FIELD. BEFORE CREW REACHED TILE, WATER WAS
SQUIRTING OUT OF GROUND.

11:45 A.M. DUE TO WATER PRESSURE AT THIS LOCATION, RESTRICTION
IS FURTHER DOWNSTREAM AND CREW WILL EXCAVATE
AT LOCATION WHERE CABLE COULD NOT PUSH THROUGH
21.3' ± SE OF BEEHIVE INTAKE IN SOUTH DITCH OF CO HWY
D-41. ADAM HAD PAUL SCHEDULED TO COME TELEVIEW
TILE TO PIN POINT ISSUE AT 1:00 P.M. SINCE NO ISSUE FOUND YET.

11:50 P.M. OBSERVER MARKED OUT EXACT LOCATION OF POSSIBLE OBSTRUCTION,
IN TILE. RON LEFT SITE AND ASKED TO LET HIM KNOW
WHEN PAUL WAS ON SITE TO TELEVIEW TILE.

12:05 P.M. CREW ROLLED ONE OF TRACKS OFF ^{MINI} EXCAVATOR HEADING BACK
TO EXCAVATE AT POSSIBLE OBSTRUCTION.

12:15 P.M. ADAM LEFT SITE TO GET A BAR TO HELP PUT TRACK BACK
ON. PERRY AND DYLAN LEFT FOR LUNCH. OBSERVER SHOT
LOCATION OF POSSIBLE OBSTRUCTION.

12:45 P.M. DYLAN AND PERRY BACK ON SITE FROM LUNCH

12:50 P.M. PAUL ON SITE WITH CAMERA EQUIPMENT TO TELEVIEW
UPSTREAM AND DOWNSTREAM FROM GPS #254 & #255 WEST
OF BEEHIVE INTAKE IN SOUTH DITCH OF CO HWY 041. CREW WAS UNABLE
TO GET POSSIBLE OBSTRUCTION EXCAVATED & EXPOSED BEFORE PAUL ARRIVED
DUE TO EQUIPMENT ISSUES. OBSERVER NOTIFIED RON PAUL WAS ON SITE

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

Observer's Signature:

Dean Perry

Date Prepared:

7/08/2020

Reviewed by:

Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/08/2020

PROJECT NUMBER: HARDEN DDWO# 252

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD: 6844.5/DD#14

SHEET NO.

4 OF 5

LOCATION: INTERSECTION OF CO HWY 5-27 & CO HWY 041
SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 34-88-22, & NW 1/4 NW 1/4 35-88-22 INVESTIGATE FOR PLUGGED TILE DD14 MAIN OR LAT 2

LOW 70's TO MID 90's SUNNY WITH LIGHT WINDS

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

JOB# 6844 DD14, SURVEY

1:13 P.M. PAUL HAD GENERATOR STARTED TO START TELEVISIONING TILE UPSTREAM.

1:15 P.M. ADAM BACK ON SITE PUTTING TRACK BACK ON MINI EXCAVATOR

1:20 P.M. PAUL TELEVISIONING UPSTREAM FROM GPS # 254 (FIELD OBSERVATION)

1.0' CAMERA BACK TIRE @ END OF 8" CLAY TILE

19.0' END TELEVISION 5" HDPE SW PERF TILE FROM WEST & FROM EAST THAT TIE IN AT SAME LOCATION WITH CLAY TILE SIDES CRACKED

& TOP APPEARS TO BE CAVING DOWN. TILE PLUGGED & ALMOST NO FLOW FROM UPSTREAM

1:33 P.M. PICTURE # 4060 SEE PICTURE FOR DETAILS.

1:45 P.M. CREW HAD TRACKS BACK ON MINI EXCAVATOR

1:55 P.M. PAUL HAD CAMERA TRACTOR BACK OUT OF TILE.

1:55 P.M. CREW WAS STARTING TO EXCAVATE TO REMOVE OBSTRUCTION

2:00 P.M. PAUL TELEVISIONING DOWNSTREAM FROM GPS # 255 (FIELD OBSERVATION)

1.0' CAMERA BACK OF TIRE @ END OF 8" CLAY TILE

10.1' LATERAL LEFT

LATERAL RIGHT @ 2 O'CLOCK

84.1' CHUNK OF TILE IN FL

2:16 P.M. 69.8' TEE. END CAMERA. PAUL ENDED CAMERA THINKING IF HE WENT ANY FURTHER CAMERA WOULD GET STUCK IN CONNECTION

8" TO 14" CONNECTION IN GOOD CONDITION WITH GOOD FLOW IN MAIN. PAUL AND OBSERVER LOCATED APPROXIMATE LOCATION OF MAIN/LAT 2 CONNECTION AND SHOT WITH GPS.

2:20 P.M. PAUL WAS BACKING CAMERA OUT AND PUTTING AWAY EQUIPMENT

2:39 P.M. PICTURE # 4061, PICTURE # 4062 & 2:41 P.M. PICTURE # 4064 SEE PICTURE FOR DETAILS

3:01 P.M. PICTURE # 4065 SEE PICTURE FOR DETAILS.

3:10 P.M. PAUL WAS WONDERING IF ANYTHING ELSE NEEDS TELEVISIONED. LEE SAID SINCE WE HAVE BLOCKAGE ISSUE RESOLVED THERE IS NO REASON TO TELEVISION ANYTHING MORE. PAUL LEFT SITE FOR DAY. PAUL WILL DROP OFF TELEVISION VIDEO AT OUR OFFICE.

I Certify that the work described in this report was incorporated into this contract unless otherwise noted.
Observer's Signature: Dean Penny Date Prepared: 7/08/2020
Reviewed by: _____ Engineer _____
Date Reviewed: _____

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/08/2020

DAYS OF WEEK:

S M T **W** T F S

SHEET NO.

5 OF 5

PROJECT NUMBER:

HARDY DOW # 292

COUNTY, ROUTE, ROAD:

6844.5/00114
INTERSECTION OF COMHWY
S-27 & CO HWY D41

LOCATION:

SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 34-88-22
& NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED THE DD14 MAIN OR LAT 2

LOW 70'S TO MID 90'S SUNNY WITH
WINDS

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

JOB # 6844 DOW SURVEY

3:25 P.M. RON & JIM VIERKANDT LEFT SITE.

3:45 P.M. PICTURE # 4066 & 3:46 P.M. PICTURE # 4067 SEE PICTURE FOR DETAILS.

3:45 P.M. CREW WAS GETTING 5" HDPE SW PERF TILE AREA PREPARED
FOR MAKING CONNECTIONS

4:15 P.M. PERRY AND DYLAN LEFT SITE

4:30 P.M. ADAM LEFT SITE. CREW NEED TO GET SUPPLIES
FOR 5" HDPE SW PERF TILE CONNECTIONS TO 8" CLAY TILE.

5:00 P.M. OBSERVER LEFT SITE AFTER SHOOTING EXISTING 4" & 5" HDPE
SW PERF TILE FOR NEW TIE IN CONNECTION TO 8" CLAY TILE
LAT 2 CONNECTION.

QUANTITIES

ADAM 8-12:15 1:45-4:30 7 HOURS 12:15-1:15 HOUR GETTING BAR
TO PUT ON TRACK
1:15-1:45 1/2 HOUR LETTING TRACK BACK ON MINI EXCAVATOR

PERRY 8-12:15, 12:45-4:15 7 3/4 HOUR
12:15-12:45 1/2 LUNCH

DYLAN 8-12:15, 12:45-4:15 7 3/4 HOUR
12:15-12:45 1/2 HOUR

PAUL WITH CAMERA EQUIPMENT 2 1/3 HOURS

KOLBELCO SK 85CS MINI EXCAVATOR 7 HOURS

CASE TR 340 TRACKED SKIDLOADER 7 3/4 HOURS

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

Observer's Signature:

Dean Penning

Date Prepared:

07/08/2020

Reviewed by:

Engineer

Date Reviewed



Clapsaddle-Garber Associates, Inc.

16 East Main Street, Marshalltown, Iowa 50158, ph 641-752-6701
1523 South Bell Avenue, Suite 101, Ames, Iowa 50010, ph 515-232-1784
5106 Nordic Drive, Cedar Falls, Iowa 50613, ph 319-266-0258
739 Park Avenue, Ackley, Iowa 50601, ph 641-847-3273
511 Bank Street, Webster City, Iowa 50595, ph 515-832-1876
800-542-7981, www.cgaconsultants.com

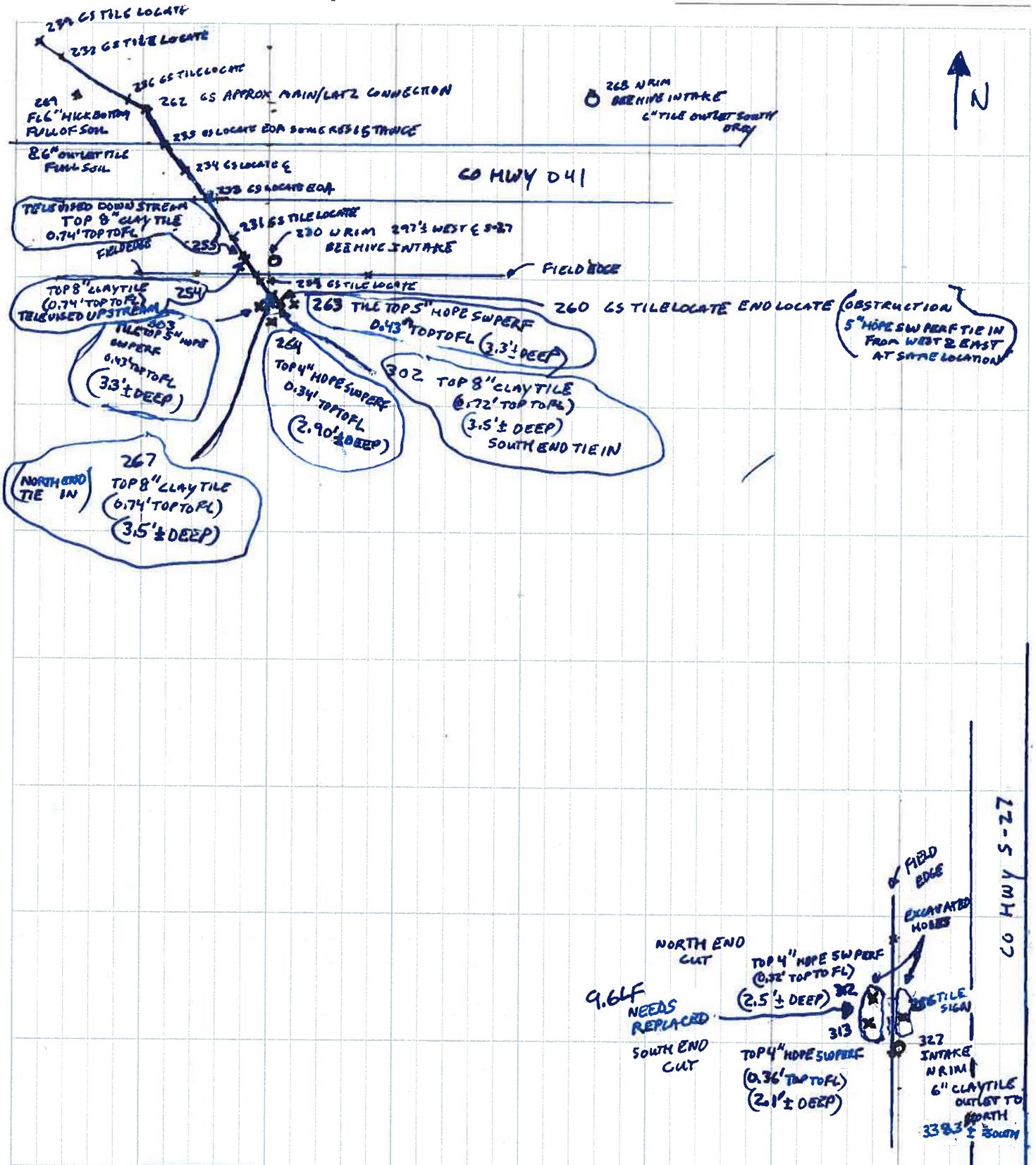
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6844.5 / 00#14

07/08/2020

D.R.A.

PN _____ Date _____
Computed By _____ Date _____
Checked By _____ Date _____
Subject _____



PICTURE# 4051 IS LOOKING SW SHOWING 8" CLAY TILE THAT WAS DAMAGED WHILE EXCAVATING TO EXPOSE 14" CLAY @ LOCATION WHERE WATERMAIN GOES UNDER TILE



GPS# 250 TOP 8" CLAY TILE (0.72' TO TOP)

(3.7' ± DEEP)



GPS# 251
TOP 8" CLAY
TILE
(6.75' TO TOP)
3.7' ± DEEP

07/08/2020
08:51

GPS# 252 TOP 14" CLAY TILE
(4.9' ± DEEP)



07/08/2020
08:52

PICTURE# 4052 IS LOOKING NW UPSTREAM INSIDE 8" CLAY TILE WITH 2" ± OF MUD IN FLOWLINE FROM GPS# 250. TILE IS IN GOOD SHAPE WITH FEW FINE ROOTS AND A FEW OFFSET JOINTS

PICTURE # 4053 IS LOOKING SE DOWNSTREAM INSIDE 8" CLAY TILE WITH 2"± OF MUD IN FLOWLINE FROM GPS # 251. TILE HAS A LITTLE POPOUT AT NEXT JOINT AND IS IN GOOD SHAPE WITH 2" MUD IN FLOWLINE AND COMPLETELY FULL DOWNSTREAM. RON THINKS THIS TILE IS ABANDONED.

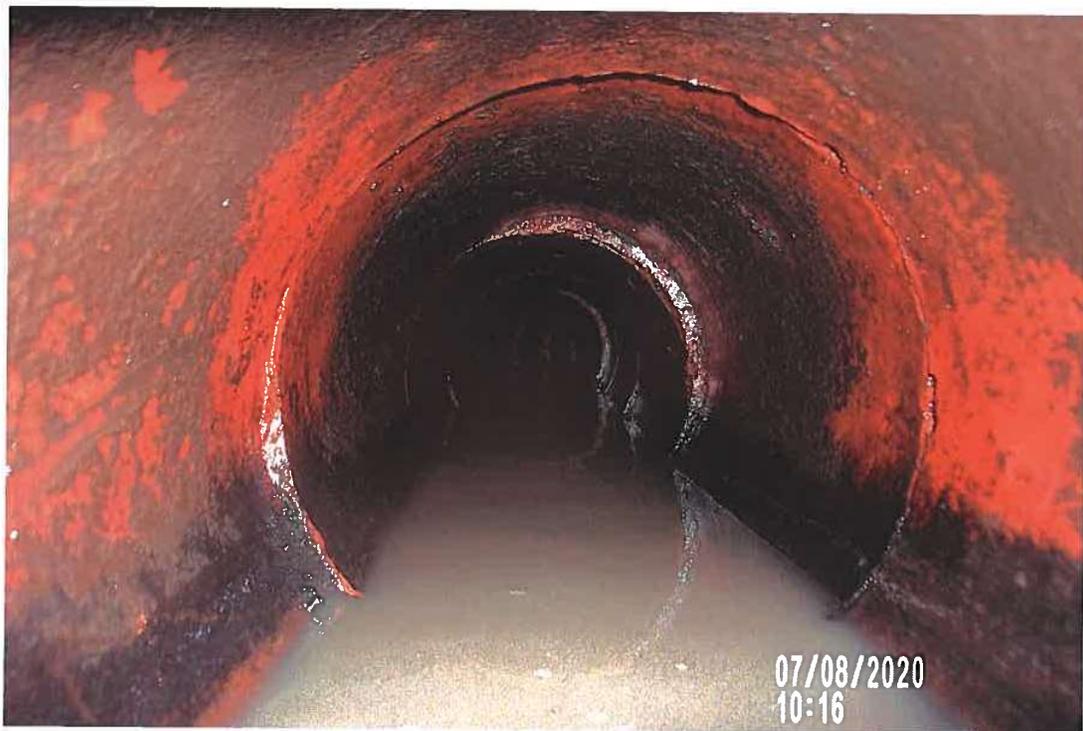


THINKS
THIS TILE
IS
ABANDONED.



07/08/2010
08:52

PICTURE #4054 IS LOOKING EAST IN SOUTH DITCH CO HWY 04/
297[±] WEST OF E CO HWY S-27 SHOWING CREW EXPOSING LATZ TILE
WEST OF BEEHIVE INTAKE SO CREW CAN RUN LOCATE CABLE UPSTREAM
TO CHECK FOR PLUGGED TILE.



PICTURE #4055 IS LOOKING ^{NW} DOWNSTREAM INSIDE 8" CLAY TILE
FROM GPS # 255' SHOWING TILE IN GOOD CONDITION WITH $\frac{3}{4}$ " OF
WATER AND NOT MUCH FLOW. TILE IS 3.1' \pm DEEP.

PICTURE# 4056 IS LOOKING SE UPSTREAM INSIDE 8" CLAY TILE
SHOWING TILE IN GOOD CONDITION WITH 3/4" WATER IN FL &
NOT MUCH FLOW. TILE IS 3.11' ± DEEP.
↑ 6" CLAY TILE INLET FROM BEEHIVE INTAKE.



PICTURE# 4057 IS LOOKING NW SHOWING SECTION OF 8" CLAY
TILE ROLLED OUT IN SOUTH DITCH OF CO HWY 041 NW OF BEEHIVE INTAKE
FOR CREW TO RUN LOCATOR CABLE UPSTREAM TO FIND PLUG
IN TILE.

PICTURE # 4058 IS LOOKING NORTH - SHOWING CREW EXCAVATING ALONG FIELD EDGE IN WEST DITCH OF COHWYS-27 TO EXPOSE TILE TO CHECK CONDITION, FLOW AND RUN LOCATE CABLE THROUGH IT.



WATER FILLING UP IN HOLE, EXCAVATED ON EAST SIDE OF WATER MAIN

PICTURE # 4059 IS LOOKING NORTH SHOWING CREW NOW EXCAVATING ON WEST SIDE OF WATER MAIN TO CHECK IF WATER MAIN IS THE CAUSE.

PICTURE # 4060 IS LOOKING UPSTREAM INSIDE 8" CLAY TILE @ 2 1/3' UPSTREAM FROM BEEHIVE INTAKE SHOWING 5" PERF SW HOPE TILE FROM EAST & FROM WEST CONNECTING AT SAME LOCATION WITH SIDES CRACKED AND TOP CAVING DOWN WITH TILE PLUGGED UPSTREAM WITH SOIL & ROOTS



PICTURE # 4061 IS LOOKING SW AT EXPOSED LOCATION WHERE 5" HOPE SW PERF TILE FROM EAST & FROM WEST TIE INTO 8" CLAY TILE LATERAL 2

PICTURE # 4062 IS LOOKING SE AT TOP VIEW OF 5" HDPE SW PERF TILE FROM WEST & EAST TIEING INTO SAME LOCATION INTO BROKEN 8" CLAY TILE AND PLUGGED LINE



PICTURE # 4064 IS LOOKING SW SHOWING WATER GUSHING FROM UPSTREAM END OF 8" CLAY TILE AT 5" HDPE TILE CONNECTIONS AFTER BLOCKAGE REMOVED

PICTURE# 4065 IS LOOKING SOUTH SHOWING 5" HOPE TILE CONNECTION WITH 5" HOPE TILE FROM WEST HAVING A SAC OR HUMPE UP IN A SPOT.



PICTURE# 4066 IS LOOKING NORTH SHOWING WATER GONE NOW IN EXCAVATED HOLE IN WEST DITCH OF COUNTY 527 ALONG FIELD EDGE EAST OF WATER MAIN N-S

PICTURE#4067 IS LOOKING NORTH SHOWING PREVIOUSLY EXCAVATED HOLE EAST OF EAST ROW FENCE FOR CO. HWY 527 & SOUTH OF CO HWY D41



PICTURE# 4068 IS LOOKING NW SHOWING TILE FLOWING IN SOUTH DITCH OF CO HWY D41

PICTURE # 4069 IS LOOKING EAST SHOWING 5" HOPE SW PERF TILE CONNECTION AREA. 8" CLAY TILE STILL FLOWING GOOD.



5" HOPE SW PERF TILE



6" CHICKEN BOTTOM
R_L FULL OF
SOIL &
6" CLAY TILE
OUTLET
BROKEN
& FULL
OF SOIL

PICTURE # 4070 IS LOOKING NW FROM CO HWY 041 SHOWING AREA IN NORTH DITCH EXCAVATED AND HOLE EXCAVATED IN FIELD AT TILE/WATERMAIN CROSSING.

PICTURE # 4071 IS LOOKING SE TOWARDS CO HWY 04/
SHOWING 14" CLAY TILE FLOWING GOOD



GPS#248
TOP 14" CLAY
(1.20' TO TOP)
N
↓

07/08/2020
17:32

GPS#247 TOP 14" CLAY 1.24' TO TOP



268
NRIM
BEEHIVE
INTAKE
N
→

07/08/2020
17:39

PICTURE # 4072 IS LOOKING WEST SHOWING BEEHIVE
INTAKE IN NORTH DITCH OF CO HWY 04/ 170.8' ± WEST OF E
CO HWY S-27

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE: 07/09/2020

PROJECT NUMBER: HARDIN DD WO# 292
6844.5/00#14
COUNTY, ROUTE, ROAD: INTERSECTION OF CO HWY
S-27 & CO HWY D41
LOCATION: SE 1/4 SE 1/4 27-88-22 NE 1/4 NE 1/4 24-88-22,
& NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD14 MAIN OR LAT 2

DAYS OF WEEK:

S	M	T	W	TH	F	S
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SHEET NO. 1 OF 6

MID 60'S TO LOW 80'S CLOUDY
MID MORNING & MID AFTERNOON RAIN/
SHOWER WITH SUNSHINE BY LATE AFTERNOON
& LIGHT WIND JOB# 6844 DD14 SURVEY

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

- 7:40 A.M. OBSERVER LEFT OFFICE FOR JOBSITE
- 8:20 A.M. OBSERVER ARRIVED ON SITE AND SET GPS BASE ON GPS# 23
3/4" IRON ROD 0.2' DEEP SW CORNER FIELD DRIVE IN SE QUADRANT
OF CO HWY D41 & CO HWY S27.
- 8:40 A.M. ADAM ON SITE AND DROPPED OFF CONCRETE MIXER
- 8:45 A.M. OBSERVER HAD GPS BASE SETUP AND CHECKED INTO GPS# 21 SURVEY
MARK NAIL FLUSH IN AGL IN CO HWY S-27 ABOUT 2632' ± SOUTH OF
& CO HWY D-41 WITH BOTH HORIZONTAL AND VERTICAL POSITION CHECKING
GOOD.
- 8:58 A.M. PICTURE# 4088, 9:08 A.M. PICTURE# 4089, & 9:18 A.M. PICTURE# 4090 SEE PICTURE FOR DETAILS.
- 9:30 A.M. OBSERVER STARTED SHOOTING CORN DAMAGE ON NORTH SIDE
OF CO HWY D41. ADAM LEFT SITE TO GET ANOTHER
LOAD OF 1" CLEAN ROCK WITH TRUCK AND DUMP TRAILER.
- 9:30 A.M. PICTURE# 4091, 9:38 A.M. PICTURE# 4092 SEE PICTURES FOR DETAILS
- 9:40 A.M. RON VIERKANT STOPPED ON SITE AND OBSERVER INFORMED
RON THAT CREW WILL BE WORKING ON MAKING TILE TODAY
- 9:45 A.M. PERRY AND DYLAN ARRIVED ON SITE WITH TILE FOR REPAIR.
- 10:00 A.M. OBSERVER FINISHED SHOOTING CORN DAMAGE #1 SHOTS
(SEE SHEET FOR LOCATION OF CORN DAMAGE #1) GPS# 270 TO GPS# 300 0.371 ACRES. ALSO ADAM WAS
BACK WITH LOAD OF 1" CLEAN ROCK. SITE WAS
ALSO RECEIVING RAIN (RADAR SHOWED IT WOULD NOT LAST LONG)
- 10:20 A.M. RAIN WAS DONE AT SITE
- 10:55 A.M. PICTURE# 4093 AND PICTURE# 4094 SEE PICTURE FOR DETAILS
- 10:30 A.M. CREW WAS PREPPING 14" CLAY TILE REPAIR 168' ± NORTH
OF & OF CO HWY D41 IN FIELD.
- 11:56 A.M. PICTURE # 4095, 12:02 PICTURE# 4096, & 12:03 PICTURE# 4097 SEE PICTURE FOR DETAILS
- 11:00 A.M. CARSON ARRIVED ON SITE
- 12:34 P.M. PICTURE # 4098 & 12:43 PICTURE # 4099 SEE PICTURE FOR DETAILS.

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

Observer's Signature: Dean Penning Date Prepared: 07/09/2020

Reviewed by: _____ Engineer Date Reviewed: _____

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE: 07/09/2020

PROJECT NUMBER: HARDIN DD WO# 292
6844.5/00#14
COUNTY, ROUTE, ROAD: INTERSECTION OF CO HWY
S-27 & CO HWY D41
LOCATION: SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 34-88-22,
& NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD14 MAIN OR LAT 2

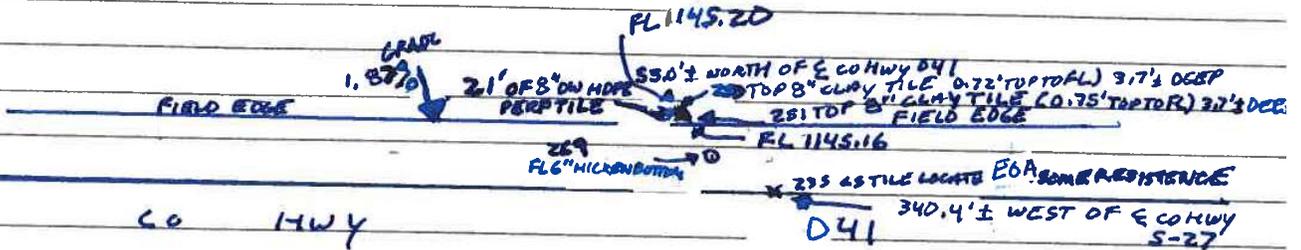
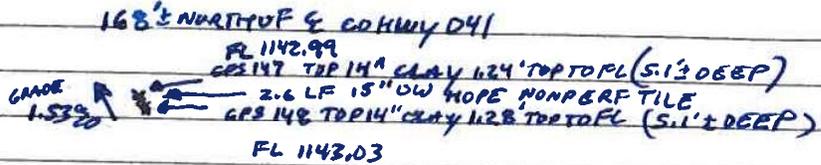
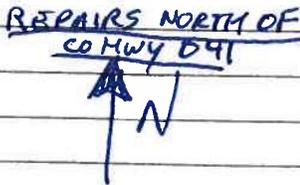
DAYS OF WEEK:

S	M	T	W	TH	F	S
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SHEET NO. 2 OF 6

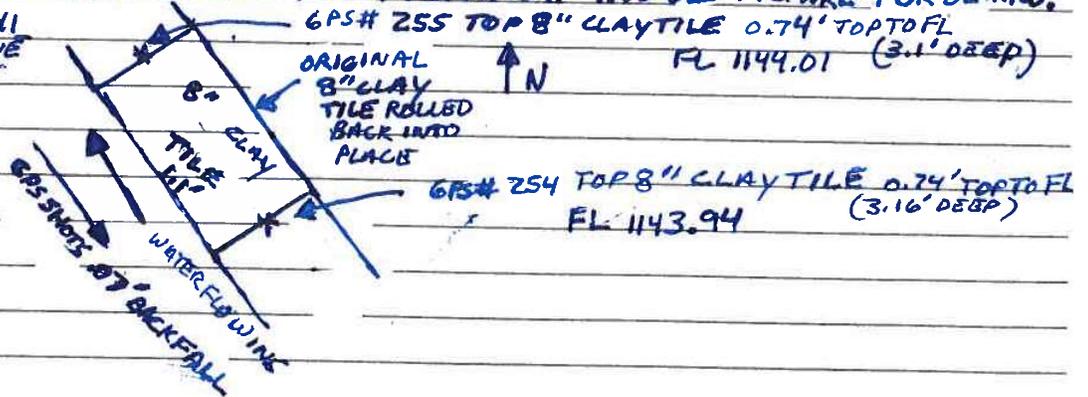
MID 60'S TO LOW 80'S CLOUDY
MID MORNING & MID AFTERNOON RAIN/
SHOWER WITH SUNSHINE BY LATE AFTERNOON
& LIGHT WIND JOB# 6844 DD14 SURVEY

DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUB
NAME, ITEM NO. AND LOCATION 12:52 P.M. PICTURE# 4100 & 12:56 P.M. PICTURE# 4101
SEE PICTURE FOR DETAILS.



1:00 P.M. CREW STARTED FIXING TILE ON SOUTH SIDE OF CO HWY D41
1:20 P.M. PICTURE # 4102, 1:27 PICTURE# 4103 SEE PICTURE FOR DETAILS
1:58 P.M PICTURE# 4104 & 2:07 PICTURE# 4105 & PICTURE# 4106 SEE PICTURE FOR DETAIL
2:08 P.M PICTURE# 4107 & 2:21 P.M PICTURE# 4108 SEE PICTURE FOR DETAILS.

SOUTH DITCH CO HWY D41
9.5'± WEST OF BEEHIVE
INTAKE REPAIR



3:03 P.M. PICTURE# 4109, 3:07 P.M. PICTURE# 4110, 3:20 P.M. PICTURE# 4111, PICTURE#
4112, & PICTURE# 4113 SEE PICTURE FOR DETAILS.

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

Observer's Signature: Dean Penning Date Prepared: 07/09/2020

Reviewed by: _____ Engineer Date Reviewed: _____

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE: 07/09/2020

PROJECT NUMBER: HARDIN DD WO# 292
6844.5/00#14
COUNTY, ROUTE, ROAD: INTERSECTION OF CO HWY
S-27 & CO HWY 041
LOCATION: SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 24-88-22,
& NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD14 MAIN OR LATZ.

DAYS OF WEEK:

S	M	T	W	TH	F	S
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SHEET NO. 3 OF 6

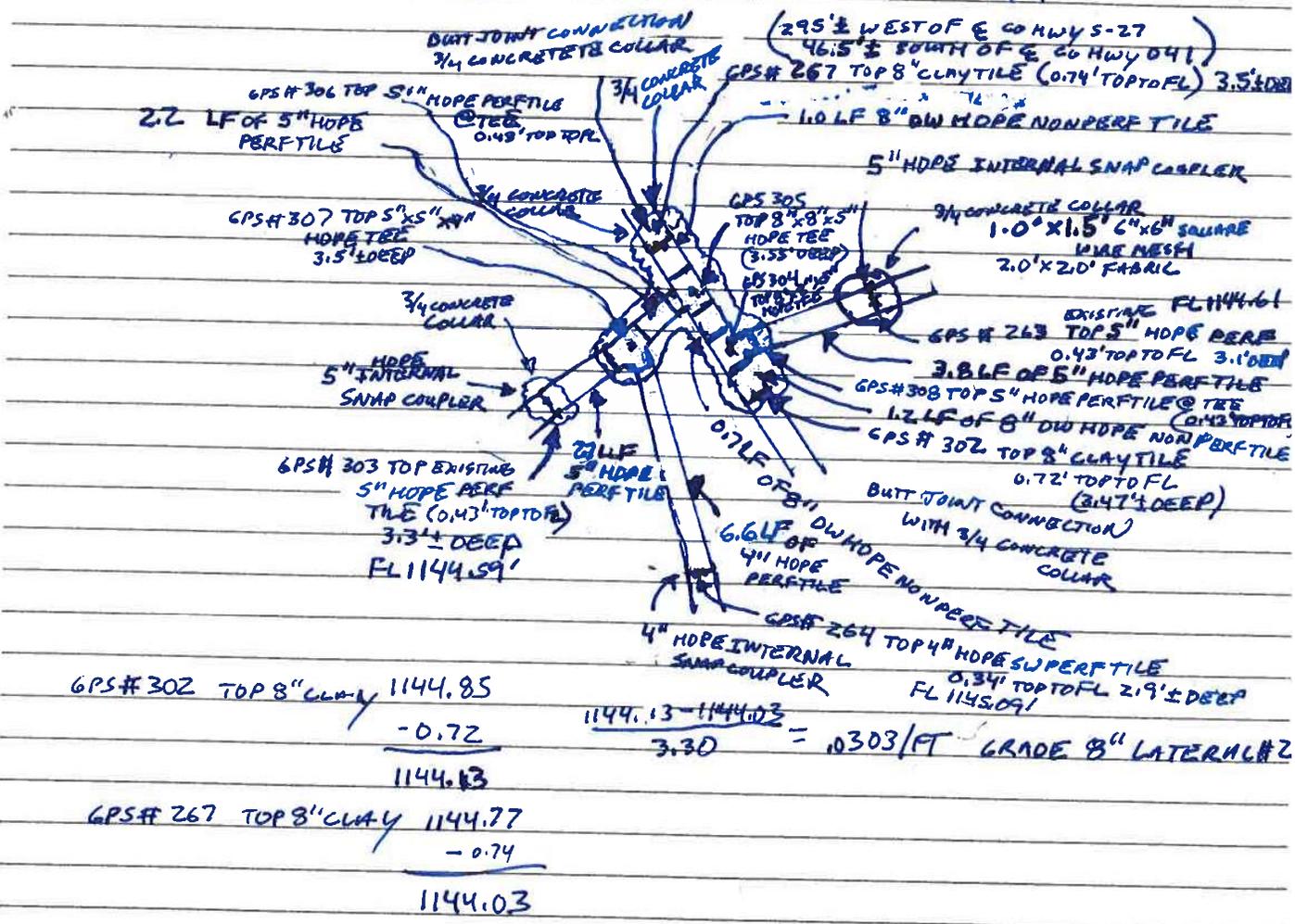
MID 60'S TO LOW 80'S CLOUDY
MID MORNING & MID AFTERNOON RAIN!
SHOWER WITH SUNSHINE BY LATE AFTERNOON
& LIGHT WIND JOB# 6844 DD14 SURVEY

DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUB
NAME, ITEM NO. AND LOCATION 3:26 P.M. PICTURE # 4114 & 3:46 P.M. PICTURE #

4115 SEE PICTURE FOR DETAILS.

CO HWY 041 FIELD ROW 5" HDPE SUPERF
TILE TIE IN
EDGE CONNECTIONS TO
LATERAL #2

TOTAL 30 - 60 LB BAGS OF QUIKRETE HIGH
STRENGTH CONCRETE USED ON ALL 3/4 CONCRETE COLLARS.



I Certify that the work described in this report was incorporated into this contract unless otherwise noted.
 Observer's Signature: Dean Penning Date Prepared: 07/09/2020
 Reviewed by: _____ Engineer _____
 Date Reviewed: _____

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/09/2020

PROJECT NUMBER:

HARDIN DD WO# 292

DAYS OF WEEK:

S M T W 0 F S

COUNTY, ROUTE, ROAD:

6844.5/00#14
INTERSECTION OF CO HWY
S-27 & CO HWY D41

SHEET NO.

4 OF 6

LOCATION:

SE 1/4 SE 1/4 27-88-22 NE 1/4 NE 1/4 34-88-22,
& NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD14 MAIN OR LATZ.

MID 60'S TO LOW 80'S CLOUDY
MID MORNING & MID AFTERNOON RAIN/
SHOWER WITH SUNSHINE BY LATE AFTERNOON
& LIGHT WIND JOB# 6844 DD14 SURVEY

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

3:48 P.M. CREW DONE POURING 3/4 CONCRETE
COLLARS FOR 5" HOPE PERF TILE TIE IN CONNECTION AND START
WORKING ON TILE REPAIRS ON EAST & WEST SIDE OF CO HWY
S-27.

3:51 P.M. PICTURE # 4116 SEE PICTURE FOR DETAILS

4:00 P.M. PICTURE # 4117 & 4:01 P.M. PICTURE # 4119 SEE PICTURES FOR DETAILS

4:03 P.M. PICTURE # 4120 & 4:06 P.M. PICTURE # 4121 SEE PICTURE FOR DETAILS

4:58 P.M. PICTURE # 4122 SEE PICTURE FOR DETAILS

5:26 P.M. PICTURE # 4123 & 5:36 P.M. PICTURE # 4124 SEE PICTURE FOR DETAILS

5:56 P.M. PICTURE # 4125 & PICTURE # 4126 SEE PICTURE FOR DETAILS

6:11 P.M. PICTURE # 4127 & 6:15 PICTURE # 4128 SEE PICTURE FOR DETAILS

7:40 P.M. PICTURE # 4129, 7:41 P.M. PICTURE # 4130 SEE PICTURE FOR
DETAILS

7:42 P.M. PICTURE # 4131 & PICTURE # 1 SEE PICTURE FOR DETAILS

7:00 P.M. CREW LEFT SITE. CREW WILL FINISH BACKFILLING
TRENCHES TOMORROW.

QUANTITIES

ADAM 8:40-9:30, 10 TO 7 9 3/4 HOURS
GETTING LOAD OF 1" CEMENT ROCK WITH DUMP TRAILOR 1/2 HR

DYLAN 9:45 TO 7 9 1/4 HOURS PERRY 9:45 TO 7 9 1/4 HOURS

LARSON 11 TO 7 8 HOURS

KOLBELCO SK 85CS MINI EXCAVATOR 10 TO 7 9 HOURS

CASE TR 340 TRACKED SKIDLOADER 10 TO 7 9 HOURS

CONCRETE MIXER ON SKIDLOADER 14" CLAY REPAIR N. OF D41 1/2 HOUR

8" CLAY REPAIR N OF D41 1/2 HOUR

8" CLAY REPAIR SOUTH D41 1/2 HOUR

REST OF CONCRETE COLLARS. 1 HOUR

REPAIRS

① 14" CLAY TILE REPAIR (NORTH OF D41) 2.6 LF 15" Ø DW HOPE WOOD PERF TILE

2- 2.0 X 3.5' ENGINEERING FABRIC

11.0' X 4.0' & 1.5' X 4.0' 6" X 6" SQUARE WIRE MESH

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

Observer's Signature:

Dean Perry

Date Prepared:

07/09/2020

Reviewed by:

Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/09/2020

PROJECT NUMBER:

HARDIN DD W# 292

DAYS OF WEEK:

S M T W **Φ** F S

COUNTY, ROUTE, ROAD:

6844.5/00#14
INTERSECTION OF CO HWY
S-27 & CO HWY D41

SHEET NO.

5 OF 6

LOCATION:

SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 24-88-22,
& NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD14 MAIN OR LAT 2

MID 60'S TO LOW 80'S CLOUDY
MID MORNING & MID AFTERNOON RAIN/
SHOWER WITH SUNSHINE BY LATE AFTERNOON
& LIGHT WIND JOB # 6844 DD14 SURVEY

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

② 8" CLAY TILE REPAIR (NORTH OF D41)

18 - 60LB BAGS OF QUIKRETE HIGH STRENGTH CONCRETE

2.0' X 3.0' ENGINEER FABRIC

1.5' X 2.0' 6" X 6" SQUARE WIRE MESH

2.1 LF 8" DW HDPE NONPERF TILE

8 - 60LB BAGS OF QUIKRETE HIGH STRENGTH CONCRETE

③ 8" CLAY ROLL BACK IN (SOUTH DITCH OF D41) REPAIR

1.5' X 2.0' 6" X 6" SQUARE WIRE MESH

2.0' X 2.0' ENGINEERING FABRIC

5 - 60LB BAGS QUIKRETE HIGH STRENGTH CONCRETE

④ 5" HDPE PERF TILE TIE IN REPAIR

(4A) 8" MAIN 1.2 LF 8" Ø DW NON PERF TILE, HDPE 8" X 8" X 5" TEE,
(TOTAL 5.35 LF) 0.7 LF 8" Ø DW NON PERF TILE, HDPE 8" X 8" X 5" TEE
& 1.0 LF 8" Ø DW NON PERF TILE

(4B) EAST 5" PERF TILE TIE IN

5" HDPE INTERNAL SNAP COUPLER

3.8 LF OF 5" HDPE PERF TILE

(4C) WEST 5" PERF TILE TIE IN

2.2 LF OF 5" Ø HDPE SW PERF TILE, 5" X 5" X 4" HDPE TEE,

2.7 LF OF 5" Ø HDPE SW PERF TILE, 5" Ø HDPE INTERNAL

SNAP COUPLER, 6.6 LF OF 4" HDPE PERF TILE,

8.4" HDPE INTERNAL SNAP COUPLER

(4D) 3/4 CONCRETE COLLARS

8" CLAY TO 8" HDPE NON PERF NORTH END 1.5' X 1.5' 6" X 6" WIRE MESH
2.0' X 2.0' ENGINEER FABRIC
SOUTH END 1.5' X 1.5' 6" X 6" WIRE MESH
2.0' X 2.0' ENGINEER FABRIC

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

Observer's Signature:

Dean Penning

Date Prepared:

07/09/2020

Reviewed by:

Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/09/2020

PROJECT NUMBER:

MARION DD WO # 292

DAYS OF WEEK:

S M T W 0 F S

COUNTY, ROUTE, ROAD:

6844.5/DD#14
INTERSECTION OF CO
HWY 5-27 & CO HWY 41

SHEET NO.

6 OF 6

LOCATION:

SE 1/4 SE 1/4 2788-22 NE 1/4 NE 1/4 2788-22
2 NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD#14 MARION LAT 2

MID 60'S TO LOW 80'S CLOUDY
MID MORNING & MID AFTERNOON
RAIN SHOWER WITH SUNSHINE BY LATE
AFTERNOON

JOB # 6844 DD#14 SURVEY

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

- 1.5 X 2.0' ENGINEERING FABRIC OVER BOTH 8" X 8" X 1.5" HDPE TEE TO 5" HDPE SW PERF TILE SLID IN CONNECTION
- 1.5 X 2.0' ENGINEER FABRIC OVER BOTH 5" HDPE TO 5" HDPE INTERNAL COUPLER CONNECTIONS.
- 1.5' X 2.0' ENGINEERING FABRIC OVER 4" HDPE TO 4" HDPE INTERNAL COUPLER CONNECTION, 4" HDPE SLID IN CONNECTION ON 5" X 5" X 4" HDPE TEE, & AROUND 5" X 5" X 4" TEE CONNECTIONS
- 26 - 60 LB BAGS OF QUIKRETE HIGH STRENGTH CONCRETE.

⑤ HOLE IN 8" HDPE NONPERF TILE REPAIR

- 2.0 X 2.0 ENGINEER FABRIC
- 1.0 X 2.0' 6" X 6" SQUARE WIRE MESH
- 4 - 60 LB BAGS OF QUIKRETE HIGH STRENGTH CONCRETE.

⑥ 4" HDPE PERF TILE REPAIR

- 9.8 LF 4" HDPE PERF TILE WITH 2 4" INTERNAL ^{SNAP} COUPLERS
- LOAD #1 MARTIN MARIETTA TICKET # 302243 1" CLEAN ROCK 7.58 TONS
- LOAD #2 MARTIN MARIETTA TICKET # 1" CLEAN ROCK TONS
- CORN DAMAGE #1 0.371 AC CORN DAMAGE #2 0.043 AC; CORN DAMAGE #3 0.051 AC

ADDITIONAL ACTIONS - FINE GRADE & SEED; SOUTH DITCH CO HWY 41, NORTH DITCH CO HWY 41, & WEST DITCH CO HWY 27 WET LAND AREA DISTURBED BY REPAIR

- 14" CLAY TILE REPAIR (NOF D4) SOIL WAS MIXED WITH CORN STALKS NOW EXTRA SOIL BUT WILL SETTLE DUE TO STALKS MIXED WITH SOIL.
- 8" CLAY TILE AT GPS# 250 TO GPS# 251 (FIELD ABOVE MAIN TILE) DAM CROSSING NORTH DITCH APPEARS TO BE ABANDONED
- 6" HILKEN BOTTOM FULL OF SOIL ALONG WITH OUTLET TILE BEING CRACKED AND FULL OF SOIL (MAY NEED REPLACED SOMETIME) (GPS# 269)

STILL HAVE BEE HIVE INTAKE TO EAST IN NORTH DITCH OF CO HWY 41 (1/2 MI WEST OF CO HWY 27)

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

Observer's Signature: Dean Penny
Reviewed by: _____

Date Prepared: 07/09/2020
 Engineer

Date Reviewed: _____

Beacon™ Hardin County, IA

68445/00 #14 07/09/2020
 LOTS # 270 TO 6PS # 301 0.371 ACRES CORN, DRAINAGE #1

- Layer List Legend
- Quick Links:
- Property Search
 - View Map
 - Drainage District Search
- Layers:
- Address
 - Corporate Limits
 - Political Townships
 - Geographic Townships
 - Sections
 - Subdivision Annotation
 - Lot Annotation
 - Lot Lines
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 - Road ROW
 - Railroad Annotation
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 - Railroad ROW
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 - Landuse
 - Soils
 - Enterprise Zones
 - Conservation Property
 - Structures
 - Garden Winds Turbines
 - Airport Protected
 - Airspace Surfaces
 - Two Mile Boundary
 - School Districts
 - Voting Districts
 - LOMR



6844.5/DO#14 01/09/2020 CORN DAMAGE #2 VERS #20 10 01/11/21), 0.073 ACRES
CORN DAMAGE #3 (6844.5/DO#14 TO 6844.5/DO#14) 0.051 ACRES

Beacon™ Hardin County, IA

- Layers
- Map
- Search
- Comp Search
- Results
- Comp Results
- Report
- Pictometry Imagery

Layer List Legend

Quick Links:

- Property Search
- View Map
- Drainage District Search

- Layers:
- Address
 - Corporate Limits
 - Political Townships
 - Geographic Townships
 - Sections
 - Subdivision Annotation
 - Lot Annotations
 - Lot Lines
 - Road Dimensions
 - Roads
 - Road ROW
 - Railroad Annotation
 - Railroads
 - Railroad ROW
 - Water
 - Parcel Dimensions
 - Parcels
 - Drainage Tiles
 - Drainage Districts
 - Cartography
 - Landuse
 - Soils
 - Enterprise Zones
 - Conservation Property
 - Structures
 - Garden Winds Turbines
 - Airport Protected
 - Airport Surfaces
 - Two Mile Boundary
 - School Districts
 - Voting Districts
 - LOMR



Parcel ID	882234200003	Alternate ID	ID2840100000	Owner	Address/Vetrandt, Ronald R - Trust	Vetrandt, Carol Jean - Trust
Sec/Twp/Rng	34-88-22	Class	AD		15898 Highway D41	Alden IA 50006-9141
Property/Address	15898 CO HWY D41	Acreage	18.69			
District	HARDIN					
Other Tax Description		13000				
		E1/2 NE NE				
		SEC34-T88N-R22W				

(Note: Not to be used on legal documents)

Results:

Parcel ID - 882234200003
Alt ID - 2840100000
Address - 15898 CO HWY D41
Owner - Vetrandt, Ronald R - Trust (Deed)
Acre - 18.69
View Report | Pictometry Imagery

PICTURE # 4088 SHOWING PILE OF DEBRIS PULLED OUT OF TILE
(WHERE 8" CLAY TILE SECTION WAS ROLLED OUT IN SOUTH DITCH OF
CO HWY 041) BEFORE IT WENT DOWNSTREAM AFTER PLUGGED
TILE WAS OPENED



PICTURE # 4089 IS LOOKING NE INSIDE TILE WYE ACCESS LID
ON SOUTH SIDE OF CO HWY 041 1195.6' ± WEST OF E CO HWY 527
SHOWING TILE IS STILL FLOWING GOOD AT THIS LOCATION

GPS # 88

(GPS#269)
PICTURE# 4090 SHOWING 6" HICKEN BOTTOM WITH TOP COMPLETELY
BROKE OFF AND FL COMPLETELY FULL OF SOIL WITH 6" CLAY
TILE OUTLET BROKE AND COMPLETELY FULL OF SOIL. PICTURE
IS LOOKING WEST IN NORTH DITCH OF CO HWY 041



PICTURE#4091 IS LOOKING EAST FROM GRAVEL DRIVE FOR
20825 CO HWY 527 OFF OF CO HWY 041 SHOWING CORN DAMAGE
OUT TO TILE REPAIR.

PICTURE# 4092 IS LOOKING NW FROM SOUTH DITCH
OF CO HWY 041 SHOWING CORN DAMAGE / OUT TO
TILE REPAIR.



↑
NW



↓
W

PICTURE# 4093 IS LOOKING WEST SHOWING CORN DAMAGE /
TO TILE REPAIR - LOOKING TOWARDS 20825th CO HWY 527
GRAVEL DRIVE OFF CO HWY 041.

PICTURE # 4094 IS LOOKING SE TOWARDS COMWYD4
@ CORN DAMAGE / TO TILE REPAIR



CPS# 248 TOP 14" CLAY TILE
(1.28' TOP TO FL) 5.1'± DEEP

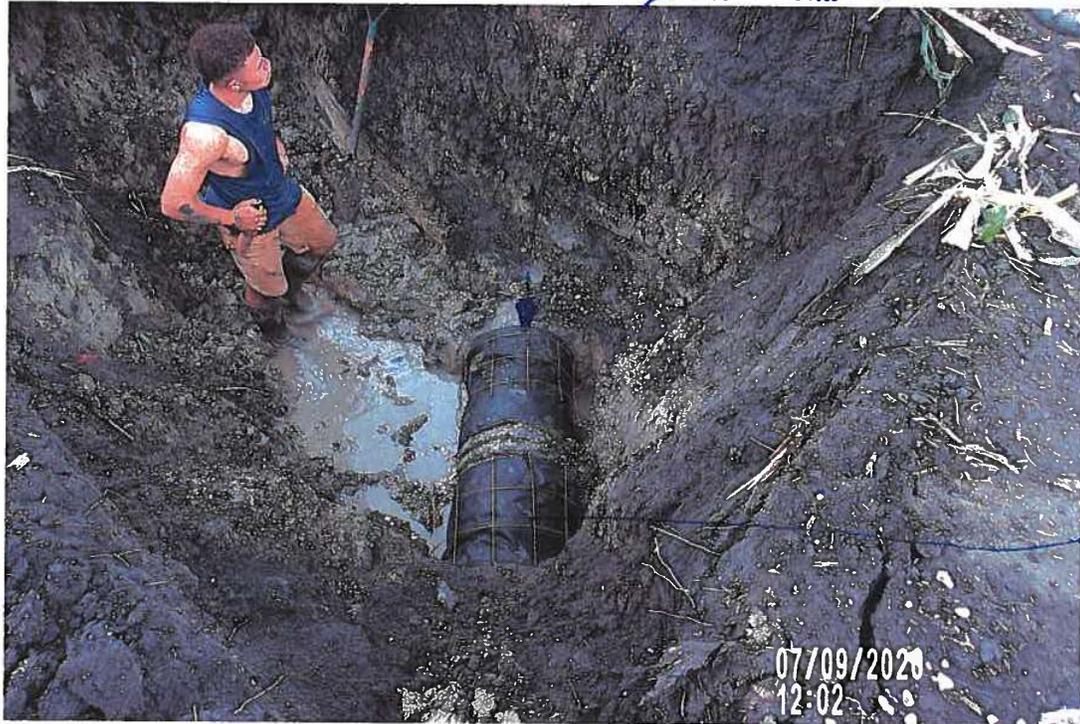


CPS# 247
TOP 14" CLAY
TILE
(1.24' TOP TO FL)
(5.1'± DEEP)

PICTURE # 4095 IS LOOKING SE SHOWING 2.6 LF. PIECE
OF 15" Ø DW HDPE NONPERF TILE IN PLACE FOR REPAIR
WITH BEDDING ROCK UNDER TILE

PICTURE# 4096 IS LOOKING NW SHOWING FABRIC & MESH OVER NORTH & SOUTH TIE IN JOINTS FOR 14" CLAY TILE REPAIR NORTH OF COMWY D41

6.5# 2.0'x3.5' FABRIC WITH 1.0' X 4.0' WIRE MESH OVER JOINT BEFORE COLLARS POURED



6.5# 2.0'x3.5' FABRIC & 1.5' X 4.0' WIRE MESH OVER JOINT BEFORE COLLARS POURED

07/09/2020
12:02



07/09/2020
12:03

PICTURE# 4097 IS LOOK NW SHOWING CREW POURING 3/4 CONCRETE COLLARS FOR 14" CLAY TILE REPAIR FROM QUIKRETE BAGS MIXED IN A CONCRETE MIXER THAT ATTACHES TO A SKIDLOADER.

PICTURE #4098 IS LOOKING SE DOWNSTREAM FROM GPS #251
 TOP 8" CLAY TILE (0.75' TOP TO FL) AFTER ANOTHER DAMAGED
 4.0' SECTION OF TILE WAS REMOVED. 2" MUD IN FL TO COMPLETELY
 FULL OF MUD. RON SAYS TILE HAS BEEN ABANDONED BUT



WILL CONNECT
 TOGETHER
 IN CASE
 ANY TILE
 UPSTREAM
 IS CONNECTED
 YES
 N
 ↓



GPS #251
 TILE TOP 8" CLAY
 0.75' TOP TO FL
 2" MUD IN FL
 (3.7' ± DEEP)

N
 ↓

GPS #250
 TILE TOP 8"
 CLAY
 (0.75' TOP TO FL)
 2" MUD IN FL
 3.7' ± DEEP

PICTURE #4099 IS LOOKING SE SHOWING 2.1LF 8" OW HOPE PERP TILE
 IN PLACE WITH 2.0' X 3.0' FABRIC & 1.5' X 2.0' 6" X 6" WIRE MESH
 OVER JOINTS BEFORE 3/4 CONCRETE COLLAR POURED

PICTURE # 4100 IS LOOKING SW AT FINISHED 3/4 CONCRETE COLLAR FOR 8" CLAY TILE REPAIR 55'± NORTH OF E HWY D41. CREW USED 8-60LB QUIKRETE HIGH STRENGTH CONCRETE BAGS.



PICTURE #4101 IS LOOKING NW AT FINISHED 3/4 CONCRETE COLLAR FOR 14" CLAY TILE REPAIR 168'± NORTH OF E HWY D41. CREW USED 18-60LB QUIKRETE HIGH STRENGTH CONCRETE BAGS FOR CONCRETE COLLARS.

PICTURE #4102 IS LOOKING NW IN SOUTH DITCH OF CO HWY 041 9.5' ± WEST OF WEST RIM OF BEEHIVE INTAKE SHOWING 8" CLAY TILE SECTION ROLLED BACK IN PLACE.



GPS#255
TOP 8" CLAY TILE
(0.74' TOP TO FL)
3.1' ± DEEP

NA

GPS#254
TOP 8" CLAY TILE
(0.74' TOP TO FL)



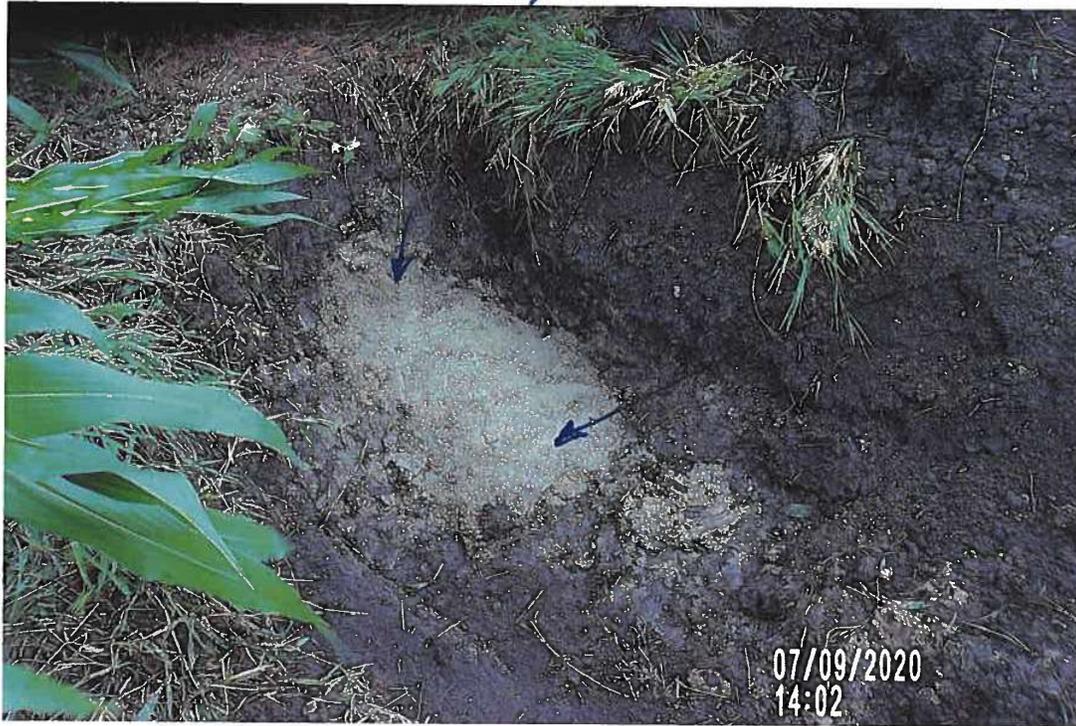
PICTURE #4103 IS LOOKING UPSTREAM INSIDE 8" CLAY TILE WITH ABOUT 1" FLOW AT GPS #302 (TOP 8" CLAY TILE) (0.72' TOP TO FL)

PICTURE #4104 IS LOOKING NW SHOWING 2.0'X2.0' ENGINEERING FABRIC & 1.5'X2.0' 6"X6" SQUARE WIRE MESH OVER JOINT FOR 8" CLAY TILE SECTION ROLLED BACK INTO PLACE BEFORE 3/4 CONCRETE COLLAR POURED.



PICTURE #4105 IS LOOKING DOWNSTREAM INSIDE 8" CLAY TILE WITH ABOUT 2"± OF SLOW WATER FLOW.

PICTURE # 4106 IS LOOKING NORTH SHOWING 3/4" CONCRETE COLLAR POURED FOR 8" CLAY TILE SECTION ROLLED BACK INTO PLACE WEST OF BEHIVE ENTIRE. CREW USED 5-60LB BAGS OF QUIKRETE HIGH STRENGTH / GP#255



CONCRETE ON COLLAR

GP#254



PICTURE # 4107 IS LOOKING NORTH SHOWING BEDDING ROCK BACKFILLED AROUND 3/4" CONCRETE COLLAR IN SOUTH DITCH OF HWY D41 FOR 8" CLAY TILE SECTION ROLLED BACK INTO PLACE.

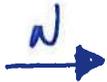
PICTURE # 4108 IS LOOKING SW SHOWING 8" CLAY TILE REMOVED WITH BEDDING ROCK IN PLACE TO TIE IN 5" SW HOPE PERF TILE LINES INTO 8" CLAY TILE LATERAL



PICTURE # 4109 IS LOOKING WEST AT 8" DW HOPE NONPERF TILE INSTALLED WITH A 8" x 8" x 5" HOPE TEE EAST & WEST & 5" HOPE PERF TILE INSTALLED INTO TEE WITH 5" x 5" x 4" HOPE TEE INSTALLED ON IT WITH BEDDING ROCK UNDER CONNECTION.

PICTURE #4110 IS LOOKING WEST AT NORTH & SOUTH TIES
 IN CONNECTIONS ON 8" LATZ BEFORE 3/4 CONCRETE COLLARS
 POURED

GPS#: 307 TOP HOPE 5"X5"X4" HOPE TEE



GPS#304
 TOP HOPE
 8"X8"X5"
 TEE



GPS#267
 TOP 8" CLAY
 0.74' TOP TO FL
 1.5' X 11.5'
 6" X 6"
 WIRE MESH
 2.0' X 2.0'
 FABRIC
 OVER JOINT
 BEFORE 3/4
 CONCRETE
 COLLAR
 POURED

GPS#305
 TOP HOPE
 8"X8"X5"
 TEE

GPS #302
 TOP 8" CLAY 0.88' TOP TO FL
 1.5' X 11.5' 6" X 6" WIRE MESH
 & 2.0' X 2.0' FABRIC OVER
 JOINT BEFORE 3/4 CONCRETE COLLAR POURED



GPS#263
 TOP 5" HOPE
 PERF TILE
 0.43' TOP TO FL

302

PICTURE #4111 IS LOOKING NW SHOWING 3/4 CONCRETE COLLARS
 POURED AT CONNECTIONS FOR 5" HOPE SW PERF TILE TIE
 INS. CREW USED 17-60 LB BAGS OF QUIKRETE HIGH STRENGTH

PICTURE #4112 IS LOOKING EAST SHOWING 3/4 CONCRETE COLLARS POURED (USED 17 QUIKRETE HIGH STRENGTH CONCRETE BAGS



GPS# 264
TOP 4" HOPE PERFTILE
0.34' TOP TO FL
(2.9' ± DEEP)

GPS# 303 TOP 5" HOPE PERFTILE
0.43' TOP TO FL

4" HOPE INTERNAL SNAP COUPLER
GPS# 264 TOP 4" HOPE PERFTILE
(2.9' ± DEEP)
0.34' TOP TO FL



6' 6" LF OF 4" HOPE SW PERFTILE
GPS# 303 TOP 5" HOPE PERFTILE
0.43' TOP TO FL

GPS# 302 TOP OF 5" RBH x 4" HOPE TEE

21' LF OF 5" HOPE PERFTILE

PICTURE # 4113 IS LOOKING SE SHOWING 4" HOPE PERFTILE TIED INTO 5" HOPE PERFTILE TIED INTO 8" HOPE NOW PERFTILE LAT 2 WITH 3/4 CONCRETE COLLARS (USED 17 QUIKRETE CONCRETE BAGS)

PICTURE #4114 IS LOOKING NE SHOWING 5" HDPE SW PERF TILE TIE IN CONNECTION INTO 8" HDPE LATERAL #2.
 GPS#263 TOP 5" HDPE PERF TILE 0.43' TO TOP FL

N



5" HDPE INTERNAL SW PERF TILE

3.0 LF OF 5" HDPE PERF TILE

07/09/2020 15:26

GPS# 304 TOP 8" x 8" x 5" HDPE TEE

GPS# 263 5" HDPE SW PERF TILE



N

07/09/2020 15:46

GPS# 304 TOP 8" x 8" x 5" HDPE TEE

PICTURE # 4115 IS LOOKING SE AT 5" HDPE SW PERF TILE TIE IN CONNECTIONS 3/4 CONCRETE COLLARS. (USED 9-6016 BAGS OF QUIKRETE HIGH STRENGTH CONCRETE)

PICTURE # 4116 IS LOOKING EAST SHOWING HOLE IN TOP OF 8" HOPE NONPERF TILE EXCAVATED BY ANOTHER CONTRACTOR AND LEFT OPEN 322'E SOUTH OF COM HWY 041 & 9.6'±



EAST OF
EAST ROW
FENCE
COM HWY
S-27
IN WETLAND
AREA



GPS # 311
TOP 8" HOPE
NONPERF



PICTURE # 4117 IS LOOKING DOWNSTREAM (FROM GPS # 311) INSIDE 8" TILE SHOWING CHANGE OF MATERIAL. TILE LOOKS GOOD SHAPE WITH WATER LEVEL AT 4" (SLOW FLOW). ALSO FLOWLINE HAS SOFT MUCK BUT SHOULD FLUSH OUT NOW TILE OPEN.

PICTURE # 4119 IS LOOKING UPSTREAM (FROM GPS #311) INSIDE 8" TILE
SHOWING TILE IN GOOD SHAPE BUT CHANGED TO CLAY WITH
WATER LEVEL AT 4" (SLOW FLOW). ALSO FLOWLINE HAS SOFT MUCK
BUT SHOULD FLUSH OUT NOW THAT IT IS
OPEN,



GPS #311

N

PICTURE # 4120 IS LOOKING EAST SHOWING FABRIC &
1.0' X 1.5' WIRE MESH OVER HOLE BEFORE 3/4 CONCRETE
COLLAR POURED OVER HOLE IN TILE.

PICTURE #4121 IS LOOKING AT FINISHED 3/4 CONCRETE COLLAR OVER HOLE IN 8" DW HOPE NON PERF TILE. CREW USED 4 - 60 LB BAGS OF QUIKRETE HIGH STRENGTH CONCRETE ON COLLAR



ON COLLAR



PICTURE #4122 IS LOOKING NW SHOWING 4" SW HOPE PERF TILE THAT NEEDS REPLACED AFTER CUTTING TILE WHILE EXCAVATING TO CHECK LAT #2 TILE FLOW STATUS ON EAST SIDE OF CO HWY S-27.

PICTURE # 4123 IS LOOKING NORTH SHOWING 9.8 LF OF 4" HDPE SW PERF TILE INSTALLED WITH 4" HDPE INTERNAL COUPLERS AND OFF TO SIDE SOME FOR FIRMER GROUND & BEDDED WITH ROCK UNDER. GPS # 312 TOP EXISTING 4" HDPE PERF TILE



0.32' TOP TO FL
GRADE ON TILE
2.02%

↑ N

GPS # 318
TOP 4" HDPE
PERF TILE
0.38' TOP TO
FL

GPS # 316
TOP 4" HDPE
PERF TILE
0.35' TOP TO FL

GPS # 317
TOP 4" HDPE
PERF TILE
0.38' TOP TO FL

07/09/2020
17:26

← GPS # 313 TOP EXISTING 4" HDPE PERF TILE 0.36' TOP TO FL



↑

07/09/2020
17:36

PICTURE # 4124 IS LOOKING NORTH WEST SIDE OF CO HWY 327 SHOWING 4" HDPE PERF TILE REPAIR BEDDED WITH ROCK.

PICTURE#4125 IS LOOKING NORTH SHOWING DITCH WEST SIDE COMWY S-27 BACK FILLED & GRADED.



PICTURE#4126 IS LOOKING WEST FROM COMWY S27 ABOUT 330'± SOUTH E COMWY D41 SHOWING 4" HDPE SW PERF TILE REPAIR BACK FILLED & GRADED. ALSO SHOWS 0.043 AC CORW DAMAGE (GPS# 320 - #324) DURING REPAIR.

PICTURE# 4127 IS LOOKING EAST SOUTH OF SOUTH
ROW OF COMWY D41 SHOWING 5" HDPE PERF TILE
THE INS BEDDED WITH ROCK TO TOP OF TILE



PICTURE# 4128 IS LOOKING NW SHOWING NORTH 14" CLAY TILE EXPOSED TRENCH WITH TILE BEDDED WITH ROCK TO TOP OF TILE

PICTURE # 4129 IS LOOKING EAST IN NORTH DITCH OF
CO HWY D41 SHOWING DITCH STILL NEEDS GRADED.



PICTURE # 4130 IS LOOKING EAST SHOWING PILE OF
EXTRA SOIL THAT WAS USED TO BACKFILL (14" CLAY TILE NORTH OF
TILE TRENCH. CORN STALKS WERE MIXED WITH SOIL CREATING
CO HWY D41)
VOIDS AND EXTRA SOIL AREA WILL SETTLE DUE TO THIS.

PICTURE#4131 IS LOOKING SE SHOWING 5" HOPE TIE IN
TRENCH THAT NEEDS BACK FILLED YET. PICTURE
SHOWS 0.051 ACRES CORN DAMAGE DURING REPAIR



(GPS#331 TO
GPS#330)

N
↙

07/09/2020
 PICTURE # | LOAD # | 1" CLEAN ROCK USED
 TO BED TILE IN REPAIRS.

Martin
 MORTAR

Order # 32839
 Order Date 05/28/2020
 Order Time 10:00 AM
 Order Location ALDEN, IA
 Order Address ALDEN, IA 50003
 Order Phone 563-232-1000
 Order Fax 563-232-1000
 Order Email 563-232-1000

Customer: ALDEN QUARRY
 Order # 32839
 Order Date 05/28/2020
 Order Time 10:00 AM
 Order Location ALDEN, IA
 Order Address ALDEN, IA 50003
 Order Phone 563-232-1000
 Order Fax 563-232-1000
 Order Email 563-232-1000

Product: 1" CLEAN
 Quantity: 7.25
 Unit: Ton

Line	Qty	Unit	Price	Total
1	7.25	Ton	15.20	110.15
Subtotal				110.15
Taxes				1.85
Total				112.00

Customer: ALDEN QUARRY
 Order # 32839
 Order Date 05/28/2020
 Order Time 10:00 AM
 Order Location ALDEN, IA
 Order Address ALDEN, IA 50003
 Order Phone 563-232-1000
 Order Fax 563-232-1000
 Order Email 563-232-1000

Additional Information:
 SCALE PROVIDED BY SUPPLIER.
 HOURS OF SERVICE: 7 AM TO 4 PM
 MON-FRI. SUNDAY & HOLIDAYS.
 ALL OTHERS ARE NON-FRI 7 AM TO 4 PM
 MON-FRI. SUNDAY & HOLIDAYS.
 SCALE PROVIDED BY SUPPLIER.
 HOURS OF SERVICE: 7 AM TO 4 PM
 MON-FRI. SUNDAY & HOLIDAYS.
 ALL OTHERS ARE NON-FRI 7 AM TO 4 PM
 MON-FRI. SUNDAY & HOLIDAYS.

PRECAUTION

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE: 07/13/2020

PROJECT NUMBER: HARDIN DD WO# 292
6844.5 DD#14
COUNTY, ROUTE, ROAD: 538.5' ± EAST OF CO HWY
527 & 42 ± SOUTH OF E. CO HWY D41
LOCATION: 35-88-22. NW 1/4 NW 1/4 INVESTIGATE
BLOWOUT SOUTH DITCH EAST OF
18" BEEHIVE INTAKE

DAYS OF WEEK:

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

SHEET NO. 1 OF 2

UPPER 50'S TO MID 80'S
SUNNY & BREEZY
JOB# 6844 DD14 SURVEY

DESCRIPTION OF WORK AND MATERIAL USED FOR EACH OPERATION, INCLUDING CONTRACTOR/SUB NAME, ITEM NO. AND LOCATION 07/10/2020 PERRY AND TR. 340 TRACKED SKIDLOADER FINISHED BACKFILLING REST OF HOLES LEFT OPEN 2 HOURS

7:15 A.M. ADAM CALLED OBSERVER THAT HE WILL BE ON SITE
AROUND 10:00 A.M. TO REPAIR BLOWOUT IN SOUTH DITCH
OF D41 EAST OF BEEHIVE INTAKE

7:20 A.M. OBSERVER NOTIFIED LEE THAT ADAM'S CREW WOULD BE
WORKING TODAY

8:40 A.M. OBSERVER LEFT OFFICE FOR JOBSITE

9:10 A.M. OBSERVER ARRIVED ON SITE AND SET GPS BASE ON GPS #23
3/4" Ø IRON REBAR 0.2' DEEP SW CORNER OF FIELD DRIVE
IN SE QUADRANT OF CO HWY D-41 & CO HWY 5-27.

9:40 A.M. OBSERVER HAD GPS BASE SETUP AND CHECKED INTO
GPS #21 SURVEY MARK NAIL FLUSH IN ACC IN CO HWY 5-27
ABOUT 2632' ± SOUTH OF E. CO HWY D41 WITH BOTH HORIZONTAL
AND VERTICAL POSITIONS CHECKING GOOD

9:45 A.M. OBSERVER STARTED TO LOOK FOR REPAIR AREA.

9:50 A.M. PERRY ARRIVED ON SITE.

10:00 A.M. ADAM ARRIVED ON SITE WITH KOLBELCO SK85 CS MINI
EXCAVATOR & CASE TR340 TRACKED SKIDLOADER FOR EQUIPMENT
PERRY WENT TO HELP ADAM UNLOAD EQUIPMENT.

10:01 A.M. PICTURE # 4138 & 10:02 A.M. PICTURE # 4139 SEE PICTURE FOR DETAILS

10:17 A.M. PICTURE # 4140 SEE PICTURE FOR DETAILS.

10:20 A.M. OBSERVER SHOT CULVERT, BEEHIVE INTAKE IN NORTH
AND SOUTH DITCH OF CO HWY D41 & SINK HOLE IN NORTH
SHOULDER OF CO HWY D41.

10:25 A.M. UPON FURTHER INVESTIGATION SINK HOLE IN NORTH SHOULDER
IS DIRECTLY ABOVE 18" RCP ABOUT 11.7' ± SOUTH OF NORTH
END OF RCP SO SINK HOLE IS A CULVERT ISSUE (COUNTY ROAD
DEPARTMENT)

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

Observer's Signature: *[Signature]* Date Prepared: 07/13/2020
Reviewed by: _____ Engineer
Date Reviewed _____

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/13/2020

PROJECT NUMBER:

HARROW DOW #292

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD:

6844.5 DDHT4
538.5 ± EAST OF COMNY
527 & 42.2 SOUTH OF E COMNY 401

SHEET NO.

2 OF 2

LOCATION:

35-88-22 NW 1/4 NW 1/4 INVESTIGATE
BLINDOUT SOUTH DITCH EAST OF
18" BERTHUS INTAKE

UPPER 50'S TO MID 80'S
SUNNY & BREEZY

JOB # 68440014 SURVE

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

4:42. SEE PICTURE FOR DETAILS.

11:30 A.M. CREW LEFT SITE TO GET SUPPLIES FOR REPAIR

11:32 A.M. PICTURE #4144, 11:45 A.M. PICTURE #4145, 11:46 A.M. PICTURE #4147 SEE PICTURE FOR DETAILS.

1:10 P.M. CREW BACK ON SITE WITH SUPPLIES

1:46 P.M. PICTURE #4148, 1:56 PICTURE #4149, 1:59 PICTURE #4150 SEE PICTURE FOR DETAILS.

2:15 P.M. PICTURE #4151 & 2:35 PICTURE #4152 SEE PICTURE FOR DETAILS.

2:30 P.M. OBSERVER AND CREW LEFT SITE.

QUANTITIES

PERKY, ADAM 9:50 - 11:30 1:10 - 2:30 3 HOURS
11:30 - 1:10 1 1/2 HOURS GETTING SUPPLIES

KOLBELLO SK 85CS MINI EXCAVATOR 3 HOURS

CASETR 340 TRACKED SKID LOADER 3 HOURS

2.4 LF OF 6" HDPE SWPERF TILE, 6" HDPE INTERNAL SNAP COUPLER

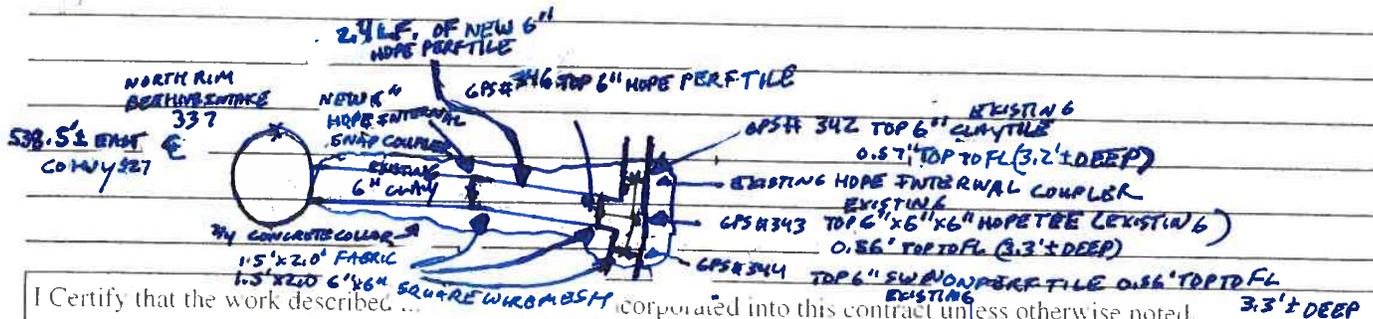
3 - 1.5' X 2.0' ENGINEER FABRIC & 3 - 2.0' X 1.5' 6" X 6" SQUARE

WIRE MESH, & 5 - 60 LB BAGS QUIKRETE HIGH STRENGTH CONCRETE Mlk

OUTLET OPEN TILE

340 18" BERTHUS N RIM
341 TOP 18" RCP 1.71' TO TOP FL
339 CS BLINDOUT SHOULDER
041
338 TOP 18" CMP 1.54' TO TOP FL

COMNY



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

Observer's Signature:

Diann Penning

Date Prepared:

07/13/2020

Reviewed by:

Engineer

Date Reviewed

PICTURE# 4138 IS LOOKING EAST SHOWING SMALL SINKHOLE ON EAST SIDE OF BEEHIVE INTAKE PER RANDY'S REPORT AREA LOOKED LIKE IT HAD BEEN EXCAVATED AT ONETIME



GPS# 337
18" BEEHIVE
INTAKE
N RIM

07/13/2020
10:01



DIP IN
GRAVEL
SHOULDER
WITH
FRESH
ROCK

07/13/2020
10:02

PICTURE#4139 IS LOOKING WEST ON NORTH SHOULDER OF CO HWY 241 SHOWING SINK HOLE PER RANDY'S REPORT WITH A LITTLE DIP IN ALL 2 GRAVEL AND APPEARS SOMEONE HAS PUT FRESH ROCK IN SINK HOLE.

PICTURE# 4140 IS LOOKING NORTH TOWARDS CO HWY D41
 SHOWING 18" CMP OUTLET FOR CULVERT UNDER CO HWY D41
 & 18" BEEHIVE INTAKE IN SOUTH DITCH OF CO HWY D41 WITH SINKHOLE
 GPS# 337 NRM BEEHIVE INTAKE GPS# 338 TOP 18" CMP TO EAST,
 1.54' TO TOP FL

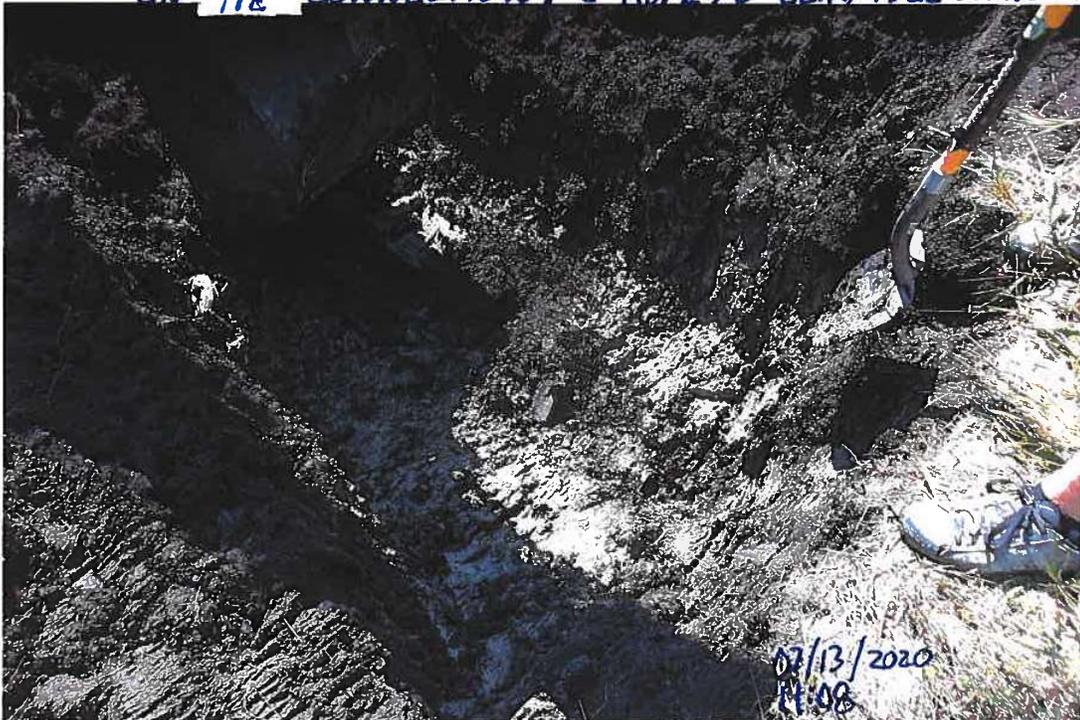


SINKHOLE
 EAST OF
 BEEHIVE
 INTAKE



PICTURE# 4141 IS LOOKING EAST ON EAST SIDE OF
 BEEHIVE INTAKE SHOWING 6" HDPE PERF TILE CONNECTION
 TO 6" CLAY TILE OUTLET EAST FROM BEEHIVE INTAKE,

PICTURE# 4142 IS LOOKING SE SHOWING 6" HDPE PERF TILE CONNECTION TO 6" CLAY TILE EAST OF BEEHIVE INTAKE. PICTURE SHOWS CREW EXCAVATING TO CHECK ON TILE CONNECTION. 6" HDPE / 6" CLAY TILE CONNECTION CLAY TILE BROKE & WILL NEED REPLACED.

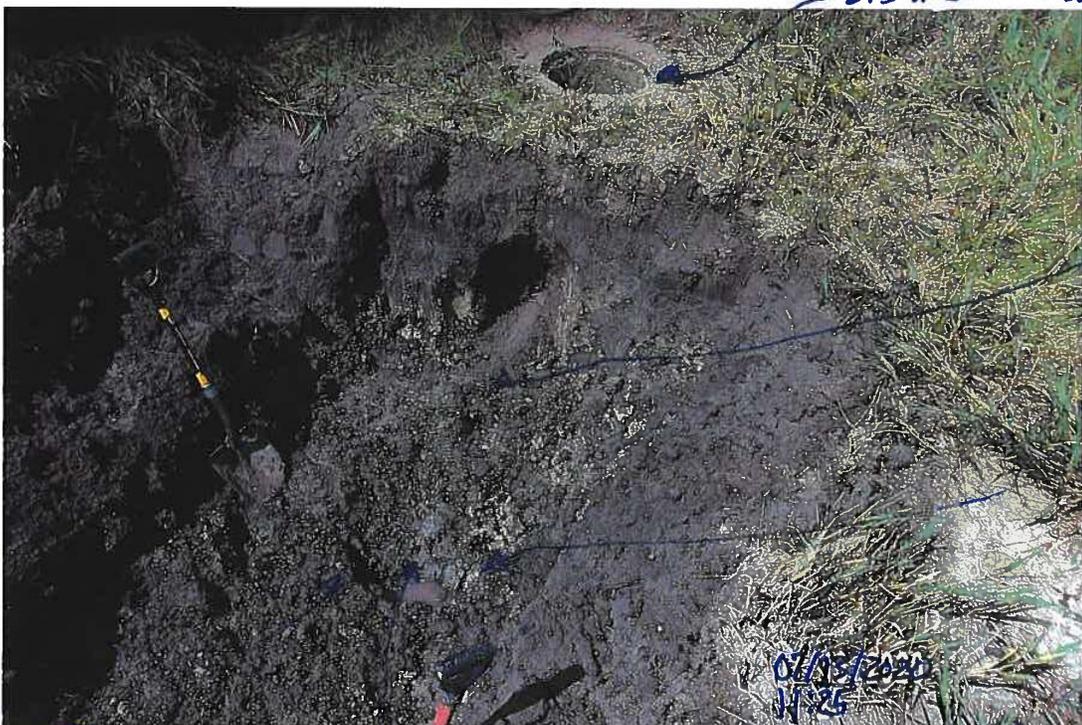


TILE BROKE & WILL NEED REPLACED.



07/13/2020
11:08

GPS# 337 18" BEEHIVE INTAKE N RIM



GPS# 345 TOP 6" CLAY TILE (0.57' TOP TO FL) 2.65' DEEP

GPS# 342 TOP 6" CLAY TILE (0.15' TOP TO FL) 3.72' ± DEEP

07/13/2020
11:25

GPS# 344 TOP 6" SW HDPE NON PERF TILE (0.56' TOP TO FL) 3.3' ± DEEP

GPS# 343 TOP 6" x 6" x 6" HDPE TEE (0.56' TOP TO FL) 3.3' ± DEEP

PICTURE# 4143 IS LOOKING AT 6" x 6" x 6" HDPE TEE CONNECTION WITH 6" HDPE / 6" CLAY CONNECTION DAMAGE AND NEEDS REPLACED

PICTURE # 4144 IS LOOKING WEST SHOWING 6"x6"x6" HOPE TEE CONNECTION & 6" HOPE PERFTILE / 6" CLAY TILE WITH ISSUE BETWEEN PLASTIC & CLAY TILE

GPS # 345 TOP 6" CLAY (0.57' TOP TO FL)



GPS # 344 TOP 6" HOPE PERFTILE

GPS # 343 TOP 6"x6"x6" HOPE (0.56' TOP TO FL)

GPS # 342 TOP 6" CLAY (0.51' TOP TO FL)



PICTURE # 4145 IS LOOKING SW ON SOUTH SIDE OF HWY 041 SHOWING DITCH GRADED TO INTAKE & TRENCH BACKFILL & GRADED. EXTRA SOIL PILED UP. BLEND EXTRA SOIL AROUND

PICTURE #4147 IS LOOKING WEST SHOWING NORTH DITCH
GRADED ABOVE TRENCH



07/13/2020
11:46

↖ NW
GPS# 345
TOP 6" CLAY
TILE
(0.57'
TOP TO
FL.)



07/13/2020
13:46

GPS# 346
TOP 6" HDPE
PERF TILE

6" HDPE
INTERNAL
COUPLER

2.4 LF
OF 6" SUPERF
TILE

PICTURE # 4148 IS LOOKING NE SHOWING 6" HDPESM PERF TILE
SLIDE INTO TEE & TIED UPSTREAM INTO 6" CLAY TILE WITH
6" HDPE INTERNAL COUPLER.

PICTURE# 4149 IS LOOKING SW SHOWING $\frac{3}{4}$ CONCRETE COLLAR
 POURED ON BEEHIVE INTAKE TILE OUTLET TIE IN WITH
 3 - 20X15' 6"x6" WIRE MESHES OVER JOINTS & 3 - 1.5 X 20'
 FIBERGLASS FABRIC OVER JOINTS WITH 5-60 LB BAGS OF HIGH STRENGTH
 CONCRETE



337
 NEMA
 BEEHIVE
 INTAKE



PICTURE# 4150 IS LOOKING SE SHOWING: $\frac{3}{4}$ CONCRETE COLLAR
 POURED OVER BEEHIVE OUTLET TILE TIE IN CONNECTION.

PICTURE# 4151 IS LOOKING WEST SHOWING DITCH
GRADED TO BEEHIVE INTAKE



PICTURE# 4152 IS LOOKING NORTH SHOWING TRENCH
BACKFILLED EAST OF EAST ROW HIGHWAY 27 & SOUTH D41
IN WETLAND DUG BY PREVIOUS CONTRACTOR



WRc MSCC Third Edition

Inspection Report

Produced on behalf of – HARDIN CO

Site location – ,

Survey reference –

Date – 080720

WILLIAMS UNDERGROUND SVCS.
102 INDUSTRIAL DRIVVE, ACKLEY, IOWA
50601,
641-485-3925

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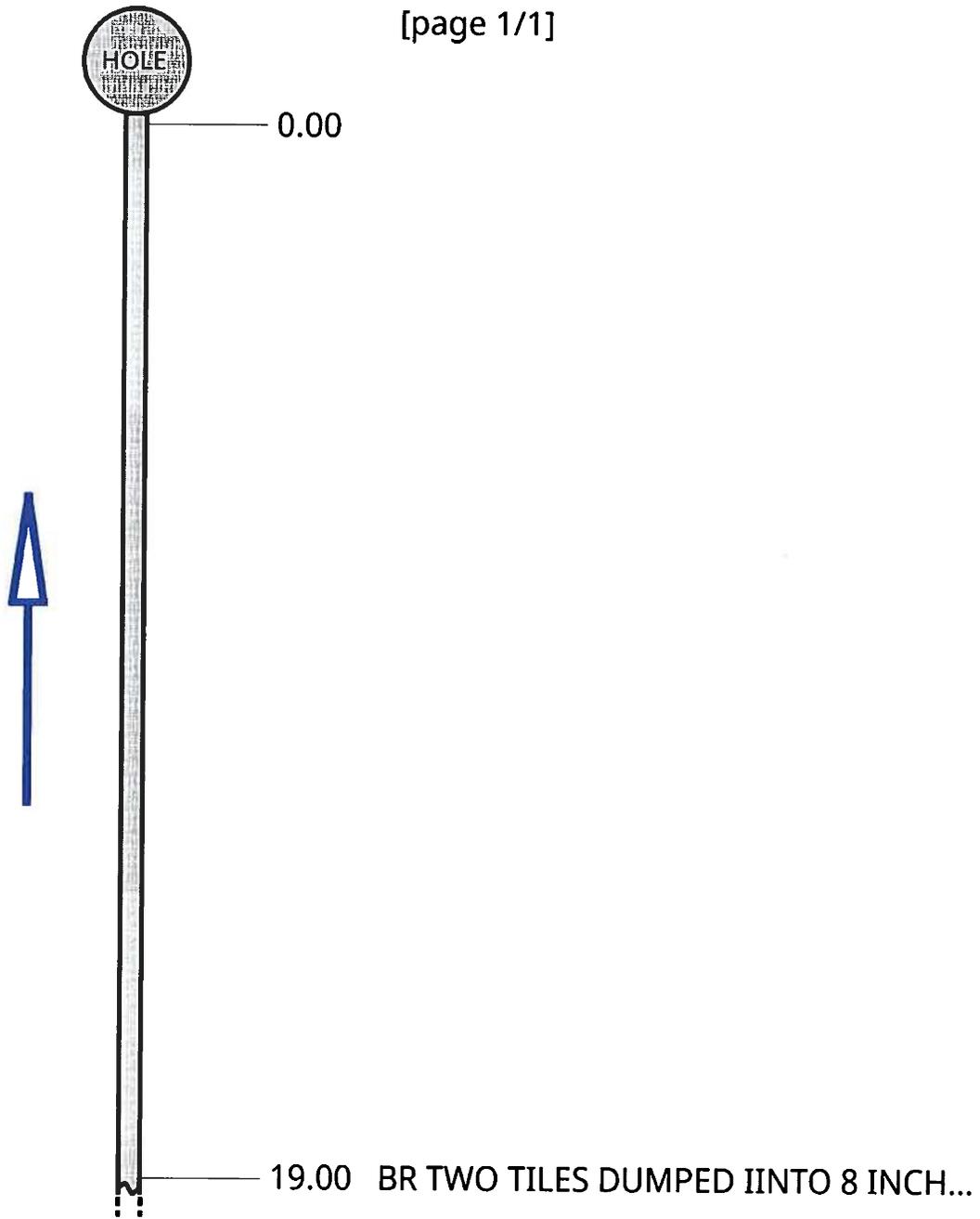
1 Drain / Sewer Survey

1.1 Survey Header

1.1.1	Surveyed by (Operator)	PAUL
1.1.2	Contract no.	
1.1.3	Job no.	
1.1.4	Catchment (Drainage area)	DD14
1.1.5	Division	LAT 2
1.1.6	District	
1.1.7	Pipeline length ref	1000
1.1.8	Date	080720
1.1.9	Time	13:16
1.1.10	Location	
1.1.11	Start manhole no.	HOLE #254
1.1.12	Start depth	m
1.1.13	Start cover level	
1.1.14	Start invert level	
1.1.15	Finish manhole no.	
1.1.16	Finish depth	m
1.1.17	Finish cover level	
1.1.18	Finish invert level	
1.1.19	Use of Drain	
1.1.20	Direction	U
1.1.21	Size 1 (diameter/height)	8mm
1.1.22	Size 2 (width)	mm
1.1.23	Shape	C
1.1.24	Material	VC
1.1.25	Lining	
1.1.26	Pipe length	m
1.1.27	Total length	
1.1.28	Year laid	
1.1.29	Video cassette number	
1.1.30	Comments: General	
1.1.31	Purpose	
1.1.32	Sewer category	
1.1.33	Pre-cleaning	
1.1.34	Weather	
1.1.35	Location code	
1.1.36	Further location details	

1.2 Diagram

[page 1/1]



1.3 Observations

Video Ref	Dist (ft)	Cont Defect	Code	Photo Ref	Diameter/ Dimension	Clock		Intrusion		Remarks
						At	To	%	mm	
0:00:00	19.0		BR	2020_07_08- 13_30_01_583.jpg 	4	09	03			TWO TILES DUMPED IINTO 8 INCH CLAY TILE

1.4 Photographs

BR 2020_07_08-13_30_01_583.jpg



Inspection Report

Produced on behalf of – HARDIN CO

Site location – ,

Survey reference – W/O 292

Date – 080720

WILLIAMS UNDERGROUND SVCS.
102 INDUSTRIAL DRIVVE, ACKLEY, IOWA
50601,
641-485-3925

Contents

1	Drain / Sewer Survey	Error! Bookmark not defined.
1.1	Site information	Error! Bookmark not defined.
1.2	Drain / Sewer Details	Error! Bookmark not defined.
1.3	Survey Details	Error! Bookmark not defined.
1.4	Drain / Sewer Diagram	Error! Bookmark not defined.
1.5	Observations	Error! Bookmark not defined.
1.6	Photographs.....	Error! Bookmark not defined.
2	Drain / Sewer Survey	Error! Bookmark not defined.
2.1	Site information	Error! Bookmark not defined.
2.2	Drain / Sewer Details	Error! Bookmark not defined.
2.3	Survey Details	Error! Bookmark not defined.
2.4	Drain / Sewer Diagram	Error! Bookmark not defined.
2.5	Observations	Error! Bookmark not defined.
2.6	Photographs.....	Error! Bookmark not defined.

1 Drain / Sewer Survey

1.1 Survey Header

1.1.1	Surveyed by (Operator)	PAUL
1.1.2	Contract no.	6844.5
1.1.3	Job no.	W/O 292
1.1.4	Catchment (Drainage area)	DD14
1.1.5	Division	
1.1.6	District	LAT 2
1.1.7	Pipeline length ref	1000
1.1.8	Date	080720
1.1.9	Time	13:39
1.1.10	Location	
1.1.11	Start manhole no.	
1.1.12	Start depth	m
1.1.13	Start cover level	
1.1.14	Start invert level	
1.1.15	Finish manhole no.	
1.1.16	Finish depth	m
1.1.17	Finish cover level	
1.1.18	Finish invert level	
1.1.19	Use of Drain	
1.1.20	Direction	D
1.1.21	Size 1 (diameter/height)	8mm
1.1.22	Size 2 (width)	mm
1.1.23	Shape	C
1.1.24	Material	VC
1.1.25	Lining	
1.1.26	Pipe length	m
1.1.27	Total length	
1.1.28	Year laid	
1.1.29	Video cassette number	
1.1.30	Comments: General	
1.1.31	Purpose	
1.1.32	Sewer category	
1.1.33	Pre-cleaning	
1.1.34	Weather	
1.1.35	Location code	
1.1.36	Further location details	

1.2 Observations

Video Ref	Dist (ft)	Cont Defect	Code	Photo Ref	Diameter/ Dimension	Clock		Intrusion		Remarks
						At	To	%	mm	



WRc MSCC Third Edition

Inspection Report

Produced on behalf of – HARDIN CO

Site location – ,

Survey reference – W/O 292

Date – 080720

WILLIAMS UNDERGROUND SVCS.

102 INDUSTRIAL DRIVVE, ACKLEY, IOWA

50601,

641-485-3925

Contents

- 1 Drain / Sewer Survey**Error! Bookmark not defined.
 - 1.1 Site information***Error! Bookmark not defined.*
 - 1.2 Drain / Sewer Details***Error! Bookmark not defined.*
 - 1.3 Survey Details***Error! Bookmark not defined.*
 - 1.4 Drain / Sewer Diagram***Error! Bookmark not defined.*
 - 1.5 Observations***Error! Bookmark not defined.*
 - 1.6 Photographs**.....*Error! Bookmark not defined.*

- 2 Drain / Sewer Survey**Error! Bookmark not defined.
 - 2.1 Site information***Error! Bookmark not defined.*
 - 2.2 Drain / Sewer Details***Error! Bookmark not defined.*
 - 2.3 Survey Details***Error! Bookmark not defined.*
 - 2.4 Drain / Sewer Diagram***Error! Bookmark not defined.*
 - 2.5 Observations***Error! Bookmark not defined.*
 - 2.6 Photographs**.....*Error! Bookmark not defined.*

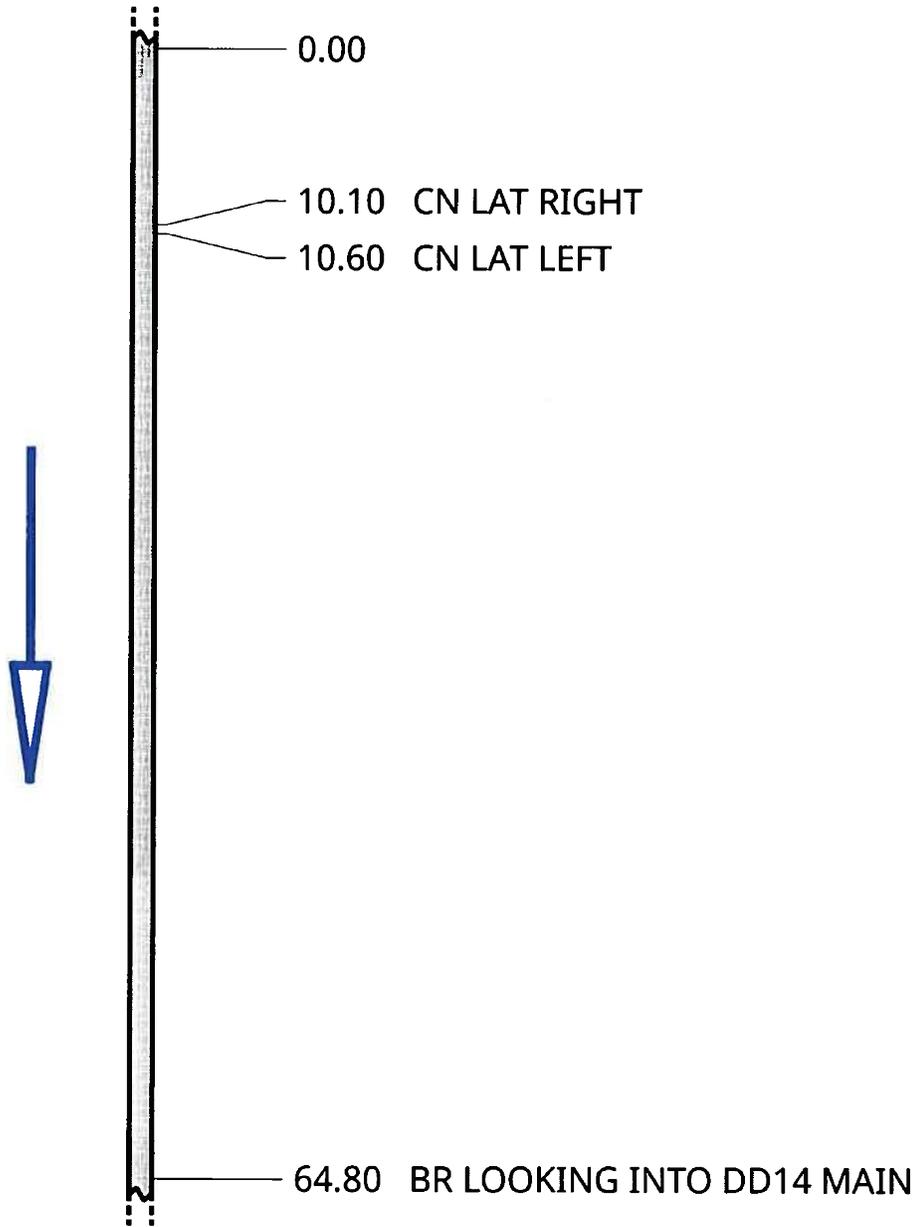
1 Drain / Sewer Survey

1.1 Survey Header

1.1.1	Surveyed by (Operator)	PAUL
1.1.2	Contract no.	66844.5
1.1.3	Job no.	W/O 292
1.1.4	Catchment (Drainage area)	DD 14
1.1.5	Division	LAT 2
1.1.6	District	
1.1.7	Pipeline length ref	1000
1.1.8	Date	080720
1.1.9	Time	14:00
1.1.10	Location	HOLE 255
1.1.11	Start manhole no.	
1.1.12	Start depth	m
1.1.13	Start cover level	
1.1.14	Start invert level	
1.1.15	Finish manhole no.	
1.1.16	Finish depth	m
1.1.17	Finish cover level	
1.1.18	Finish invert level	
1.1.19	Use of Drain	
1.1.20	Direction	D
1.1.21	Size 1 (diameter/height)	8mm
1.1.22	Size 2 (width)	mm
1.1.23	Shape	C
1.1.24	Material	VC
1.1.25	Lining	
1.1.26	Pipe length	m
1.1.27	Total length	
1.1.28	Year laid	
1.1.29	Video cassette number	
1.1.30	Comments: General	
1.1.31	Purpose	
1.1.32	Sewer category	
1.1.33	Pre-cleaning	
1.1.34	Weather	
1.1.35	Location code	
1.1.36	Further location details	

1.2 Diagram

[page 1/1]



1.3 Observations

Video Ref	Dist (ft)	Cont Defect	Code	Photo Ref	Diameter/ Dimension	Clock		Intrusion		Remarks
						At	To	%	mm	
0:00:00	10.1		CN	2020_07_08-14_04_12_399.jpg 	4	02				LAT RIGHT
0:00:00	10.6		CN	2020_07_08-14_07_01_027.jpg 	4	08				LAT LEFT
0:03:32	64.8		BR	2020_07_08-14_13_23_027.jpg 	?					LOOKING INTO DD14 MAIN

1.4 Photographs

CN 2020_07_08-14_04_12_399.jpg



CN 2020_07_08-14_07_01_027.jpg



BR 2020_07_08-14_13_23_027.jpg



1,3603240.750,4962602.710,1176.370,HC GPSMON 8026
 2,3603240.750,4962602.710,1176.370,Autonomous Setup
 3,3618688.957,4946916.051,1169.764,HC GPS 8016
 4,3605705.123,4952677.153,1135.516, TOP 12"VCP JOINT 1.06'TOP TO FL
 5,3606415.768,4950139.889,1135.574,GS TILE BLOWOUT N SIDE
 6,3606436.207,4950151.534,1135.854,GS TILE BLOWOUT N SIDE
 7,3606433.594,4950154.282,1135.676,GS TILE BLOWOUT N SIDE
 8,3606806.866,4950366.902,1140.171,FENCE E-W
 9,3606807.989,4950160.633,1143.206,FENCE E-W
 10,3606808.684,4950069.741,1147.297,FENCE E-W
 11,3606418.172,4950139.776,1130.823, TOP 15" VCP TILE JOINT (1.35'TOFTO FL)
 12,3606416.527,4950138.554,1130.832, TOP 15" TILE (1.35' TOP TO FL
 13,3606433.374,4950151.026,1130.931, TOP 15" TILE (1.30' TOP TO FL
 14,3606431.767,4950149.817,1130.912, TOP 15" TILE (1.35' TOP TO FL
 15,3606430.189,4950148.568,1130.898, TOP 15" TILE (1.33' TOP TO FL
 16,3605706.138,4952688.229,1139.481,GS
 17,3605704.925,4952670.361,1139.347,GS
 18,3605480.270,4952811.838,1148.799,FENCE E-W
 19,3605485.212,4952217.754,1137.030,FENCE E-W
 20,3608115.762,4952199.343,1155.903,MAG NAIL
 21,3605484.284,4952146.915,1142.370,SURVEY MARK NAIL
 22,3606802.079,4952129.144,1147.964,FENCE S&W
 23,3608053.507,4952267.497,1152.132,CPT 34 IR 0.2'D
 24,3607989.169,4950926.173,1140.628, TOP EXISTING 15" CMP
 25,3608049.542,4950961.076,1141.017, TOP 14" VCP (1.17'TOFTOFL)
 26,3608053.288,4950963.091,1140.699, TOP 14" VCP (0.96'TOFTOFL)
 27,3607983.653,4950923.063,1140.661, TOP 14" VCP (1.21'TOFTOFL)
 28,3608080.752,4950995.945,1141.522, TOP EXISTING 15" SW HDPE TILE
 29,3608083.253,4950994.402,1141.500, TOP 6"SW CPP (0.49'TOFTOFL)
 30,3608092.799,4951005.494,1141.648, TOP 15" CMP (1.23' TOP TO FL)
 31,3608077.605,4950993.300,1145.298,GS
 32,3608060.368,4950969.312,1145.175,GS
 33,3608037.548,4950953.803,1145.213,GS
 34,3608015.699,4950941.810,1145.088,GS
 35,3607980.101,4950921.322,1144.873,GS
 36,3608000.481,4950932.767,1140.940, TOP 15" HDPE PERFTILE (0.67'NTOBELL)(1.35'TOFTO FL)
 37,3608084.607,4950949.402,1145.388,GS FIELD/DITCH
 38,3608084.599,4950983.584,1145.143,GS FIELD/DITCH
 39,3608082.212,4951024.307,1146.627,GS FIELD/DITCH
 40,3608100.133,4950999.532,1145.416,FL 4'*2'TALL CONC BOX
 41,3608089.162,4950987.889,1148.373, TOP 6" HICKENBOTTOM INTAKE (6.31' TOP TO FL)
 42,3608017.662,4950942.112,1141.078, TOP 15" HDPE PERF TILE (1.35'TOFTO FL)
 43,3608034.233,4950952.510,1141.216, TOP 15" HDPE PERF TILE (1.35'TOP TO FL)
 44,3608051.197,4950962.357,1141.350, TOP 15" HDPE TILE (1.35'TOFTOFL
 45,3608033.829,4950950.107,1140.548, TOP 6" PERF TILE (0.51'TOFTO FL)
 46,3608034.571,4950947.776,1140.544, TOP 6" PERF TILE (0.51'TOFTO FL)
 47,3608034.608,4950940.382,1140.602, TOP 6" PERF TILE (0.51'TOFTO FL)
 48,3608034.739,4950934.740,1140.530, TOP 6" PERF TILE (0.51'TOFTO FL)

49,3608034.707,4950928.336,1140.460,T0P 6" PERF TILE (0.51'TOPTO FL)
 50,3608034.827,4950922.605,1140.417,T0P 6" PERF TILE (0.51'TOPTO FL)
 51,3608128.896,4949539.459,1151.696,MAG NAIL
 52,3608060.852,4950968.394,1141.418, TOP 15" HDPE TILE 22.5BEND (1.35'TOPTO FL)
 53,3608066.056,4950977.043,1141.487, TOP 15" DW HDPE TILE (1.35'TOPTOFL)
 54,3608077.936,4950992.725,1141.629, TOP 15" DW HDPE TILE (1.35'TOPTOFL)
 55,3608086.285,4951003.294,1141.742, TOP 15" DW HDPE TILE 22.5 BEND (1.35'TOPTOFL)
 56,3608091.951,4951005.247,1141.780, TOP 15"*15"*15" HDPE WYE
 57,3608081.157,4950995.861,1141.444, TOP 6" HDPE SADDLE TAP
 58,3608081.696,4950995.452,1141.576, TOP 6" HDPE EXTERNAL COUPLER
 59,3608085.434,4951011.982,1145.974,GS
 60,3608089.265,4950998.392,1145.365,GS
 61,3608034.172,4950949.577,1140.537,T0P 6" PERF TILE (0.51'TOPTO FL)
 62,3608033.230,4950951.027,1140.591,T0P 6" DW TILE (0.55'TOPTO FL)
 63,3608079.348,4951335.208,1151.564,GS BEAN DAMAGE
 64,3608033.743,4951335.117,1150.834,GS BEAN DAMAGE
 65,3608046.530,4951310.109,1150.762,GS BEAN DAMAGE
 66,3608057.991,4951262.988,1149.769,GS BEAN DAMAGE
 67,3608057.119,4951206.321,1148.555,GS BEAN DAMAGE
 68,3608053.376,4951189.795,1148.130,GS BEAN DAMAGE
 69,3608051.635,4951142.339,1147.931,GS BEAN DAMAGE
 70,3608031.595,4951129.695,1147.612,GS BEAN DAMAGE
 71,3608031.998,4951105.324,1147.754,GS BEAN DAMAGE
 72,3608050.176,4951073.771,1147.711,GS BEAN DAMAGE
 73,3608049.722,4951053.602,1147.324,GS BEAN DAMAGE
 74,3608036.030,4951011.428,1146.382,GS BEAN DAMAGE
 75,3608019.553,4951003.326,1146.204,GS BEAN DAMAGE
 76,3608020.181,4950994.983,1146.039,GS BEAN DAMAGE
 77,3607959.756,4950955.599,1145.266,GS BEAN DAMAGE
 78,3607940.555,4950929.442,1144.729,GS BEAN DAMAGE
 79,3607940.652,4950910.000,1144.641,GS BEAN DAMAGE
 80,3607979.594,4950877.412,1144.902,GS BEAN DAMAGE
 81,3608039.390,4950886.414,1145.489,GS BEAN DAMAGE
 82,3608085.975,4950915.943,1145.790,GS BEAN DAMAGE/DITCH
 83,3608081.452,4951072.899,1147.693,GS BEAN DAMAGE/DITCH
 84,3608081.095,4951139.433,1148.235,GS BEAN DAMAGE/DITCH
 85,3608081.027,4951239.536,1149.007,GS BEAN DAMAGE/DITCH
 86,3608079.743,4951304.686,1150.586,GS BEAN DAMAGE/DITCH
 88,3608087.940,4951003.741,1145.460,CENTER ACCESS CASTING
 89,3608176.604,4951135.886,1148.318,gs wl locate 93"d
 90,3608176.050,4951076.885,1146.497,gs wl locate 112"d
 91,3608175.129,4951061.949,1146.637,gs wl locate 108"d
 92,3608173.187,4951047.397,1146.547,gs wl locate 105"d
 93,3608172.919,4951040.333,1146.503,gs wl locate 101"d (15" tile)
 94,3608172.828,4951032.374,1146.529,gs wl locate 108"d
 95,3608160.046,4951031.601,1145.991,wws ciwa stamp 13N (TILE LINE BELOW)
 96,3608176.411,4951123.190,1149.042,GS CL 20825 CO HWY S27 GRAVEL DRIVE ABOVE WL
 100,3608173.775,4951794.097,1142.090, TOP WATERMAIN
 101,3608172.970,4951806.421,1144.607, TOP 14"CLAY

102,3606801.876,4950336.843,1134.500, TOP 15" CLAY 1.38' TOPTOFL
103,3606776.447,4950322.423,1139.240,GS ABOVE TILE
104,3606801.246,4950330.369,1139.443,GS
105,3606785.751,4950322.663,1139.572,GS
106,3606781.230,4950330.843,1139.443,GS
107,3606800.988,4950343.062,1139.717,GS
108,3606806.097,4950348.422,1140.101,FENCE E-W
109,3606806.277,4950329.481,1140.050,FENCE E-W
110,3606812.666,4950342.795,1139.661,GS
111,3606808.337,4950339.736,1138.919,GS
112,3606784.008,4950326.675,1134.306, TOP 15" CLAY 1.31' TOPTOFL
113,3606784.164,4950326.703,1134.338, TOP 15" HDPE PERF TILE
114,3606798.454,4950335.076,1134.431, TOP 15" HDPE PERF TILE
115,3606801.757,4950336.845,1134.463, TOP 15" HDPE PERF TILE
116,3605345.937,4950152.361,1122.926,GS ABOVE TILE
117,3605340.655,4950146.152,1122.854,GS ABOVE TILE
118,3605342.974,4950149.013,1120.006,TILE TOP 14.25*17.25" SQUAT CLAY (1.25'TOP TO FL)
119,3605344.620,4950151.047,1120.026,TILE TOP 14*17" SQUAT CLAY (1.22'TOP TO FL)
120,3605385.960,4950177.421,1123.131,GS ABOVE TILE
121,3605379.508,4950173.853,1123.177,GS ABOVE TILE
122,3605414.981,4950167.886,1124.101,GS WATERWAY
123,3605371.837,4950148.276,1123.621,GS WATERWAY
124,3605332.279,4950112.525,1122.863,GS WATERWAY
125,3605309.994,4950133.091,1122.804,GS WATERWAY
126,3605355.127,4950171.596,1123.269,GS WATERWAY
127,3605414.606,4950191.842,1123.890,GS WATERWAY
128,3605452.781,4950199.659,1124.464,GS TILE LOCATE
129,3605507.884,4950208.120,1125.500,GS TILE LOCATE
130,3605566.488,4950211.914,1125.840,GS TILE LOCATE
131,3605624.107,4950214.918,1126.524,GS TILE LOCATE
133,3605683.158,4950217.229,1126.920,GS TILE LOCATE
134,3605750.126,4950216.561,1127.637,GS TILE LOCATE
135,3605805.896,4950206.324,1128.247,GS TILE LOCATE
136,3605869.322,4950185.200,1128.558,GS TILE LOCATE
137,3605907.201,4950164.902,1128.683,GS TILE LOCATE END CAMERA
138,3605951.503,4950135.957,1125.608,TILE TOP 12*19" SQUAT CLAY (1.09'TOP TO FL)
REMOVED
139,3605948.015,4950138.425,1125.762,TILE TOP 13*18 SQUAT "CLAY (1.21'TOP TO FL)
REMOVED
140,3606002.087,4950097.117,1129.897,GS TILE LOCATE
141,3606047.969,4950060.252,1130.485,GS TILE LOCATE
142,3606093.946,4950024.079,1131.195,GS TILE LOCATE
143,3606148.452,4949995.916,1131.594,GS TILE LOCATE
144,3606194.832,4949987.959,1131.959,GS TILE LOCATE
145,3606198.408,4949987.796,1132.012,GS TILE LOCATE END LOCATE
146,3605911.704,4950162.539,1125.405,TILE TOP 15*17 " CLAY 1.32'TOPTOFL
147,3605913.527,4950161.426,1125.261,TILE TOP 12*19" SQUAT CLAY 1.05'TOPTOFL REMOVED
148,3605905.139,4950166.616,1128.680,GS ABOVE TILE

149,3605914.838,4950160.561,1128.801,GS ABOVE TILE
150,3605945.044,4950140.580,1129.365,GS ABOVE TILE
151,3605953.724,4950134.445,1129.394,GS ABOVE TILE
152,3605917.145,4950159.407,1125.461,TILE TOP 15.25*16" CLAY 1.34'TOFTOFL
153,3605957.056,4950121.773,1129.527,GS WATERWAY
154,3605918.162,4950152.972,1128.826,GS WATERWAY
155,3605846.419,4950191.394,1128.563,GS WATERWAY
156,3605692.445,4950210.179,1127.221,GS WATERWAY
157,3605572.291,4950198.841,1126.518,GS WATERWAY
158,3605481.505,4950182.506,1125.016,GS WATERWAY
159,3605480.915,4950202.881,1124.880,GS WATERWAY
160,3605493.194,4950208.150,1125.264,GS WATERWAY
161,3605492.050,4950234.982,1126.183,GS WATERWAY
162,3605516.988,4950233.467,1126.920,GS WATERWAY
163,3605521.214,4950215.654,1126.130,GS WATERWAY
164,3605535.721,4950214.240,1126.077,GS WATERWAY
165,3605627.973,4950230.113,1126.487,GS WATERWAY
166,3605650.168,4950236.977,1126.710,GS WATERWAY
167,3605705.205,4950290.733,1127.666,GS WATERWAY
168,3605742.239,4950280.558,1127.890,GS WATERWAY
169,3605735.245,4950245.369,1127.709,GS WATERWAY
170,3605735.412,4950240.914,1127.535,GS WATERWAY
171,3605823.622,4950228.426,1127.666,GS WATERWAY
172,3605893.923,4950204.258,1128.704,GS WATERWAY
173,3605948.734,4950172.433,1129.588,GS WATERWAY
174,3606004.304,4950123.863,1130.051,GS WATERWAY
175,3605946.237,4950139.603,1125.854,TILE TOP 15*15.75" CLAY 1.36'TOFTOFL
176,3605953.253,4950134.826,1125.849,TILE TOP 15.75*16" CLAY 1.39'TOFTOFL
177,3605384.208,4950176.364,1120.543,TILE TOP 15*16.25" squat CLAY 1.35'TOFTOFL
178,3605382.068,4950175.088,1120.425,TILE TOP 14*17" squat CLAY 1.24'TOFTOFL
179,3605308.552,4950098.525,1122.265,GS TILE LOCATE
180,3605283.080,4950047.286,1121.952,GS TILE LOCATE
181,3605264.542,4949992.162,1121.779,GS TILE LOCATE
182,3605246.456,4949937.507,1121.209,GS TILE LOCATE
183,3605227.996,4949883.706,1120.689,GS TILE LOCATE
184,3605208.491,4949829.163,1120.112,GS TILE LOCATE
185,3605187.171,4949775.725,1119.631,GS TILE LOCATE
186,3605162.969,4949720.465,1119.157,GS TILE LOCATE
187,3605138.529,4949666.755,1118.794,GS TILE LOCATE
188,3605115.421,4949616.282,1118.212,GS TILE LOCATE
189,3605091.558,4949566.464,1118.417,GS TILE LOCATE
190,3605060.423,4949517.341,1118.346,GS TILE LOCATE
191,3605044.705,4949495.848,1118.377,GS TILE LOCATE
192,3605007.736,4949448.293,1116.480,GS TILE LOCATE
193,3604971.956,4949403.645,1115.997,GS TILE LOCATE
194,3604933.158,4949356.696,1115.465,GS TILE LOCATE
195,3604902.280,4949319.604,1115.271,GS TILE LOCATE END
196,3605007.109,4949493.659,1118.634,FNL N-S
197,3605066.434,4949494.540,1117.773,FNL N-S

198,3606042.834,4950084.321,1130.491,GS WATERWAY
199,3606092.572,4950032.226,1130.980,GS WATERWAY
200,3606145.664,4950000.670,1131.473,GS WATERWAY
201,3606210.807,4949998.901,1132.203,GS WATERWAY
202,3606214.261,4949964.616,1132.458,GS WATERWAY
203,3606132.656,4949976.520,1131.497,GS WATERWAY
204,3606052.849,4950031.398,1130.741,GS WATERWAY
205,3605988.156,4950092.948,1129.841,GS WATERWAY
206,3605267.201,4950069.065,1122.129,GS WATERWAY
207,3605228.432,4949964.232,1121.465,GS WATERWAY
208,3605197.938,4949866.193,1120.875,GS WATERWAY
209,3605163.386,4949760.174,1119.578,GS WATERWAY
210,3605125.162,4949640.384,1118.926,GS WATERWAY
211,3605110.716,4949585.173,1118.333,GS WATERWAY
212,3605100.210,4949499.905,1117.402,GS WATERWAY
213,3605122.963,4949510.205,1118.127,GS WATERWAY
214,3605495.092,4949501.521,1129.346,FNL N-S&W
215,3605133.332,4949555.621,1118.404,GS WATERWAY
216,3605178.871,4949717.223,1119.920,GS WATERWAY
217,3605241.192,4949906.375,1121.016,GS WATERWAY
218,3605271.139,4950005.075,1121.944,GS WATERWAY
219,3605312.635,4950088.007,1122.763,GS WATERWAY
220,3605504.519,4950234.224,1126.183,Cogo
230,3608084.124,4951902.308,1147.445,W RIM BEEHIVE
231,3608089.801,4951888.318,1147.847,GS TILE LOCATE
232,3608104.983,4951879.465,1154.112,GS TILE LOCATE
233,3608106.624,4951878.417,1154.184,GS TILE LOCATE EOA
234,3608117.917,4951869.070,1154.547,GS TILE LOCATE CL
235,3608129.210,4951858.971,1154.234,GS TILE LOCATE EOA SOME RESISTENCE
236,3608146.621,4951845.243,1148.110,GS TILE LOCATE
237,3608161.933,4951817.422,1149.628,GS TILE LOCATE
238,3608165.220,4951813.473,1149.904,GS TILE LOCATE FIELD EDGE
239,3608168.579,4951809.460,1149.604,GS TILE LOCATE
240,3608178.369,4951801.269,1149.377,GS TILE LOCATE
241,3608188.241,4951791.528,1149.576,GS TILE LOCATE
242,3608209.740,4951773.387,1149.698,GS TILE LOCATE
243,3608231.610,4951755.411,1149.682,GS TILE LOCATE
244,3608253.737,4951735.679,1149.571,GS TILE LOCATE
245,3608280.557,4951712.028,1149.410,GS TILE LOCATE
246,3608284.668,4951708.431,1149.364,GS TILE LOCATE END OBSTRUCTION?
247,3608285.090,4951708.634,1144.232,TILE TO 14"CLAY 1.24'TOFTOFL
248,3608283.091,4951710.319,1144.305,TILE TO 14"CLAY 1.28'TOFTOFL
249,3608289.834,4951703.250,1149.599,GS
250,3608172.054,4951804.330,1145.918,TILE TOP 8" CLAY 0.72'TOFTOFL
251,3608170.627,4951805.930,1145.912,TILE TOP 8"CLAY 0.75'TOFTOFL
252,3608173.804,4951805.527,1144.706,TILE TOP 14" CLAY 1.38'TOFTOFL
253,3608174.204,4951808.223,1144.440,WM 1.38'GSTOTOP WM
254,3608084.572,4951892.856,1144.681,TILE TOP 8"CLAY 0.74'TOFTOFL
255,3608085.478,4951892.193,1144.745,TILE TOP 8"CLAY 0.74'TOFTOFL

256,3607786.141,4952154.305,1148.855,GS SIGN TILE LINE
259,3608076.855,4951898.654,1148.210,GS TILE LOCATE
260,3608067.662,4951905.816,1148.319,GS TILE LOCATE OBSTRUCTION?
261,3608079.284,4951896.646,1149.016,GS EDGE FIELD
262,3608143.074,4951852.200,1148.498,GS APPROX TILE MAIN LAT 2 CONNECTION
263,3608067.743,4951910.457,1145.035,TILE TOP 5" HDPE PERF 0.43'TOFTOFL
264,3608059.621,4951902.767,1145.428,TILE TOP 4" HDPE PERF 0.34'TOFTOFL
267,3608069.254,4951904.084,1144.770,TILE TOP 8"CLAY 0.74'TOFTOFL
268,3608151.043,4952028.550,1147.989,INTAKE BEEHIVE N RIM
269,3608148.458,4951824.752,1145.486,FL 6" HICKENBOTTOM INTAKE
270,3608356.513,4951135.356,1147.339,GS CORN DAMAGE 1
271,3608349.998,4951198.416,1147.156,GS CORN DAMAGE 1
272,3608342.105,4951272.849,1147.785,GS CORN DAMAGE 1
273,3608337.421,4951324.659,1148.118,GS CORN DAMAGE 1
274,3608335.119,4951375.990,1148.173,GS CORN DAMAGE 1
275,3608331.695,4951427.177,1148.383,GS CORN DAMAGE 1
276,3608329.218,4951534.790,1148.667,GS CORN DAMAGE 1
277,3608326.276,4951625.404,1149.140,GS CORN DAMAGE 1
278,3608306.692,4951650.463,1149.366,GS CORN DAMAGE 1
279,3608279.429,4951677.110,1149.468,GS CORN DAMAGE 1
280,3608259.987,4951696.313,1149.684,GS CORN DAMAGE 1
281,3608260.177,4951716.006,1149.489,GS CORN DAMAGE 1
282,3608166.019,4951798.622,1149.708,GS CORN DAMAGE 1
283,3608163.719,4951845.257,1149.910,GS CORN DAMAGE 1
284,3608193.655,4951845.248,1149.929,GS CORN DAMAGE 1
285,3608195.478,4951803.739,1149.599,GS CORN DAMAGE 1
286,3608270.710,4951727.264,1149.451,GS CORN DAMAGE 1
287,3608280.575,4951736.489,1149.435,GS CORN DAMAGE 1
288,3608292.462,4951732.982,1149.389,GS CORN DAMAGE 1
289,3608311.870,4951716.945,1149.271,GS CORN DAMAGE 1
290,3608312.299,4951692.591,1149.298,GS CORN DAMAGE 1
291,3608344.022,4951684.697,1149.142,GS CORN DAMAGE 1
292,3608344.617,4951440.966,1148.243,GS CORN DAMAGE 1
293,3608347.083,4951432.959,1148.166,GS CORN DAMAGE 1
294,3608349.318,4951400.370,1148.110,GS CORN DAMAGE 1
295,3608349.618,4951364.090,1148.024,GS CORN DAMAGE 1
296,3608352.051,4951359.720,1148.086,GS CORN DAMAGE 1
297,3608352.082,4951310.589,1148.041,GS CORN DAMAGE 1
298,3608357.674,4951281.382,1147.847,GS CORN DAMAGE 1
299,3608361.609,4951234.904,1147.412,GS CORN DAMAGE 1
300,3608368.174,4951167.004,1147.332,GS CORN DAMAGE 1
301,3608385.227,4951136.275,1147.398,GS CORN DAMAGE 1
302,3608064.858,4951907.140,1144.848,TILE TOP 8"CLAY 0.72'TOFTOFL
303,3608065.976,4951899.316,1145.016,TILE TOP 5" HDPE PERF 0.43'TOFTOFL
304,3608066.325,4951906.090,1144.804,TILE TOP 8"*8"*5" HDPE TEE
305,3608067.955,4951905.120,1144.767,TILE TOP HDPE 8"*8"*5" TEE
306,3608067.368,4951904.522,1144.650,TILE TOP 5" HDPE PERF @ TEE 0.43'TOFTOFL
307,3608066.483,4951902.291,1144.813,TILE TOP 5"*5"*4" HDPE TEE
308,3608066.794,4951906.637,1144.618,TILE TOP 5" HDPE PERF @ TEE 0.43'TOFTOFL

309,3607822.096,4952238.535,1149.727,FNL N-S
310,3607798.155,4952237.894,1149.855,FNL N-S
311,3607793.814,4952247.403,1145.203,TILE TOP 8" HDPE NONPERF (HOLE)
312,3607794.478,4952141.899,1147.273,TILE TOP 4" HDPE PERF 0.32'TOFTOFL
313,3607784.928,4952141.448,1147.506,TILE TOP 4" HDPE PERF 0.36'TOFTOFL
316,3607789.071,4952140.770,1147.444,TILE TOP 4" HDPE PERF 0.38'TOFTOFL
317,3607786.252,4952141.423,1147.519,TILE TOP 4" HDPE PERF 0.38'TOFTOFL
318,3607792.952,4952141.702,1147.384,TILE TOP 4" HDPE PERF 0.38'TOFTOFL
320,3607772.108,4952149.515,1149.663,GS CORN DAMAGE 2
321,3607765.439,4952132.040,1149.471,GS CORN DAMAGE 2
322,3607766.323,4952110.312,1149.537,GS CORN DAMAGE 2
323,3607811.039,4952111.921,1149.513,GS CORN DAMAGE 2
324,3607818.925,4952152.088,1149.858,GS CORN DAMAGE 2
325,3607810.601,4952181.593,1154.265,EOA
326,3607748.957,4952180.166,1154.283,EOA
327,3607777.446,4952152.857,1148.859,INTAKE BEEHIVE N RIM
328,3607772.871,4952153.571,1149.545,GS SIGN TILE LINE
329,3607759.653,4952202.415,1154.498,EOA
330,3607835.381,4952204.204,1154.372,EOA
331,3608080.006,4951941.286,1148.184,GS CORN DAMAGE 3
332,3608057.015,4951932.847,1148.177,GS CORN DAMAGE 3
333,3608039.389,4951920.646,1148.462,GS CORN DAMAGE 3
334,3608040.271,4951891.508,1148.649,GS CORN DAMAGE 3
335,3608056.992,4951872.352,1148.722,GS CORN DAMAGE 3
336,3608078.679,4951872.507,1148.701,GS CORN DAMAGE 3
337,3608073.676,4952737.840,1148.917,INTAKE 18" BEEHIVE N RIM
338,3608084.796,4952746.455,1150.538,CMP TOP 18" 1.54'TOFTOFL
339,3608124.706,4952745.934,1155.472,GS BLOWOUT SHOULDER
340,3608147.597,4952746.884,1149.178,INTAKE 18" BEEHIVE N RIM
341,3608136.448,4952746.150,1151.386,RCP TOP 18" 1.71'TOFTOFL
342,3608073.094,4952744.578,1145.664,CLAY TOP 6" 0.57'TOFTOFL
343,3608072.372,4952744.584,1145.604,TEE TOP HDPE 6"*6"*4" 0.56'TOFTOFL
344,3608071.838,4952744.372,1145.598,TILE TOP 6" SW HDPE NONPERF 0.56'TOFTOFL
345,3608072.542,4952741.735,1146.267,TILE TOP 6" CLAY 0.57'TOFTOFL
346,3608072.419,4952743.936,1145.716,TILE TOP 4" CLAY 0.38'TOFTOFL

Drainage District:

#14 Main and Lateral 2

Investigation/Repair Summary:

- Landowners and tenants in the NE¼ of Section 34 and NW¼ of Section 35, Township 88 North, Range 22 West reported restricted drainage at intersection of County Highways D41 and S27 along the assumed Main and Lateral 2 tile routes.
- Visual observation found all intakes on assumed Main tile and Lateral 2 tile routes in all 4 quadrants of the intersection to have standing water, but intakes on assumed Main tile route downstream of the road intersection appeared to be dry and functioning.

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

None recorded as only visual observation was done.

Additional Actions Recommended:

Something at the road intersection is restricting drainage in at least the Main tile and possibly the Lateral 2 tile also. However, it is not clear how many restrictions there are or what constitutes those restrictions without excavation. It is recommended that excavations at the road intersection be performed using available contractors from the lottery system. It should also be noted that this area has had several utilities (i.e. rural water and others) installed in recent years which may or may not be contributing to the restricted drainage.





Drainage Work Order Request For Repair

Hardin County

Date: 4/15/2020

Work Order #: WO00000291

Drainage District: DDs\DD 14 (51027)

Sec-Twp-Rge: 34-88-22 **Qtr Sec:** E1/2 NE NE

Location/GIS: 88-22-34-200-003

Requested By: James Sweeney/Cynthia loger/Jim & Ron Vierkandt

Contact Phone: (641) 847-3273

Contact Email: jsweeney@cgaconsultants.com

Landowner (if different): Ron/Jim Vierkandt/Cynthia loger

Description: DD 14- Sweeney reports plugged main tile in Jim & Ron's parcels, Sheldahl called in to pothole/explore tile on S side of D41, likely main tile. Intake further E of D41 & S27 intersection where tile goes under road needs repair. See Add'l Req in docs- lack of drg downstream of intersection of Lat 2/main tile. Last 3 years, Lat 2 has lacked enough drg to effectively farm area it should drain. Potholes dug by landowners in Sects 34/35 do not drain. Also, broken intake @ Lat 2 intersection w D41 in Sect. 35.

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:** _____



Drainage Work Order Request For Repair

Hardin County

Date 4/20/2020

Work Order # _____

District # #14

Lateral Lat 2 & Main

Fund # _____

Township _____

Section 27, 34, 35 ^{wp} 88

Rge 22 Qtr Sec _____

Repair Requested By Cynthia Ioerger, Ronald Vierkandt, James Vierkandt

Address 15898 Co Hwy D41 Phone _____

Landowner Same

Address Same Phone _____

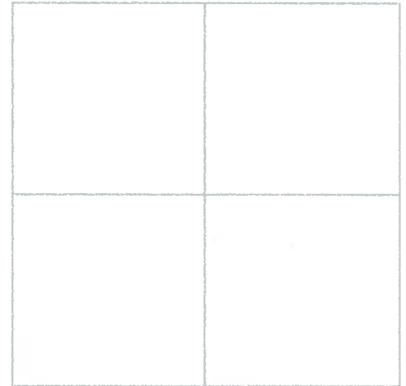
Request Taken By _____

Available for Repair Now? Yes

Date Available _____

Problem Description **There is a lack of drainage somewhere downstream of the intersection of Lateral 2 and the main tile. Last three or so years the Lateral 2 tile has lacked enough drainage effectively farm the area it is supposed to drain. Pot-holes were dug by the landowners in sections 34 and 35, and water just sits in said holes without draining.**

Also, there is a broken intake where Lateral 2 intersects D41 in section 35



Repair labor, materials and equipment _____

Potential Wetlands? Yes-Repair existing tile only

No-Repair and maintain tile

Repaired By: _____

Date: _____

Please send statement for services to:

Hardin County Auditor's Office

Attn: Tina Schlemme

1215 Edgington Ave, Suite 1

Eldora, IA 50627

Phone (641) 939-8111

Fax (641) 939-8245

For Office Use Only

Approved: _____

Date: _____

882227300002

882227400001

882227400002

882226300001

D.D. No. 14

D.D. No. 123
(D.D. 26)

882227300004

882227400003

D.D. No. 26

882227400004

88222630000

88222630000

Co Hwy S27

Co Hwy D41

LAT 1

LAT 2

882234100002

882234200001

882234200002 882234200003

882235100001

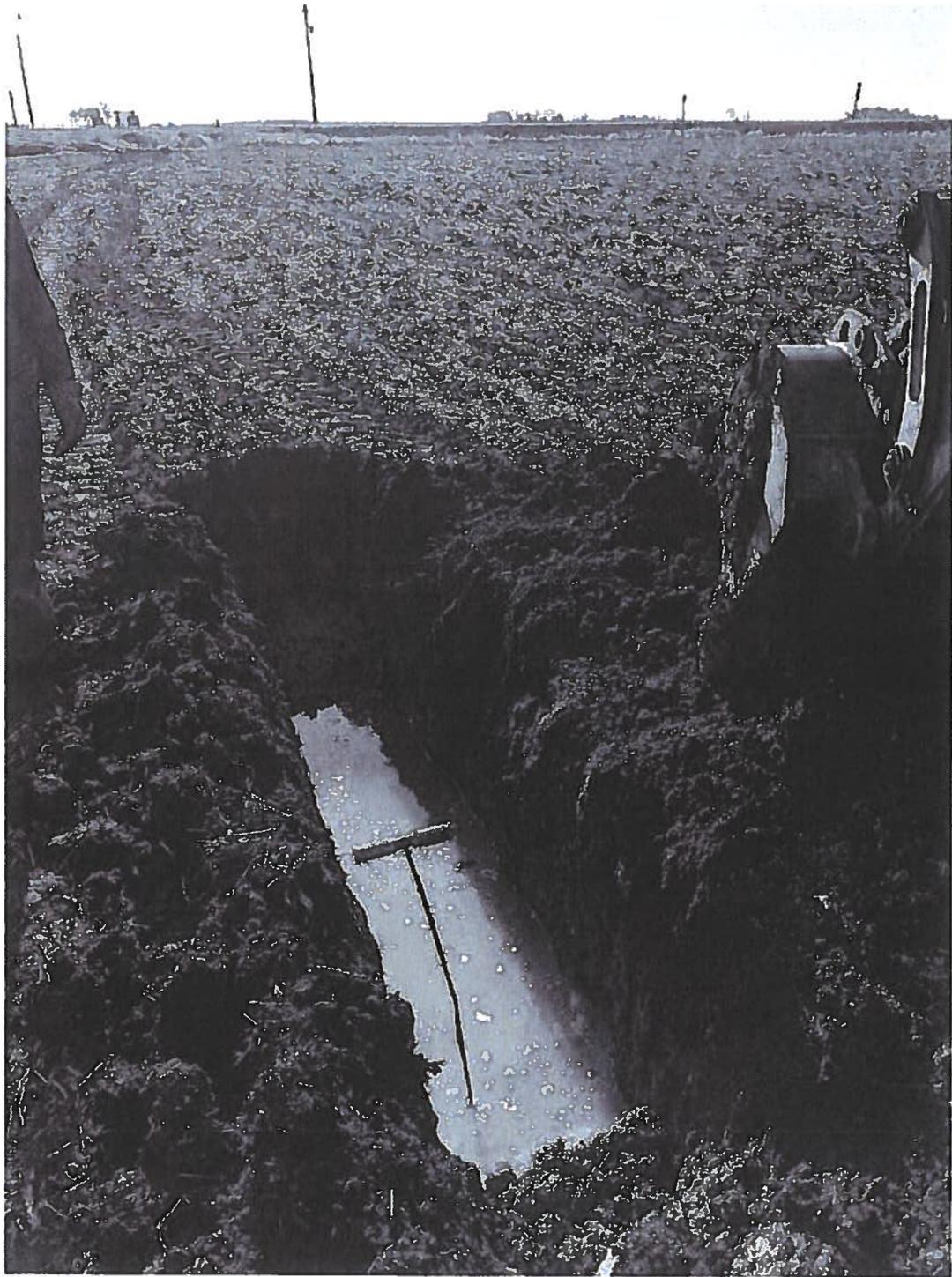
MAIN

882234100004

882234200004

882234200006

882235100003



















CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

4/29/20

PROJECT NUMBER:

6844.5 WO 291

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD:

DD 14 MAIN + LAT 2

SHEET NO.

OF 1

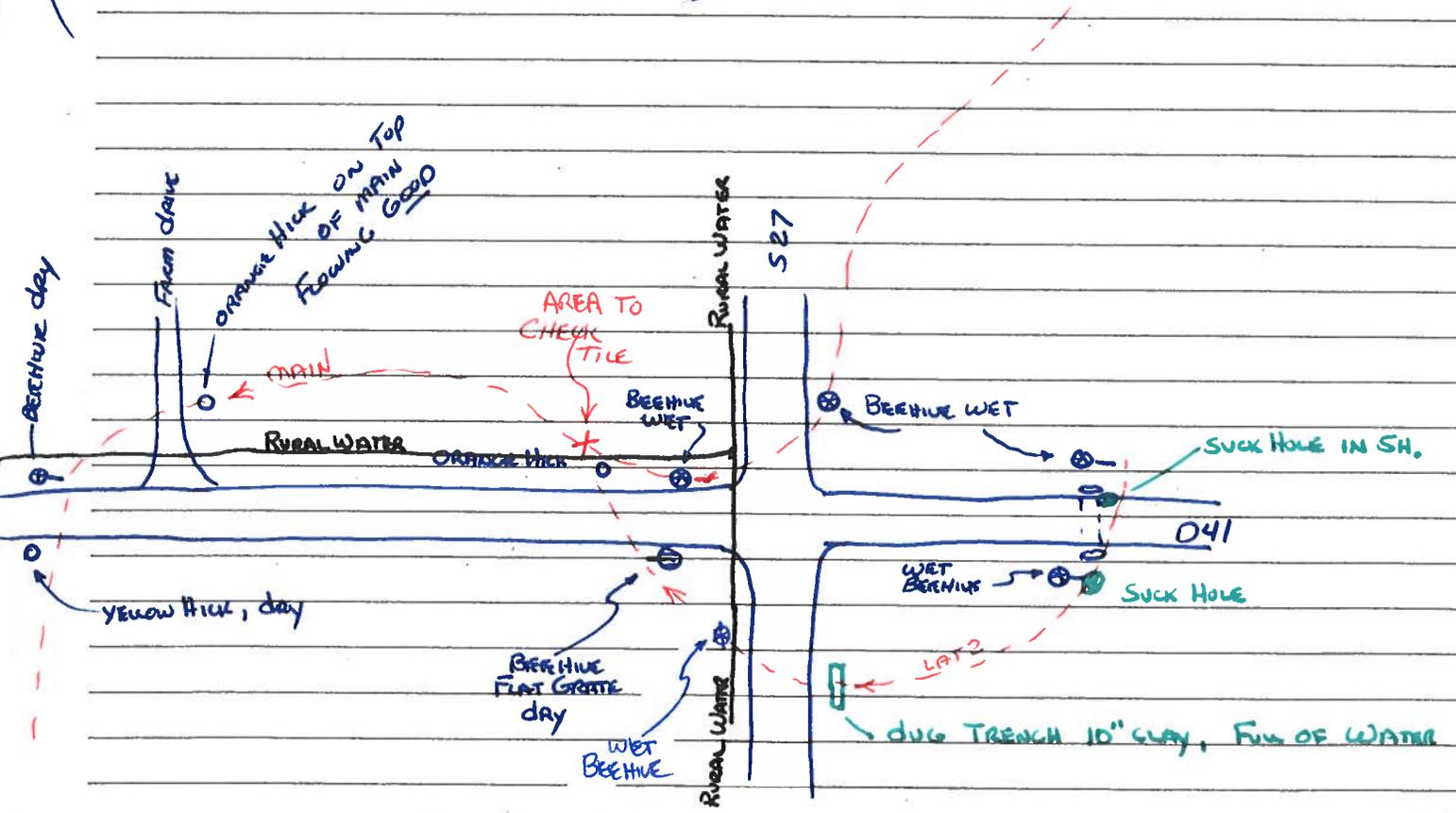
LOCATION:

S27 AND D41 INTERSECTION

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

LAT 2 HAS RESTRICTION @ D41 (N. OR S. SIDE?). NEED TO DIG ON NORTH SIDE 1ST, TRY AND FIND LAT 2 CONNECTION TO MAIN. INTAKES ON MAIN @ FARM DRIVE LOOK GOOD WITH FLOWING WATER IN MAIN

TALKED TO RON VIKRAMA (80 YRS OLD) HE AGREED WITH ME THAT THE LAT 2 CONNECTION SHOULD BE CHECKED, BUT HE HAD NO IDEA WHERE IT WAS AT.



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

Observer's Signature:

[Handwritten Signature]

Date Prepared:

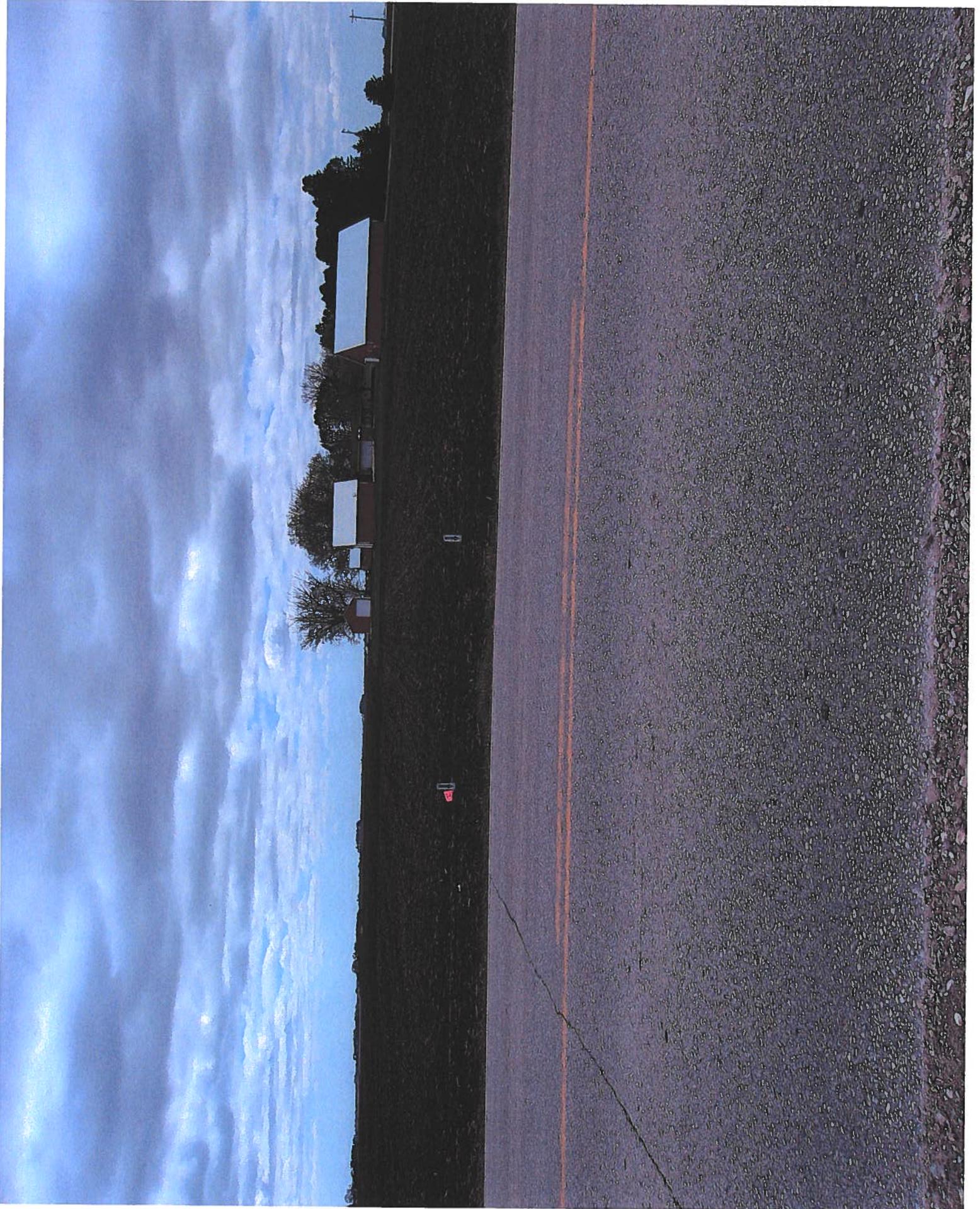
4/29/20

Reviewed by:

Engineer

Date Reviewed

LOOKING WEST OVER S27 ON LATZ



LOOKING E. @ 10" CLAY ON LAT 2, E. OF S27



TRENCH ON LAT 2, E SIDE S27



LOOKING EAST @ BEEHIVE WITH HOLE ON LAT2, S. SIDE D41 BY CRP



S. SIDE D41 , HOLE ON LAT 2 , LOOKING N.



LOOKING WEST ON S. DITCH D41



SURF. DRAIN RCP WITH SUCK HOLE OVER TOP RCP AND LAT 2



LOOKING S. ON LAT 2 ROUTE, FLAG ON SIXK HOLE ON N.S.H. D41



INTAKE ON N. SIDE D41 ON LAT 2, FULL OF WATER



LOOKING E @ S27, BEEHIVE IN N DITCH D41



LOOKING UPSIDEAM ON MAIN, S. OF D41, TRST SET ON MAIN BY REPAIR



Looking W. on N R/W D41, Just W. of S27



ORANGE HICK ON LAT 2? ON N DITCH D41



Dry INTAKE ON LAT 2 , S. ditch 041 (inv. of S27)



LAT 2, WET BEEHIVE, W. SIDE S27

