

**AGENDA  
REGULAR DRAINAGE MEETING  
WEDNESDAY, NOVEMBER 25, 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:

[11\\_18\\_2020 - DRAINAGE MINUTES.PDF](#)

4. DD 82 WO 301- Discuss W Possible Action - Investigation Summary

Documents:

[DD 82 WO 301 - INVESTIGATION SUMMARY 11\\_23\\_20.PDF](#)

5. DD 4-112 - WO 2020-1 - Discuss W Possible Action - Utility Crossing Summary

Documents:

[2020-1 DD 4-112 - UTILITY CROSSING SUMMARY 11\\_23\\_2020.PDF](#)

6. DD's 1, 8, 8 Sub 2, 44, 62, & 78 - WO 2020-12 - Discuss W Possible Action - Utility Crossing Summaries

Documents:

[2020-12 DD 1 ONLY UTILITY CROSSING SUMMARY 11\\_23\\_20.PDF](#)  
[2020-12 DD 8 ONLY UTILITY CROSSING SUMMARY 11\\_23\\_20.PDF](#)  
[2020-12 DD 8 SUB 2 ONLY UTILITY CROSSING SUMMARY 11\\_23\\_20.PDF](#)  
[2020 -12 DD 44 ONLY UTILITY CROSSING SUMMARY 11\\_23\\_20.PDF](#)  
[2020-12 DD 62 ONLY UTILITY CROSSING SUMMARY 11\\_23\\_20.PDF](#)  
[2020-12 DD 78 ONLY UTILITY CROSSING SUMMARY 11\\_23\\_20.PDF](#)

7. DD 46 - WO 2020-14 - Discuss W Possible Action - Utility Crossing Summary

Documents:

[2020-14 DD 46 UTILITY CROSSING SUMMARY 11\\_23\\_20.PDF](#)



8. Other Business

9. Adjourn Meeting

**REGULAR DRAINAGE MEETING**  
**Wednesday, November 18, 2020 9:30 AM**

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

11/18/2020 - Minutes

1. Open Meeting

Hardin County Drainage Chairperson Lance Granzow opened the meeting. Also present were Trustee BJ Hoffman,; Trustee Renee McClellan; Lee Gallentine of Clapsaddle-Garber Associates (CGA); Angela Silvey, Board Secretary; 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 Drainage Meeting dated 11-10-2020. Second by Hoffman. All ayes. Motion carried.

4. DD 9 - WO 229 - Discuss W Possible Action - Change Order #2

Gallentine stated the original plans and profiles show the main tile and both laterals connect outside of the railroad right of way, once we went up there for exploratory, we found they both connect inside the right of way, so when we rerouted everything we made the reroute outside of the right of way, but it did require some extra lateral tile, which totalled an increase of \$3,500, but now we are not in the railroad's right of way. Gallentine stated that junction structure is 20' to 25' outside of the railroad right of way now. Hoffman stated so we can always get to it without needing the railroad's permission.

Motion by Hoffman to approve the DD 9 Work Order 229 Change Order #2 as presented. Second by McClellan.

In additional discussion on the motion, Granzow stated the decision was made without the Trustees authority but was made with the District's and the County's best interests in mind, and he knows us well enough, that yes, Granzow is fine with this, although we don't need to approve this, Granzow feels we should. Hoffman stated it was brought to our attention but it was not an actionable item.

All ayes. Motion carried.

5. DD 136 - Discuss W Possible Action - Heart Of Iowa Drainage Utility Permit #2020-16

Gallentine stated this was in the town of Cleves, Heart of Iowa filed a Drainage Utility Permit for DD 136, boring fiber optic through Cleves, Jay Duncan ended up contacting Gallentine last week, and Heart of Iowa does not end up crossing Lateral 7, they run parallel to Lateral 7, they are above the lateral, Heart of Iowa is only 2' to 3' deep and Lateral 7 is 7' to 8' deep. Gallentine stated he told Duncan he would talk with the Trustees, but was not sure what there was to shoot and monitor if Heart of Iowa is never crossing the district facility, that is what the purpose of the permit is for. McClellan asked if they are running above it instead of beside the lateral, Gallentine replied they are running offset of the lateral, Granzow stated they are running it through the easement, is that correct. Gallentine stated the district tile is about 2' of the road edge, inside the road right of way, Heart of Iowa is also inside the road right of way, the road right of way was there before the tile was, this is in DD 136, which was installed in the 1920's. Granzow stated that the only thing he would add on is that if it ever becomes a conflict, it will be Heart of Iowa's expense to fix it if we ever need to repair the tile. Smith stated that was noted in the discussion on the permit's original review and approval, so that is noted in the minutes as well. Granzow was happy that we don't have to cross any DD tile, Gallentine agreed, if we didn't have any damage to district facilities and they don't have to cross any he is happy with that.

Motion to acknowledge Drainage Permit 2020-16 and that Heart of Iowa is doing the right thing in their communication. Second by McClellan.

In additional discussion on the motion, Hoffman stated we need to remember instances like these when we deal with Heart of Iowa, that Jay Duncan and Bryan the staff of Heart of Iowa, this is a perfect example of going above or beyond, and whenever Hoffman sees Jay, Bryan or any of their technicians, he lets them know the County and the community really appreciates their efforts, when they don't even have to. Gallentine stated Heart of Iowa went

ahead and found the tile, they located it to do their due diligence, even though they are paralleling the tile, they still wanted to make sure. McClellan stated she wished all of our utilities were like this.

All ayes. Motion carried.

6. Discuss W Possible Action - Midland Drainage Utility Permits

Smith stated she wanted to provide the Trustees an update that she had sent Casey Huff of Midland an email requesting info on the status of locating the open Drainage Utility Permits, and had not had a response from Huff yet, until this morning. Huff's email stated that Midland is not currently on schedule to have the locates done on their open Drainage Utility Permits, that they had hoped to have this completed by Thanksgiving. Midland has pushed completion on the locates back to the end of the year, due to the Covid-19 situation they have had some staffing issues, and as soon as they can possibly get to it they will, and they hope to have it wrapped up by the end of this year.

7. Discuss W Possible Action - Drainage Utility Permit Invoices

Smith stated these are two drainage utility permit invoices from CGA for Drainage Utility Permits that have been closed. Gallentine stated these were for two different permits but similar to today's situation in DD 136, it took some time to get the information from the utility, to realize that they are not even crossing the district facility. There are two bills, one is for \$236 and one is for \$228, Gallentine had sent them to Smith, and Gallentine didn't know if the Trustees wanted to pay those, or if they want him to forward them on to the utility company, but DD 136 with Jay Duncan, as soon as he told Gallentine what was going on, Gallentine told Duncan he would just take this to the Supervisors, as we have such a good working relationship with Heart of Iowa, and that we understood the situation so quickly, there won't be any bill on that permit. Gallentine stated these two invoices reflect some emailing and work back and forth, the utilities filed the permit but didn't end up doing construction. Granzow stated unfortunately they filed for the permit and Granzow believes the costs still go with the permit, McClellan and Hoffman agreed. Granzow asked if the District should split half of it for their diligence. McClellan does not want to penalize them by making they pay the whole bill for being proactive and filing for a permit, and does not want them in the future to say well, we don't think we will cross it so let's not get a permit just in case, McClellan wouldn't have a problem splitting it but does not know if they would do that or not. Hoffman stated try to bill it all to the utility, and if they disagree let them come to us for a relief, and we can compromise at that time, but thinks most of these entities have a whole lot more money coming in than Hardin County has, McClellan would agree with that, send the utility the bill and if they have a problem with it they can contact us.

Gallentine asked if the Trustees would like him to send it through CGA's normal billing or would they like to have the Drainage Clerk forward them on. Hoffman asked what the typical process was, Gallentine stated typically CGA would bill the utility, Hoffman would suggest staying with the typical / standard process. Gallentine stated these were a couple of older Drainage Utility Permits, and now with Smith on board, he does not think we will get to this point again, as Smith is taking a more active roll in pursuing the utility companies than Gallentine is any more, which he appreciates. Gallentine stated no further action is needed, he just needed some direction.

8. Discuss W Possible Action - Drainage Investigation Waiver

Smith stated in last week discussion of Drainage Utility Permits, we had discussed the Drainage Investigation Waiver that Franklin County uses, and McClellan has mentioned this waiver a few times, this waiver states that the landowner may be responsible for expenses that may be incurred if the issue is found to be private tile, Smith added this to the agenda today at the Trustees request, so that they may review it and decide if it is something they want to pursue or if they would like to make changes to the language, Smith could draft a copy or attorney Mike Richards could draft a copy for Hardin County, it is entirely up to the Trustees what they would like to do. McClellan stated it should for sure be run by Mike Richards, and he will have to defend whatever may come out of it, and she does not know if Franklin County ran that by an attorney. Hoffman asked if Gallentine was already familiar with this. Gallentine replied that essentially what this ends up being is that if we go out and it ends up being private tile, then they just forward all the bills on to the landowner or whomever the requestor was. McClellan asked if they had any complaints over that. Gallentine stated yes, every time, but at least it starts the discussion and usually if they sign this type of thing and sometimes the Supervisors will say well we understand and we can pay half, but he can't think of an example where they have paid half, it is usually well you signed this so you will have to pay it. Gallentine stated the only issue he will point out is that sometimes they do not get work orders turned in because of this waiver, some guys will just gamble and go out and hire my own guy and fix it myself, well if you need this form filled out I don't need to tell you, but they can do that right now if they want to.

Hoffman asked if they get in over their head, do they have to finish what they started, at whose expense, that is one of those deals, where they might set out to fix it themselves and 6' of tile turns into 600', are they held harmless, and they say I started it but I don't have the means to finish it. Granzow would look at that as once you found out it was district tile, that was 600' you shouldn't have done. Hoffman stated or they may have known it was district tile when they started and they wanted to circumvent the process, Granzow stated if they want to circumvent the Trustees, then they can pay the bill, and we may redo it and charge you again. Gallentine stated

the one thing you may want to think about is like open ditch clean-out, sometimes guys will think the open ditch has silt but they don't know for certain and if they have to sign it, they are really reluctant to tell you about it, but that doesn't happen too often. Granzow stated you can visually see an open ditch, you are out there with tripods, not digging with a backhoe, Granzow does not have a problem excluding open ditches. Granzow stated he thinks there should be some verbiage in there stating that if you do discover it is district tile, you cease and desist, you have no authority going forward, and any authority in going forward may cost you in fines and penalties, and damages.

Motion by Hoffman to have the Drainage Clerk send Franklin County's Resolution 2016-18 to attorney Mike Richards for review and constructive criticism and report back to us. Second by McClellan.

In additional discussion on the motion, Granzow asked if Hoffman wanted the open ditches to be excluded as part of that motion. Hoffman stated yes, he would amend the motion "to include the exception of open ditches in the waiver language".

All ayes. Motion carried.

Hoffman stated at this point maybe this is all we need to do today, until attorney Richards responds, and then address this again as soon as possible upon receipt of Richard's reply. Granzow asked if the Trustees would like to have Richards to address the question of how to keep people from working on district tile without permission. Hoffman stated sure, and he thinks that some of that falls onto the three Trustees that may need to work with the Drainage Clerk and Mike Richards on how we can put something out in the newspaper to let people know this is what the process is and the consequence is if you start something and you end up in over your head, it is your bill. McClellan asked if when a farmer puts in private tile, doesn't he then know where that private tile is located. Granzow stated they are GPS'ed now. Hoffman stated with absentee landowners and people that purchase farms in huge farming operations like the one up by Britt, they don't know the history of a farm like you or I would know the history of our family farm, you know where to look if something is not working, these people that are buying up 80 acre parcels every other Wednesday at the Legion Hall, they don't know that history. Granzow stated you may not even get private tile maps with that, Gallentine stated if you have 5 acres under water, it's got to be the main to them, but sometimes it isn't. McClellan stated to her it seems you should dig up your private tile first to see if it is the issue. Hoffman stated but that costs them, if they refer it to the district then everyone in the district pays. McClellan asked can't they refer to their own contractors. Granzow stated as an example that happened to him, his neighbor has a pond, that pond is about 3/4 of a mile from Granzow's outlet, so the neighbor takes it upon himself to take his ranger and drive it through Granzow's corn field to listen to the water run, he got a phone call, and yes they have responsibilities, yes he took responsibility to make sure the main was running, now he knows it is a private tile, he didn't do enough damage to have crop loss but it is the concept that the neighbor did not have the right to drive on Granzow's property, Granzow stated we do have that right as Trustees, but landowners do not. Granzow's point is that at least the neighbor took the diligence to look and see that the main was flowing, and he hasn't filed anything yet. Granzow stated this is a touchy thing because we still have the possibility of going in reverse in doing this and we still have an issue coming up of a \$24,000 bill for private tile, now contractors when they go do GPS they can be off as far as they want, they just click, they don't mark the spot they put the tile.

Hoffman stated he remembered his first GPS, back in 1993 that he bought for ice fishing only, which was guaranteed to be within 12 meters, now GPS is less than a meter. Granzow stated it can be as accurate as about 3", Hoffman stated yes depending on the quality of equipment, Gallentine stated it used to get you in the room now it can get you down to the carpet. Granzow stated if they put the mark where they actually connected they might be that far off when they actually push the button, McClellan was just thinking that if this is your main and your private tile comes through here, private tile depending on where the pond is, check your own first or check and see that the main is running. Gallentine stated that in Franklin County, they may get one a year that this waiver applies to, it really is not very many instances this applies. Granzow stated he hoped the most cost would be for digging the hole, Hoffman stated a lot of people will hurry up and wait and see if it resolves, and if we have a really wet time, you may have a hard time realizing what the drainage coefficient should be, and if we have a really dry time and then you get a little rain, you have to have the hydrology of the soils to add up to an issue, most people will wait and see if it resolves.

Smith asked if Gallentine had any issues with unreported repairs on district tile, where they may just go ahead and make a repair on district tile and not let anyone know or repairs not being done to district standards. Gallentine stated the only thing he runs into is once in a while he will get a call from a contractor who is in the field doing private tile and the district main may need repaired and the contractor will say I need to replace 100' and you need to authorize that, Gallentine tells them I can't authorize that, you need to talk to the Auditor's office and turn in a work order, and a month later I will ask the Auditor, did you ever get a work order, and the answer is no, Gallentine stated either the contractor didn't fix it or didn't go through the effort to report it. Hoffman stated the contractor is not going to let equipment set for two weeks waiting on a work order authorization. McClellan asked if the landowner pays for that then, Gallentine stated yes. Granzow stated we have taken steps to help in that instance

by authorizing the Drainage Clerk to authorize repairs up to \$1,500. Gallentine stated that is mainly in Franklin County he runs into this, as Hardin County has been good at communicating that you need to reach out to the Drainage Clerk. Gallentine stated the one from Franklin County this year, was hey I have been out out here 3 years in a row and replaced another 20' of the main, we need to replace another 400' of it, Gallentine stated he can't authorize that, and never got an official request on it. Granzow asked if the Franklin County Auditor has any authority to replace district tile. Gallentine does not thinks so. Granzow stated he thinks it saves people a lot of money by doing that.

9. Other Business

10. Adjourn Meeting

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



# Drainage Work Order Request For Repair

## Hardin County

**Date:** 9/24/2020

**Work Order #:** WO00000301

**Drainage District:** DDs\DD 82 (51111)

**Sec-Twp-Rge:** 17-87-21      **Qtr Sec:** W1/2 SW1/4

**Location/GIS:** 87-21-17-300-004

**Requested By:** Connie Eklund

**Contact Phone:** (612) 554-7550

**Contact Email:** coneklund@gmail.com

**Landowner (if different):** \_\_\_\_\_

**Description:** DD 82 - Landowner Connie Eklund reports sinkhole in parcel #872117300004, sinkhole at DD tile just east of I Ave and south of field entrance. There is area of washout and erosion that continues into the field, looks like it has gone on for some time. Field has been in CRP for years, not currently in crops and not had soil turned over in years so only just discovered. Landowner would like to farm this in the spring and requests investigation/repair.

**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:** \_\_\_\_\_



872118400004

D.D. No. 82

W 301

872117300004

872117300005

177

MAIN

250th St

119200001

872120100001

872120100005

20

8721



## Drainage District:

#82

## Investigation/Repair Summary:

- Landowner in the SW¼ SW¼ Section 17, Township 87 North, Range 21 West reported a sinkhole above the assumed Main tile route on the east side of I Avenue.
- Visual observation found a surface swale/washout that had formed and eroded due to overland flow of water, originating from the concrete box culvert below I Avenue, following the lowest point of elevation through the field, and running to the wooded area at the beginning of the open ditch. During the observation, some pieces of broken VCP tile were found in the swale, but there is no indication that they originated from the Main tile and may be part of the erosion protection that was installed near the box culvert and beginning of the wooded area. Lastly, no distinct signs of a sinkhole/blowout or any defect with the Main tile were observed.

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

None recorded as only visual observation was performed.

## Additional Actions Recommended:

Since there doesn't appear to be any defect with the Main tile, it does not appear that there are any issues for the District to repair. However, given the amount of erosion due to overland flow of water, the District Trustees may decide to install an intake on each side of I Avenue.





# Project Diary

Project: DDB2 HAZARD Co. WO# 301			
CGA PN: ?	Days Charged:	Report No.	Proj. Mgr. <input checked="" type="checkbox"/>
Contractor:		Date:	LEE GALINTINE
Superintendent:	Weather Conditions:	Precip.: "	Temp. Hi: 65 ° Temp. Low: 32 °
INSPECTOR: Time Arrived: 1:30 Time Left:		Contractor: Time Arrived: Time Left:	
<p>1. General Remarks and Work Accomplished:</p> <p>ARRIVED @ FIELD DRIVE ON E. SIDE I. AVE, NORTH OF 250TH ST. AND N. OF DDB2. FOUND ERODED SURFACE SWALE WITH CONC. RIP RAP. ERODED SWALE CONTINUES E. TO TREES, THERE SURFACE WATER CUTS THRU TREES WITH CUT BACKS AND OX BOWS. WALKED ON BOTH SIDES OF CRP SURF SWALE AND DIDN'T FIND ANY TYPICAL TIRE BLOW-OUTS, JUST SURFACE WATER WASH-OUTS. I FOUND (1) 6" CHARD IN <del>X</del> SURFACE SWALE, ALSO FOUND SOME 15"± CONC. TIRE PIECES IN TREES. TRIED TO CALL CONNIE, NO ANSWER, LEFT A MESSAGE.</p> <p>3:45, CONNIE EKLUND CALLED BACK, WE TALKED ABOUT TIRE AND SURF WASH-OUT. SHE WOULD LIKE ANY INFO, MAPS, ETC., WE HAVE ON DDB2</p>			
2. Changes or Extra Work Ordered			
3. Test Samples Taken			
4. Visitors to Site			
5. Other Work Crews or Project (utilities, subcontractors, etc.) and Work Done			
6. Attachments (total sheets attached <u>0</u> )			

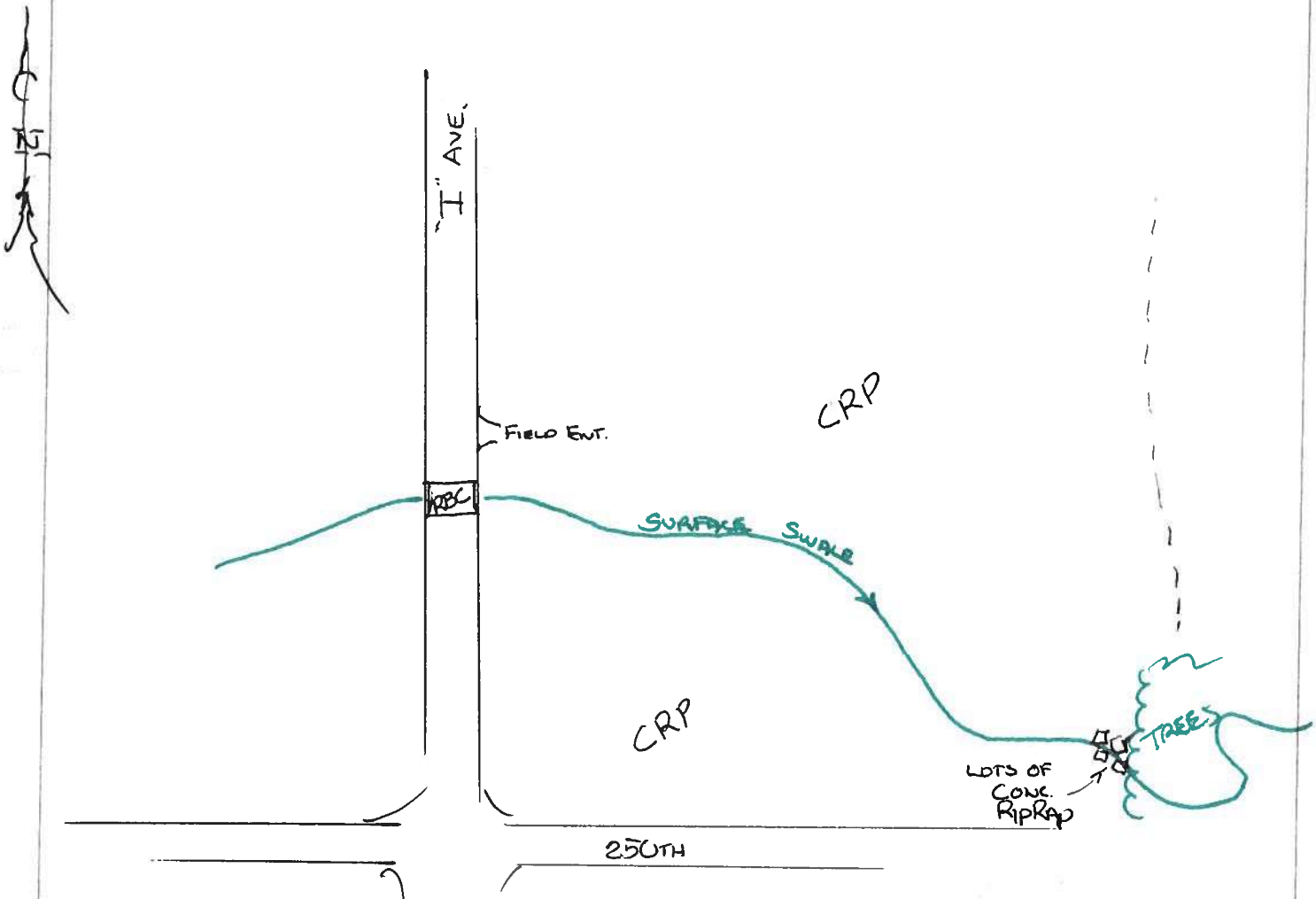
# Project Diary (continued)

CGA PN:

Report  
No.

Date:

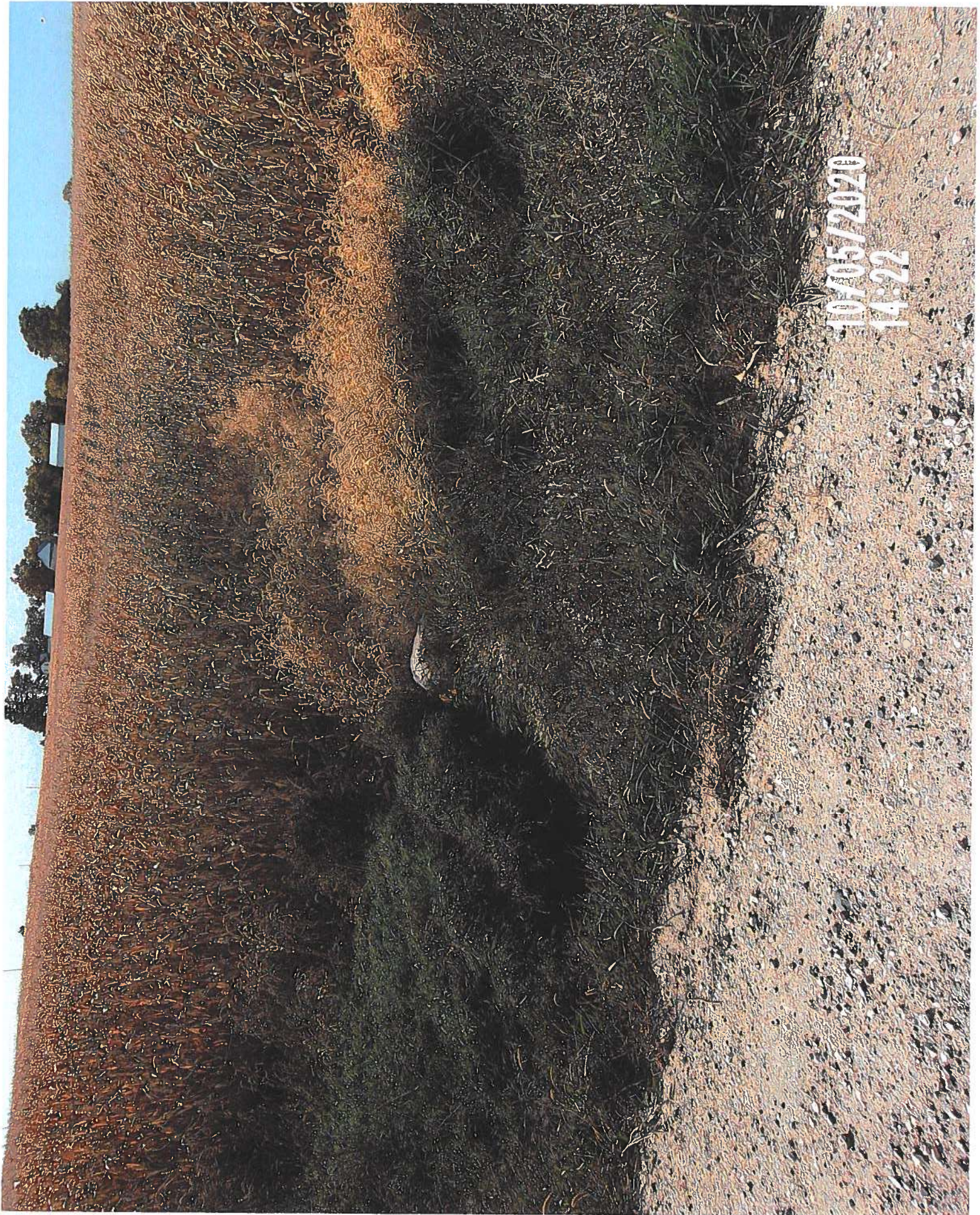
1. General Remarks and Work Accomplished (Continued):





LOOKING W. FROM "I" AVE.

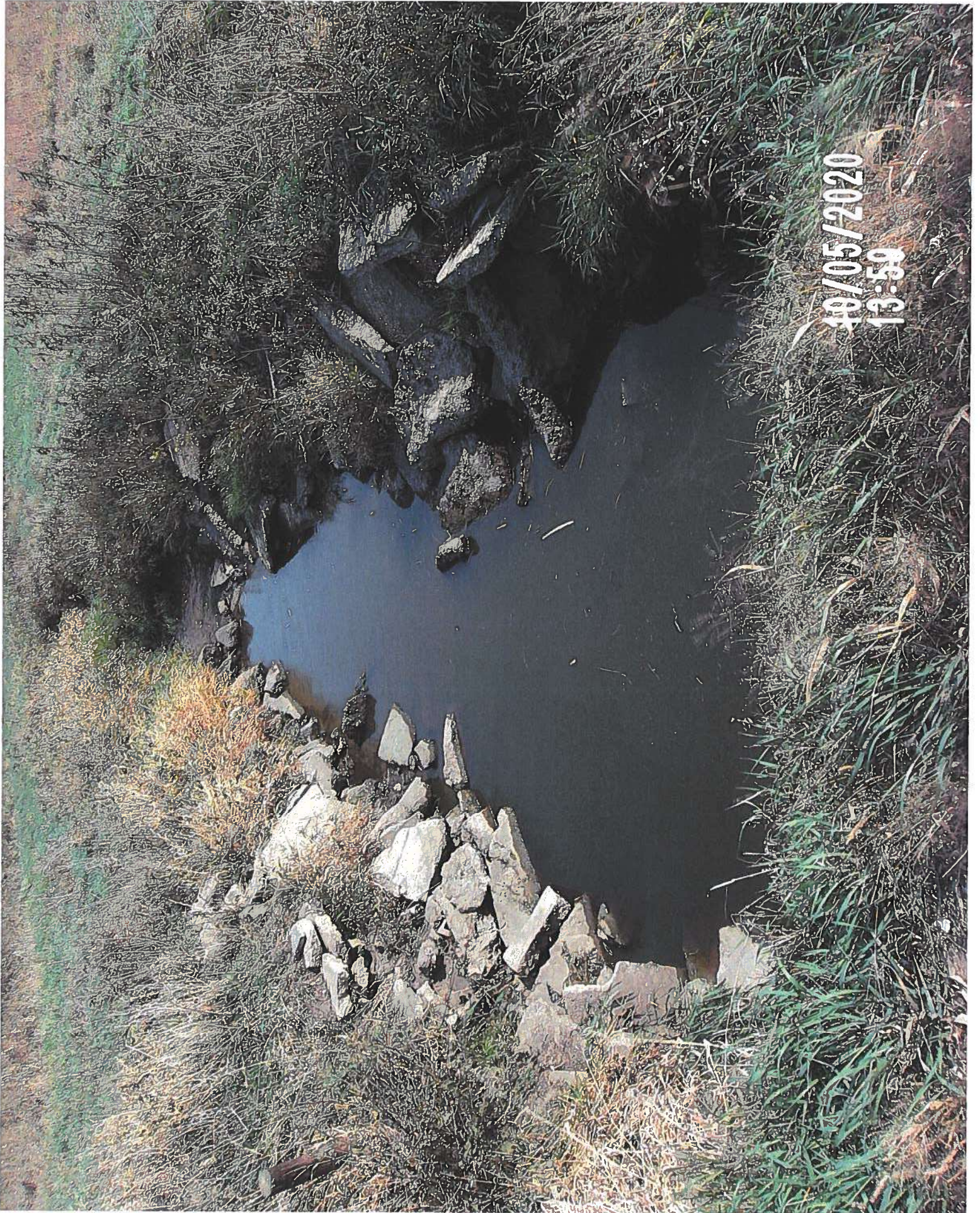
10/05/2020  
14:22





WASH-OUT FROM BOX CULVERT

10/05/2020  
13:59





LOOKING WEST @ RBC ON I<sup>ST</sup> AVE.





CLAY 6" CHARD BY ROAD





LOOKING E. BY TREES ; SURFACE WASH-OUT

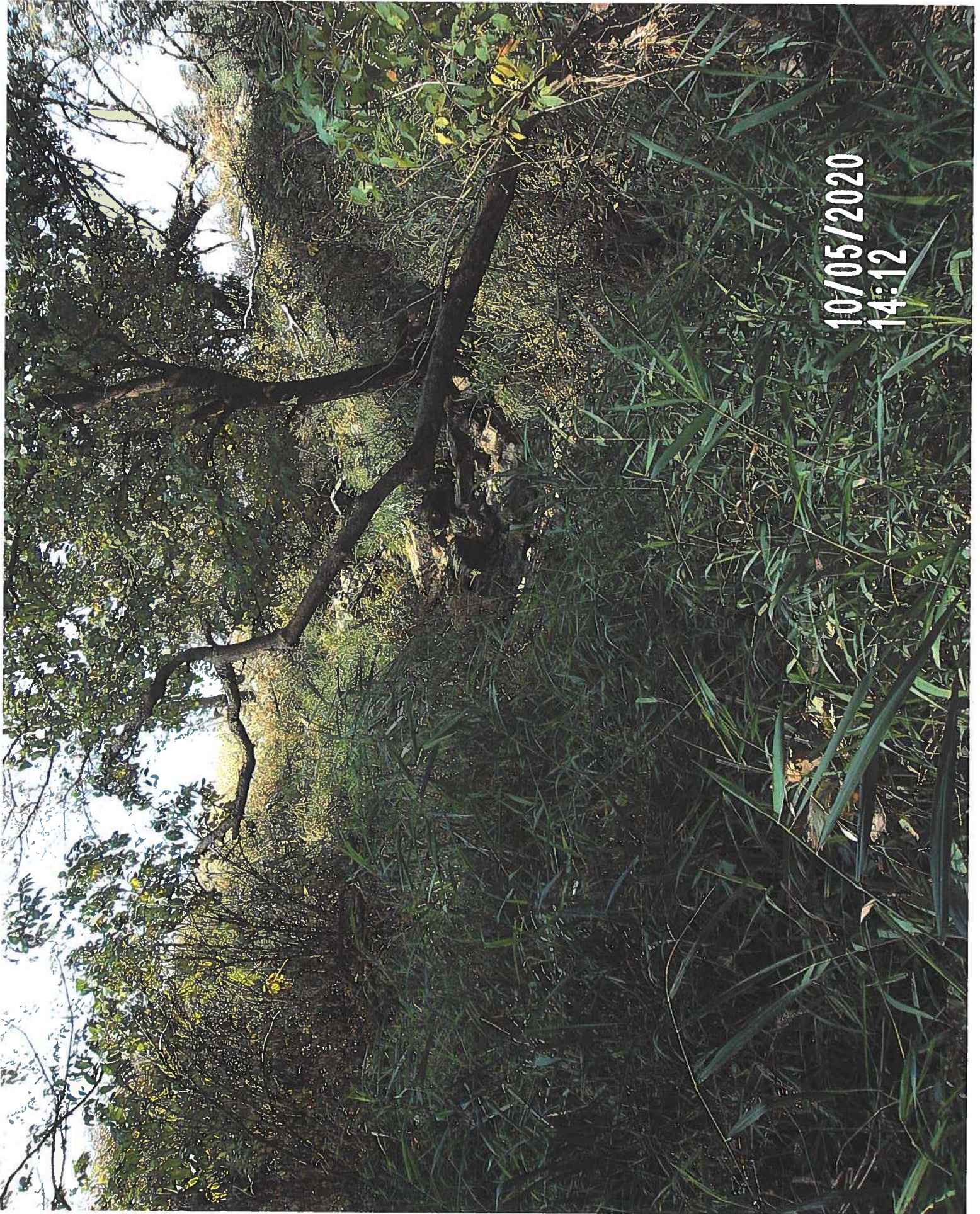


10/05/2020  
14:08



LOOKING WEST FROM TREES

10/05/2020  
14:12







# Drainage Work Order Request For Repair

## Hardin County

**Date:** 2/27/2020

**Work Order #:** 2020-1

**Drainage District:** DDs\DD 45 (51070)

**Sec-Twp-Rge:** 35-86-21      **Qtr Sec:** \_\_\_\_\_

**Location/GIS:** 86-21-35-400-008

**Requested By:** Aaron Landmesser

**Contact Phone:** (641) 487-7399

**Contact Email:** aaron@minervavalley.net

**Landowner (if different):** Shirley R Cowles

**Description:** DD 45- Minerva Valley Tel. Co. - 33849 LL Ave. Installation of buried fiber optic cable. Construction consists of plowing and directional boring. Cable to be placed minimum of 36" deep.

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

\_\_\_\_\_

\_\_\_\_\_

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

**Please reference work order # and send statement for services to:**

Hardin County Auditor's Office  
Attn: Drainage Clerk  
1215 Edgington Ave, Suite 1  
Eldora, IA 50627  
Phone (641) 939-8111  
Fax (641) 939-8245

For Office Use Only

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



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant:

Minerva Valley Tel. Co.  
Company Name

104 North Pine  
Address

Zearing Iowa 50278-0176  
City State Zip

Applicant Contact:

Aaron Landmesser ( 641 ) 487 - 7399  
Name Phone

aaron@minervavalley.net  
Email

Utility Type:

Telecommunications

Drainage District(s) Crossed:

District # DD 45

Facilities Crossed (specific tile, open ditch): District #45 lies north of 33849 LL Ave ends in open ditch

Description of Work:

Installation of buried fiber optic cable. Construction consists of plowing  
and directional boring. Cable to be placed minium of 36" deep.

(Location plan of  
proposed utility must  
be attached.)

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage District. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

  
Applicant Signature

2-26-2020  
Date

Submit Form and Location Plan To:

Hardin County Auditor's Office  
Attn: Drainage Clerk  
1215 Edgington Ave, Suite 1  
Eldora, IA 50627  
Fax (641) 939-8225  
[drainage@hardincountyia.gov](mailto:drainage@hardincountyia.gov)

For Office Use Only

Application Approval:

By: \_\_\_\_\_  
Board of Supervisor Chairman, Acting as Drainage District Trustee

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

APPROVED PERMIT #: \_\_\_\_\_



## REQUIREMENTS FOR CONSTRUCTION ON, OVER, ACROSS OR BENEATH ESTABLISHED DRAINAGE DISTRICT

Upon issuance of a permit for utilities on, over, across or beneath established Hardin County Drainage Districts, the applicant shall be governed by these requirements and shall comply with all conditions contained herein.

1. The Applicant shall furnish the Drainage District, or its representative, plats showing the exact location of the proposed construction. If it is found that such locations are in conflict with the present or proposed facilities and that a more desirable location is possible, the Applicant shall review such possible alignment changes. **No construction is to commence with the drainage facility without an approved application.**
2. Applicant shall comply with Iowa One-Call requirements prior to commencing any work.
3. The Drainage District shall provide Applicant access to maps or other information regarding the location of all known drainage district facilities so that reasonable care may be taken by Applicant to avoid un-necessary damage to said drainage district facilities.
4. The Applicant shall hold the Drainage District harmless from any damage that may result to the Drainage District facility because of the construction or maintenance of the utility, and shall reimburse the Drainage District for any expenditures that the Drainage District may have to make on said Drainage District facilities resulting from Applicant's construction and installation of utilities, or their subsequent repair or modification.
5. The Applicant shall take all reasonable precaution during the construction of said utility to protect and safeguard the lives and property of the public and adjacent property owners and shall hold the Drainage District harmless from any damages or losses that may be sustained by adjacent property owners on account of such construction operations. Further, Applicant agrees to replace, repair or reimburse all damages to private property occasioned by Applicant's installation of subsequent modification or repairs.
6. The Drainage District assumes no responsibility for damages to the Applicants property occasioned by any construction or maintenance operation of said Drainage District facilities, subsequent to Applicants installation.
7. A copy of a certificate of insurance naming the County/Drainage District as additional insured for their permit work shall be provided to the County Auditor prior to installation. The limit of liability under the insurance policy shall not be less than \$1,000,000 per occurrence.
8. The Applicant agrees to give the Drainage District twenty-four (24) hours (Saturday and Sunday excluded) notice of its intention to commence construction on any lands within the jurisdiction of the Drainage District. Said notice shall be made in writing to the County Auditor or to the designated Drainage District representative.
9. The Applicant agrees to place permanent, visible markers or monuments at locations where utility crosses Drainage District facilities. These monuments or markers shall identify the owners name, address and phone number.
10. The Drainage District Trustees may appoint a representative to inspect and approve all construction across Drainage District facilities as part of this permit. All compensation, wages, mileage and other expenses for this representative will be paid by the Applicant. It will be the responsibility of the Applicant to make all contacts with private parties (adjacent owners/operators) to determine the location of private drainage facilities. Said representative will also inspect all crossing of Drainage District facilities and may, if required, observe the crossing of private drainage facilities, and shall have the authority to require the Applicant to excavate and expose the crossing of any Drainage District facility where the representative believes it prudent to visually examine Applicants crossing of the Drainage District facility. Further, said representative has the authority to suspend construction and installation by the Applicant within any Drainage District jurisdiction by verbal order to the contractor at the site and a telephone call to Applicants contact person listed on page 1 within six (6) hours of the verbal order.



11. The construction and maintenance of Applicants installation shall be carried on in such a manner as to not interfere with or interrupt the function of said Drainage District facilities without the express written consent of the Drainage District Representative. In the event it becomes necessary to temporarily stop the flow of water, the following shall be completed by the Applicant:
  - a. If the crossing involves a tile line, the replacement of tile with approved materials, in the manner approved by the Drainage Districts designated representative, shall be performed as rapidly as possible. If the approved method of repair is impossible and the volume of water flowing in the tile is sufficient to create the possibility of crop loss or property damage, the Contractor will be permitted to temporarily block the tile line to prevent the flow of this tile water into the pipeline, or tile line ditch. In the event this tile line is so temporarily blocked, the Contractor will be expected to provide sufficient pumping equipment to pump the impounded tile water across the construction ditch to the undisturbed tile line. Such temporary blockages of said Drainage District tile lines will be removed as rapidly as possible and any tile repairs caused by this blockage will be immediately repaired at the Applicants expense.
  - b. If the crossing involves an open ditch that is carrying sufficient flow of water to make it necessary to place a temporary dam across said open ditch, such temporary dams may be constructed only upon approval from the Drainage District designated representative. The maximum elevation of this impounded water shall be determined by the designated Drainage District representative and all excess water must be allowed to flow across the construction ditch through either a closed metal culvert pipe or by pumping. All temporary dam structures are to be removed as soon as the crossing is completed. The construction and removal of these dams shall be in such a manner that the smooth and efficient function of the drainage ditch is not impaired, with all costs and damages borne by Applicant.
12. The Applicant will at any time subsequent to the commencement of construction, and at Applicants sole expense, reconstruct or replace its installation as may be necessary to conform to new grade or alignments resulting from maintenance or construction operations by the Drainage District in connection with any of its drainage facilities. Applicant agrees to do this within forty-five (45) days of receipt of written request from the Drainage District, or such longer time period as the Drainage District may specify, without cost to the Drainage District. Such reconstruction or realignment of Applicants improvements shall be made in accordance with and approved by the Drainage District or its designated representative. If the Applicant is unable to comply within the time period specified above, the Drainage District may cause the work to be done and the Applicant will pay the cost thereof upon receipt of a statement of such costs.
13. **CROSSING OF OPEN DITCH FACILITIES.** Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
  - a. Passage of installation in a horizontal plane five feet (5') below design grade of drainage ditch, as established by the Drainage District representative.
  - b. The above depth to extend to a point two (2) times the design base width of ditch either side of centerline of drainage ditch (measured along the centerline of utility) unless the existing base width is greater than the design bases width. If the existing base width is greater than the design with, the depth is to extend to a point two (2) times the existing width.
  - c. The rate of slope for transition from normal utility laying depth of crossings of drainage ditches shall not be steeper than 4:1.
  - d. If such ditch crossings occur at points of outlets of Drainage District or private tile lines or within twenty-five feet (25') of said outlets, such outlets must be relocated to a point not less than twenty-five feet (25') from such crossings. Such relocations shall be at the expense of the Applicant and as directed by the representative of the Drainage District.



14. CROSSING OF DRAINAGE DISTRICT TILE LINES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only upon the review by and approval of the designated representative of the Drainage District. Such waiver must be in writing.
  - b. A minimum of one foot (1') clearance below existing Drainage District facilities must be maintained.
  - c. At all crossings of Drainage District tile lines with the proposed utility, one of the following must be used:
    - i. Replace Drainage District tile with reinforced concrete pipe of same or larger diameter than existing tile. Concrete pipe to be 2,000 D strength (Iowa Department of Transportation approved) with standard tongue and groove joints. Pipe to have a minimum of three (3) bolt-type connectors at each joint.
    - ii. Replace Drainage District tile with cathodic protected corrugated metal pipe. Diameter of corrugated metal pipe to be a minimum of two inches (2") larger than outside diameter of tile line being replaced. (Specifications regarding gage, cathodic protection and other details to be subject to review and approval.)
    - iii. Dual wall plastic with specific approval of Drainage District representative.
    - iv. Bore new utility installation; maintain existing tile in an undisturbed state.
  - d. The length of tile to be replaced by any of the above alternates is as follows:
    - i. Eight-inch (8") tile and smaller: Six feet (6') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
    - ii. Ten inch (10") tile and larger: Ten feet (10') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
  - e. At all crossings of Drainage District tile lines where the Drainage District and private tile lines are damaged by the construction, maintenance or repair of Applicants installation shall be repaired as directed by the Drainage Districts designated representative.
15. This permit is subject to existing regulations and statutes of the State of Iowa and future regulations, which may be promulgated or enacted.
16. This application is subject to revocation by Hardin County, if in its judgment it is necessary for legitimate purposes. In such event, written notice shall be provided to permit holder.
17. Applicant agrees to pay all other legitimate costs, fees and expenses associated with its crossing of the Drainage District facility, including but not limited to, publication costs, engineering costs and legal service costs. Said costs will be paid within thirty (30) days of the mailing of the statements to the Applicant.
18. Applicant agrees to provide a copy of as-built plan of the utility route and location, showing route changes that may have taken place during construction.
19. Applicant agrees to include a copy of these requirements to all bidding specifications; or if the construction and installation contract has been let by the time this permit is approved, Applicant agrees to provide a copy of these requirements to the contractor and to advise them that they are bound by the terms of these requirements.





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
02/07/2020

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES ELLOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> UNITEL 1128 Lincoln Mall Suite 200 Lincoln NE 68508		<b>CONTACT NAME:</b> Joanne Mohn <b>PHONE (A/C, No, Ext):</b> (402) 434-7200 <b>FAX (A/C, No):</b> (402) 434-7272 <b>E-MAIL ADDRESS:</b> jmohn@unitelinsurance.com	
<b>INSURED</b> Minerva Valley Telephone Company, Inc. PO Box 176 Zearing IA 50278-0176		<b>INSURER(S) AFFORDING COVERAGE</b> <b>INSURER A:</b> National Farmers Union P & C <b>INSURER B:</b> Hartford Casualty Insurance Co <b>INSURER C:</b> <b>INSURER D:</b> <b>INSURER E:</b> <b>INSURER F:</b>	
		<b>NAIC #</b> 16217 29424	

## COVERAGES

CERTIFICATE NUMBER: 19-20 COI

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS

INSR LTR	TYPE OF INSURANCE	ADOL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER	Y		1RU0153508	10/06/2019	10/06/2020	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ UNLIMITED PRODUCTS - COMP/OP AGG \$ 2,000,000
A	<input checked="" type="checkbox"/> AUTOMOBILE LIABILITY ANY AUTO <input checked="" type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY			1RU0153508	10/06/2019	10/06/2020	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ Underinsured motorist \$ 1,000,000
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 10,000			1CB0153509	10/06/2019	10/06/2020	EACH OCCURRENCE \$ 2,000,000 AGGREGATE \$ 2,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N	N/A	91WEBV2698	10/06/2019	10/06/2020	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTHER E L EACH ACCIDENT \$ 500,000 E L DISEASE - EA EMPLOYEE \$ 500,000 E L DISEASE - POLICY LIMIT \$ 500,000

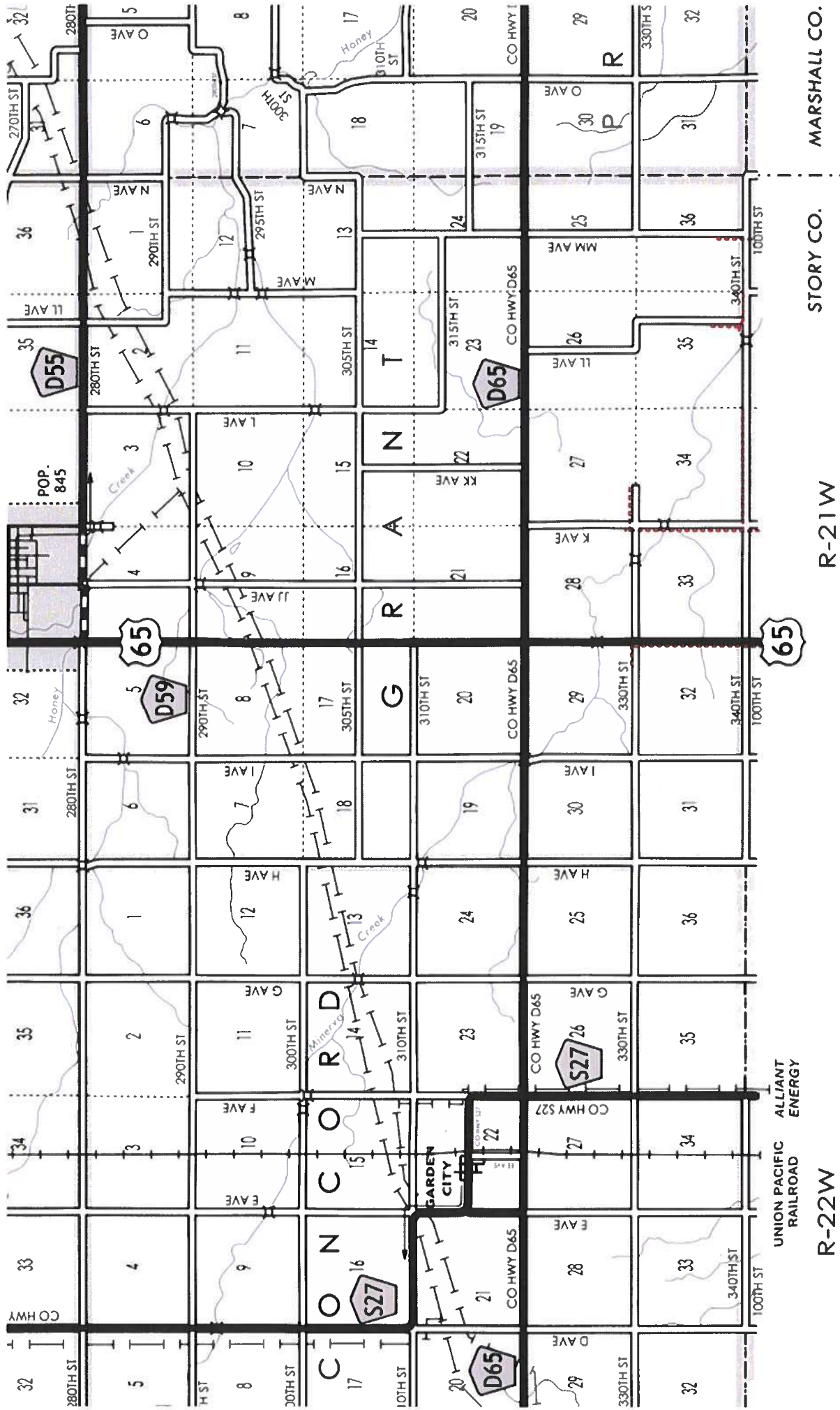
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Hardin County Engineer is included as an Additional Insured with respect to the General Liability.

## CERTIFICATE HOLDER

## CANCELLATION

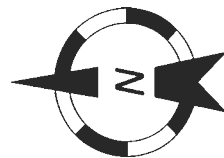
Hardin County Engineer Taylor Roll 708 18th St Eldora IA 50627	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE 
--	---



Zearing, Iowa

**Proposed Fiber Route**

**Existing Fiber Route**

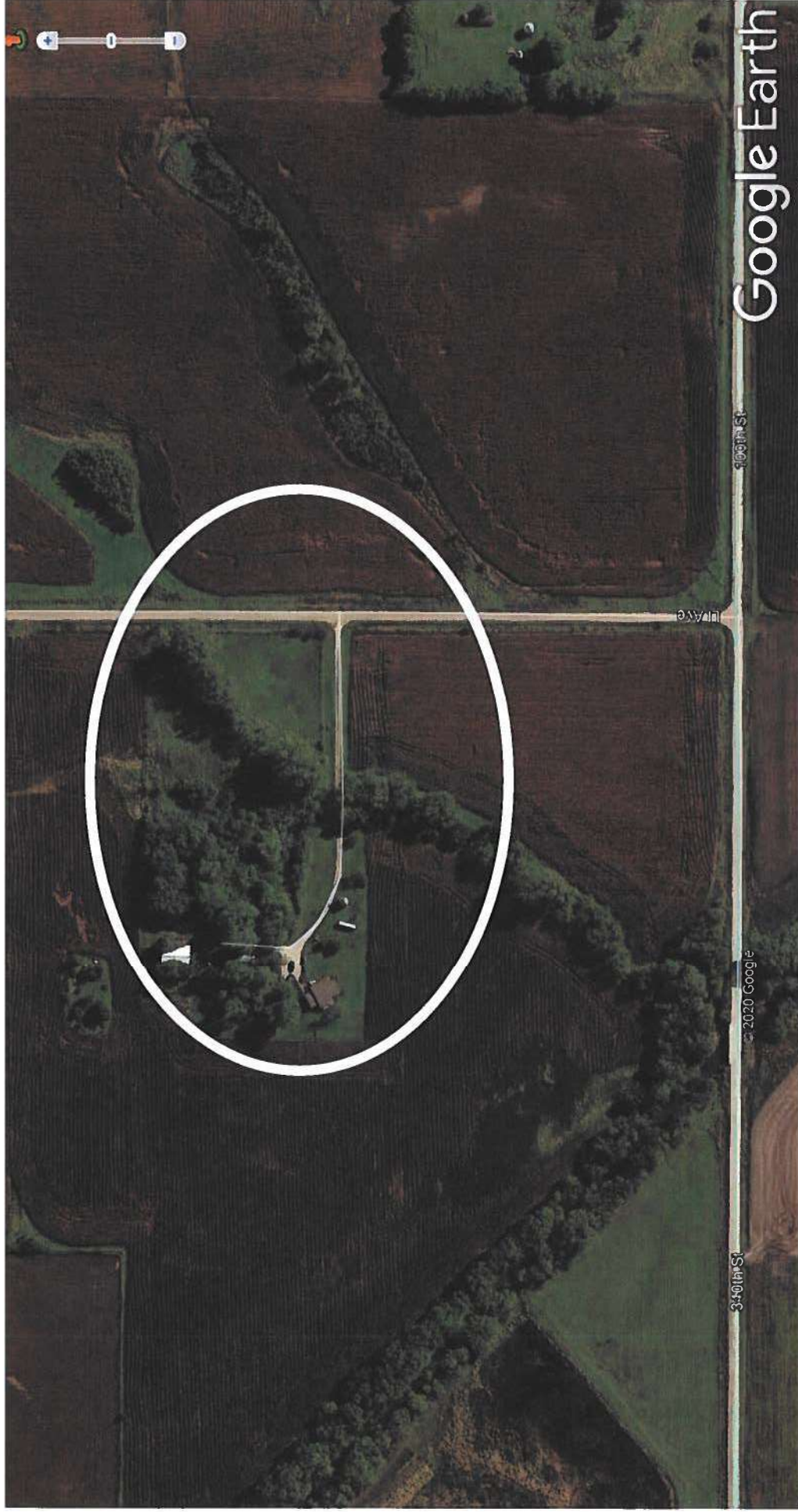


State: Iowa

County: Hardin

Range: 21 W

Twsp: 86 N



Google Earth

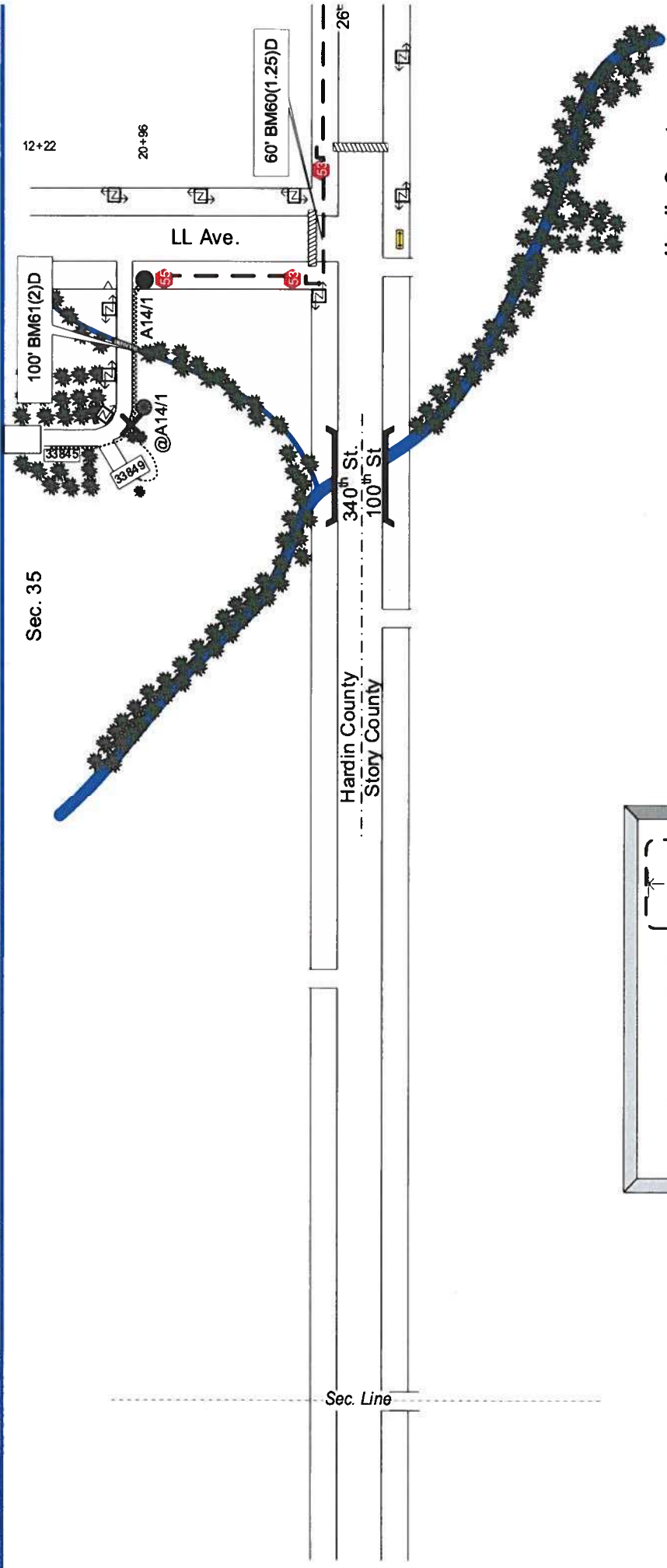
3401st St

© 2020 Google

3401st St



Sec. 35



Note: Hardin County Requires Bore 5' below and 40' each side of culvert or backhoe around all culverts at 5' depth, beginning and ending a minimum of 40' from CIL of culvert unless otherwise noted.

**Hardin County:**

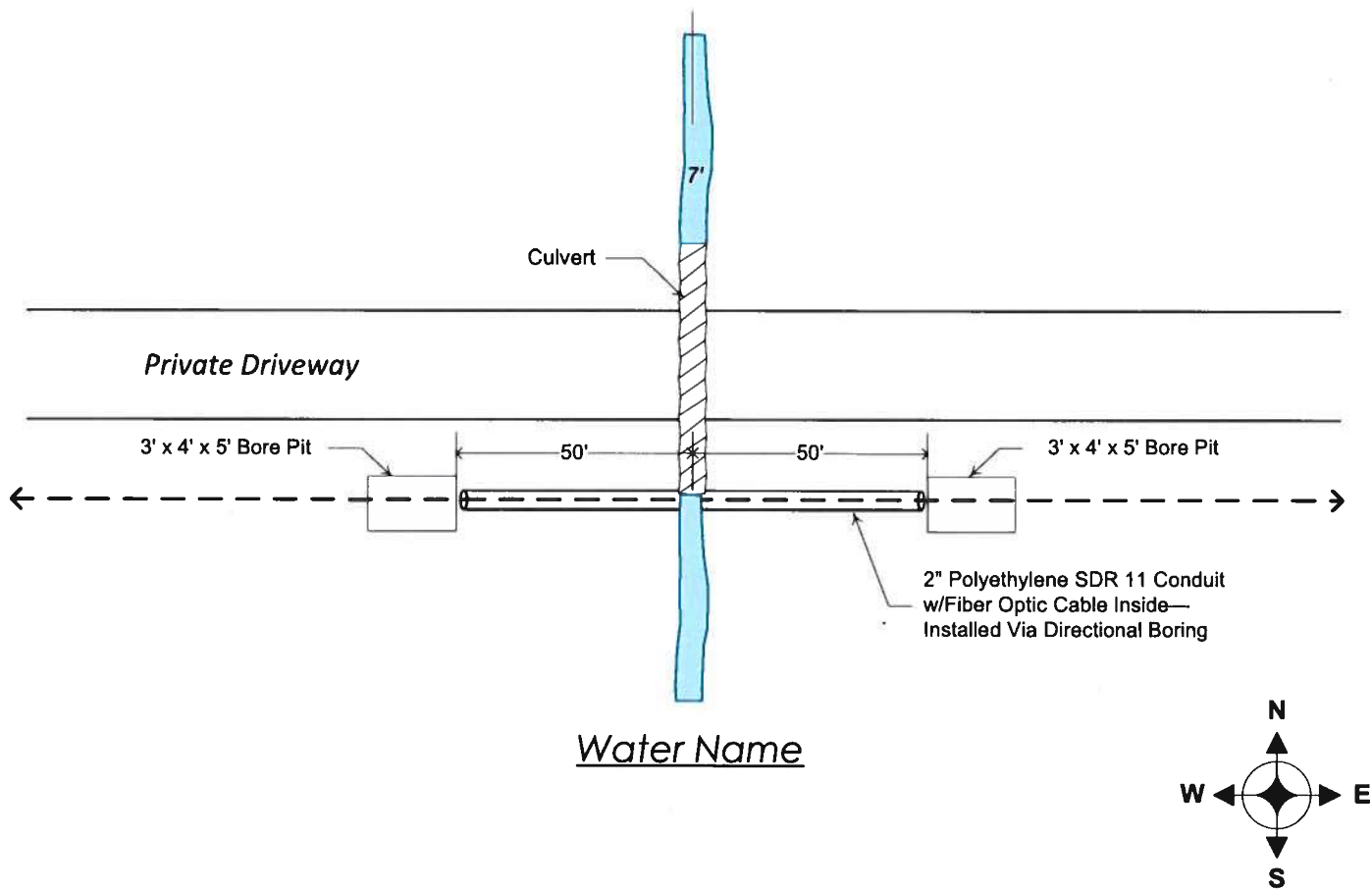
All utilities in Hardin County shall be located between the bottom of the backslope and bottom of the foreslope, unless otherwise approved in writing by the County Engineer prior to installation.

Sec. 2

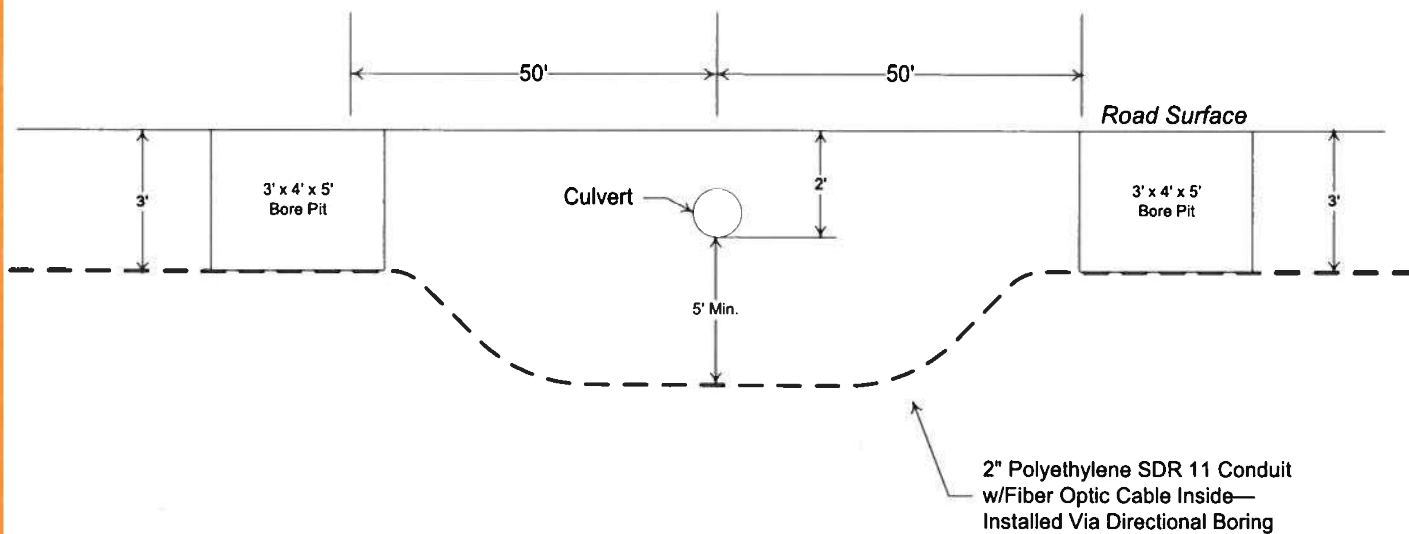
From	To	PType	Units	Feet	BM	HBFO	HO	ONT	Remarks	
(A/23)	A14/1	BHF(30R)	BFO 12W	2196	2(5/8)(8)	1	S	1	2	A14 Rte.
A14/1	A14/1		BFO 12	50	53	2				50' Tail In HH.
	A14/1				55	1				
	A14/1				60(1.25)D	60				
A14/1	X@A14/1		SEBO 4I	640						
	X@A14/1		SEBO 4I	640						
	X@A14/1		SEBOV(2x.75)E36	1280						

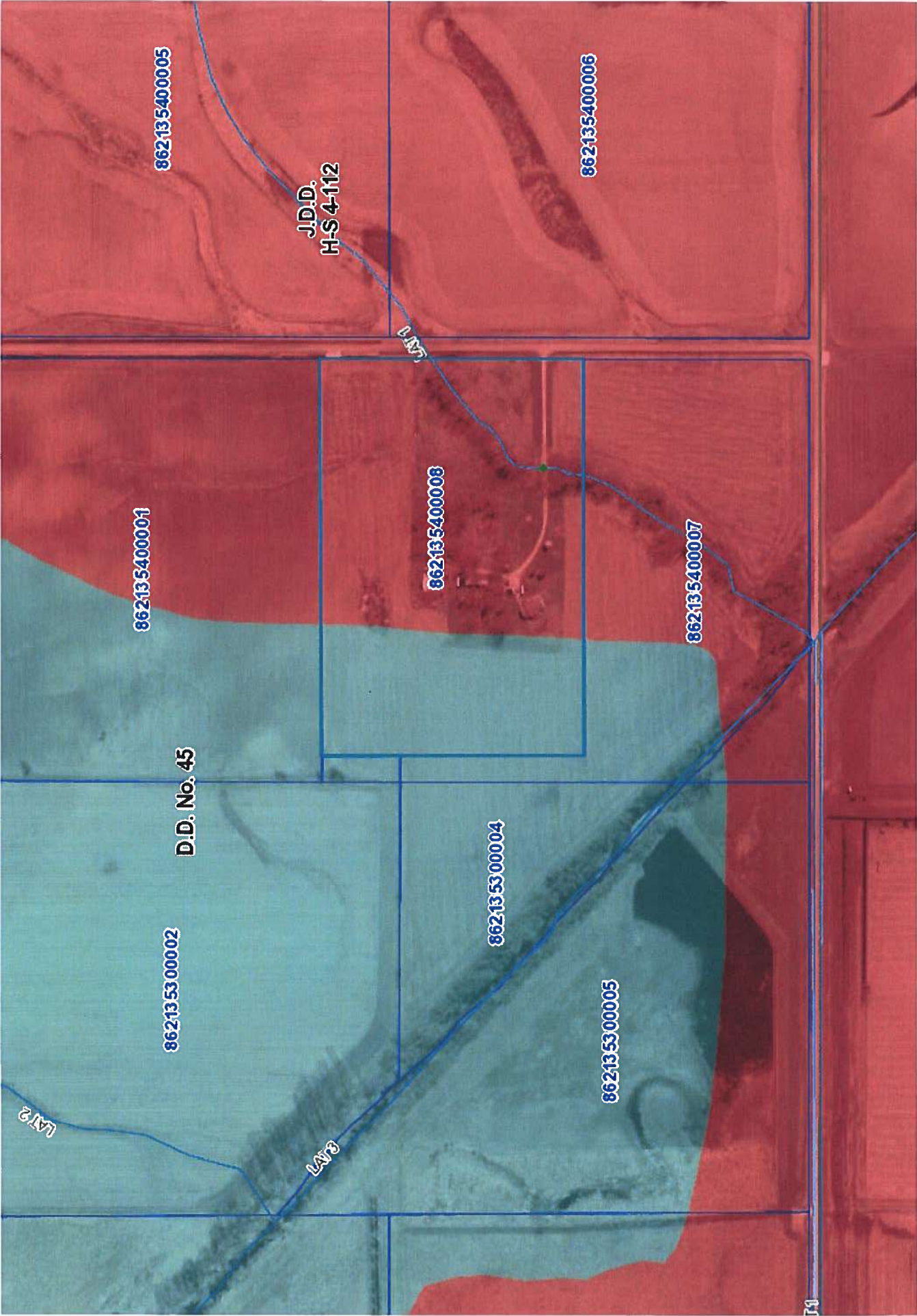
# Water Crossing Detail

## PLAN VIEW



## Profile View





862135400005

862135400006

J.D.D.  
H-S 4-112

862135400001

862135400008

862135400007

D.D. No. 45

862135300002

862135300004

862135300005

LA2

LA3



Utility Permit #: 2020-1

## Utility Observation Report

General Information	
<b>Project Name and Number:</b>	Utility Crossing #6853
<b>Drainage District Number:</b>	DD 4-112
<b>Drainage District Facility ID:</b>	Lateral 3 or 1
<b>Project Location:</b> (1/4, Sec, Twp, Rng and road)	SW SE 35-86-21
<b>Date of Observation:</b>	10/27/2020
<b>Observer Name/Title:</b>	Chris Sweeney

Field Observations	
<b>District facility type:</b>	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
<b>Utility Orientation:</b>	<input type="checkbox"/> Parallel <input checked="" type="checkbox"/> Crossing <input type="checkbox"/> Overhead <input checked="" type="checkbox"/> Over <input type="checkbox"/> Under <input type="checkbox"/> Same Elevation Other:
<b>Source of utility elevation and/or location:</b>	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
<b>Utility Elevation:</b>	1051.3'
<b>Source of district facility elevation and/or location:</b>	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
<b>District Facility Elevation:</b> (include where measured)	1043.71' (Top of tile)
<b>Vertical clearance from district facility:</b> (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	7.6'





Utility Permit #: 2020-1

<b>Horizontal clearance from District Tile or Open Ditch centerline:</b>	NA		
<b>Tile outlets within 25-feet relocated? (If applicable)</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<b>Original tile size &amp; material:</b>	<input type="checkbox"/> RCP <input checked="" type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input type="checkbox"/> VCP Other: 12-inch		
<b>Tile replaced by utility?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<b>Tile replacement material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:		
<b>Condition of District tile:</b>	Questionable/poor		
<b>Signage present?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A

Notes
<p>Utility was installed in existing driveway significantly higher than District facility apparent elevation. Did not locate district tile directly below utility but found the assumed Lateral 1 or 3 CMP tile in the downstream direction. The Lateral 1 or 3 tile was found at a previous repair in a state of disrepair and may warrant further investigation into its overall condition in this area.</p> <p>Signage was not installed at time of observation and will need to be confirmed with Utility if desired by District Trustees.</p>

CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

10-27-20

DAYS OF WEEK:

S M T W T F S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6853

COUNTY, ROUTE, ROAD:

DD 112-4

LOCATION:

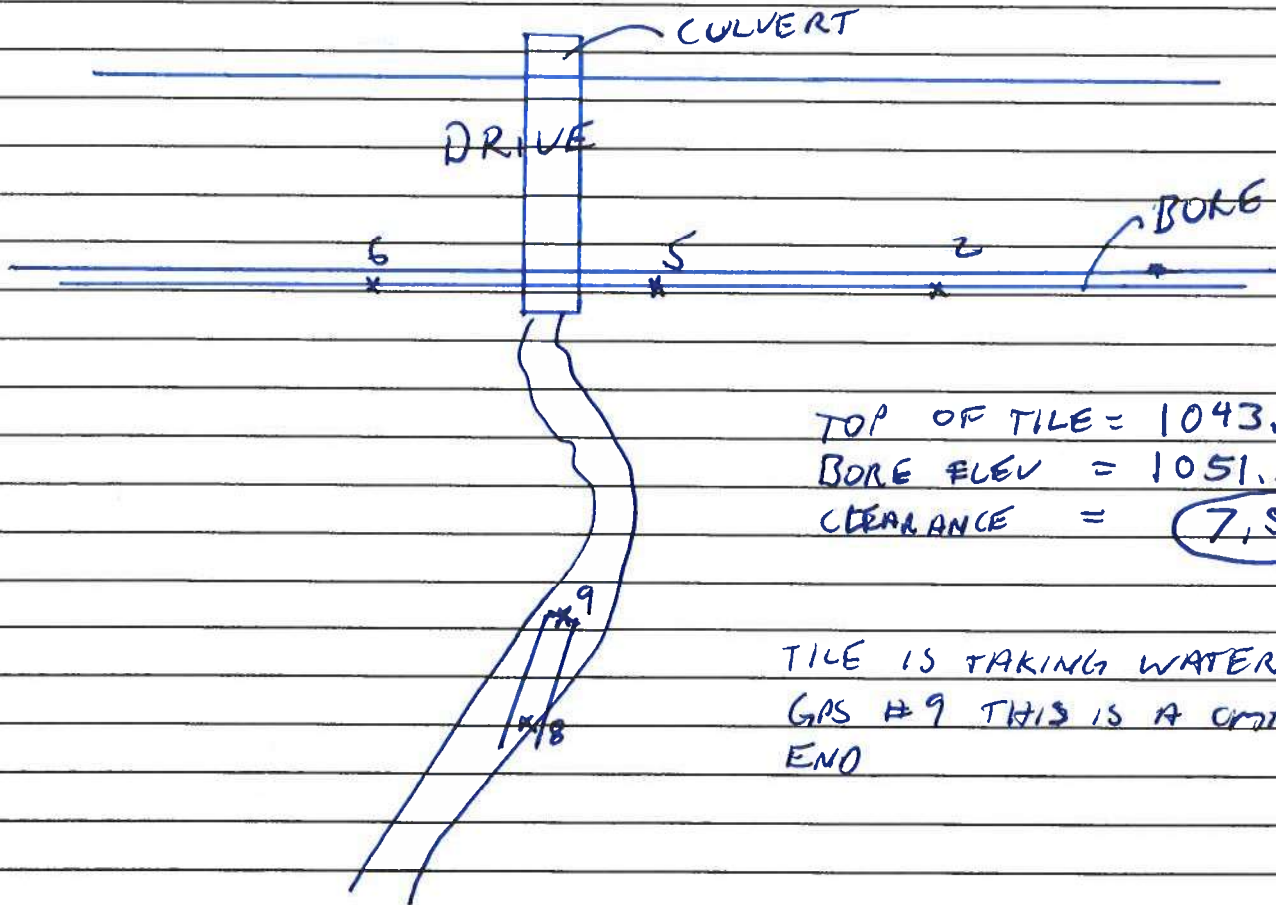
LL AVE

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

STARTED TO NEW JOB T 8048 GAS MON ✓ 8031, 9808

TIED OUT BORE @ 2, 5, & 6

TIED OUT TILE @ 9+8 I COULD NOT FIND ANY EXISTING  
TILE N. OF #9 THERE IS ONLY A 15'± SECTION OF  
TILE BENT ON THE SURFACE.



TOP OF TILE = 1043.71'  
BORE ELEV = 1051.30  
CLEARANCE = 7.59'

TILE IS TAKING WATER @  
GPS #9 THIS IS A CMP  
END

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

Observer's Signature:

Chris [Signature]

Date Prepared:

10-29-20

Reviewed by:



Engineer

Date Reviewed



BORE @ 5



2020/10/27



2020/10/27

BORE @ 5



15' ± SECTION OF CMP



2020/10/27



2020/10/27

PMD CMP @ 8+9



@ 9 Look Mts @ BORE



2020/10/27



2020/10/27

TUE @ 9



6853 DD112-4 2020-10-27 cs

1,8485917.365,14933913.287,1104.060,Autonomous Setup  
2,8486725.803,14926990.751,1051.993,700  
3,8486725.997,14926991.281,1053.175,300  
4,8486725.760,14926977.559,1052.619,300  
5,8486725.729,14926976.526,1051.297,700  
6,8486725.419,14926954.243,1051.289,700  
7,8486726.034,14926955.241,1052.542,300  
8,8486676.945,14926953.948,1043.628,513 12  
9,8486681.023,14926957.006,1043.709,513 12 end  
10,8486679.537,14926955.570,1044.626,300 fl stream  
8031,8485956.912,14919409.440,1080.316,gps mon 8031  
8048,8485917.365,14933913.287,1104.060,gps mon 8048  
9808,8496500.871,14933924.072,1136.203,gps mon 9808



# Drainage Utility Permit Application

## Hardin County

**Applicant:** Heart of Iowa Communication Coop - Jay Duncan

**Contact Email:** jduncan@heartofiowa.coop

**Contact Phone:** (641) 486-2211

**Utility Type:** N/A - Utility Permits Only

**Drainage District:** DDs\DD 44 (51069)

**Description of Work:** DDs 44, 62, 1, 128, 78, 63, 8, 93 & 94 - Heart of Iowa - Install fiber optic cable in rural areas of Eldora & Steamboat Rock. Will work with CGA on facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage Districts. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

\_\_\_\_\_  
Applicant Signature

\_\_\_\_\_  
Date

**Submit Form and Location Plan 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  
drainage@hardincountyia.gov

*For Office Use Only*

### Application Approval:

By:   
Board of Supervisor Chairman, Acting as Drainage District Trustee

Date: 6-7-2020

APPROVED PERMIT # 2020-12

- ☐ Application in TCM
- ☐ GIS Annotation
- ☐ Approval Emailed



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant: Heart of Iowa Communications Cooperative  
Company Name  
PO Box 130  
Address  
Union IA 50258-0130  
City State Zip  
Applicant Contact: Jay Duncan ( 641 ) 486 - 2211  
Name Phone  
jduncan@heartofiowa.coop  
Email  
Utility Type: Fiber Optic  
Drainage District(s) Crossed: 44, 62, 1, 128, 78, 63, 8, 93 & 94  
Facilities Crossed (specific tile, open ditch): tile and open ditch  
Description of Work: Install fiber optic cable in rural areas of Eldora and Steamboat Rock. Will work with CGA on  
*(Location plan of proposed utility must be attached.)* facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage District. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

[Signature]  
Applicant Signature

6/10/2020  
Date

Submit Form and Location Plan To: Hardin County Auditor's Office  
Attn: Drainage Clerk  
1215 Edgington Ave, Suite 1  
Eldora, IA 50627  
Fax (641) 939-8225  
[drainage@hardincountyia.gov](mailto:drainage@hardincountyia.gov)

For Office Use Only

Application Approval:

By: [Signature]  
Board of Supervisor Chairman, Acting as Drainage District Trustee

Date: 6-7-2020

APPROVED PERMIT #: \_\_\_\_\_



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## REQUIREMENTS FOR CONSTRUCTION ON, OVER, ACROSS OR BENEATH ESTABLISHED DRAINAGE DISTRICT

Upon issuance of a permit for utilities on, over, across or beneath established Hardin County Drainage Districts, the applicant shall be governed by these requirements and shall comply with all conditions contained herein.

1. The Applicant shall furnish the Drainage District, or its representative, plats showing the exact location of the proposed construction. If it is found that such locations are in conflict with the present or proposed facilities and that a more desirable location is possible, the Applicant shall review such possible alignment changes. **No construction is to commence with the drainage facility without an approved application.**
2. Applicant shall comply with Iowa One-Call requirements prior to commencing any work.
3. The Drainage District shall provide Applicant access to maps or other information regarding the location of all known drainage district facilities so that reasonable care may be taken by Applicant to avoid un-necessary damage to said drainage district facilities.
4. The Applicant shall hold the Drainage District harmless from any damage that may result to the Drainage District facility because of the construction or maintenance of the utility, and shall reimburse the Drainage District for any expenditures that the Drainage District may have to make on said Drainage District facilities resulting from Applicant's construction and installation of utilities, or their subsequent repair or modification.
5. The Applicant shall take all reasonable precaution during the construction of said utility to protect and safeguard the lives and property of the public and adjacent property owners and shall hold the Drainage District harmless from any damages or losses that may be sustained by adjacent property owners on account of such construction operations. Further, Applicant agrees to replace, repair or reimburse all damages to private property occasioned by Applicant's installation of subsequent modification or repairs.
6. The Drainage District assumes no responsibility for damages to the Applicants property occasioned by any construction or maintenance operation of said Drainage District facilities, subsequent to Applicants installation.
7. A copy of a certificate of insurance naming the County/Drainage District as additional insured for their permit work shall be provided to the County Auditor prior to installation. The limit of liability under the insurance policy shall not be less than \$1,000,000 per occurrence.
8. The Applicant agrees to give the Drainage District twenty-four (24) hours (Saturday and Sunday excluded) notice of its intention to commence construction on any lands within the jurisdiction of the Drainage District. Said notice shall be made in writing to the County Auditor or to the designated Drainage District representative.
9. The Applicant agrees to place permanent, visible markers or monuments at locations where utility crosses Drainage District facilities. These monuments or markers shall identify the owners name, address and phone number.
10. The Drainage District Trustees may appoint a representative to inspect and approve all construction across Drainage District facilities as part of this permit. All compensation, wages, mileage and other expenses for this representative will be paid by the Applicant. It will be the responsibility of the Applicant to make all contacts with private parties (adjacent owners/operators) to determine the location of private drainage facilities. Said representative will also inspect all crossing of Drainage District facilities and may, if required, observe the crossing of private drainage facilities, and shall have the authority to require the Applicant to excavate and expose the crossing of any Drainage District facility where the representative believes it prudent to visually examine Applicants crossing of the Drainage District facility. Further, said representative has the authority to suspend construction and installation by the Applicant within any Drainage District jurisdiction by verbal order to the contractor at the site and a telephone call to Applicants contact person listed on page 1 within six (6) hours of the verbal order.



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

11. The construction and maintenance of Applicants installation shall be carried on in such a manner as to not interfere with or interrupt the function of said Drainage District facilities without the express written consent of the Drainage District Representative. In the event it becomes necessary to temporarily stop the flow of water, the following shall be completed by the Applicant:
  - a. If the crossing involves a tile line, the replacement of tile with approved materials, in the manner approved by the Drainage Districts designated representative, shall be performed as rapidly as possible. If the approved method of repair is impossible and the volume of water flowing in the tile is sufficient to create the possibility of crop loss or property damage, the Contractor will be permitted to temporarily block the tile line to prevent the flow of this tile water into the pipeline, or tile line ditch. In the event this tile line is so temporarily blocked, the Contractor will be expected to provide sufficient pumping equipment to pump the impounded tile water across the construction ditch to the undisturbed tile line. Such temporary blockages of said Drainage District tile lines will be removed as rapidly as possible and any tile repairs caused by this blockage will be immediately repaired at the Applicants expense.
  - b. If the crossing involves an open ditch that is carrying sufficient flow of water to make it necessary to place a temporary dam across said open ditch, such temporary dams may be constructed only upon approval from the Drainage District designated representative. The maximum elevation of this impounded water shall be determined by the designated Drainage District representative and all excess water must be allowed to flow across the construction ditch through either a closed metal culvert pipe or by pumping. All temporary dam structures are to be removed as soon as the crossing is completed. The construction and removal of these dams shall be in such a manner that the smooth and efficient function of the drainage ditch is not impaired, with all costs and damages borne by Applicant.
12. The Applicant will at any time subsequent to the commencement of construction, and at Applicants sole expense, reconstruct or replace its installation as may be necessary to conform to new grade or alignments resulting from maintenance or construction operations by the Drainage District in connection with any of its drainage facilities. Applicant agrees to do this within forty-five (45) days of receipt of written request from the Drainage District, or such longer time period as the Drainage District may specify, without cost to the Drainage District. Such reconstruction or realignment of Applicants improvements shall be made in accordance with and approved by the Drainage District or its designated representative. If the Applicant is unable to comply within the time period specified above, the Drainage District may cause the work to be done and the Applicant will pay the cost thereof upon receipt of a statement of such costs.
13. CROSSING OF OPEN DITCH FACILITIES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
  - a. Passage of installation in a horizontal plane five feet (5') below design grade of drainage ditch, as established by the Drainage District representative.
  - b. The above depth to extend to a point two (2) times the design base width of ditch either side of centerline of drainage ditch (measured along the centerline of utility) unless the existing base width is greater than the design bases width. If the existing base width is greater than the design with, the depth is to extend to a point two (2) times the existing width.
  - c. The rate of slope for transition from normal utility laying depth of crossings of drainage ditches shall not be steeper than 4:1.
  - d. If such ditch crossings occur at points of outlets of Drainage District or private tile lines or within twenty-five feet (25') of said outlets, such outlets must be relocated to a point not less than twenty-five feet (25') from such crossings. Such relocations shall be at the expense of the Applicant and as directed by the representative of the Drainage District.





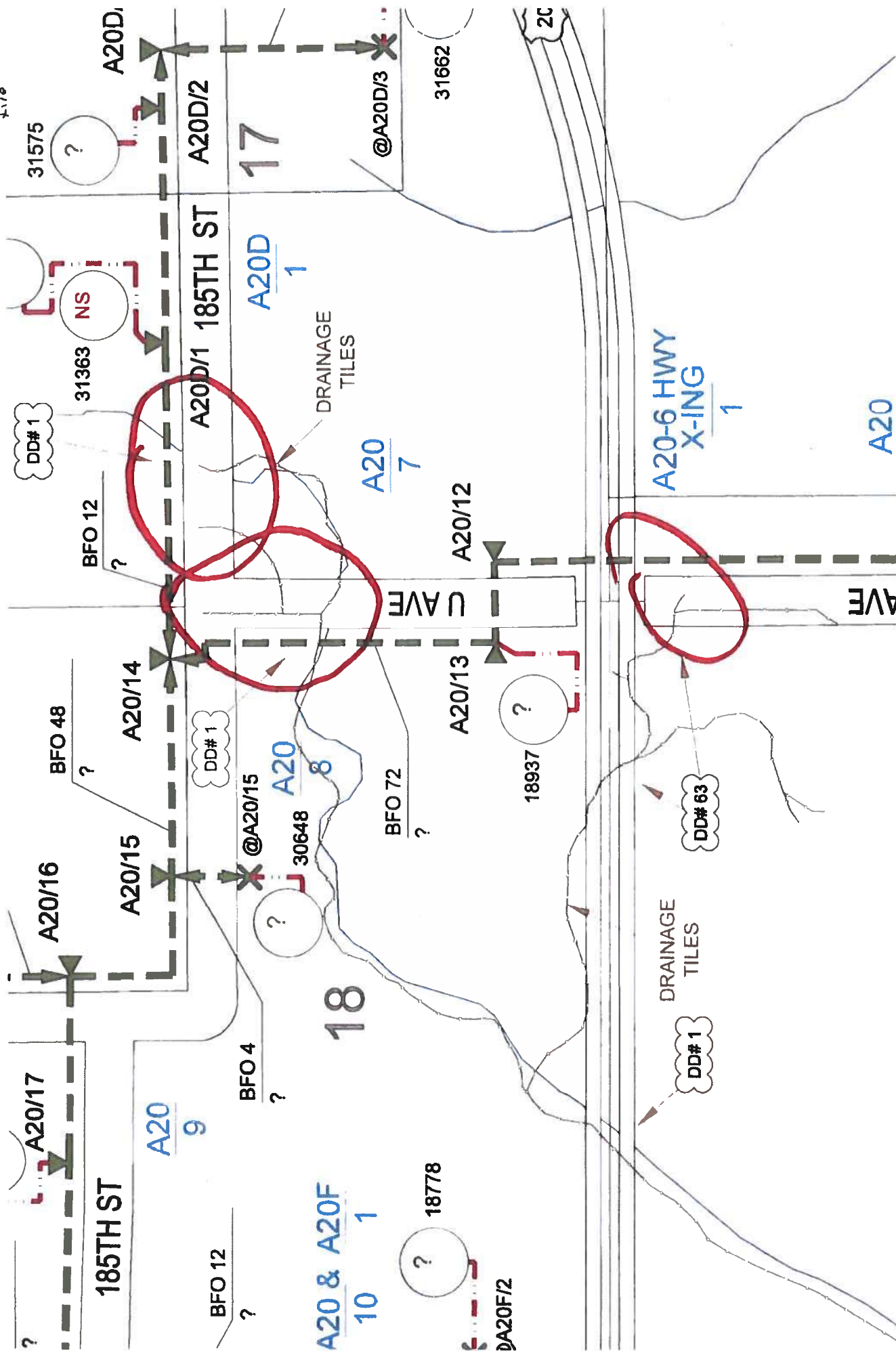
# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

14. **CROSSING OF DRAINAGE DISTRICT TILE LINES.** Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only upon the review by and approval of the designated representative of the Drainage District. Such waiver must be in writing.
  - b. A minimum of one foot (1') clearance below existing Drainage District facilities must be maintained.
  - c. At all crossings of Drainage District tile lines with the proposed utility, one of the following must be used:
    - i. Replace Drainage District tile with reinforced concrete pipe of same or larger diameter than existing tile. Concrete pipe to be 2,000 D strength (Iowa Department of Transportation approved) with standard tongue and groove joints. Pipe to have a minimum of three (3) bolt-type connectors at each joint.
    - ii. Replace Drainage District tile with cathodic protected corrugated metal pipe. Diameter of corrugated metal pipe to be a minimum of two inches (2") larger than outside diameter of tile line being replaced. (Specifications regarding gage, cathodic protection and other details to be subject to review and approval.)
    - iii. Dual wall plastic with specific approval of Drainage District representative.
    - iv. Bore new utility installation; maintain existing tile in an undisturbed state.
  - d. The length of tile to be replaced by any of the above alternates is as follows:
    - i. Eight-inch (8") tile and smaller: Six feet (6') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
    - ii. Ten inch (10") tile and larger: Ten feet (10') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
  - e. At all crossings of Drainage District tile lines where the Drainage District and private tile lines are damaged by the construction, maintenance or repair of Applicants installation shall be repaired as directed by the Drainage Districts designated representative.
15. This permit is subject to existing regulations and statutes of the State of Iowa and future regulations, which may be promulgated or enacted.
16. This application is subject to revocation by Hardin County, if in its judgment it is necessary for legitimate purposes. In such event, written notice shall be provided to permit holder.
17. Applicant agrees to pay all other legitimate costs, fees and expenses associated with its crossing of the Drainage District facility, including but not limited to, publication costs, engineering costs and legal service costs. Said costs will be paid within thirty (30) days of the mailing of the statements to the Applicant.
18. Applicant agrees to provide a copy of as-built plan of the utility route and location, showing route changes that may have taken place during construction.
19. Applicant agrees to include a copy of these requirements to all bidding specifications; or if the construction and installation contract has been let by the time this permit is approved, Applicant agrees to provide a copy of these requirements to the contractor and to advise them that they are bound by the terms of these requirements.



DD 2  
DD 63  
file



[illegible]



Utility Permit #2020-12

## Utility Observation Report

General Information	
<b>Project Name and Number:</b>	Utility Permit 6749.6
<b>Drainage District Number:</b>	#1
<b>Drainage District Facility ID:</b>	Main & Laterals
<b>Project Location:</b> (1/4, Sec, Twp, Rng and road)	SW of 17 & SE of 18, T88N-R19W NE & SE 24-T88N-R20W
<b>Date of Observation:</b>	10/20 & 10/21/2020
<b>Observer Name/Title:</b>	Chris Sweeney

Field Observations	
<b>District facility type:</b>	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
<b>Utility Orientation:</b>	<input type="checkbox"/> Parallel <input checked="" type="checkbox"/> Crossing <input type="checkbox"/> Overhead <input type="checkbox"/> Over <input checked="" type="checkbox"/> Under <input type="checkbox"/> Same Elevation Other:
<b>Source of utility elevation and/or location:</b>	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input checked="" type="checkbox"/> Utility Reported Other:
<b>Utility Elevation:</b>	@ GPS 1476 – 1057.4', @ GPS 1469 – 1066.8', @ GPS 1483 – 1062.4', @ GPS 1466 – 1066.3', @GPS 1486 – 1046.4', @ GPS 1488 – 1037.9'
<b>Source of district facility elevation and/or location:</b>	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
<b>District Facility Elevation:</b> (include where measured) *Flowline*	@ GPS 1476 – 1069.4', @ GPS 1469 – 1074.9', @ GPS 1483 – 1074.3', @ GPS 1466 – 1075.5', @GPS 1486 – 1054.8', @ GPS 1488 – 1048.9'
<b>Vertical clearance from district facility:</b> (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	@ GPS 1476 – 12', @ GPS 1469 – 8.2', @ GPS 1483 – 9.9', @ GPS 1466 – 7.2', @GPS 1486 – 8.4', @ GPS 1488 – 11'



### Utility Permit #2020-12

<b>Tile outlets within 25-feet relocated? (If applicable)</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<b>Original tile material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input type="checkbox"/> VCP Other: GPS 1476 14" VCP, 1469 8" HDPE, 1466 12" HDPE, 1486 22" HDPE, & 1488 24" HDPE, 1483 6" CMP
<b>Tile replaced by utility?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
<b>Tile replacement material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:
<b>Condition of District tile:</b>	Intact where observed. Some tile not visible due to GPS shots being recorded in intake.
<b>Signage present?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A

### Notes

Signage was not installed at time of observation and will need to be confirmed with Utility if desired by District Trustees.

CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

10-20-20

PROJECT NUMBER:

6749

COUNTY, ROUTE, ROAD:

DD1

LOCATION:

INT UAVE + 185<sup>th</sup> ST

DAYS OF WEEK:

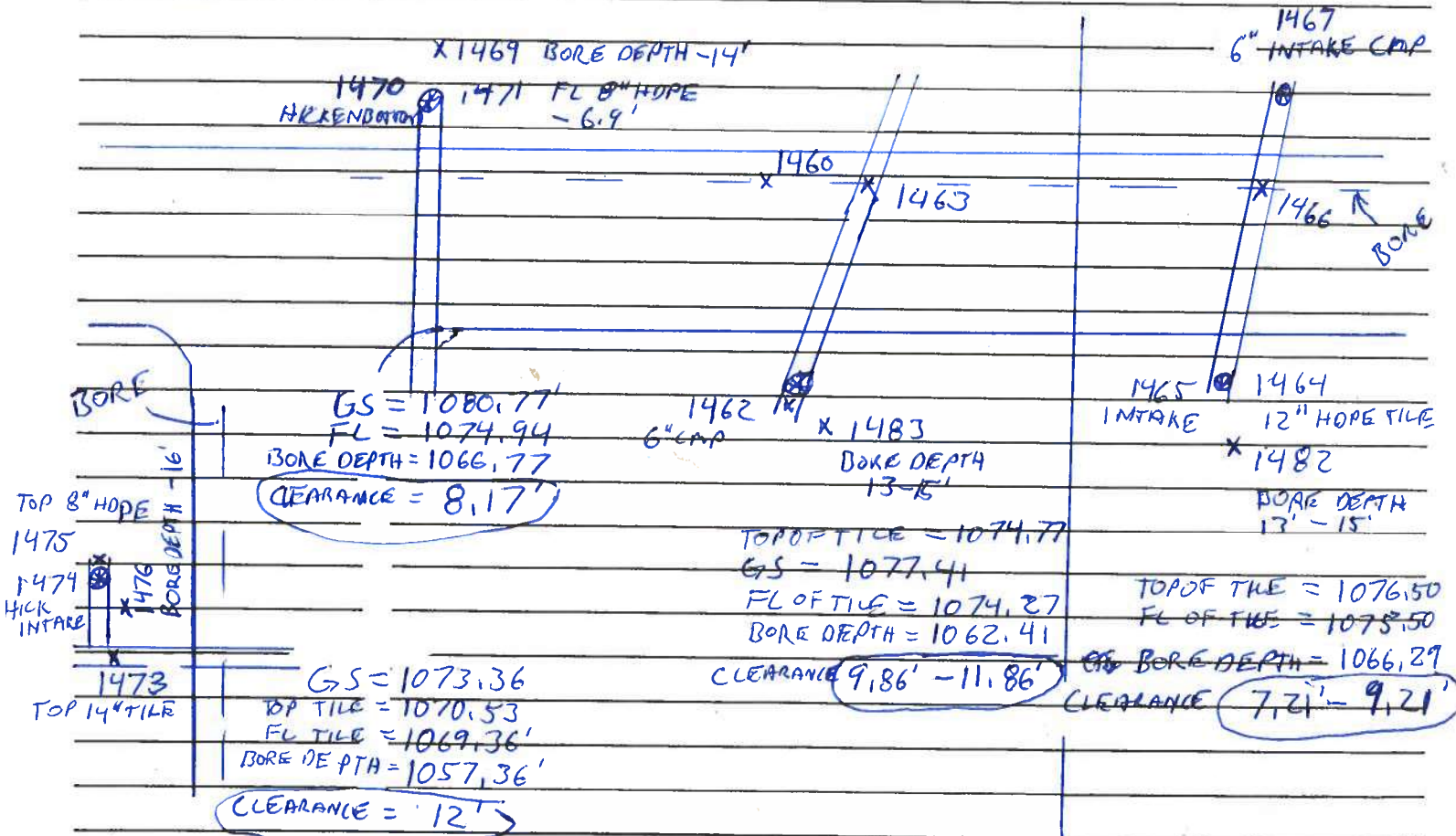
S M T W T F S

SHEET NO.

1 OF 1

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

ARRIVED ON SITE AND CREWS ~~HA~~ WERE BACK FILLING  
ROADS ~~IN~~ HOLES IN ROADS. I ASKED THE CREW WHERE  
WERE THE LATH AND THEY SAID THAT THEY HAD BEEN  
PULLED. THEY THEN PROCEEDED TO PULL OUT 5 LATH THAT  
HAD DEPTHS OF '13', '15', + '14' WRITTEN ON THEM. THESE  
LATH WERE THE LATH THAT WAS MARKING THE DEPTH  
OF THE JOKE



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

Observer's Signature:

*Chris L...*

Date Prepared:

10-20-20

Reviewed by:

☐ Engineer

Date Reviewed



DEPTH @ 1476



1470 LOOKING N.



1470 LOOKING E



BORF DEPTH @ 1469



#1470 / 1469



1463 LOOKING E



1462 LOOKING S



1462



1464 LOOKING E



2020/10/20



2020/10/20

1464



1466 Looking N.



2020/10/20



2020/10/20

1473 Looking S.



SETTING POST @ 1475



2020/10/20



2020/10/20

GPS 1473





GR #1473



CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

10-21-20

DAYS OF WEEK:

S M T W T F S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6749.6

COUNTY, ROUTE, ROAD:

DD1

LOCATION:

T-AVE + MAIN + D-35

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

K 2/3 TIED OUT CROSSINGS

T AVE + MAIN

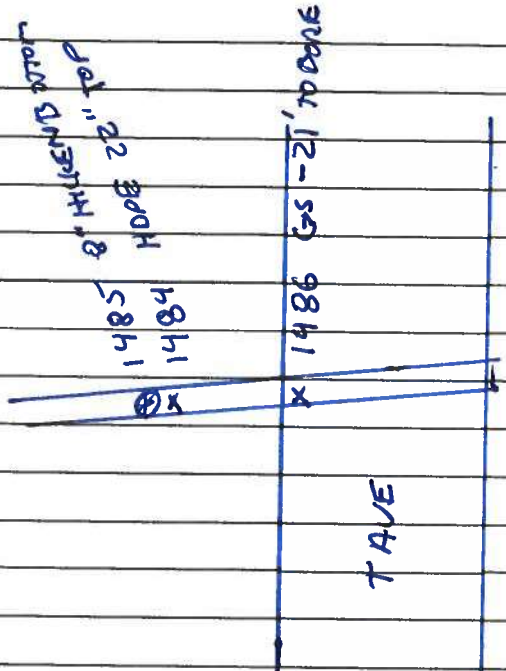
TOP TILE = 1056.60'

GS @ BORE = 1067.36'

FL @ TILE = 1054.77'

BORE DEPTH = 1046.36'

CLEARANCE = -8.41'



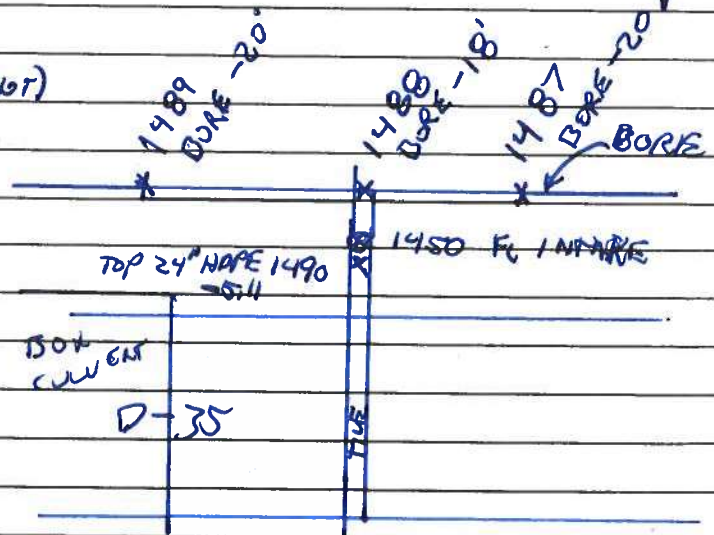
D-35 + MAIN

FL INTAKE = 1048.92' (LEGACY SHOT)

GS @ BORE = 1055.93'

BORE DEPTH = 1037.93'

CLEARANCE = -10.99'



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

Observer's Signature:

*As [Signature]*

Date Prepared:

10-21-20

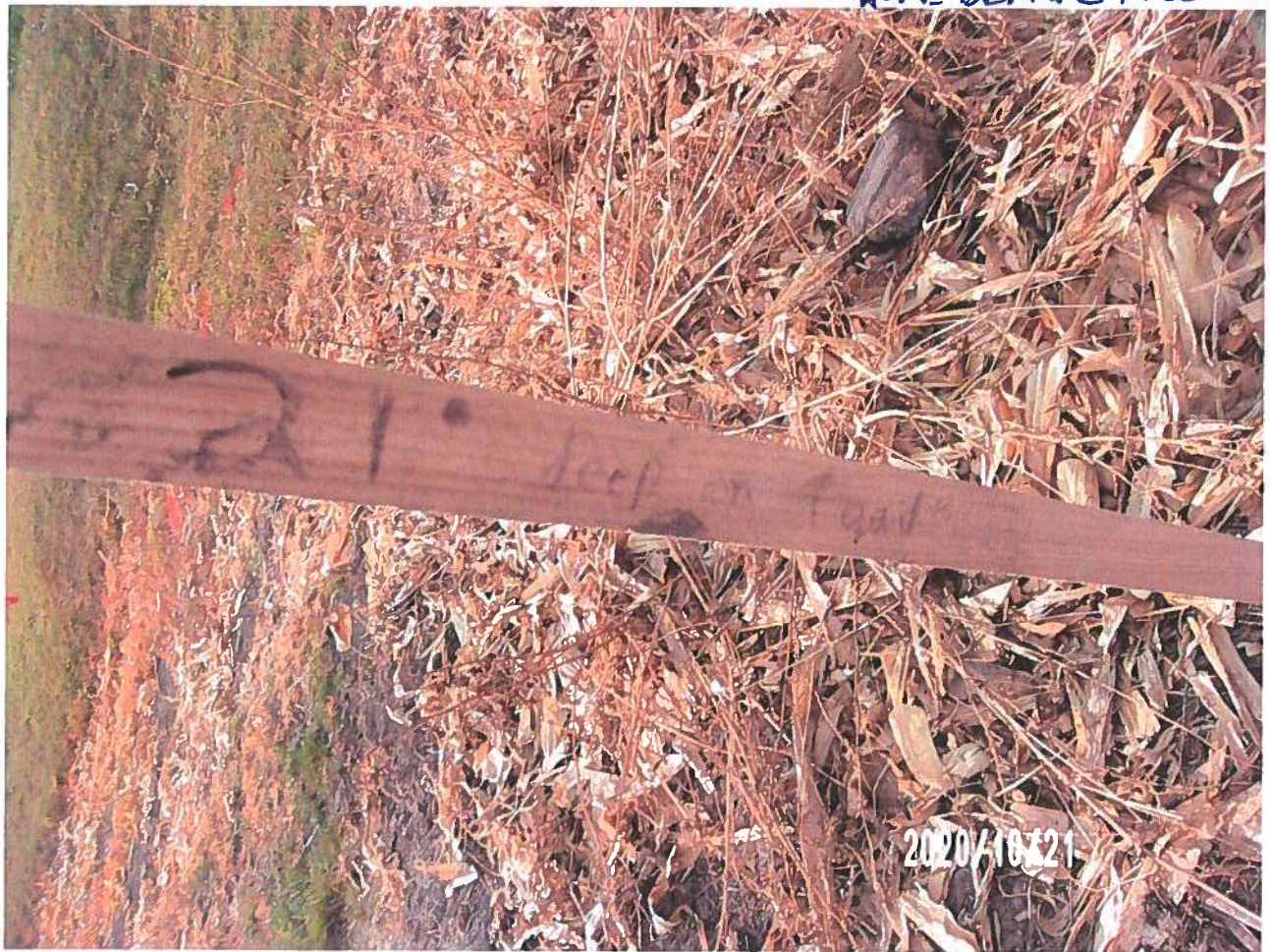
Reviewed by:

☐ Engineer

Date Reviewed



SOLE DEPTH @ 1486



2020/10/21

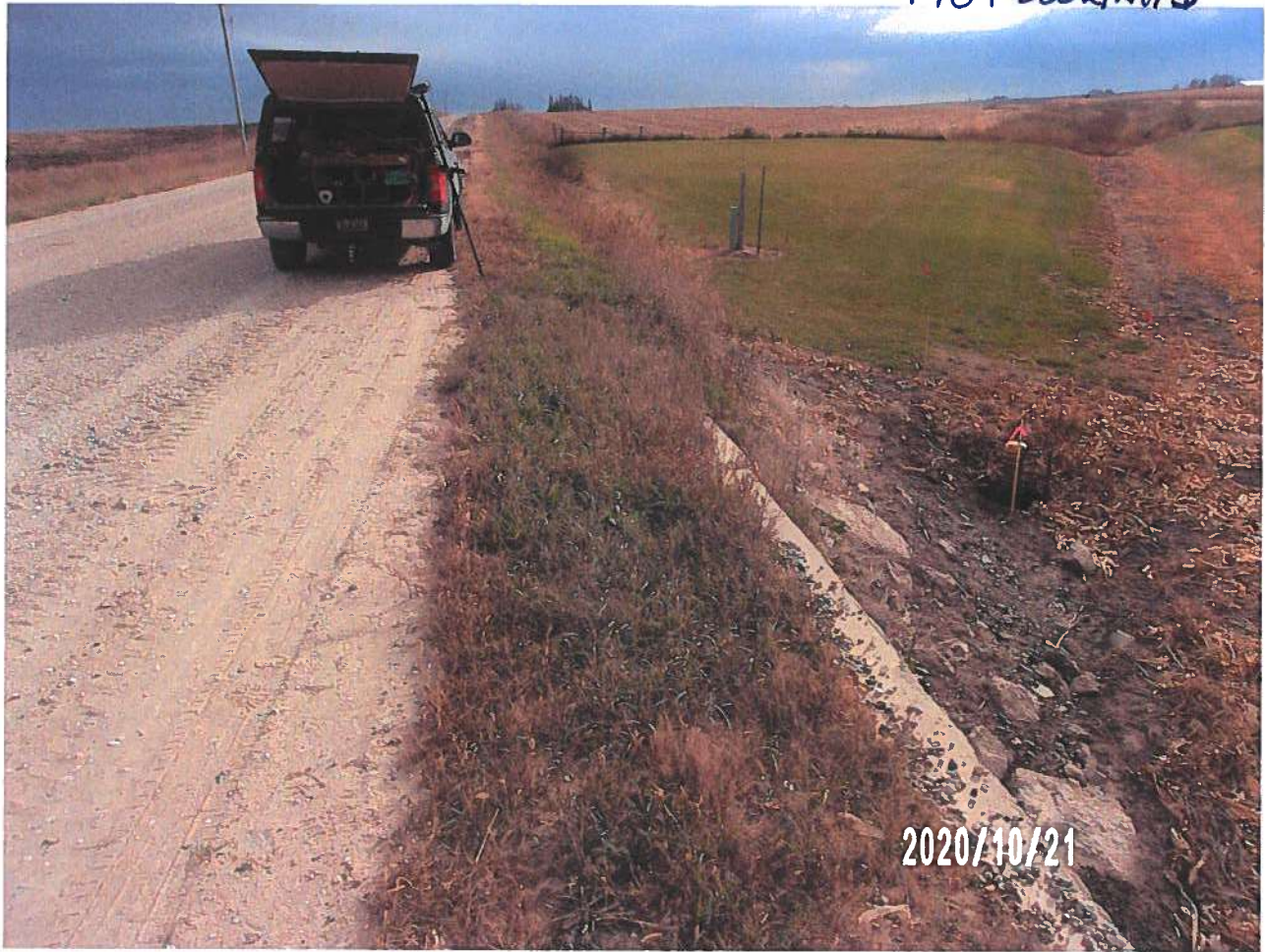


2020/10/21

#1484 LOOKING W.



1484 Looking S



2020/10/21



2020/10/21

1484 Looking N.



1450 LOOKING E



2020/10/21



2020/10/21

1450





BORE DEPTH @ 1488



6749 DD1 2020-10-20 cs

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6749 DD1 2020-10-20 cs

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6749 DD1 2020-10-20 cs

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1193,3610477.764,5021108.337,1050.415,TB  
1194,3610521.644,5021135.129,1050.317,TB  
1195,3610516.982,5021143.974,1050.208,TB  
1196,3610561.673,5021170.734,1050.394,TB  
1197,3610567.728,5021160.758,1050.361,TB  
1198,3614041.029,5022717.076,1052.126,TOP CLAY TILE START TV  
1199,3614495.830,5022973.021,1053.178,TOP CLAY@COLLAR  
1200,3614465.363,5022954.280,1052.898,TOP CLAY@COLLAR  
1201,3614593.451,5023078.958,1053.147,TOP HDPE@COLLAR  
1202,3614598.493,5023086.534,1053.220,TOP CLAY@COLLAR  
1203,3613994.403,5022690.458,1058.478,GS TILELOCATE  
1204,3613955.814,5022669.720,1058.368,GS TILELOCATE  
1205,3613904.918,5022641.151,1058.711,GS TILELOCATE  
1206,3613859.710,5022615.113,1058.726,GS TILELOCATE  
1207,3613817.225,5022590.224,1059.074,GS TILELOCATE  
1208,3613773.844,5022565.563,1058.872,GS TILELOCATE  
1209,3613730.644,5022539.174,1058.947,GS TILELOCATE  
1210,3613690.127,5022514.803,1058.267,GS TILELOCATE  
1211,3613645.972,5022491.771,1058.182,GS TILELOCATE  
1212,3614861.364,5023409.807,1054.040,TOP CLAY TILE  
1213,3614848.870,5023407.259,1054.008,TOP CLAY TILE  
1214,3614795.987,5023395.222,1058.907,CL 53+50  
1215,3614928.670,5023427.894,1054.103,TOP CLAY TILE  
1216,3614938.310,5023430.673,1054.118,TOP CLAY TILE  
1217,3614546.048,5023021.312,1056.519,48+99.887 CL  
1218,3614602.688,5023103.479,1057.485,50+00 CL  
1219,3614645.165,5023193.577,1057.151, 51+00 CL  
1220,3614686.775,5023284.230,1056.967, 52+00 CL  
1221,3614731.649,5023390.331,1064.006,GS  
1222,3615131.725,5023476.423,1054.941,TOP CLAY 22"  
1223,3614750.776,5023367.822,1059.011,CL 53+00  
1224,3615116.931,5023472.903,1054.730,TOP CLAY 22"



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1225,3615041.710,5023455.911,1054.625,TOP CLAY 22"  
1226,3614973.987,5023440.598,1054.648,TOP CLAY 22"  
1227,3614979.735,5023438.076,1054.903,TOP 12"PE  
1228,3615021.260,5023473.733,1058.460,TOP 4"CLAY  
1229,3615191.127,5023493.678,1054.916,TOP 22"CLAY  
1230,3615213.393,5023500.784,1055.011,TOP 22"CLAY  
1231,3614978.909,5023440.781,1054.397,TOP 12"TAP(T)COLLAR  
1232,3614981.034,5023434.556,1055.277,TOP 12"EXTERNAL PE COLLAR  
1233,3615016.496,5023450.772,1054.277,TOP 6"RUBER INSERT A TEE  
1234,3615587.747,5023680.859,1059.031,TOP 7"CLAYTILE  
1235,3615598.315,5023683.961,1058.399,TOP 7"CLAYTILE  
1236,3615633.798,5023696.803,1055.602,TOP 22"CLAY MAIN  
1237,3615567.794,5023654.445,1055.380,TOP 22"CLAY MAIN  
1238,3614980.469,5023442.044,1054.707,TOP 24"@S 12"INTK  
1239,3615564.641,5023673.214,1064.421,GS TILELOCATE 7"  
1240,3615552.462,5023669.321,1064.447,GS TILELOCATE 7"  
1241,3615514.949,5023661.488,1065.890,GS TILELOCATE 7"  
1242,3615502.566,5023657.381,1065.931,GS TILELOCATE 7"  
1243,3615694.365,5023737.548,1055.624,TOP 22"CLAYMAIN  
1244,3615723.337,5023753.921,1055.598,TOP 22"CLAYMAIN  
1245,3615575.663,5023677.281,1059.224,TOP 8"HDPE DUAL  
1246,3615580.246,5023678.572,1059.296,TOP 8"HDPE DUAL  
1247,3615581.724,5023677.967,1058.821,TOP 8"HDPE DUAL  
1248,3615585.313,5023666.834,1055.119,TOP 8"PE SADDALTAP  
1249,3615768.852,5023780.108,1055.663,TOP 22"CLAYMAIN  
1250,3615809.032,5023803.842,1056.068,TOP 24"HDPP EXTERNAL COLLAR  
1251,3615831.082,5023817.054,1056.035,TOP 22"CLAYMAIN  
1252,3615874.170,5023850.234,1055.926,TOP 22"CLAYMAIN  
1253,3615916.526,5023881.008,1056.071,TOP 22"CLAYMAIN  
1254,3616060.931,5023970.908,1056.837,TOP 22"CLAYMAIN  
1255,3616047.358,5023962.098,1056.313,TOP 22"CLAYMAIN  
1256,3613237.711,5022270.928,1050.854,TOP 24"CLAYMAIN  
1257,3613249.401,5022276.496,1050.981,TOP 24"CLAYMAIN  
1258,3613182.823,5022236.438,1050.845,TOP 24"CLAYMAIN  
1259,3613193.031,5022243.979,1051.106,TOP 24"CLAYMAIN  
1260,3612881.617,5022057.942,1050.593,TOP 24"CLAYMAIN  
1261,3612900.225,5022068.581,1050.659,TOP 24"CLAYMAIN  
1262,3612749.983,5022037.386,1050.019,TOP 24"CLAYMAIN  
1263,3612768.176,5022039.778,1050.182,TOP 24"CLAYMAIN  
1264,3613635.333,5022485.742,1051.438,TOP 24"CLAYMAIN  
1265,3613646.506,5022492.263,1051.525,TOP 24"CLAYMAIN  
1266,3613677.848,5022508.660,1051.670,TOP 24"CLAYMAIN  
1267,3613704.331,5022523.752,1051.655,TOP 24"CLAYMAIN  
1268,3613708.409,5022520.969,1053.790,UGTL  
1269,3613843.403,5022603.590,1051.990,TOP 24"CLAY  
1270,3613891.875,5022633.199,1052.042,TOP 24"CLAY  
1271,3613987.243,5022686.770,1052.185,TOP 24"CLAYTILE  
1272,3614048.410,5022713.867,1053.381,TOP 6"CLAYTILE  
1273,3614069.683,5022727.776,1053.256,TOP 7"CLAYTILE

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1274,3614095.394,5022752.574,1054.424,TOP 4" PE TILE  
1275,3614115.348,5022758.031,1052.477,TOP 24" CLAY TILE  
1276,3618829.667,5021441.306,1092.767,300  
1277,3618858.456,5021446.397,1096.622,300  
1278,3618881.998,5021447.427,1096.871,300  
1279,3618901.019,5021448.309,1098.234,324 WCP E W N  
1280,3618906.029,5021438.585,1097.036,3.00  
1281,3619021.868,5021427.659,1093.472,300  
1282,3619022.020,5021446.960,1093.829,324  
1283,3619137.654,5021446.940,1090.778,324  
1284,3619139.558,5021424.372,1090.457,300  
1285,3619141.275,5021296.987,1093.706,300  
1286,3619028.882,5021302.004,1097.321,300  
1287,3618994.893,5021305.111,1098.030,300  
1288,3618955.846,5021307.155,1096.954,300  
1289,3618907.507,5021307.872,1095.947,300  
1290,3618901.226,5021307.431,1095.965,324  
1291,3618901.302,5021210.445,1098.322,324  
1292,3618908.284,5021210.423,1098.289,300  
1293,3618973.001,5021207.557,1098.849,300  
1294,3619059.537,5021201.346,1098.936,300  
1295,3619153.510,5021195.084,1098.022,300  
1296,3619151.911,5021145.454,1097.872,300  
1297,3619150.109,5021112.121,1097.445,300  
1298,3619148.341,5021092.549,1098.054,300  
1299,3619062.937,5021096.590,1098.757,300  
1300,3618986.321,5021101.253,1099.523,300  
1301,3618910.724,5021102.707,1100.952,300  
1302,3618901.242,5021102.550,1101.355,324  
1303,3618901.186,5021017.577,1099.248,324  
1304,3618912.197,5021017.728,1099.489,300  
1305,3618971.646,5021015.668,1098.866,300  
1306,3619014.287,5021014.074,1099.177,300  
1307,3619068.173,5021009.895,1100.723,300  
1308,3619104.755,5021007.425,1100.975,300  
1309,3619172.995,5021003.398,1099.445,300  
1310,3619228.698,5020999.333,1098.054,300  
1311,3619281.840,5020906.067,1097.556,300  
1312,3619235.600,5020909.336,1100.463,300  
1313,3619197.371,5020911.961,1101.177,300  
1314,3619144.262,5020914.333,1100.336,300  
1315,3619073.650,5020917.884,1099.983,300  
1316,3618997.764,5020922.068,1100.655,300  
1317,3618914.708,5020921.462,1100.759,300  
1318,3618901.230,5020921.215,1101.261,324  
1319,3618901.216,5020834.332,1104.872,324  
1320,3618914.718,5020834.114,1104.710,300  
1321,3618980.292,5020831.187,1104.862,300  
1322,3619066.080,5020825.154,1102.787,300



1323,3619142.386,5020820.496,1100.565,300  
1324,3619135.944,5020725.294,1103.161,300  
1325,3619062.334,5020729.168,1106.669,300  
1326,3619025.200,5020731.389,1107.515,300  
1327,3619026.212,5020752.698,1107.955,300  
1328,3619003.149,5020754.174,1107.534,300  
1329,3619001.895,5020730.885,1107.302,300  
1330,3618934.830,5020733.674,1106.552,300  
1331,3618906.039,5020734.137,1106.586,300  
1332,3618901.213,5020734.098,1106.536,324  
1333,3618901.380,5020649.554,1108.119,324  
1334,3618916.016,5020650.240,1107.749,300  
1335,3618977.437,5020646.269,1106.002,300  
1336,3619055.129,5020641.943,1105.132,300  
1337,3619130.903,5020638.765,1104.056,300  
1338,3619200.495,5020550.959,1103.536,300  
1339,3619106.110,5020556.710,1109.015,300  
1340,3619067.825,5020558.746,1109.251,300  
1341,3619005.317,5020561.810,1108.504,300  
1342,3618941.955,5020561.995,1107.120,300  
1343,3618906.019,5020559.014,1106.152,300  
1344,3618901.374,5020558.898,1106.212,324  
1345,3618901.573,5020468.241,1103.044,324 FL  
1346,3618911.672,5020467.589,1103.580,300  
1347,3618961.254,5020464.464,1104.870,300  
1348,3619024.117,5020461.930,1107.372,300  
1349,3619066.156,5020460.209,1108.707,300  
1350,3619096.430,5020459.521,1108.773,300  
1351,3619130.643,5020458.404,1108.578,300  
1352,3619170.431,5020457.499,1107.166,300  
1353,3619227.685,5020455.885,1104.328,300  
1354,3619225.695,5020379.368,1105.195,300  
1355,3619166.688,5020382.369,1107.029,300  
1356,3619087.599,5020387.043,1107.529,300  
1357,3619020.129,5020391.407,1106.177,300  
1358,3618944.024,5020395.123,1104.415,300  
1359,3618908.760,5020394.250,1103.751,300  
1360,3618901.664,5020393.575,1103.740,324  
1361,3618901.681,5020310.637,1103.098,300  
1362,3618969.748,5020309.238,1103.958,300  
1363,3619037.492,5020304.134,1105.589,300  
1364,3619099.614,5020301.654,1107.211,300  
1365,3619142.283,5020300.159,1107.234,300  
1366,3619203.707,5020299.921,1106.630,300  
1367,3619239.856,5020298.361,1106.519,300  
1368,3619238.947,5020213.339,1107.774,300  
1369,3619146.639,5020218.223,1106.782,300  
1370,3619063.015,5020222.314,1105.204,300  
1371,3618987.441,5020226.671,1103.811,300

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1372,3618912.648,5020226.844,1102.391,300  
1373,3618901.741,5020226.671,1101.966,324  
1374,3618901.898,5020156.134,1102.030,324  
1375,3618915.201,5020155.513,1102.298,300  
1376,3618916.793,5020126.856,1102.487,300  
1377,3618917.755,5020119.337,1103.320,324 N S  
1378,3618992.846,5020119.321,1105.213,324 N S  
1379,3618993.161,5020127.285,1104.866,300  
1380,3618993.061,5020178.711,1103.975,300  
1381,3619066.557,5020176.370,1105.342,300  
1382,3619066.959,5020128.123,1106.185,300  
1383,3619067.914,5020119.332,1107.138,324  
1384,3619132.714,5020119.429,1109.317,324  
1385,3619132.533,5020129.624,1108.134,300  
1386,3619134.043,5020160.530,1107.380,300  
1387,3619193.954,5020158.504,1108.657,300  
1388,3619194.030,5020127.729,1109.483,300  
1389,3619194.472,5020119.581,1110.264,3204  
1390,3619256.986,5020119.514,1108.786,324  
1391,3619257.290,5020130.347,1108.288,300  
1392,3619258.888,5020169.848,1107.900,300  
1393,3619260.758,5020238.565,1107.739,300  
1394,3619263.827,5020310.752,1106.735,300  
1395,3619265.550,5020392.774,1103.972,300  
1396,3619268.666,5020430.724,1102.547,300  
1397,3619273.921,5020533.523,1100.093,300  
1398,3619275.820,5020633.973,1097.613,300  
1399,3619283.777,5020733.622,1096.877,300  
1400,3619290.484,5020830.474,1096.127,300  
1401,3619300.053,5020936.519,1095.939,300  
1402,3619301.755,5021034.968,1095.243,300  
1403,3619304.174,5021134.321,1092.359,300  
1404,3619301.486,5021235.616,1089.648,300  
1405,3619300.414,5021332.324,1087.088,300  
1406,3619303.248,5021401.972,1085.888,300  
1407,3613440.676,5022375.708,1056.509,UGTL heart of iowa  
1408,3613441.874,5022392.903,1056.715,UGTL heart of iowa  
1409,3613440.657,5022403.703,1057.569,UGTL heart of iowa  
1410,3613444.973,5022393.548,1057.473,tped is&w  
1411,3613459.170,5022390.799,1051.082,TOP 24"CLAY  
1412,3613361.129,5022404.591,1057.573,ugel o flag e-w  
1413,3613361.910,5022370.259,1056.941,ugel o flag e-w  
1414,3613363.023,5022333.730,1055.662,ugel o flag e-w  
1415,3613363.241,5022315.618,1057.445,ugel o flag e-w  
1416,3613350.649,5022333.109,1051.066,TOP 24" CLAY TILE  
1417,3613459.212,5022390.826,1048.984,fl 24" clay  
1418,3613351.539,5022333.538,1049.043,fl 24" clay  
1419,3613355.612,5022394.761,1059.302,hub  
1420,3613375.009,5022397.269,1058.162,hub



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1421,3613427.045,5022403.706,1058.108,hub  
 1422,3613444.713,5022405.920,1058.499,hub  
 1423,3613369.685,5022377.849,1051.409,CASING STEEL TOP 36" 2.96'TOPTOFL  
 1424,3613351.693,5022333.533,1048.862,TILE FL 24" CLAY OLD GPS 1418  
 1425,3613426.160,5022383.574,1051.659,CASING STEEL TOP 36" 2.95'TOPTOFL  
 1426,3613427.453,5022383.663,1051.202,TILE TOP 24" HDPP PERF 2.17'TOPTOFL  
 1427,3613368.881,5022377.734,1051.181,TILE TOP 24" HDPP PERF 2.17'TOPTOFL  
 1428,3613367.235,5022377.509,1051.195,TILE TOP 24" HDPP 22.5 BEND  
 1429,3613364.753,5022375.950,1051.190,TILE TOP 24" HDPP 22.5 BEND  
 1430,3613363.554,5022373.804,1051.181,TILE TOP 24" HDPP 11.25 BEND  
 1431,3613363.296,5022372.921,1051.188,TILE TOP 24" HDPP PERF 2.17'TOPTOFL  
 1432,3613361.843,5022387.826,1054.261,FOC TOP HEART OF IOWA  
 1433,3613363.258,5022377.513,1054.109,FOC TOP HEART OF IOWA  
 1434,3613356.145,5022354.841,1051.196,TOP 24" HDPP TILE 2.17'TOPTOFL  
 1435,3613362.978,5022363.091,1053.629,FOC TOP HEART OF IOWA  
 1436,3613348.832,5022336.291,1051.210,TOP 24" HDPP TILE 2.17'TOPTOFL  
 1437,3613342.775,5022328.772,1051.016,TILE TOP 24" CLAY 2.15'TOPTOFL  
 1438,3613430.029,5022384.080,1051.175,TILE TOP 24" HDPP PERF 2.17'TOPTOFL  
 1439,3613433.289,5022384.519,1051.174,TILE TOP 24" HDPP PERF 2.17'TOPTOFL  
 1440,3613443.094,5022386.703,1051.185,TILE TOP 24" HDPP PERF 2.17'TOPTOFL  
 1441,3613440.963,5022383.901,1051.912,FOC TOP HEART OF IOWA  
 1442,3613441.323,5022389.769,1053.700,FOC TOP HEART OF IOWA  
 1443,3613420.715,5022390.920,1054.800,TILE 5" CLAY TILE  
 1444,3613421.889,5022387.945,1053.851,TILE TOP 5" SW NONPERF HDPE  
 1445,3613429.277,5022384.065,1051.558,TOP 6" INSERTA TEE  
 1446,3613423.061,5022386.013,1053.799,TILE TOP 5" SW NONPERF HDPE ADAPTER  
 1447,3613424.575,5022385.580,1053.405,TILE TOP 5" SW NONPERF HDPE  
 1448,3613426.610,5022386.699,1053.307,TILE TOP 5" SW NONPERF HDPE  
 1449,3613428.568,5022385.996,1053.011,TILE TOP 5" SW NONPERF HDPE  
 1450,3613431.814,5022384.336,1048.923,FL 24"\*12" HDPE TEE  
 1451,3613457.033,5022389.587,1051.121,TILE TOP 24" CLAY 2.12'TOPTOFL  
 1452,3621298.057,5029408.748,1077.253,001 bore pit  
 1453,3613455.831,5022388.662,1051.175,TILE TOP 24" 2.17'TOPTOFL 22.5 BEND  
 1454,3613454.441,5022388.437,1051.202,TILE TOP 24" HDPP 2.17'TOPTOFL  
 1455,3613346.819,5022331.667,1051.155,TILE TOP 24" HDPP PERF 2.17'TOPTOFL  
 1456,3613346.447,5022330.825,1051.152,TILE TOP 24" HDPP PERF 2.17'TOPTOFL  
 1457,3613426.984,5022374.243,1051.038,TILE TOP 24" CLAY NORTH END REMOVAL  
 1458,3613375.561,5022346.448,1049.046,TILE FL 24" CLAY SOUTH END END REMOVAL  
 1459,3613348.564,5022331.679,1054.251, 30" INTAKE N RIM  
 1460,3621298.375,5029426.166,1081.109,700  
 1461,3621296.462,5029458.719,1081.275,700  
 1462,3621266.039,5029443.987,1074.772,513 6 w/6" intake  
 1463,3621297.284,5029462.181,1081.223,700  
 1464,3621273.981,5030183.825,1076.499,421 12"  
 1465,3621274.301,5030183.971,1078.425,922 6" hick  
 1466,3621306.575,5030187.512,1082.736,700  
 1467,3621326.547,5030189.226,1080.229,922 6" cmp  
 1468,3621326.678,5030189.280,1076.230,507?  
 1469,3621311.974,5029148.050,1080.770,001 bore depth -14'

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1470,3621309.761,5029148.201,1080.698,922 8" hick  
 1471,3621309.931,5029148.225,1081.839,507 -6.9  
 1472,3621297.288,5029148.559,1083.064,700  
 1473,3620513.044,5029110.046,1070.532,962 14"  
 1474,3620529.706,5029110.146,1072.954,922 8" hick  
 1475,3620529.891,5029110.149,1070.707,421 8" n-s  
 1476,3620518.612,5029110.950,1073.364,001 bore depth -16'  
 1477,3620575.258,5029128.520,1079.667,700  
 1478,3620524.839,5029128.438,1079.517,700  
 1479,3620471.908,5029132.171,1075.824,700  
 1480,3620475.026,5029131.780,1079.823,503  
 1481,3620600.076,5029129.837,1079.897,001 bore pit  
 1482,3621271.586,5030186.950,1079.288,300 bore depth 13-15'  
 1483,3621262.040,5029444.807,1077.407,300 bore depth 13-15'  
 2000,3610747.364,5024114.770,1078.491,324 WCP N W  
 2001,3610767.525,5022350.950,1058.413,324 WCP E W REM N  
 2002,3610767.804,5022262.373,1056.899,324 E W  
 2003,3610768.182,5022144.163,1055.780,324 E W  
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 2009,3610772.126,5021515.885,1052.109,324 WCP E S N  
 2010,3610665.072,5021515.266,1053.727,324 S N  
 2011,3610573.850,5021517.451,1054.576,324 S N  
 2012,3610475.495,5021517.435,1054.532,324 S N  
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 2014,3610337.849,5021519.313,1056.842,324 S N  
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 2016,3610235.564,5021522.297,1052.563,324 S N  
 2017,3610147.461,5021521.584,1046.755,324 S N  
 2018,3609310.215,5021527.211,1063.237,324 WCP S N  
 2019,3609389.602,5021526.969,1062.207,324 S N  
 2020,3609464.363,5021527.490,1057.738,324 S N  
 2021,3609556.027,5021527.090,1052.747,324 S N  
 2022,3609642.916,5021526.102,1050.203,324 S N  
 2023,3609736.158,5021526.319,1048.282,324 S N  
 2024,3609830.412,5021524.948,1047.547,324 S N  
 2025,3609926.741,5021523.602,1047.161,324 S N  
 2026,3609988.402,5021523.018,1047.757,324 S N  
 2027,3609916.531,5021532.105,1045.548,300  
 2028,3609998.300,5021539.374,1045.625,300  
 2029,3610003.531,5021560.206,1045.449,300  
 2030,3609938.242,5021534.802,1045.517,300  
 2031,3609827.311,5021534.308,1046.502,300  
 2032,3609715.016,5021534.778,1047.271,300  
 2033,3609709.442,5021534.476,1047.239,300  
 2034,3609663.545,5021535.312,1048.207,300





# Drainage Utility Permit Application

## Hardin County

**Applicant:** Heart of Iowa Communication Coop - Jay Duncan

**Contact Email:** jduncan@heartofiowa.coop

**Contact Phone:** (641) 486-2211

**Utility Type:** N/A - Utility Permits Only

**Drainage District:** DDs\DD 44 (51069)

**Description of Work:** DDs 44, 62, 1, 128, 78, 63, 8, 93 & 94 - Heart of Iowa - Install fiber optic cable in rural areas of Eldora & Steamboat Rock. Will work with CGA on facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage Districts. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

\_\_\_\_\_  
Applicant Signature

\_\_\_\_\_  
Date

**Submit Form and Location Plan 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  
drainage@hardincountyia.gov

*For Office Use Only*

### Application Approval:

By:   
Board of Supervisor Chairman, Acting as Drainage District Trustee

Date: 6-7-2020

APPROVED PERMIT # 2020-12

- ☐ Application in TCM
- ☐ GIS Annotation
- ☐ Approval Emailed



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant: Heart of Iowa Communications Cooperative  
Company Name  
PO Box 130  
Address  
Union IA 50258-0130  
City State Zip  
Applicant Contact: Jay Duncan ( 641 ) 486 - 2211  
Name Phone  
jduncan@heartofiowa.coop  
Email  
Utility Type: Fiber Optic  
Drainage District(s) Crossed: 44, 62, 1, 128, 78, 63, 8, 93 & 94  
Facilities Crossed (specific tile, open ditch): tile and open ditch  
Description of Work: Install fiber optic cable in rural areas of Eldora and Steamboat Rock. Will work with CGA on  
*(Location plan of proposed utility must be attached.)* facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage District. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

[Signature]  
Applicant Signature

6/10/2020

Date

Submit Form and Location Plan To:

Hardin County Auditor's Office  
Attn: Drainage Clerk  
1215 Edgington Ave, Suite 1  
Eldora, IA 50627  
Fax (641) 939-8225  
[drainage@hardincountyia.gov](mailto:drainage@hardincountyia.gov)

For Office Use Only

Application Approval:

By: [Signature]  
Board of Supervisor Chairman, Acting as Drainage District Trustee

Date: 6-7-2020

APPROVED PERMIT #: \_\_\_\_\_





# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## REQUIREMENTS FOR CONSTRUCTION ON, OVER, ACROSS OR BENEATH ESTABLISHED DRAINAGE DISTRICT

Upon issuance of a permit for utilities on, over, across or beneath established Hardin County Drainage Districts, the applicant shall be governed by these requirements and shall comply with all conditions contained herein.

1. The Applicant shall furnish the Drainage District, or its representative, plats showing the exact location of the proposed construction. If it is found that such locations are in conflict with the present or proposed facilities and that a more desirable location is possible, the Applicant shall review such possible alignment changes. **No construction is to commence with the drainage facility without an approved application.**
2. Applicant shall comply with Iowa One-Call requirements prior to commencing any work.
3. The Drainage District shall provide Applicant access to maps or other information regarding the location of all known drainage district facilities so that reasonable care may be taken by Applicant to avoid un-necessary damage to said drainage district facilities.
4. The Applicant shall hold the Drainage District harmless from any damage that may result to the Drainage District facility because of the construction or maintenance of the utility, and shall reimburse the Drainage District for any expenditures that the Drainage District may have to make on said Drainage District facilities resulting from Applicant's construction and installation of utilities, or their subsequent repair or modification.
5. The Applicant shall take all reasonable precaution during the construction of said utility to protect and safeguard the lives and property of the public and adjacent property owners and shall hold the Drainage District harmless from any damages or losses that may be sustained by adjacent property owners on account of such construction operations. Further, Applicant agrees to replace, repair or reimburse all damages to private property occasioned by Applicant's installation of subsequent modification or repairs.
6. The Drainage District assumes no responsibility for damages to the Applicants property occasioned by any construction or maintenance operation of said Drainage District facilities, subsequent to Applicants installation.
7. A copy of a certificate of insurance naming the County/Drainage District as additional insured for their permit work shall be provided to the County Auditor prior to installation. The limit of liability under the insurance policy shall not be less than \$1,000,000 per occurrence.
8. The Applicant agrees to give the Drainage District twenty-four (24) hours (Saturday and Sunday excluded) notice of its intention to commence construction on any lands within the jurisdiction of the Drainage District. Said notice shall be made in writing to the County Auditor or to the designated Drainage District representative.
9. The Applicant agrees to place permanent, visible markers or monuments at locations where utility crosses Drainage District facilities. These monuments or markers shall identify the owners name, address and phone number.
10. The Drainage District Trustees may appoint a representative to inspect and approve all construction across Drainage District facilities as part of this permit. All compensation, wages, mileage and other expenses for this representative will be paid by the Applicant. It will be the responsibility of the Applicant to make all contacts with private parties (adjacent owners/operators) to determine the location of private drainage facilities. Said representative will also inspect all crossing of Drainage District facilities and may, if required, observe the crossing of private drainage facilities, and shall have the authority to require the Applicant to excavate and expose the crossing of any Drainage District facility where the representative believes it prudent to visually examine Applicants crossing of the Drainage District facility. Further, said representative has the authority to suspend construction and installation by the Applicant within any Drainage District jurisdiction by verbal order to the contractor at the site and a telephone call to Applicants contact person listed on page 1 within six (6) hours of the verbal order.



# HARDIN COUNTY

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ELDORA, IA 50627  
(641) 939-8108

11. The construction and maintenance of Applicants installation shall be carried on in such a manner as to not interfere with or interrupt the function of said Drainage District facilities without the express written consent of the Drainage District Representative. In the event it becomes necessary to temporarily stop the flow of water, the following shall be completed by the Applicant:
  - a. If the crossing involves a tile line, the replacement of tile with approved materials, in the manner approved by the Drainage Districts designated representative, shall be performed as rapidly as possible. If the approved method of repair is impossible and the volume of water flowing in the tile is sufficient to create the possibility of crop loss or property damage, the Contractor will be permitted to temporarily block the tile line to prevent the flow of this tile water into the pipeline, or tile line ditch. In the event this tile line is so temporarily blocked, the Contractor will be expected to provide sufficient pumping equipment to pump the impounded tile water across the construction ditch to the undisturbed tile line. Such temporary blockages of said Drainage District tile lines will be removed as rapidly as possible and any tile repairs caused by this blockage will be immediately repaired at the Applicants expense.
  - b. If the crossing involves an open ditch that is carrying sufficient flow of water to make it necessary to place a temporary dam across said open ditch, such temporary dams may be constructed only upon approval from the Drainage District designated representative. The maximum elevation of this impounded water shall be determined by the designated Drainage District representative and all excess water must be allowed to flow across the construction ditch through either a closed metal culvert pipe or by pumping. All temporary dam structures are to be removed as soon as the crossing is completed. The construction and removal of these dams shall be in such a manner that the smooth and efficient function of the drainage ditch is not impaired, with all costs and damages borne by Applicant.
12. The Applicant will at any time subsequent to the commencement of construction, and at Applicants sole expense, reconstruct or replace its installation as may be necessary to conform to new grade or alignments resulting from maintenance or construction operations by the Drainage District in connection with any of its drainage facilities. Applicant agrees to do this within forty-five (45) days of receipt of written request from the Drainage District, or such longer time period as the Drainage District may specify, without cost to the Drainage District. Such reconstruction or realignment of Applicants improvements shall be made in accordance with and approved by the Drainage District or its designated representative. If the Applicant is unable to comply within the time period specified above, the Drainage District may cause the work to be done and the Applicant will pay the cost thereof upon receipt of a statement of such costs.
13. CROSSING OF OPEN DITCH FACILITIES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
  - a. Passage of installation in a horizontal plane five feet (5') below design grade of drainage ditch, as established by the Drainage District representative.
  - b. The above depth to extend to a point two (2) times the design base width of ditch either side of centerline of drainage ditch (measured along the centerline of utility) unless the existing base width is greater than the design bases width. If the existing base width is greater than the design with, the depth is to extend to a point two (2) times the existing width.
  - c. The rate of slope for transition from normal utility laying depth of crossings of drainage ditches shall not be steeper than 4:1.
  - d. If such ditch crossings occur at points of outlets of Drainage District or private tile lines or within twenty-five feet (25') of said outlets, such outlets must be relocated to a point not less than twenty-five feet (25') from such crossings. Such relocations shall be at the expense of the Applicant and as directed by the representative of the Drainage District.

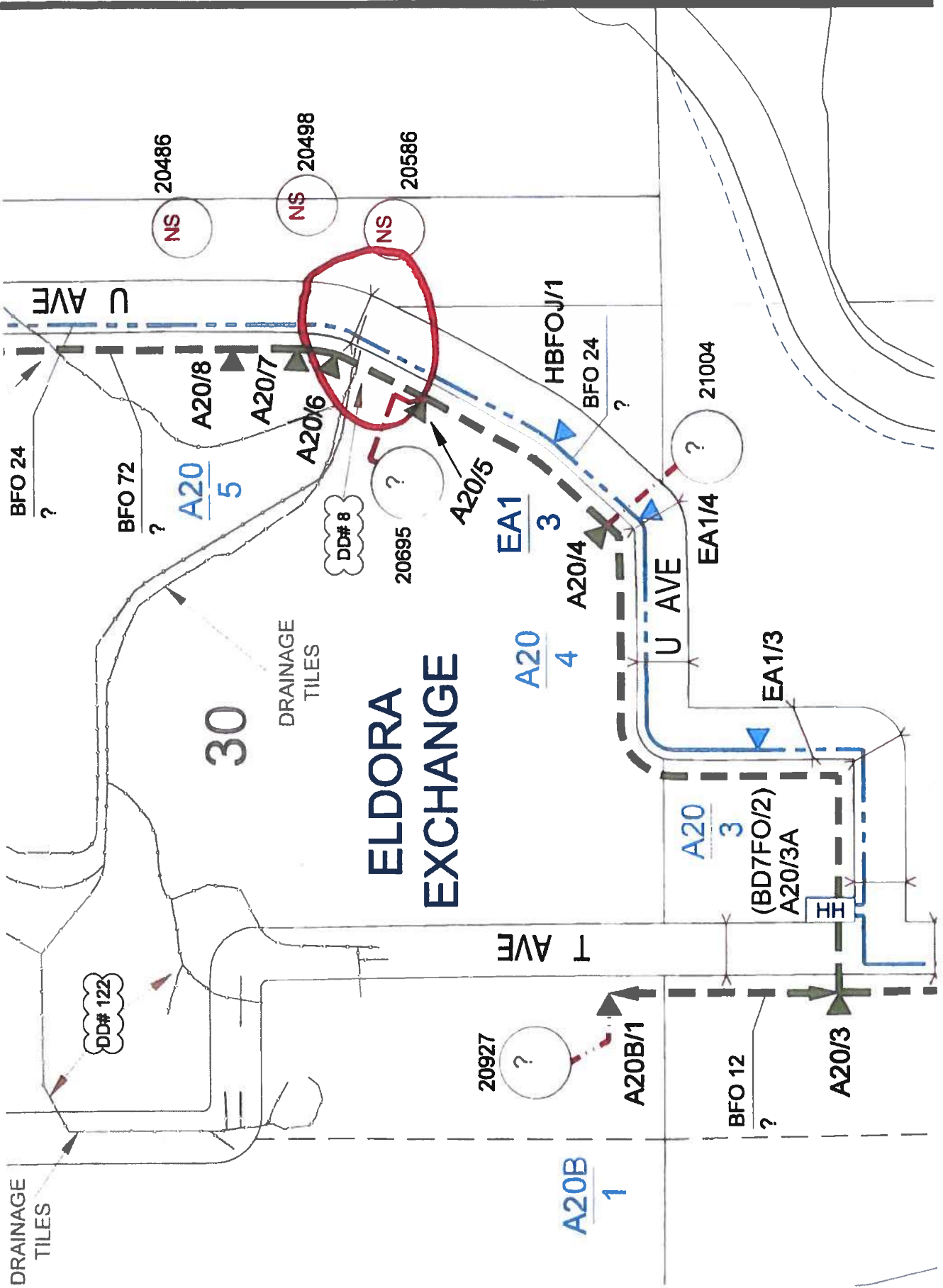




# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

14. **CROSSING OF DRAINAGE DISTRICT TILE LINES.** Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only upon the review by and approval of the designated representative of the Drainage District. Such waiver must be in writing.
  - b. A minimum of one foot (1') clearance below existing Drainage District facilities must be maintained.
  - c. At all crossings of Drainage District tile lines with the proposed utility, one of the following must be used:
    - i. Replace Drainage District tile with reinforced concrete pipe of same or larger diameter than existing tile. Concrete pipe to be 2,000 D strength (Iowa Department of Transportation approved) with standard tongue and groove joints. Pipe to have a minimum of three (3) bolt-type connectors at each joint.
    - ii. Replace Drainage District tile with cathodic protected corrugated metal pipe. Diameter of corrugated metal pipe to be a minimum of two inches (2") larger than outside diameter of tile line being replaced. (Specifications regarding gage, cathodic protection and other details to be subject to review and approval.)
    - iii. Dual wall plastic with specific approval of Drainage District representative.
    - iv. Bore new utility installation; maintain existing tile in an undisturbed state.
  - d. The length of tile to be replaced by any of the above alternates is as follows:
    - i. Eight-inch (8") tile and smaller: Six feet (6') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
    - ii. Ten inch (10") tile and larger: Ten feet (10') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
  - e. At all crossings of Drainage District tile lines where the Drainage District and private tile lines are damaged by the construction, maintenance or repair of Applicants installation shall be repaired as directed by the Drainage Districts designated representative.
15. This permit is subject to existing regulations and statutes of the State of Iowa and future regulations, which may be promulgated or enacted.
16. This application is subject to revocation by Hardin County, if in its judgment it is necessary for legitimate purposes. In such event, written notice shall be provided to permit holder.
17. Applicant agrees to pay all other legitimate costs, fees and expenses associated with its crossing of the Drainage District facility, including but not limited to, publication costs, engineering costs and legal service costs. Said costs will be paid within thirty (30) days of the mailing of the statements to the Applicant.
18. Applicant agrees to provide a copy of as-built plan of the utility route and location, showing route changes that may have taken place during construction.
19. Applicant agrees to include a copy of these requirements to all bidding specifications; or if the construction and installation contract has been let by the time this permit is approved, Applicant agrees to provide a copy of these requirements to the contractor and to advise them that they are bound by the terms of these requirements.







Utility Permit #:2020-12

## Utility Observation Report

General Information	
<b>Project Name and Number:</b>	Utility Permit 6666.4
<b>Drainage District Number:</b>	#8
<b>Drainage District Facility ID:</b>	Main
<b>Project Location:</b> (1/4, Sec, Twp, Rng and road)	NE 30-88-19 U Ave, south of D35
<b>Date of Observation:</b>	10/23 & 10/24/2020
<b>Observer Name/Title:</b>	Chris Sweeney

Field Observations	
<b>District facility type:</b>	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
<b>Utility Orientation:</b>	<input type="checkbox"/> Parallel <input checked="" type="checkbox"/> Crossing <input type="checkbox"/> Overhead <input type="checkbox"/> Over <input checked="" type="checkbox"/> Under <input type="checkbox"/> Same Elevation Other:
<b>Source of utility elevation and/or location:</b>	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input checked="" type="checkbox"/> Utility Reported Other:
<b>Utility Elevation:</b>	1065.5'
<b>Source of district facility elevation and/or location:</b>	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
<b>District Facility Elevation:</b> (include where measured)	1071.8' (flowline, slightly downstream, exposed)
<b>Vertical clearance from district facility:</b> (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	6.3'



Utility Permit #:2020-12

<b>Horizontal clearance from District Tile or Open Ditch centerline:</b>	
<b>Tile outlets within 25-feet relocated? (If applicable)</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<b>Original tile material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input checked="" type="checkbox"/> VCP Other: 6"
<b>Tile replaced by utility?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
<b>Tile replacement material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:
<b>Condition of District tile:</b>	Intact
<b>Signage present?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A

Notes
Signage was not installed at time of observation and will need to be confirmed with Utility if desired by District Trustees.



CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

10-24-20  
10-23-20

PROJECT NUMBER:

6666.5

COUNTY, ROUTE, ROAD:

DOB

LOCATION:

V AVE

DAYS OF WEEK:

S M T W T F S

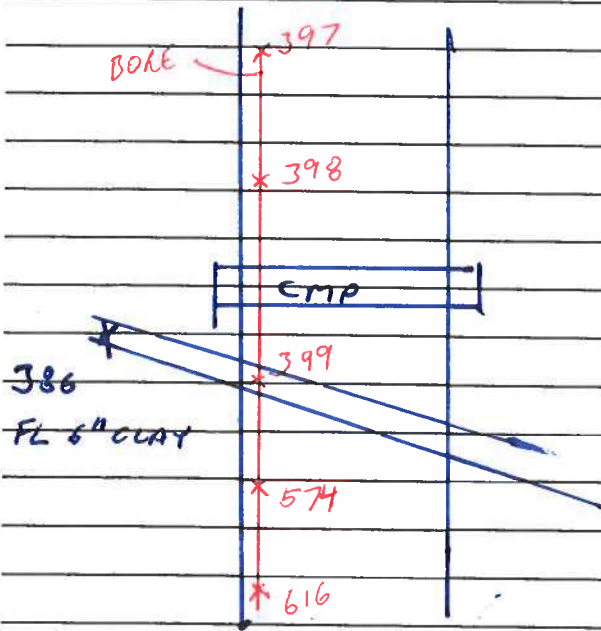
SHEET NO.

1 OF 1

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

TI 1 ✓ 180

TIED OUT TILE



TILE FL @ 386 = 1071.82

BORE DEPTH = 1065.48

CLEARANCE = 6.34'

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

Observer's Signature: \_\_\_\_\_

Date Prepared: \_\_\_\_\_

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

☐ Engineer

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



A photograph of a gravel road in a rural field. A wooden stake is in the grass on the right. A red 'X' is marked on the gravel. The date 2020/10/29 is printed in the bottom right.

2020/10/29



2020/10/29

BORE DEPTH @ 386



6666 DD8 2020-11-10

1,3610944.202,5029244.721,1098.632,CP 3/4  
2,3609899.457,5029141.385,1048.076,TOP CMP  
3,3609923.128,5029093.654,1060.470,TILE LOCATE  
4,3609933.547,5029079.378,1050.715,TILE LOCATE  
5,3609968.090,5029024.826,1051.921,TILE LOCATE  
6,3609979.808,5028947.099,1051.208,TILE LOCATE  
7,3609993.458,5028857.845,1052.244,TILE LOCATE  
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16,3610222.078,5028090.133,1055.023,TILE LOCATE  
17,3610304.736,5028041.447,1054.881,TILE LOCATE  
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35,3611374.960,5027383.836,1061.462,TILE LOCATE  
36,3610745.703,5027763.710,1057.231,FENCE E-W  
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41,3610030.498,5028637.209,1049.560,TOP 20" VCP 1.82'TOFL  
42,3610041.859,5028571.434,1049.561,TOP 20" VCP 1.82'TOFL  
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44,3610033.228,5028630.785,1049.563,FL 8" VCP  
45,3610049.049,5028585.809,1054.106,FENCE S&E  
46,3610050.013,5028642.162,1054.410,FENCE E-W  
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48,3609909.902,5029120.516,1064.378,E GRAVEL road EDGE  
49,3610688.197,5029186.545,1088.040,MAG TOP CMP

6666 DD8 2020-11-10

50,3610031.504,5028630.731,1049.826,TOP 24"\*8" HDPE TILE TEE  
 51,3610032.772,5028631.012,1049.802,TOP 8" HDPE STUB ON TEE 0.72'TOFL  
 52,3610042.103,5028634.598,1050.151,TOP 8" VCP TILE .64'TOFL  
 53,3610553.795,5027894.872,1051.134,TOP 20" VCP 1.82'TOFL  
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 55,3610071.476,5028389.732,1048.076,7+79.000 C  
 56,3610082.780,5028321.664,1048.076,8+48.000 C  
 57,3610093.204,5028270.742,1048.076,9+00.000 C  
 58,3610181.690,5028122.161,1048.076,10+78.000 C  
 59,3611063.689,5027597.990,1048.076,21+04.500 C  
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 98,3610742.799,5028081.443,1056.739,damage



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99,3610723.111,5028102.093,1056.537,damage  
100,3610707.764,5028106.637,1056.397,damage  
101,3610070.623,5028394.912,1049.882,top main 24od/21id start repair  
102,3610070.490,5028394.726,1048.062,fl  
103,3610067.157,5028390.453,1049.891,tile fl 5id 7od from sw  
104,3610070.121,5028402.175,1053.921,ground elev  
105,3610073.096,5028376.806,1049.779,top main 24od/21id end repair  
106,3610072.988,5028377.096,1047.995,fl  
107,3610082.782,5028320.424,1048.041,fl  
108,3610082.751,5028320.803,1049.825,top main 24od/21id start repair  
109,3610083.536,5028314.768,1047.860,fl  
110,3610083.624,5028314.163,1049.658,top main 24od/21id end repair  
111,3610088.591,5028271.591,1049.339,tile 5" cpp from ssw  
112,3610092.341,5028265.700,1048.053,fl  
113,3610092.229,5028266.245,1049.845,top main 21od start repair  
114,3610093.723,5028256.238,1047.988,fl  
115,3610093.787,5028256.088,1049.791,top main 21od end repair  
116,3610691.788,5028104.993,1056.228,damage  
117,3610661.888,5028106.906,1056.094,damage  
118,3610479.721,5028109.413,1055.197,damage  
119,3610285.128,5028112.598,1054.482,damage  
120,3610261.317,5028111.603,1054.310,damage  
121,3610232.280,5028099.842,1054.451,damage  
122,3610215.692,5028089.779,1054.452,damage  
123,3610206.642,5028081.834,1054.493,damage  
124,3610206.485,5028060.364,1054.464,damage  
125,3610184.974,5028061.688,1054.473,damage  
126,3610180.239,5028075.430,1054.483,damage  
127,3610152.091,5028083.287,1054.532,damage  
128,3610131.801,5028108.630,1054.551,damage  
129,3610126.703,5028109.666,1054.590,damage  
130,3610124.988,5028116.778,1054.433,damage  
131,3610132.938,5028120.336,1054.366,damage  
132,3610136.381,5028125.200,1054.235,damage  
133,3610135.480,5028159.148,1054.278,damage  
134,3610127.650,5028180.856,1054.092,damage  
135,3610142.750,5028187.003,1054.202,damage  
136,3610152.233,5028172.692,1054.064,damage  
137,3610179.750,5028161.921,1054.164,damage  
138,3610197.840,5028160.565,1054.259,damage  
139,3610217.653,5028133.025,1054.349,damage  
140,3610230.876,5028125.782,1054.304,damage  
141,3610262.517,5028124.453,1054.401,damage  
142,3610264.660,5028122.876,1054.422,damage  
143,3610119.159,5028229.306,1054.115,damage  
144,3610129.254,5028235.216,1054.233,damage  
145,3610134.264,5028269.851,1054.173,damage  
146,3610116.189,5028343.800,1053.936,damage  
147,3610119.027,5028190.421,1054.020,damage

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148,3610082.293,5028218.036,1054.366,damage  
 149,3610051.962,5028260.729,1054.516,damage  
 150,3610039.221,5028325.716,1054.612,damage  
 151,3610041.477,5028350.833,1054.598,damage  
 152,3610111.815,5028361.905,1053.944,damage  
 153,3610112.295,5028391.905,1053.936,damage  
 154,3610083.492,5028422.404,1053.850,damage  
 155,3610060.739,5028425.244,1054.096,damage  
 156,3610043.636,5028408.123,1054.189,damage  
 157,3610043.279,5028390.570,1054.283,damage  
 158,3610034.491,5028387.287,1054.362,damage  
 159,3610047.973,5028361.933,1054.308,damage  
 160,3610452.031,5028120.157,1055.120,damage  
 161,3610693.947,5028116.694,1056.359,damage  
 162,3610712.980,5028122.519,1056.410,damage  
 163,3610726.246,5028138.639,1056.577,damage  
 164,3610729.190,5028154.655,1056.686,damage  
 165,3610730.477,5028488.654,1057.965,damage  
 166,3610746.616,5028486.416,1059.484,fnb e-w  
 167,3610730.218,5028817.725,1065.621,damage  
 168,3610746.006,5028821.790,1066.707,fnb e-w  
 169,3610727.520,5028998.574,1074.006,damage  
 170,3610746.023,5029000.223,1075.135,fnb e-w  
 171,3610719.384,5029051.753,1078.046,damage  
 172,3610696.638,5029089.681,1081.090,damage  
 173,3610685.583,5029113.391,1083.058,damage  
 174,3610690.262,5029175.821,1088.973,damage  
 175,3610720.166,5029172.845,1089.420,damage  
 176,3610744.147,5029143.985,1088.550,damage  
 177,3610742.055,5029075.904,1081.822,damage  
 178,3610745.245,5029177.777,1090.616,bc cp +1.0  
 179,3610726.302,5029180.428,1089.950,bc pp +1.0  
 180,3613382.019,5029192.232,1101.968,mag  
 181,3610743.885,5029211.641,1092.114,stn 0.9d  
 182,3610690.928,5029177.100,1088.866,gp gpw +1.0  
 183,3610743.906,5029224.697,1092.412,tie sir 12x2  
 184,3608124.836,5026605.803,1075.469,ir 58 flsh  
 185,3608105.752,5029231.049,1092.114,Cogo  
 186,3608120.069,5025290.278,1075.370,reading  
 187,3608134.370,5029236.852,1075.469,Cogo  
 188,3613337.576,5025364.869,1064.826,FOL  
 189,3613338.175,5025378.933,1065.132,FOL  
 190,3613337.903,5025386.558,1065.045,FOL  
 191,3613337.793,5025399.127,1065.330,FOL  
 192,3613338.405,5025409.939,1065.049,FOL  
 193,3613338.298,5025419.426,1065.182,FOL  
 194,3613338.415,5025432.356,1065.103,FOL  
 195,3613347.017,5025435.835,1064.670,FOL  
 196,3613347.338,5025425.503,1064.561,FOL



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197,3613347.006,5025413.883,1064.817,FOL  
 198,3613347.914,5025401.079,1064.988,FOL  
 199,3613346.634,5025385.924,1065.625,FOL  
 200,3613342.678,5025378.688,1065.270,FOL  
 201,3613343.251,5025365.417,1064.561,FOL  
 202,3613327.901,5025400.916,1061.582, TOP CLAYTILE  
 203,3613328.384,5025401.010,1060.415,FL 12"CLAY  
 204,3613305.552,5025401.316,1064.038,GS TILE LOCATE  
 205,3613262.989,5025401.224,1064.147,GS TILE LOCATE  
 206,3613217.936,5025401.353,1063.837,GS TILE LOCATE  
 207,3613154.862,5025401.531,1063.604,GS TILE LOCATE  
 208,3613093.866,5025400.926,1063.279,GS TILE LOCATE  
 209,3613027.406,5025399.928,1063.128,GS TILE LOCATE  
 210,3612961.901,5025399.295,1062.911,GS TILE LOCATE  
 211,3612900.078,5025398.083,1062.610,GS TILE LOCATE  
 212,3612870.371,5025397.503,1062.599,GS TILE LOCATE  
 213,3610781.318,5024180.965,1081.118,GRAV  
 214,3610867.242,5024181.732,1078.152,WCP  
 215,3611760.855,5024116.032,1066.473,FL 4"HICK INTK  
 216,3611761.044,5024116.985,1068.108,GS  
 217,3611759.787,5024128.204,1072.088,EOG  
 218,3611760.521,5024156.800,1071.886,EOG  
 219,3611737.819,5024169.926,1067.631,EOC BEEHIVE INTK  
 220,3611736.072,5024169.961,1067.641,EOC BEEHIVE INTK  
 221,3611736.026,5024168.300,1067.633,EOC BEEHIVE INTK  
 222,3611737.404,5024168.040,1067.649,EOC BEEHIVE INTK  
 223,3611285.815,5024180.372,1073.099,WCP  
 224,3611737.197,5024169.595,1066.303,FL 6"CLAY INTK  
 225,3611738.767,5024174.556,1067.644,GS TILELOCATE  
 226,3611776.129,5024190.360,1069.182,GS TILELOCATE  
 227,3611763.343,5024185.557,1069.017,GS TILELOCATE  
 228,3611754.799,5024182.128,1069.095,GS TILELOCATE  
 229,3611775.695,5024162.123,1067.895,FL CMP18  
 230,3611778.779,5024122.148,1068.057,FL CMP18  
 231,3611662.166,5024167.922,1066.003,FL 12"CLAY  
 232,3611682.273,5024167.971,1068.371,GS TILELOCATE  
 233,3611713.405,5024170.383,1068.094,GS TILELOCATE  
 234,3611730.412,5024172.252,1068.494,GS TILELOCATE  
 235,3611739.447,5024174.955,1066.395, TOP 12"CLAY @6"CONC TO INTK  
 236,3611786.028,5024195.851,1069.281,gs tile locate debris  
 237,3611810.943,5024214.361,1069.325,gs tile locate  
 238,3611836.701,5024238.881,1069.251,gs tile locate  
 239,3611868.701,5024276.661,1068.899,gs tile locate  
 240,3611896.372,5024316.684,1068.930,gs tile locate  
 241,3611927.043,5024361.240,1068.579,gs tile locate  
 242,3611957.024,5024406.514,1068.230,gs tile locate  
 243,3611985.586,5024451.003,1067.911,gs tile locate  
 244,3612022.842,5024508.258,1067.265,gs tile locate  
 245,3612045.514,5024569.183,1066.370,gs tile locate

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246,3612053.548,5024631.541,1066.092,gs tile locate  
247,3612055.545,5024691.771,1065.594,gs tile locate  
248,3612055.999,5024762.258,1065.431,gs tile locate  
249,3612055.275,5024824.249,1066.101,gs tile locate  
250,3612053.419,5024842.015,1066.351,gs tile locate  
251,3611663.694,5024167.785,1067.378,gs bgn televise  
252,3613325.442,5025139.286,1067.015,GS CORN DAMAGE 1  
253,3613328.839,5025195.589,1066.349,GS CORN DAMAGE 1  
254,3613329.990,5025252.853,1065.759,GS CORN DAMAGE 1  
255,3613330.252,5025310.421,1065.848,GS CORN DAMAGE 1  
256,3613330.537,5025361.091,1064.945,GS CORN DAMAGE 1  
257,3613330.133,5025407.852,1064.492,GS CORN DAMAGE 1  
258,3613312.183,5025401.548,1064.148,GS CORN DAMAGE 1  
259,3613307.073,5025394.266,1064.255,GS CORN DAMAGE 1  
260,3613306.969,5025377.661,1064.756,GS CORN DAMAGE 1  
261,3613324.268,5025345.702,1065.499,GS CORN DAMAGE 1  
262,3613324.073,5025293.404,1065.784,GS CORN DAMAGE 1  
263,3613323.570,5025239.809,1065.856,GS CORN DAMAGE 1  
264,3613320.948,5025156.840,1066.809,GS CORN DAMAGE 1  
265,3613319.382,5026092.582,1067.820,GS BEAN DAMAGE 1  
266,3613294.017,5026078.369,1067.931,GS BEAN DAMAGE 1  
267,3613254.527,5026047.817,1067.854,GS BEAN DAMAGE 1  
268,3613208.991,5026028.235,1067.656,GS BEAN DAMAGE 1  
269,3613156.458,5026011.479,1067.334,GS BEAN DAMAGE 1  
270,3613103.757,5025992.499,1066.841,GS BEAN DAMAGE 1  
271,3613053.047,5025969.281,1066.105,GS BEAN DAMAGE 1  
272,3613020.372,5025942.262,1065.510,GS BEAN DAMAGE 1  
273,3612995.905,5025910.790,1064.741,GS BEAN DAMAGE 1  
274,3612966.291,5025850.791,1065.485,GS BEAN DAMAGE 1  
275,3612933.366,5025848.272,1065.876,GS BEAN DAMAGE 1  
276,3612835.387,5025849.261,1066.136,GS BEAN DAMAGE 1  
277,3612733.767,5025849.600,1065.724,GS BEAN DAMAGE 1  
278,3612619.154,5025850.926,1066.056,GS BEAN DAMAGE 1  
279,3612481.483,5025851.414,1064.621,GS BEAN DAMAGE 1  
280,3612329.685,5025852.569,1063.809,GS BEAN DAMAGE 1  
281,3612203.936,5025853.671,1063.823,GS BEAN DAMAGE 1  
282,3612056.186,5025854.885,1064.277,GS BEAN DAMAGE 1  
283,3611920.231,5025856.205,1063.448,GS BEAN DAMAGE 1  
284,3611870.019,5025858.737,1063.541,GS BEAN DAMAGE 1  
285,3611836.709,5025863.580,1063.833,GS BEAN DAMAGE 1  
286,3611820.196,5025844.850,1063.460,GS BEAN1/CORN2 DAMAGE  
287,3611818.122,5025815.272,1063.417,GS CORN DAMAGE 2  
288,3611823.124,5025812.309,1063.354,GS CORN DAMAGE 2  
289,3611822.952,5025730.878,1063.238,GS CORN DAMAGE 2  
290,3611820.290,5025727.716,1063.297,GS CORN DAMAGE 2  
291,3611820.237,5025697.753,1063.380,GS CORN DAMAGE 2  
292,3611839.552,5025683.183,1063.041,GS CORN DAMAGE 2  
293,3611965.799,5025681.025,1062.006,GS CORN DAMAGE 2  
294,3611994.490,5025650.904,1061.879,GS CORN DAMAGE 2



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295,3612010.069,5025610.847,1061.762,GS	CORN	DAMAGE	2
296,3612015.603,5025570.400,1061.595,GS	CORN	DAMAGE	2
297,3612016.833,5025547.954,1061.590,GS	CORN	DAMAGE	2
298,3611997.635,5025547.324,1061.653,GS	CORN	DAMAGE	2
299,3611996.785,5025538.079,1061.537,GS	CORN	DAMAGE	2
300,3612003.186,5025843.395,1063.440,GS	BEAN	DAMAGE	1
301,3612163.532,5025842.907,1063.849,GS	BEAN	DAMAGE	1
302,3611938.802,5025525.947,1061.747,GS	CORN	DAMAGE	2
303,3611944.114,5025503.914,1061.798,GS	CORN	DAMAGE	2
304,3611955.785,5025481.290,1061.672,GS	CORN	DAMAGE	2
305,3611963.111,5025466.235,1061.582,GS	CORN	DAMAGE	2
306,3611978.062,5025457.648,1061.407,GS	CORN	DAMAGE	2
307,3612010.089,5025439.343,1061.475,GS	CORN	DAMAGE	2
308,3612043.455,5025420.557,1061.385,GS	CORN	DAMAGE	2
309,3612097.376,5025401.776,1061.538,GS	CORN	DAMAGE	2
310,3612122.462,5025394.610,1061.537,GS	CORN	DAMAGE	2
311,3612118.482,5025382.741,1061.493,GS	CORN	DAMAGE	2
312,3612126.103,5025380.410,1061.474,GS	CORN	DAMAGE	2
313,3612128.168,5025391.499,1061.405,GS	CORN	DAMAGE	2
314,3612159.467,5025382.287,1061.599,GS	CORN	DAMAGE	2
315,3612173.752,5025379.846,1061.609,GS	CORN	DAMAGE	2
316,3612176.266,5025392.261,1061.675,GS	CORN	DAMAGE	2
317,3612192.357,5025391.757,1061.711,GS	CORN	DAMAGE	2
318,3612194.010,5025408.356,1061.600,GS	CORN	DAMAGE	2
319,3612198.388,5025481.643,1061.382,GS	CORN	DAMAGE	2
320,3612195.321,5025492.208,1061.343,GS	CORN	DAMAGE	2
321,3612161.026,5025509.843,1061.332,GS	CORN	DAMAGE	2
322,3612084.139,5025510.311,1061.476,GS	CORN	DAMAGE	2
323,3612034.209,5025548.104,1061.515,GS	CORN	DAMAGE	2
324,3612025.720,5025606.259,1061.555,GS	CORN	DAMAGE	2
325,3612006.828,5025656.984,1061.820,GS	CORN	DAMAGE	2
326,3611992.775,5025677.804,1061.973,GS	CORN	DAMAGE	2
327,3611972.952,5025695.686,1062.109,GS	CORN	DAMAGE	2
328,3611867.280,5025696.645,1062.723,GS	CORN	DAMAGE	2
329,3611852.019,5025699.189,1062.996,GS	CORN	DAMAGE	2
330,3611837.401,5025712.608,1063.177,GS	CORN	DAMAGE	2
331,3611835.222,5025721.136,1063.194,GS	CORN	DAMAGE	2
332,3611835.212,5025757.610,1063.147,GS	CORN	DAMAGE	2
333,3611847.379,5025757.709,1062.967,GS	CORN	DAMAGE	2
334,3611871.843,5025753.122,1062.648,GS	CORN	DAMAGE	2
335,3611874.806,5025770.591,1062.859,GS	CORN	DAMAGE	2
336,3611834.841,5025768.434,1063.145,GS	CORN	DAMAGE	2
337,3611835.085,5025786.417,1063.274,GS	CORN	DAMAGE	2
338,3611861.868,5025787.290,1063.113,GS	CORN	DAMAGE	2
339,3611901.292,5025787.054,1062.876,GS	CORN	DAMAGE	2
340,3611924.618,5025786.588,1062.823,GS	CORN	DAMAGE	2
341,3611959.853,5025786.494,1062.610,GS	CORN	DAMAGE	2
342,3611960.550,5025793.451,1062.725,GS	CORN	DAMAGE	2
343,3611914.254,5025793.760,1062.909,GS	CORN	DAMAGE	2

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344,3611834.906,5025794.612,1063.425,GS CORN DAMAGE 2  
 345,3611837.214,5025835.922,1063.493,GS CORN DAMAGE 2  
 346,3611841.496,5025842.377,1063.743,GS CORN DAMAGE 2  
 347,3611848.359,5025844.903,1063.448,GS BEAN1/CORN2 DAMAGE  
 348,3612363.833,5025841.241,1063.703,GS BEAN DAMAGE 1  
 349,3612519.906,5025839.965,1065.581,GS BEAN DAMAGE 1  
 350,3612662.705,5025839.151,1066.121,GS BEAN DAMAGE 1  
 351,3612822.826,5025837.681,1066.224,GS BEAN DAMAGE 1  
 352,3612993.134,5025836.524,1063.772,GS BEAN DAMAGE 1  
 353,3613010.920,5025897.667,1064.100,GS BEAN DAMAGE 1  
 354,3613026.924,5025927.167,1064.495,GS BEAN DAMAGE 1  
 355,3613063.791,5025962.206,1065.534,GS BEAN DAMAGE 1  
 356,3613123.491,5025987.251,1066.739,GS BEAN DAMAGE 1  
 357,3613215.260,5026017.195,1067.367,GS BEAN DAMAGE 1  
 358,3613255.099,5026033.322,1067.882,GS BEAN DAMAGE 1  
 359,3613291.440,5026055.604,1068.057,GS BEAN DAMAGE 1  
 360,3613308.716,5026072.685,1067.796,GS BEAN DAMAGE 1  
 361,3611807.128,5024179.743,1069.707,GS BEAN DAMAGE 2  
 362,3611807.511,5024205.868,1069.525,GS BEAN DAMAGE 2  
 363,3611773.044,5024205.956,1069.285,GS BEAN DAMAGE 2  
 364,3611772.629,5024179.468,1069.244,GS BEAN DAMAGE 2  
 365,3611420.994,5024166.126,1070.135,gs tile locate  
 366,3610877.829,5024172.845,1072.540,fl 12 vcp  
 367,3611004.766,5024168.777,1076.314,GS TILE LOCATE  
 368,3610780.475,5024176.691,1081.202,GS TILE LOCATE lat 1  
 369,3610745.385,5024185.485,1073.260,fl 10 clay  
 370,3610731.977,5024189.648,1074.838,top 6" vcp end sse  
 371,3610723.432,5024193.682,1077.814,gs tile locate lat 3  
 372,3610699.198,5024204.419,1077.851,GS TILE LOCATE  
 373,3610663.693,5024216.153,1078.463,GS TILE LOCATE  
 374,3610631.328,5024225.297,1078.691,GS TILE LOCATE  
 375,3610571.166,5024231.812,1078.927,GS TILE LOCATE  
 376,3610514.654,5024232.289,1079.249,GS TILE LOCATE  
 377,3610488.920,5024230.942,1079.279,GS TILE LOCATE end  
 378,3610658.913,5024217.869,1078.296,GS TILE LOCATE lat  
 379,3614977.645,5029155.400,1093.738,922 6" cmp fl  
 380,3614977.568,5029159.219,1094.050,531 6"  
 381,3615001.288,5029204.084,1096.287,922 6" hick  
 382,3614178.858,5029158.883,1089.078,962 8"  
 383,3614182.984,5029159.147,1088.848,952 fl  
 384,3613091.049,5029220.989,1085.891,922 6" cmp fl  
 385,3613092.172,5029227.725,1088.782,922 5" hdpe  
 386,3612041.404,5029172.589,1071.820,963 6"  
 387,3615048.527,5029193.040,1100.049,700 -40"  
 388,3615019.041,5029193.061,1099.751,700 -11-3"  
 389,3614997.961,5029192.823,1099.620,700 -12'  
 390,3614976.254,5029193.703,1099.440,700 -8'10"  
 391,3614951.315,5029193.683,1099.374,700 -3'  
 392,3614242.019,5029195.844,1096.399,700 -34"



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393,3614181.655,5029195.146,1096.557,700 -13'4"  
394,3614159.950,5029196.109,1096.495,700 -13'7"  
395,3614137.128,5029195.851,1096.574,700 -11.5'  
396,3614109.446,5029196.837,1096.493,700 -31"  
397,3612089.676,5029192.323,1079.377,700 -6'4"  
398,3612050.868,5029191.569,1079.246,700 -12'10"  
399,3612034.216,5029192.217,1079.233,700 -13'9"  
400,3611953.245,5025489.282,1057.912,vcp fl  
401,3611946.368,5025513.371,1058.054,vcp fl  
402,3611946.438,5025512.973,1059.737,top 18 conc  
403,3611948.530,5025506.310,1059.730,top 18 conc  
404,3611949.843,5025507.455,1059.512,top 15 conc  
405,3611957.254,5025503.587,1059.549,top 15 conc  
406,3611965.065,5025499.490,1059.470,top 15 conc  
407,3611972.098,5025495.678,1059.486,top 15 conc  
408,3611979.283,5025491.916,1059.444,top 15 conc  
409,3611986.381,5025488.171,1059.450,top 15 conc  
410,3611993.441,5025484.492,1059.453,top 15 conc  
411,3612000.614,5025480.783,1059.522,top 15 conc  
412,3612007.803,5025477.232,1059.490,top 15 conc  
413,3612014.955,5025473.358,1059.544,top 15 conc  
414,3612022.013,5025469.625,1059.524,top 15 conc  
415,3612029.059,5025465.935,1059.501,top 15 conc  
416,3612036.341,5025462.348,1059.612,top 15 conc  
417,3612043.369,5025458.783,1059.573,top 15 conc  
418,3612050.566,5025454.937,1059.550,top 15 conc  
419,3612057.849,5025451.546,1059.580,top 15 conc  
420,3612065.221,5025447.910,1059.592,top 15 conc  
421,3612072.323,5025444.533,1059.562,top 15 conc  
422,3612079.595,5025441.152,1059.553,top 15 conc  
423,3612086.914,5025437.857,1059.614,top 15 conc  
424,3612094.325,5025434.768,1059.582,top 15 conc  
425,3612101.777,5025431.642,1059.662,top 15 conc  
426,3612109.336,5025428.788,1059.662,top 15 conc  
427,3612116.954,5025425.961,1059.659,top 15 conc  
428,3612124.363,5025423.536,1059.621,top 15 conc  
429,3612132.164,5025420.902,1059.691,top 15 conc  
430,3612139.835,5025418.639,1059.703,top 15 conc  
431,3612147.596,5025416.402,1059.688,top 15 conc  
432,3612155.312,5025414.332,1059.718,top 15 conc  
433,3612163.137,5025412.357,1059.687,top 15 conc  
434,3612171.118,5025410.611,1059.726,top 15 conc  
435,3612178.819,5025409.062,1059.726,top 15 conc  
436,3612186.769,5025407.645,1059.711,top 15 conc  
437,3612193.672,5025406.658,1059.761,top 15 conc  
438,3612202.792,5025405.355,1059.708,top 15 conc  
439,3612210.640,5025404.358,1059.721,top 15 conc  
440,3612218.518,5025403.392,1059.730,top 15 conc  
441,3612226.522,5025402.558,1059.740,top 15 conc

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442,3612234.532,5025401.897,1059.746,top 15 conc  
443,3612250.573,5025400.525,1059.760,top 15 conc  
444,3612258.647,5025399.987,1059.765,top 15 conc  
445,3612266.603,5025399.561,1059.773,top 15 conc  
446,3612274.652,5025399.079,1059.753,top 15 conc  
447,3612282.712,5025398.896,1059.764,top 15 conc  
448,3612290.663,5025398.732,1059.808,top 15 conc  
449,3612298.677,5025398.444,1059.744,top 15 conc  
450,3612306.760,5025398.241,1059.790,top 15 conc  
451,3612314.777,5025397.975,1059.837,top 15 conc  
452,3612322.836,5025397.815,1059.814,top 15 conc  
453,3612330.843,5025397.770,1059.873,top 15 conc  
454,3612338.881,5025397.841,1059.845,top 15 conc  
455,3612346.830,5025397.716,1059.855,top 15 conc  
456,3612354.866,5025397.589,1059.880,top 15 conc  
457,3612362.896,5025397.441,1059.915,top 15 conc  
458,3612370.927,5025397.495,1059.936,top 15 conc  
459,3612378.983,5025397.465,1059.916,top 15 conc  
460,3612387.014,5025397.475,1059.946,top 15 conc  
461,3612395.020,5025397.540,1059.909,top 15 conc  
462,3612403.113,5025397.720,1059.928,top 15 conc  
463,3612411.134,5025397.876,1059.923,top 15 conc  
464,3612419.184,5025398.044,1059.925,top 15 conc  
465,3612427.259,5025398.284,1059.929,top 15 conc  
466,3612435.305,5025398.480,1059.964,top 15 conc  
467,3612443.343,5025398.636,1059.933,top 15 conc  
468,3612451.344,5025398.706,1059.985,top 15 conc  
469,3612459.438,5025398.798,1059.931,top 15 conc  
470,3612467.403,5025398.916,1059.997,top 15 conc  
471,3612475.484,5025399.010,1059.928,top 15 conc  
472,3612483.635,5025398.923,1060.023,top 15 conc  
473,3612491.634,5025398.874,1060.011,top 15 conc  
474,3612499.720,5025398.820,1059.991,top 15 conc  
475,3612507.665,5025398.846,1060.049,top 15 conc  
476,3612515.716,5025398.901,1059.953,top 15 conc  
477,3612523.793,5025398.981,1060.053,top 15 conc  
478,3612531.850,5025399.125,1060.057,top 15 conc  
479,3612538.811,5025399.199,1060.073,top 15 conc  
480,3612539.895,5025399.239,1060.020,top 15 conc  
481,3612547.967,5025399.190,1060.028,top 15 conc  
482,3612556.014,5025399.253,1060.032,top 15 conc  
483,3612563.971,5025399.341,1060.012,top 15 conc  
484,3612572.040,5025399.424,1060.011,top 15 conc  
485,3612580.093,5025399.311,1060.035,top 15 conc  
486,3612588.149,5025399.265,1060.075,top 15 conc  
487,3612596.091,5025399.219,1060.064,top 15 conc  
488,3612604.303,5025399.180,1060.066,top 15 conc  
489,3612612.248,5025399.265,1060.090,top 15 conc  
490,3612620.252,5025399.300,1060.091,top 15 conc



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491,3612628.309,5025399.341,1060.075,top 15 conc  
492,3612636.362,5025399.419,1060.099,top 15 conc  
493,3612644.417,5025399.292,1060.135,top 15 conc  
494,3612660.505,5025399.080,1060.168,top 15 conc  
495,3612668.505,5025399.411,1060.157,top 15 conc  
496,3612676.481,5025399.388,1060.185,top 15 conc  
497,3612684.613,5025399.494,1060.146,top 15 conc  
498,3612692.648,5025399.507,1060.244,top 15 conc  
499,3612700.662,5025399.544,1060.203,top 15 conc  
500,3612708.636,5025399.656,1060.235,top 15 conc  
501,3612716.743,5025399.695,1060.214,top 15 conc  
502,3612724.796,5025399.988,1060.208,top 15 conc  
503,3612732.787,5025399.927,1060.248,top 15 conc  
504,3612739.903,5025400.057,1060.319,top 15 conc  
505,3611871.995,5025758.423,1059.314,top 18 hdpe  
506,3611878.404,5025738.189,1059.387,top 18 vcp  
507,3611870.903,5025761.304,1062.660,gs  
508,3611882.126,5025728.765,1062.624,gs  
509,3612740.786,5025400.155,1060.295,top 15 conc  
510,3612748.817,5025399.915,1060.307,top 15 conc  
511,3612756.854,5025400.182,1060.331,top 15 conc  
512,3612764.806,5025400.236,1060.321,top 15 conc  
513,3612772.855,5025400.219,1060.363,top 15 conc  
514,3612780.995,5025400.323,1060.357,top 15 conc  
515,3612788.897,5025400.434,1060.404,top 15 conc  
516,3612796.928,5025400.574,1060.404,top 15 conc  
517,3612804.844,5025400.742,1060.415,top 15 conc  
518,3612812.923,5025400.944,1060.437,top 15 conc  
519,3612820.975,5025401.323,1060.466,top 15 conc  
520,3612829.118,5025401.525,1060.476,top 15 conc  
521,3612837.169,5025401.760,1060.524,top 15 conc  
522,3612845.156,5025401.972,1060.514,top 15 conc  
523,3612852.152,5025402.319,1060.539,top 15 conc  
524,3612860.231,5025405.358,1059.747,top 6 hdpe  
525,3612853.036,5025402.478,1060.536,top 15 conc  
526,3612861.030,5025402.575,1060.563,top 15 conc  
527,3612859.334,5025403.812,1059.835,top 6 hdpe  
528,3612869.190,5025402.870,1060.553,top 15 conc  
529,3612877.250,5025403.125,1060.587,top 15 conc  
530,3612885.169,5025403.376,1060.602,top 15 conc  
531,3612893.211,5025403.493,1060.634,top 15 conc  
532,3612901.092,5025403.534,1060.664,top 15 conc  
533,3612909.170,5025403.852,1060.675,top 15 conc  
534,3612917.359,5025403.715,1060.689,top 15 conc  
535,3612925.243,5025403.712,1060.724,top 15 conc  
536,3612933.272,5025403.731,1060.696,top 15 conc  
537,3612934.684,5025403.699,1060.822,top 15 conc reducer  
538,3612935.798,5025403.761,1060.615,top 12 conc reducer  
539,3612937.299,5025403.715,1060.579,top 12 conc

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540,3612945.282,5025403.825,1060.600,top 12 conc  
 541,3612953.196,5025403.799,1060.626,top 12 conc  
 542,3612961.217,5025403.667,1060.646,top 12 conc  
 543,3612969.251,5025403.683,1060.655,top 12 conc  
 544,3612977.276,5025403.766,1060.673,top 12 conc  
 545,3612985.270,5025403.695,1060.709,top 12 conc  
 546,3612993.330,5025403.862,1060.749,top 12 conc  
 547,3613001.339,5025403.766,1060.778,top 12 conc  
 548,3613009.349,5025403.954,1060.753,top 12 conc  
 549,3613016.333,5025404.057,1060.817,top 12 conc  
 550,3613065.272,5025404.788,1060.884,top 12 conc  
 551,3613073.077,5025404.798,1060.942,top 12 conc  
 552,3613129.429,5025405.633,1061.088,top 12 conc  
 553,3613137.160,5025405.711,1061.150,top 12 conc  
 554,3613225.165,5025403.891,1061.294,top 12 conc  
 555,3613233.135,5025403.496,1061.340,top 12 conc  
 556,3613338.769,5025403.516,1062.226,fo line  
 557,3613347.816,5025401.575,1061.250,tell line  
 558,3613305.138,5025401.137,1061.512,top 12 conc  
 559,3613313.136,5025401.230,1061.528,top 12 conc  
 560,3613321.058,5025401.051,1061.534,top 12 conc  
 561,3613328.971,5025401.046,1061.573,top 12 conc  
 562,3613352.040,5025400.110,1061.579,top 12 vcp  
 563,3613349.845,5025398.626,1061.331,top 5 vcp  
 564,3613336.828,5025400.513,1061.677,top 12 vcp  
 565,3613342.424,5025400.439,1061.680,top 12 conc  
 566,3613342.638,5025400.513,1061.680,top 12 hdpe  
 567,3613344.031,5025400.574,1060.329,top 12 fl intake  
 568,3613345.646,5025400.480,1061.729,top 12 hdpe  
 569,3613351.406,5025400.250,1061.640,top 12 hdpe  
 570,3613349.808,5025399.641,1061.244,top 6 hdpe  
 571,3611880.861,5025738.053,1059.412,top 18 vcp lat  
 572,3611648.419,5024167.854,1067.151,top 12 vcp start repair  
 573,3611558.908,5024167.282,1067.441,top 12 hdpe  
 574,3612012.778,5029191.845,1079.246,700 -12'8"  
 575,3611947.823,5025487.810,1059.313,top 5" clay tile  
 576,3612286.050,5025390.141,1059.134,top 6" ads tile  
 577,3612372.900,5025389.073,1059.648,fl 5" clay tile  
 578,3612397.370,5025389.460,1059.588,top 5" plastic  
 579,3611683.328,5024168.057,1066.854,begin repair  
 580,3611695.912,5024168.878,1066.738,top 12" hdpe  
 581,3611715.696,5024171.484,1066.596,top 12" hdpe  
 582,3611735.254,5024175.078,1066.357,top 12" hdpe  
 583,3611749.688,5024178.911,1066.183,end repair  
 584,3611738.700,5024175.367,1066.004,connection for intake  
 585,3611738.566,5024173.127,1066.304,connection for intake  
 586,3611856.145,5024260.554,1065.658,begin repair  
 587,3611862.242,5024269.031,1065.506,end repair  
 588,3611950.786,5024397.856,1064.713,begin repair



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589,3611955.457,5024404.765,1064.666,end repair  
590,3611974.400,5024434.106,1064.451,begin repair  
591,3611983.567,5024448.078,1064.108,end repair  
592,3612053.306,5024630.655,1063.090,begin repair  
593,3612053.680,5024639.123,1062.955,end repair  
594,3612055.439,5024741.877,1062.412,begin repair  
595,3612055.793,5024760.650,1062.311,end repair  
596,3611538.718,5024167.382,1067.492,top 12 hdpe  
597,3611519.145,5024166.988,1067.549,top 12 hdpe  
598,3611499.166,5024166.559,1067.592,top 12 hdpe  
599,3611479.463,5024165.998,1067.667,top 12 hdpe  
600,3611459.318,5024165.989,1067.760,top 12 hdpe  
601,3611431.599,5024165.636,1067.985,top 12 vcp end repair  
602,3611856.151,5024260.502,1065.629,top 15 vcp repair  
603,3611862.296,5024268.974,1065.521,top 15 vcp repair  
604,3611923.563,5024356.552,1065.209,top 15 vcp repair  
605,3611893.856,5024312.412,1065.420,top 15 vcp repair  
606,3610875.022,5024172.919,1073.703,begin repair  
607,3610864.362,5024173.011,1073.958,end repair  
608,3610729.983,5024191.405,1074.318,end repair  
609,3610759.609,5024180.856,1073.999,begin repair  
610,3610656.138,5024218.580,1074.589,begin repair  
611,3610646.237,5024222.023,1074.739,end repair  
612,3610649.434,5024224.039,1075.262,5" clay plugged  
613,3610495.640,5024231.013,1076.083,begin repair  
614,3610484.989,5024230.100,1076.186,end repair  
615,3610486.327,5024226.305,1076.319,4" plastic tile active  
616,3611969.732,5029194.712,1079.408,700 -7'4"  
617,3613035.358,5029183.687,1092.763,700 -6'4"  
618,3613060.511,5029187.838,1093.163,700 -11'6"  
619,3613078.571,5029188.109,1093.415,700 -15'4"  
620,3613100.820,5029186.882,1093.559,700 -15'6"  
1000,3612064.579,5025432.617,1058.159,FL CLAY TILE  
1001,3612060.546,5025434.400,1061.319,GS  
1002,3612070.722,5025430.155,1061.495,GS  
1003,3612052.338,5025439.666,1061.360,GS TILELOCATE  
1004,3612038.371,5025447.158,1061.407,GS PROBED TILE  
1005,3612024.560,5025455.319,1061.392,GS PROBED TILE  
1006,3612012.477,5025462.545,1061.438,GS PROBED TILE  
1007,3611998.726,5025470.327,1061.418,GS PROBED TILE  
1008,3611985.411,5025478.195,1061.530,GS PROBED TILE  
1009,3611973.507,5025485.530,1061.588,GS PROBED TILE  
1010,3611964.542,5025490.591,1061.540,GS PROBED TILE  
1011,3611956.291,5025496.681,1061.617,GS PROBED TILE  
1012,3611963.292,5025491.019,1058.109,FL 15"CLAY  
1013,3611960.720,5025492.848,1061.648,GS  
1014,3611952.035,5025498.680,1061.680,GS DD8 Y NORTH LOCATE  
1015,3611948.316,5025506.481,1058.097,FL 18"CLAY DD8  
1016,3611947.341,5025510.097,1061.699,GS

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1017,3611943.366,5025524.853,1061.656,GS TILE LOCATE  
1018,3611930.464,5025567.825,1061.931,GS TILE LOCATE  
1019,3611912.066,5025625.752,1062.119,GS TILE LOCATE  
1020,3611895.995,5025680.320,1062.329,GS TILE LOCATE  
1021,3611894.063,5025686.801,1062.406,GS TILE LOCATE  
1022,3611871.027,5025759.937,1062.734,GS TILE LOCATE  
1023,3611870.383,5025763.438,1062.562,GS TILE INTAKE  
1024,3611856.548,5025809.799,1063.001,GS TILE LOCATE  
1025,3611952.921,5025489.930,1061.571,GS TILE LOCATE DD122  
1026,3611967.528,5025488.381,1058.061,FL EXPOSED 15"CLAY  
1027,3611972.712,5025485.459,1058.090,FL EXPOSED 15"CLAY  
1028,3611978.265,5025482.317,1058.119,FL EXPOSED 15"CLAY  
1029,3611985.567,5025477.985,1058.117,FL EXPOSED 15"CLAY  
1030,3611992.658,5025473.581,1058.237,FL EXPOSED 15"CLAY  
1031,3612001.960,5025467.917,1058.205,FL EXPOSED 15"CLAY  
1032,3612009.183,5025463.816,1058.115,FL EXPOSED 15"CLAY  
1033,3612015.002,5025460.606,1058.110,FL EXPOSED 15"CLAY  
1034,3612022.106,5025456.568,1058.092,FL EXPOSED 15"CLAY  
1035,3612029.007,5025452.334,1058.031,FL EXPOSED 15"CLAY  
1036,3612034.878,5025449.127,1057.998,FL EXPOSED 15"CLAY  
1037,3612042.189,5025445.240,1057.991,FL EXPOSED 15"CLAY  
1038,3612051.151,5025439.906,1058.023,FL EXPOSED 15"CLAY  
1039,3612064.745,5025432.360,1058.204,FL EXPOSED 15"CLAY  
1040,3612068.031,5025431.080,1058.116,FL EXPOSED 15"CLAY  
1041,3612074.153,5025429.062,1058.116,FL EXPOSED 15"CLAY  
1042,3612083.062,5025425.722,1058.234,FL EXPOSED 15"CLAY@OLD INTK  
1043,3612083.308,5025431.227,1061.468,gs  
1044,3612090.403,5025428.236,1061.571,gs  
1045,3612118.674,5025413.184,1061.450,gs  
1046,3612126.811,5025413.376,1061.401,gs  
1047,3612090.985,5025422.874,1058.167,FL EXPOSED 15"CLAY  
1048,3612098.638,5025419.962,1058.240,FL EXPOSED 15"CLAY  
1049,3612110.187,5025416.695,1061.539,GS  
1050,3612106.274,5025417.354,1058.225,FL EXPOSED 15"CLAY  
1051,3612113.829,5025414.576,1058.183,FL EXPOSED 15"CLAY  
1052,3612119.441,5025412.560,1058.257,FL EXPOSED 15"CLAY @COLLAPSETOPPIPE  
1053,3612124.218,5025410.869,1058.313,FL EXPOSED 15"CLAY @ S SIDE PLASTIC REPAIR  
1054,3612137.750,5025406.028,1058.284,FL EXPOSED 15"CLAY@2.0'NOFPLASTICREPAIR  
1055,3612145.550,5025403.959,1058.317,FL EXPOSED 15"CLAY  
1056,3612152.431,5025402.358,1061.611,GS  
1057,3612157.338,5025400.810,1061.538,GS  
1058,3612164.515,5025399.598,1061.659,GS  
1059,3612175.368,5025399.780,1061.636,GS  
1060,3612186.347,5025398.115,1061.646,GS  
1061,3612154.521,5025401.681,1058.253,FL EXPOSED 15"CLAY  
1062,3612165.392,5025399.929,1058.139,FL EXPOSED 15"CLAY@NSIDE TOPCOLLAPSE  
1063,3612194.676,5025398.172,1061.653,GS  
1064,3612203.789,5025397.432,1061.777,GS  
1065,3612216.176,5025396.219,1061.757,GS



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1066,3612227.192,5025395.815,1061.718,GS  
1067,3612167.185,5025399.639,1058.218,FL EXPOSED 15"CLAY  
1068,3612273.844,5025393.047,1061.677,GS ABOVE TILE  
1069,3612316.448,5025391.083,1061.774,GS ABOVE TILE  
1070,3612359.390,5025390.460,1061.998,GS ABOVE TILE  
1071,3612393.052,5025390.973,1062.234,GS ABOVE TILE  
1072,3612395.474,5025390.623,1062.167,GS ABOVE LATERAL LEFT  
1073,3612371.868,5025390.691,1062.119,GS ABOVE LATERAL LEFT CAPPED  
1074,3612285.712,5025392.472,1061.740,GS ABOVE LATERAL LEFT  
1075,3612441.577,5025391.631,1062.324,GS ABOVE TILE  
1076,3612491.714,5025392.546,1062.564,GS ABOVE TILE  
1077,3612541.411,5025392.909,1062.375,GS ABOVE TILE  
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8070\_GNSS,3618716.220,5034450.740,1112.480,Autonomous Setup



# Drainage Utility Permit Application

## Hardin County

**Applicant:** Heart of Iowa Communication Coop - Jay Duncan

**Contact Email:** jduncan@heartofiowa.coop

**Contact Phone:** (641) 486-2211

**Utility Type:** N/A - Utility Permits Only

**Drainage District:** DDs\DD 44 (51069)

**Description of Work:** DDs 44, 62, 1, 128, 78, 63, 8, 93 & 94 - Heart of Iowa - Install fiber optic cable in rural areas of Eldora & Steamboat Rock. Will work with CGA on facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage Districts. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

\_\_\_\_\_  
Applicant Signature

\_\_\_\_\_  
Date

**Submit Form and Location Plan 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  
drainage@hardincountyia.gov

*For Office Use Only*

### Application Approval:

**By:**  **Date:** 6-7-2020

*Board of Supervisor Chairman, Acting as Drainage District Trustee*

**APPROVED PERMIT #** 2020-12

- ☐ Application in TCM
- ☐ GIS Annotation
- ☐ Approval Emailed





# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant: Heart of Iowa Communications Cooperative  
Company Name  
PO Box 130  
Address  
Union IA 50258-0130  
City State Zip  
Applicant Contact: Jay Duncan ( 641 ) 486 - 2211  
Name Phone  
jduncan@heartofiowa.coop  
Email  
Utility Type: Fiber Optic  
Drainage District(s) Crossed: 44, 62, 1, 128, 78, 63, 8, 93 & 94  
Facilities Crossed (specific tile, open ditch): tile and open ditch  
Description of Work: Install fiber optic cable in rural areas of Eldora and Steamboat Rock. Will work with CGA on  
*(Location plan of proposed utility must be attached.)* facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage District. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

[Signature]  
Applicant Signature

6/10/2020

Date

Submit Form and Location Plan To:

Hardin County Auditor's Office  
Attn: Drainage Clerk  
1215 Edgington Ave, Suite 1  
Eldora, IA 50627  
Fax (641) 939-8225  
[drainage@hardincountyia.gov](mailto:drainage@hardincountyia.gov)

For Office Use Only

Application Approval:

By: [Signature]  
Board of Supervisor Chairman, Acting as Drainage District Trustee

Date: 6-7-2020

APPROVED PERMIT #: \_\_\_\_\_



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## REQUIREMENTS FOR CONSTRUCTION ON, OVER, ACROSS OR BENEATH ESTABLISHED DRAINAGE DISTRICT

Upon issuance of a permit for utilities on, over, across or beneath established Hardin County Drainage Districts, the applicant shall be governed by these requirements and shall comply with all conditions contained herein.

1. The Applicant shall furnish the Drainage District, or its representative, plats showing the exact location of the proposed construction. If it is found that such locations are in conflict with the present or proposed facilities and that a more desirable location is possible, the Applicant shall review such possible alignment changes. **No construction is to commence with the drainage facility without an approved application.**
2. Applicant shall comply with Iowa One-Call requirements prior to commencing any work.
3. The Drainage District shall provide Applicant access to maps or other information regarding the location of all known drainage district facilities so that reasonable care may be taken by Applicant to avoid un-necessary damage to said drainage district facilities.
4. The Applicant shall hold the Drainage District harmless from any damage that may result to the Drainage District facility because of the construction or maintenance of the utility, and shall reimburse the Drainage District for any expenditures that the Drainage District may have to make on said Drainage District facilities resulting from Applicant's construction and installation of utilities, or their subsequent repair or modification.
5. The Applicant shall take all reasonable precaution during the construction of said utility to protect and safeguard the lives and property of the public and adjacent property owners and shall hold the Drainage District harmless from any damages or losses that may be sustained by adjacent property owners on account of such construction operations. Further, Applicant agrees to replace, repair or reimburse all damages to private property occasioned by Applicant's installation of subsequent modification or repairs.
6. The Drainage District assumes no responsibility for damages to the Applicants property occasioned by any construction or maintenance operation of said Drainage District facilities, subsequent to Applicants installation.
7. A copy of a certificate of insurance naming the County/Drainage District as additional insured for their permit work shall be provided to the County Auditor prior to installation. The limit of liability under the insurance policy shall not be less than \$1,000,000 per occurrence.
8. The Applicant agrees to give the Drainage District twenty-four (24) hours (Saturday and Sunday excluded) notice of its intention to commence construction on any lands within the jurisdiction of the Drainage District. Said notice shall be made in writing to the County Auditor or to the designated Drainage District representative.
9. The Applicant agrees to place permanent, visible markers or monuments at locations where utility crosses Drainage District facilities. These monuments or markers shall identify the owners name, address and phone number.
10. The Drainage District Trustees may appoint a representative to inspect and approve all construction across Drainage District facilities as part of this permit. All compensation, wages, mileage and other expenses for this representative will be paid by the Applicant. It will be the responsibility of the Applicant to make all contacts with private parties (adjacent owners/operators) to determine the location of private drainage facilities. Said representative will also inspect all crossing of Drainage District facilities and may, if required, observe the crossing of private drainage facilities, and shall have the authority to require the Applicant to excavate and expose the crossing of any Drainage District facility where the representative believes it prudent to visually examine Applicants crossing of the Drainage District facility. Further, said representative has the authority to suspend construction and installation by the Applicant within any Drainage District jurisdiction by verbal order to the contractor at the site and a telephone call to Applicants contact person listed on page 1 within six (6) hours of the verbal order.





# HARDIN COUNTY

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(641) 939-8108

11. The construction and maintenance of Applicants installation shall be carried on in such a manner as to not interfere with or interrupt the function of said Drainage District facilities without the express written consent of the Drainage District Representative. In the event it becomes necessary to temporarily stop the flow of water, the following shall be completed by the Applicant:
  - a. If the crossing involves a tile line, the replacement of tile with approved materials, in the manner approved by the Drainage Districts designated representative, shall be performed as rapidly as possible. If the approved method of repair is impossible and the volume of water flowing in the tile is sufficient to create the possibility of crop loss or property damage, the Contractor will be permitted to temporarily block the tile line to prevent the flow of this tile water into the pipeline, or tile line ditch. In the event this tile line is so temporarily blocked, the Contractor will be expected to provide sufficient pumping equipment to pump the impounded tile water across the construction ditch to the undisturbed tile line. Such temporary blockages of said Drainage District tile lines will be removed as rapidly as possible and any tile repairs caused by this blockage will be immediately repaired at the Applicants expense.
  - b. If the crossing involves an open ditch that is carrying sufficient flow of water to make it necessary to place a temporary dam across said open ditch, such temporary dams may be constructed only upon approval from the Drainage District designated representative. The maximum elevation of this impounded water shall be determined by the designated Drainage District representative and all excess water must be allowed to flow across the construction ditch through either a closed metal culvert pipe or by pumping. All temporary dam structures are to be removed as soon as the crossing is completed. The construction and removal of these dams shall be in such a manner that the smooth and efficient function of the drainage ditch is not impaired, with all costs and damages borne by Applicant.
12. The Applicant will at any time subsequent to the commencement of construction, and at Applicants sole expense, reconstruct or replace its installation as may be necessary to conform to new grade or alignments resulting from maintenance or construction operations by the Drainage District in connection with any of its drainage facilities. Applicant agrees to do this within forty-five (45) days of receipt of written request from the Drainage District, or such longer time period as the Drainage District may specify, without cost to the Drainage District. Such reconstruction or realignment of Applicants improvements shall be made in accordance with and approved by the Drainage District or its designated representative. If the Applicant is unable to comply within the time period specified above, the Drainage District may cause the work to be done and the Applicant will pay the cost thereof upon receipt of a statement of such costs.
13. CROSSING OF OPEN DITCH FACILITIES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
  - a. Passage of installation in a horizontal plane five feet (5') below design grade of drainage ditch, as established by the Drainage District representative.
  - b. The above depth to extend to a point two (2) times the design base width of ditch either side of centerline of drainage ditch (measured along the centerline of utility) unless the existing base width is greater than the design bases width. If the existing base width is greater than the design with, the depth is to extend to a point two (2) times the existing width.
  - c. The rate of slope for transition from normal utility laying depth of crossings of drainage ditches shall not be steeper than 4:1.
  - d. If such ditch crossings occur at points of outlets of Drainage District or private tile lines or within twenty-five feet (25') of said outlets, such outlets must be relocated to a point not less than twenty-five feet (25') from such crossings. Such relocations shall be at the expense of the Applicant and as directed by the representative of the Drainage District.

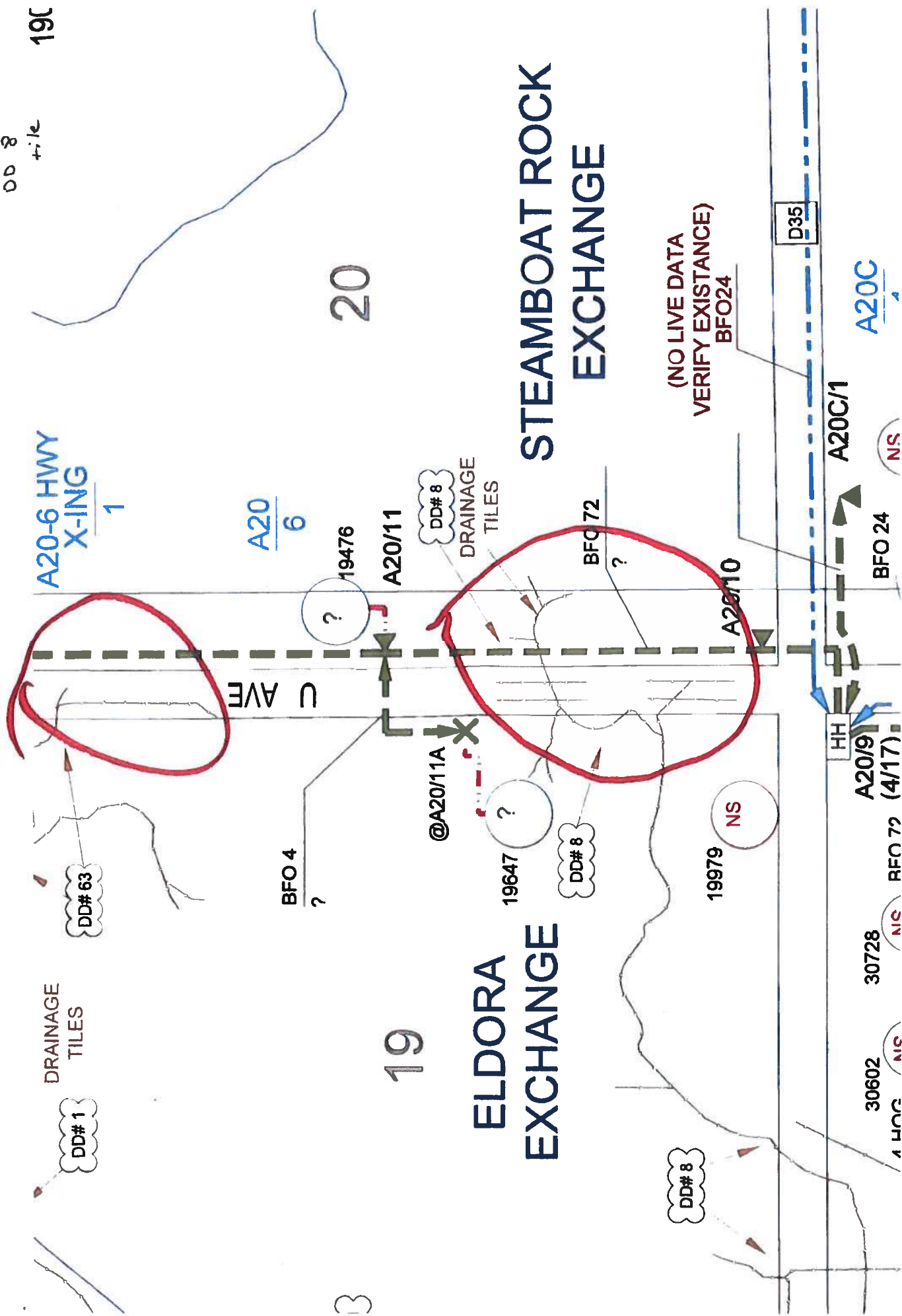


# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

- 14. CROSSING OF DRAINAGE DISTRICT TILE LINES.** Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only upon the review by and approval of the designated representative of the Drainage District. Such waiver must be in writing.
  - b. A minimum of one foot (1') clearance below existing Drainage District facilities must be maintained.
  - c. At all crossings of Drainage District tile lines with the proposed utility, one of the following must be used:
    - i. Replace Drainage District tile with reinforced concrete pipe of same or larger diameter than existing tile. Concrete pipe to be 2,000 D strength (Iowa Department of Transportation approved) with standard tongue and groove joints. Pipe to have a minimum of three (3) bolt-type connectors at each joint.
    - ii. Replace Drainage District tile with cathodic protected corrugated metal pipe. Diameter of corrugated metal pipe to be a minimum of two inches (2") larger than outside diameter of tile line being replaced. (Specifications regarding gage, cathodic protection and other details to be subject to review and approval.)
    - iii. Dual wall plastic with specific approval of Drainage District representative.
    - iv. Bore new utility installation; maintain existing tile in an undisturbed state.
  - d. The length of tile to be replaced by any of the above alternates is as follows:
    - i. Eight-inch (8") tile and smaller: Six feet (6') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
    - ii. Ten inch (10") tile and larger: Ten feet (10') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
  - e. At all crossings of Drainage District tile lines where the Drainage District and private tile lines are damaged by the construction, maintenance or repair of Applicants installation shall be repaired as directed by the Drainage Districts designated representative.
- 15.** This permit is subject to existing regulations and statutes of the State of Iowa and future regulations, which may be promulgated or enacted.
- 16.** This application is subject to revocation by Hardin County, if in its judgment it is necessary for legitimate purposes. In such event, written notice shall be provided to permit holder.
- 17.** Applicant agrees to pay all other legitimate costs, fees and expenses associated with its crossing of the Drainage District facility, including but not limited to, publication costs, engineering costs and legal service costs. Said costs will be paid within thirty (30) days of the mailing of the statements to the Applicant.
- 18.** Applicant agrees to provide a copy of as-built plan of the utility route and location, showing route changes that may have taken place during construction.
- 19.** Applicant agrees to include a copy of these requirements to all bidding specifications; or if the construction and installation contract has been let by the time this permit is approved, Applicant agrees to provide a copy of these requirements to the contractor and to advise them that they are bound by the terms of these requirements.







Utility Permit #:2020-12

## Utility Observation Report

General Information	
<b>Project Name and Number:</b>	Utility Crossing #6666.4
<b>Drainage District Number:</b>	#8 Sub 2
<b>Drainage District Facility ID:</b>	Main and Lateral 4
<b>Project Location:</b> (1/4, Sec, Twp, Rng and road)	SW 20-88-19 U Ave, N of Co Hwy D35
<b>Date of Observation:</b>	10/23/2020, 10/24/2020
<b>Observer Name/Title:</b>	Chris Sweeney

Field Observations	
<b>District facility type:</b>	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
<b>Utility Orientation:</b>	<input type="checkbox"/> Parallel <input checked="" type="checkbox"/> Crossing <input type="checkbox"/> Overhead <input type="checkbox"/> Over <input checked="" type="checkbox"/> Under <input type="checkbox"/> Same Elevation Other:
<b>Source of utility elevation and/or location:</b>	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input checked="" type="checkbox"/> Utility Reported Other:
<b>Utility Elevation:</b>	GPS #380 = 1087.6' GPS #382 = 1082.9'
<b>Source of district facility elevation and/or location:</b>	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
<b>District facility elevation:</b> (include where measured)	GPS #380 = 1093.6' (flowline) GPS #382 = 1088.4' (flowline)
<b>Vertical clearance from district facility:</b> (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	GPS #380 = 5.9' GPS #382 = 5.5'





Utility Permit #:2020-12

<b>Horizontal clearance from District Tile or Open Ditch centerline:</b>	NA
<b>Tile outlets within 25-feet relocated? (If applicable)</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<b>Original tile material:</b>	<input type="checkbox"/> RCP <input checked="" type="checkbox"/> CMP (GPS #380, 6") <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input checked="" type="checkbox"/> VCP (GPS #382, 8") Other:
<b>Tile replaced by utility?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
<b>Tile replacement material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:
<b>Condition of District tile:</b>	Not observed, used inlet to measure.
<b>Signage present?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A

Notes	
Signage was not installed at time of observation and will need to be confirmed with Utility if desired by District Trustees.	

CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

10-24-2020  
10-23-2020

DAYS OF WEEK:

S M T W T F S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6666.7

COUNTY, ROUTE, ROAD:

DD 8

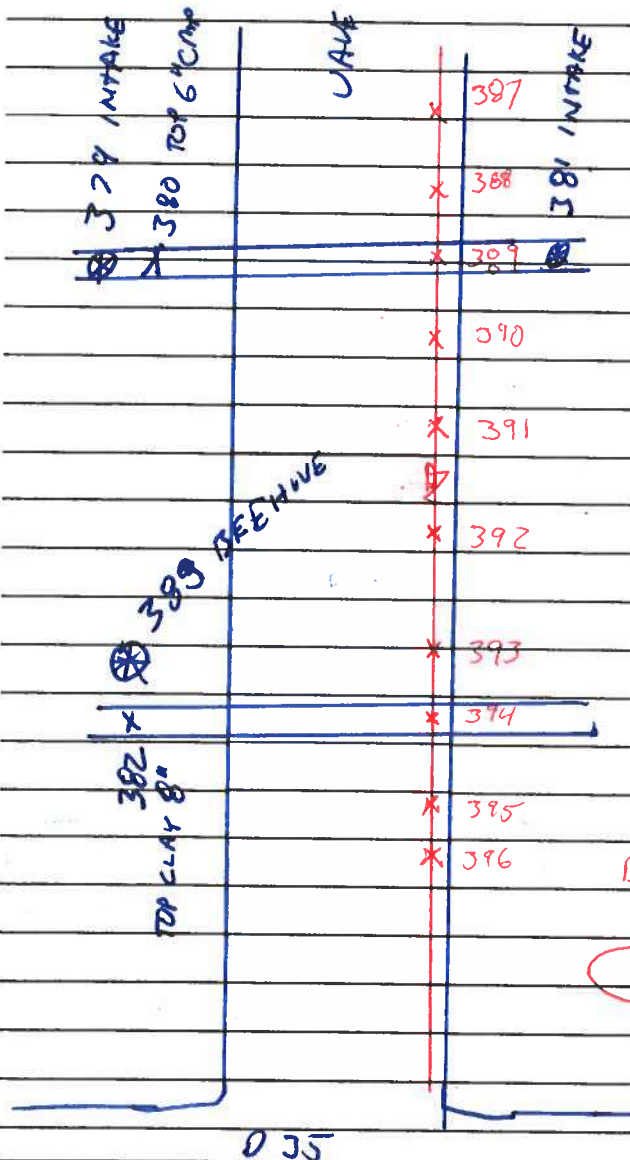
LOCATION:

U AVE

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

T 1 ✓ 180

SHOT TILE + IMAGES @ 2 CROSSINGS



TILE  
FL @ 380 = 1093.55'  
DEPTH OF BORE = 1087.62'

CLEARANCE = 5.93'

TILE  
FL @ 382 = 1088.41'  
DEPTH OF BORE = 1082.92'

CLEARANCE = 5.47'

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

Observer's Signature:

*Chris Murray*

Date Prepared:

10-23-20

Reviewed by:

☐ Engineer

Date Reviewed



BORE @ 380 LOOKINGS



2020/10/29



2020/10/29

BORE DEPTH @ 381



INTAKE @ 380



2020/10/29



2020/10/29

BORE @ 382 LOOKING S.



DEATH @ 392



INTAKE @ 393



6666 DD8 2020-11-10

1,3610944.202,5029244.721,1098.632,CP 3/4  
 2,3609899.457,5029141.385,1048.076,TOP CMP  
 3,3609923.128,5029093.654,1060.470,TILE LOCATE  
 4,3609933.547,5029079.378,1050.715,TILE LOCATE  
 5,3609968.090,5029024.826,1051.921,TILE LOCATE  
 6,3609979.808,5028947.099,1051.208,TILE LOCATE  
 7,3609993.458,5028857.845,1052.244,TILE LOCATE  
 8,3610008.070,5028768.799,1052.537,TILE LOCATE  
 9,3610023.929,5028679.861,1053.151,TILE LOCATE  
 10,3610041.470,5028575.129,1047.790,FL 20"CLAY  
 11,3610055.590,5028484.250,1053.982,TILE LOCATE  
 12,3610069.804,5028399.798,1054.265,TILE LOCATE  
 13,3610085.984,5028302.372,1054.179,TILE LOCATE  
 14,3610104.918,5028219.427,1054.389,TILE LOCATE  
 15,3610152.002,5028145.704,1054.483,TILE LOCATE  
 16,3610222.078,5028090.133,1055.023,TILE LOCATE  
 17,3610304.736,5028041.447,1054.881,TILE LOCATE  
 18,3610392.401,5027990.318,1055.247,TILE LOCATE  
 19,3610477.433,5027940.067,1054.680,TILE LOCATE  
 20,3610524.772,5027911.782,1055.123,TILE LOCATE  
 21,3610548.832,5027898.055,1049.536,FL 20"CLAYTILE  
 22,3610624.223,5027853.747,1055.364,TILE LOCATE  
 23,3610694.533,5027812.869,1055.995,TILE LOCATE  
 24,3610762.814,5027773.081,1056.611,TILE LOCATE  
 25,3610837.095,5027730.708,1057.252,TILE LOCATE  
 26,3610905.963,5027690.506,1057.624,TILE LOCATE  
 27,3610980.454,5027646.514,1058.040,TILE LOCATE  
 28,3611045.382,5027608.473,1058.574,TILE LOCATE  
 29,3611078.831,5027589.319,1059.000,TILE LOCATE  
 30,3611121.100,5027564.616,1058.998,TILE LOCATE  
 31,3611169.937,5027535.943,1059.395,TILE LOCATE  
 32,3611243.334,5027491.851,1059.808,TILE LOCATE  
 33,3611306.313,5027447.529,1060.597,TILE LOCATE  
 34,3611362.455,5027398.024,1061.254,TILE LOCATE  
 35,3611374.960,5027383.836,1061.462,TILE LOCATE  
 36,3610745.703,5027763.710,1057.231,FENCE E-W  
 37,3610747.318,5027894.440,1057.470,FENCE E-W &S  
 38,3610746.650,5028036.230,1058.006,FENCE E-W  
 39,3610450.240,5027900.055,1055.767,FENCE N-S  
 40,3610024.795,5028672.703,1049.541,TOP 20" VCP TILE  
 41,3610030.498,5028637.209,1049.560,TOP 20" VCP 1.82'TOFL  
 42,3610041.859,5028571.434,1049.561,TOP 20" VCP 1.82'TOFL  
 43,3610003.137,5028586.269,1054.425,FENCE E-W  
 44,3610033.228,5028630.785,1049.563,FL 8" VCP  
 45,3610049.049,5028585.809,1054.106,FENCE S&E  
 46,3610050.013,5028642.162,1054.410,FENCE E-W  
 47,3609920.715,5029098.323,1064.824,W GRAVEL road EDGE  
 48,3609909.902,5029120.516,1064.378,E GRAVEL road EDGE  
 49,3610688.197,5029186.545,1088.040,MAG TOP CMP



6666 DD8 2020-11-10

50,3610031.504,5028630.731,1049.826,TOP 24"\*8" HDPE TILE TEE  
51,3610032.772,5028631.012,1049.802,TOP 8" HDPE STUB ON TEE 0.72'TOFL  
52,3610042.103,5028634.598,1050.151,TOP 8" VCP TILE .64'TOFL  
53,3610553.795,5027894.872,1051.134,TOP 20" VCP 1.82'TOFL  
54,3610548.741,5027898.106,1051.320,TOP 20" VCP TILE 1.82'TOFL  
55,3610071.476,5028389.732,1048.076,7+79.000 C  
56,3610082.780,5028321.664,1048.076,8+48.000 C  
57,3610093.204,5028270.742,1048.076,9+00.000 C  
58,3610181.690,5028122.161,1048.076,10+78.000 C  
59,3611063.689,5027597.990,1048.076,21+04.500 C  
60,3610185.054,5028113.628,1048.301,fl  
61,3610185.628,5028113.542,1050.062,top main 24od/21id end repair  
62,3610177.949,5028119.507,1048.236,fl  
63,3610177.691,5028119.967,1050.043,top main 24od/21id start repair  
64,3610183.785,5028110.426,1049.851,tile 5" cpp from w  
65,3611055.573,5027602.544,1051.368,fl  
66,3611055.129,5027602.766,1053.010,top main 24od/21id start repair  
67,3611050.376,5027596.051,1058.677,ground elev  
68,3611073.898,5027592.018,1051.418,fl  
69,3611074.617,5027591.733,1053.022,top main 24od/21id end repair  
70,3610746.239,5028095.162,1057.547,fnb e-w  
71,3610749.591,5028091.799,1057.432,damage  
72,3610762.483,5028075.694,1057.577,damage  
73,3610760.280,5027891.617,1056.823,damage  
74,3610746.994,5027893.934,1057.373,fcw ews  
75,3610746.371,5027582.718,1057.332,fnb e-w  
76,3610761.445,5027632.796,1056.917,damage  
77,3610769.278,5027616.536,1057.034,damage  
78,3610788.348,5027606.618,1057.264,damage  
79,3610751.648,5027581.554,1056.882,damage  
80,3610788.969,5027593.573,1057.345,damage  
81,3610892.122,5027593.381,1057.749,damage  
82,3610904.298,5027605.075,1057.722,damage  
83,3610919.836,5027616.652,1057.708,damage  
84,3610974.476,5027577.276,1058.076,damage  
85,3611017.636,5027574.367,1058.393,damage  
86,3611043.366,5027560.434,1058.385,damage  
87,3611066.210,5027552.012,1058.799,damage  
88,3611095.985,5027560.617,1058.830,damage  
89,3611112.771,5027591.145,1058.612,damage  
90,3611118.863,5027593.896,1058.548,damage  
91,3611122.446,5027604.122,1058.555,damage  
92,3611111.519,5027621.830,1058.409,damage  
93,3611097.173,5027633.407,1058.219,damage  
94,3611071.079,5027641.704,1058.110,damage  
95,3611047.342,5027641.452,1058.113,damage  
96,3611031.209,5027631.646,1058.278,damage  
97,3611017.565,5027617.280,1058.273,damage  
98,3610742.799,5028081.443,1056.739,damage

6666 DD8 2020-11-10

99,3610723.111,5028102.093,1056.537,damage  
100,3610707.764,5028106.637,1056.397,damage  
101,3610070.623,5028394.912,1049.882,top main 24od/21id start repair  
102,3610070.490,5028394.726,1048.062,fl  
103,3610067.157,5028390.453,1049.891,tile fl 5id 7od from sw  
104,3610070.121,5028402.175,1053.921,ground elev  
105,3610073.096,5028376.806,1049.779,top main 24od/21id end repair  
106,3610072.988,5028377.096,1047.995,fl  
107,3610082.782,5028320.424,1048.041,fl  
108,3610082.751,5028320.803,1049.825,top main 24od/21id start repair  
109,3610083.536,5028314.768,1047.860,fl  
110,3610083.624,5028314.163,1049.658,top main 24od/21id end repair  
111,3610088.591,5028271.591,1049.339,tile 5" cpp from ssw  
112,3610092.341,5028265.700,1048.053,fl  
113,3610092.229,5028266.245,1049.845,top main 21od start repair  
114,3610093.723,5028256.238,1047.988,fl  
115,3610093.787,5028256.088,1049.791,top main 21od end repair  
116,3610691.788,5028104.993,1056.228,damage  
117,3610661.888,5028106.906,1056.094,damage  
118,3610479.721,5028109.413,1055.197,damage  
119,3610285.128,5028112.598,1054.482,damage  
120,3610261.317,5028111.603,1054.310,damage  
121,3610232.280,5028099.842,1054.451,damage  
122,3610215.692,5028089.779,1054.452,damage  
123,3610206.642,5028081.834,1054.493,damage  
124,3610206.485,5028060.364,1054.464,damage  
125,3610184.974,5028061.688,1054.473,damage  
126,3610180.239,5028075.430,1054.483,damage  
127,3610152.091,5028083.287,1054.532,damage  
128,3610131.801,5028108.630,1054.551,damage  
129,3610126.703,5028109.666,1054.590,damage  
130,3610124.988,5028116.778,1054.433,damage  
131,3610132.938,5028120.336,1054.366,damage  
132,3610136.381,5028125.200,1054.235,damage  
133,3610135.480,5028159.148,1054.278,damage  
134,3610127.650,5028180.856,1054.092,damage  
135,3610142.750,5028187.003,1054.202,damage  
136,3610152.233,5028172.692,1054.064,damage  
137,3610179.750,5028161.921,1054.164,damage  
138,3610197.840,5028160.565,1054.259,damage  
139,3610217.653,5028133.025,1054.349,damage  
140,3610230.876,5028125.782,1054.304,damage  
141,3610262.517,5028124.453,1054.401,damage  
142,3610264.660,5028122.876,1054.422,damage  
143,3610119.159,5028229.306,1054.115,damage  
144,3610129.254,5028235.216,1054.233,damage  
145,3610134.264,5028269.851,1054.173,damage  
146,3610116.189,5028343.800,1053.936,damage  
147,3610119.027,5028190.421,1054.020,damage



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148,3610082.293,5028218.036,1054.366,damage  
149,3610051.962,5028260.729,1054.516,damage  
150,3610039.221,5028325.716,1054.612,damage  
151,3610041.477,5028350.833,1054.598,damage  
152,3610111.815,5028361.905,1053.944,damage  
153,3610112.295,5028391.905,1053.936,damage  
154,3610083.492,5028422.404,1053.850,damage  
155,3610060.739,5028425.244,1054.096,damage  
156,3610043.636,5028408.123,1054.189,damage  
157,3610043.279,5028390.570,1054.283,damage  
158,3610034.491,5028387.287,1054.362,damage  
159,3610047.973,5028361.933,1054.308,damage  
160,3610452.031,5028120.157,1055.120,damage  
161,3610693.947,5028116.694,1056.359,damage  
162,3610712.980,5028122.519,1056.410,damage  
163,3610726.246,5028138.639,1056.577,damage  
164,3610729.190,5028154.655,1056.686,damage  
165,3610730.477,5028488.654,1057.965,damage  
166,3610746.616,5028486.416,1059.484,fnb e-w  
167,3610730.218,5028817.725,1065.621,damage  
168,3610746.006,5028821.790,1066.707,fnb e-w  
169,3610727.520,5028998.574,1074.006,damage  
170,3610746.023,5029000.223,1075.135,fnb e-w  
171,3610719.384,5029051.753,1078.046,damage  
172,3610696.638,5029089.681,1081.090,damage  
173,3610685.583,5029113.391,1083.058,damage  
174,3610690.262,5029175.821,1088.973,damage  
175,3610720.166,5029172.845,1089.420,damage  
176,3610744.147,5029143.985,1088.550,damage  
177,3610742.055,5029075.904,1081.822,damage  
178,3610745.245,5029177.777,1090.616,bc cp +1.0  
179,3610726.302,5029180.428,1089.950,bc pp +1.0  
180,3613382.019,5029192.232,1101.968,mag  
181,3610743.885,5029211.641,1092.114,stn 0.9d  
182,3610690.928,5029177.100,1088.866,gp gpw +1.0  
183,3610743.906,5029224.697,1092.412,tie sir 12x2  
184,3608124.836,5026605.803,1075.469,ir 58 flsh  
185,3608105.752,5029231.049,1092.114,Cogo  
186,3608120.069,5025290.278,1075.370,reading  
187,3608134.370,5029236.852,1075.469,Cogo  
188,3613337.576,5025364.869,1064.826,FOL  
189,3613338.175,5025378.933,1065.132,FOL  
190,3613337.903,5025386.558,1065.045,FOL  
191,3613337.793,5025399.127,1065.330,FOL  
192,3613338.405,5025409.939,1065.049,FOL  
193,3613338.298,5025419.426,1065.182,FOL  
194,3613338.415,5025432.356,1065.103,FOL  
195,3613347.017,5025435.835,1064.670,FOL  
196,3613347.338,5025425.503,1064.561,FOL

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197,3613347.006,5025413.883,1064.817,FOL  
198,3613347.914,5025401.079,1064.988,FOL  
199,3613346.634,5025385.924,1065.625,FOL  
200,3613342.678,5025378.688,1065.270,FOL  
201,3613343.251,5025365.417,1064.561,FOL  
202,3613327.901,5025400.916,1061.582, TOP CLAYTILE  
203,3613328.384,5025401.010,1060.415, FL 12"CLAY  
204,3613305.552,5025401.316,1064.038,GS TILE LOCATE  
205,3613262.989,5025401.224,1064.147,GS TILE LOCATE  
206,3613217.936,5025401.353,1063.837,GS TILE LOCATE  
207,3613154.862,5025401.531,1063.604,GS TILE LOCATE  
208,3613093.866,5025400.926,1063.279,GS TILE LOCATE  
209,3613027.406,5025399.928,1063.128,GS TILE LOCATE  
210,3612961.901,5025399.295,1062.911,GS TILE LOCATE  
211,3612900.078,5025398.083,1062.610,GS TILE LOCATE  
212,3612870.371,5025397.503,1062.599,GS TILE LOCATE  
213,3610781.318,5024180.965,1081.118, GRAV  
214,3610867.242,5024181.732,1078.152,WCP  
215,3611760.855,5024116.032,1066.473, FL 4"HICK INTK  
216,3611761.044,5024116.985,1068.108,GS  
217,3611759.787,5024128.204,1072.088,EOG  
218,3611760.521,5024156.800,1071.886,EOG  
219,3611737.819,5024169.926,1067.631,EOC BEEHIVE INTK  
220,3611736.072,5024169.961,1067.641,EOC BEEHIVE INTK  
221,3611736.026,5024168.300,1067.633,EOC BEEHIVE INTK  
222,3611737.404,5024168.040,1067.649,EOC BEEHIVE INTK  
223,3611285.815,5024180.372,1073.099,WCP  
224,3611737.197,5024169.595,1066.303, FL 6"CLAY INTK  
225,3611738.767,5024174.556,1067.644,GS TILELOCATE  
226,3611776.129,5024190.360,1069.182,GS TILELOCATE  
227,3611763.343,5024185.557,1069.017,GS TILELOCATE  
228,3611754.799,5024182.128,1069.095,GS TILELOCATE  
229,3611775.695,5024162.123,1067.895,FL CMP18  
230,3611778.779,5024122.148,1068.057,FL CMP18  
231,3611662.166,5024167.922,1066.003, FL 12"CLAY  
232,3611682.273,5024167.971,1068.371,GS TILELOCATE  
233,3611713.405,5024170.383,1068.094,GS TILELOCATE  
234,3611730.412,5024172.252,1068.494,GS TILELOCATE  
235,3611739.447,5024174.955,1066.395, TOP 12"CLAY @6"CONC TO INTK  
236,3611786.028,5024195.851,1069.281,gs tile locate debris  
237,3611810.943,5024214.361,1069.325,gs tile locate  
238,3611836.701,5024238.881,1069.251,gs tile locate  
239,3611868.701,5024276.661,1068.899,gs tile locate  
240,3611896.372,5024316.684,1068.930,gs tile locate  
241,3611927.043,5024361.240,1068.579,gs tile locate  
242,3611957.024,5024406.514,1068.230,gs tile locate  
243,3611985.586,5024451.003,1067.911,gs tile locate  
244,3612022.842,5024508.258,1067.265,gs tile locate  
245,3612045.514,5024569.183,1066.370,gs tile locate



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246,3612053.548,5024631.541,1066.092,gs tile locate  
247,3612055.545,5024691.771,1065.594,gs tile locate  
248,3612055.999,5024762.258,1065.431,gs tile locate  
249,3612055.275,5024824.249,1066.101,gs tile locate  
250,3612053.419,5024842.015,1066.351,gs tile locate  
251,3611663.694,5024167.785,1067.378,gs bgn televise  
252,3613325.442,5025139.286,1067.015,GS CORN DAMAGE 1  
253,3613328.839,5025195.589,1066.349,GS CORN DAMAGE 1  
254,3613329.990,5025252.853,1065.759,GS CORN DAMAGE 1  
255,3613330.252,5025310.421,1065.848,GS CORN DAMAGE 1  
256,3613330.537,5025361.091,1064.945,GS CORN DAMAGE 1  
257,3613330.133,5025407.852,1064.492,GS CORN DAMAGE 1  
258,3613312.183,5025401.548,1064.148,GS CORN DAMAGE 1  
259,3613307.073,5025394.266,1064.255,GS CORN DAMAGE 1  
260,3613306.969,5025377.661,1064.756,GS CORN DAMAGE 1  
261,3613324.268,5025345.702,1065.499,GS CORN DAMAGE 1  
262,3613324.073,5025293.404,1065.784,GS CORN DAMAGE 1  
263,3613323.570,5025239.809,1065.856,GS CORN DAMAGE 1  
264,3613320.948,5025156.840,1066.809,GS CORN DAMAGE 1  
265,3613319.382,5026092.582,1067.820,GS BEAN DAMAGE 1  
266,3613294.017,5026078.369,1067.931,GS BEAN DAMAGE 1  
267,3613254.527,5026047.817,1067.854,GS BEAN DAMAGE 1  
268,3613208.991,5026028.235,1067.656,GS BEAN DAMAGE 1  
269,3613156.458,5026011.479,1067.334,GS BEAN DAMAGE 1  
270,3613103.757,5025992.499,1066.841,GS BEAN DAMAGE 1  
271,3613053.047,5025969.281,1066.105,GS BEAN DAMAGE 1  
272,3613020.372,5025942.262,1065.510,GS BEAN DAMAGE 1  
273,3612995.905,5025910.790,1064.741,GS BEAN DAMAGE 1  
274,3612966.291,5025850.791,1065.485,GS BEAN DAMAGE 1  
275,3612933.366,5025848.272,1065.876,GS BEAN DAMAGE 1  
276,3612835.387,5025849.261,1066.136,GS BEAN DAMAGE 1  
277,3612733.767,5025849.600,1065.724,GS BEAN DAMAGE 1  
278,3612619.154,5025850.926,1066.056,GS BEAN DAMAGE 1  
279,3612481.483,5025851.414,1064.621,GS BEAN DAMAGE 1  
280,3612329.685,5025852.569,1063.809,GS BEAN DAMAGE 1  
281,3612203.936,5025853.671,1063.823,GS BEAN DAMAGE 1  
282,3612056.186,5025854.885,1064.277,GS BEAN DAMAGE 1  
283,3611920.231,5025856.205,1063.448,GS BEAN DAMAGE 1  
284,3611870.019,5025858.737,1063.541,GS BEAN DAMAGE 1  
285,3611836.709,5025863.580,1063.833,GS BEAN DAMAGE 1  
286,3611820.196,5025844.850,1063.460,GS BEAN1/CORN2 DAMAGE  
287,3611818.122,5025815.272,1063.417,GS CORN DAMAGE 2  
288,3611823.124,5025812.309,1063.354,GS CORN DAMAGE 2  
289,3611822.952,5025730.878,1063.238,GS CORN DAMAGE 2  
290,3611820.290,5025727.716,1063.297,GS CORN DAMAGE 2  
291,3611820.237,5025697.753,1063.380,GS CORN DAMAGE 2  
292,3611839.552,5025683.183,1063.041,GS CORN DAMAGE 2  
293,3611965.799,5025681.025,1062.006,GS CORN DAMAGE 2  
294,3611994.490,5025650.904,1061.879,GS CORN DAMAGE 2

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295,3612010.069,5025610.847,1061.762,GS CORN DAMAGE 2  
296,3612015.603,5025570.400,1061.595,GS CORN DAMAGE 2  
297,3612016.833,5025547.954,1061.590,GS CORN DAMAGE 2  
298,3611997.635,5025547.324,1061.653,GS CORN DAMAGE 2  
299,3611996.785,5025538.079,1061.537,GS CORN DAMAGE 2  
300,3612003.186,5025843.395,1063.440,GS BEAN DAMAGE 1  
301,3612163.532,5025842.907,1063.849,GS BEAN DAMAGE 1  
302,3611938.802,5025525.947,1061.747,GS CORN DAMAGE 2  
303,3611944.114,5025503.914,1061.798,GS CORN DAMAGE 2  
304,3611955.785,5025481.290,1061.672,GS CORN DAMAGE 2  
305,3611963.111,5025466.235,1061.582,GS CORN DAMAGE 2  
306,3611978.062,5025457.648,1061.407,GS CORN DAMAGE 2  
307,3612010.089,5025439.343,1061.475,GS CORN DAMAGE 2  
308,3612043.455,5025420.557,1061.385,GS CORN DAMAGE 2  
309,3612097.376,5025401.776,1061.538,GS CORN DAMAGE 2  
310,3612122.462,5025394.610,1061.537,GS CORN DAMAGE 2  
311,3612118.482,5025382.741,1061.493,GS CORN DAMAGE 2  
312,3612126.103,5025380.410,1061.474,GS CORN DAMAGE 2  
313,3612128.168,5025391.499,1061.405,GS CORN DAMAGE 2  
314,3612159.467,5025382.287,1061.599,GS CORN DAMAGE 2  
315,3612173.752,5025379.846,1061.609,GS CORN DAMAGE 2  
316,3612176.266,5025392.261,1061.675,GS CORN DAMAGE 2  
317,3612192.357,5025391.757,1061.711,GS CORN DAMAGE 2  
318,3612194.010,5025408.356,1061.600,GS CORN DAMAGE 2  
319,3612198.388,5025481.643,1061.382,GS CORN DAMAGE 2  
320,3612195.321,5025492.208,1061.343,GS CORN DAMAGE 2  
321,3612161.026,5025509.843,1061.332,GS CORN DAMAGE 2  
322,3612084.139,5025510.311,1061.476,GS CORN DAMAGE 2  
323,3612034.209,5025548.104,1061.515,GS CORN DAMAGE 2  
324,3612025.720,5025606.259,1061.555,GS CORN DAMAGE 2  
325,3612006.828,5025656.984,1061.820,GS CORN DAMAGE 2  
326,3611992.775,5025677.804,1061.973,GS CORN DAMAGE 2  
327,3611972.952,5025695.686,1062.109,GS CORN DAMAGE 2  
328,3611867.280,5025696.645,1062.723,GS CORN DAMAGE 2  
329,3611852.019,5025699.189,1062.996,GS CORN DAMAGE 2  
330,3611837.401,5025712.608,1063.177,GS CORN DAMAGE 2  
331,3611835.222,5025721.136,1063.194,GS CORN DAMAGE 2  
332,3611835.212,5025757.610,1063.147,GS CORN DAMAGE 2  
333,3611847.379,5025757.709,1062.967,GS CORN DAMAGE 2  
334,3611871.843,5025753.122,1062.648,GS CORN DAMAGE 2  
335,3611874.806,5025770.591,1062.859,GS CORN DAMAGE 2  
336,3611834.841,5025768.434,1063.145,GS CORN DAMAGE 2  
337,3611835.085,5025786.417,1063.274,GS CORN DAMAGE 2  
338,3611861.868,5025787.290,1063.113,GS CORN DAMAGE 2  
339,3611901.292,5025787.054,1062.876,GS CORN DAMAGE 2  
340,3611924.618,5025786.588,1062.823,GS CORN DAMAGE 2  
341,3611959.853,5025786.494,1062.610,GS CORN DAMAGE 2  
342,3611960.550,5025793.451,1062.725,GS CORN DAMAGE 2  
343,3611914.254,5025793.760,1062.909,GS CORN DAMAGE 2



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344,3611834.906,5025794.612,1063.425,GS CORN DAMAGE 2  
 345,3611837.214,5025835.922,1063.493,GS CORN DAMAGE 2  
 346,3611841.496,5025842.377,1063.743,GS CORN DAMAGE 2  
 347,3611848.359,5025844.903,1063.448,GS BEAN1/CORN2 DAMAGE  
 348,3612363.833,5025841.241,1063.703,GS BEAN DAMAGE 1  
 349,3612519.906,5025839.965,1065.581,GS BEAN DAMAGE 1  
 350,3612662.705,5025839.151,1066.121,GS BEAN DAMAGE 1  
 351,3612822.826,5025837.681,1066.224,GS BEAN DAMAGE 1  
 352,3612993.134,5025836.524,1063.772,GS BEAN DAMAGE 1  
 353,3613010.920,5025897.667,1064.100,GS BEAN DAMAGE 1  
 354,3613026.924,5025927.167,1064.495,GS BEAN DAMAGE 1  
 355,3613063.791,5025962.206,1065.534,GS BEAN DAMAGE 1  
 356,3613123.491,5025987.251,1066.739,GS BEAN DAMAGE 1  
 357,3613215.260,5026017.195,1067.367,GS BEAN DAMAGE 1  
 358,3613255.099,5026033.322,1067.882,GS BEAN DAMAGE 1  
 359,3613291.440,5026055.604,1068.057,GS BEAN DAMAGE 1  
 360,3613308.716,5026072.685,1067.796,GS BEAN DAMAGE 1  
 361,3611807.128,5024179.743,1069.707,GS BEAN DAMAGE 2  
 362,3611807.511,5024205.868,1069.525,GS BEAN DAMAGE 2  
 363,3611773.044,5024205.956,1069.285,GS BEAN DAMAGE 2  
 364,3611772.629,5024179.468,1069.244,GS BEAN DAMAGE 2  
 365,3611420.994,5024166.126,1070.135,gs tile locate  
 366,3610877.829,5024172.845,1072.540,fl 12 vcp  
 367,3611004.766,5024168.777,1076.314,GS TILE LOCATE  
 368,3610780.475,5024176.691,1081.202,GS TILE LOCATE lat 1  
 369,3610745.385,5024185.485,1073.260,fl 10 clay  
 370,3610731.977,5024189.648,1074.838,top 6" vcp end sse  
 371,3610723.432,5024193.682,1077.814,gs tile locate lat 3  
 372,3610699.198,5024204.419,1077.851,GS TILE LOCATE  
 373,3610663.693,5024216.153,1078.463,GS TILE LOCATE  
 374,3610631.328,5024225.297,1078.691,GS TILE LOCATE  
 375,3610571.166,5024231.812,1078.927,GS TILE LOCATE  
 376,3610514.654,5024232.289,1079.249,GS TILE LOCATE  
 377,3610488.920,5024230.942,1079.279,GS TILE LOCATE end  
 378,3610658.913,5024217.869,1078.296,GS TILE LOCATE lat  
 379,3614977.645,5029155.400,1093.738,922 6" cmp fl  
 380,3614977.568,5029159.219,1094.050,531 6"  
 381,3615001.288,5029204.084,1096.287,922 6" hick  
 382,3614178.858,5029158.883,1089.078,962 8"  
 383,3614182.984,5029159.147,1088.848,952 fl  
 384,3613091.049,5029220.989,1085.891,922 6" cmp fl  
 385,3613092.172,5029227.725,1088.782,922 5" hdpe  
 386,3612041.404,5029172.589,1071.820,963 6"  
 387,3615048.527,5029193.040,1100.049,700 -40"  
 388,3615019.041,5029193.061,1099.751,700 -11-3"  
 389,3614997.961,5029192.823,1099.620,700 -12'  
 390,3614976.254,5029193.703,1099.440,700 -8'10"  
 391,3614951.315,5029193.683,1099.374,700 -3'  
 392,3614242.019,5029195.844,1096.399,700 -34"

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393,3614181.655,5029195.146,1096.557,700 -13'4"  
 394,3614159.950,5029196.109,1096.495,700 -13'7"  
 395,3614137.128,5029195.851,1096.574,700 -11.5'  
 396,3614109.446,5029196.837,1096.493,700 -31"  
 397,3612089.676,5029192.323,1079.377,700 -6'4"  
 398,3612050.868,5029191.569,1079.246,700 -12'10"  
 399,3612034.216,5029192.217,1079.233,700 -13'9"  
 400,3611953.245,5025489.282,1057.912,vcp fl  
 401,3611946.368,5025513.371,1058.054,vcp fl  
 402,3611946.438,5025512.973,1059.737,top 18 conc  
 403,3611948.530,5025506.310,1059.730,top 18 conc  
 404,3611949.843,5025507.455,1059.512,top 15 conc  
 405,3611957.254,5025503.587,1059.549,top 15 conc  
 406,3611965.065,5025499.490,1059.470,top 15 conc  
 407,3611972.098,5025495.678,1059.486,top 15 conc  
 408,3611979.283,5025491.916,1059.444,top 15 conc  
 409,3611986.381,5025488.171,1059.450,top 15 conc  
 410,3611993.441,5025484.492,1059.453,top 15 conc  
 411,3612000.614,5025480.783,1059.522,top 15 conc  
 412,3612007.803,5025477.232,1059.490,top 15 conc  
 413,3612014.955,5025473.358,1059.544,top 15 conc  
 414,3612022.013,5025469.625,1059.524,top 15 conc  
 415,3612029.059,5025465.935,1059.501,top 15 conc  
 416,3612036.341,5025462.348,1059.612,top 15 conc  
 417,3612043.369,5025458.783,1059.573,top 15 conc  
 418,3612050.566,5025454.937,1059.550,top 15 conc  
 419,3612057.849,5025451.546,1059.580,top 15 conc  
 420,3612065.221,5025447.910,1059.592,top 15 conc  
 421,3612072.323,5025444.533,1059.562,top 15 conc  
 422,3612079.595,5025441.152,1059.553,top 15 conc  
 423,3612086.914,5025437.857,1059.614,top 15 conc  
 424,3612094.325,5025434.768,1059.582,top 15 conc  
 425,3612101.777,5025431.642,1059.662,top 15 conc  
 426,3612109.336,5025428.788,1059.662,top 15 conc  
 427,3612116.954,5025425.961,1059.659,top 15 conc  
 428,3612124.363,5025423.536,1059.621,top 15 conc  
 429,3612132.164,5025420.902,1059.691,top 15 conc  
 430,3612139.835,5025418.639,1059.703,top 15 conc  
 431,3612147.596,5025416.402,1059.688,top 15 conc  
 432,3612155.312,5025414.332,1059.718,top 15 conc  
 433,3612163.137,5025412.357,1059.687,top 15 conc  
 434,3612171.118,5025410.611,1059.726,top 15 conc  
 435,3612178.819,5025409.062,1059.726,top 15 conc  
 436,3612186.769,5025407.645,1059.711,top 15 conc  
 437,3612193.672,5025406.658,1059.761,top 15 conc  
 438,3612202.792,5025405.355,1059.708,top 15 conc  
 439,3612210.640,5025404.358,1059.721,top 15 conc  
 440,3612218.518,5025403.392,1059.730,top 15 conc  
 441,3612226.522,5025402.558,1059.740,top 15 conc



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442,3612234.532,5025401.897,1059.746,top 15 conc  
443,3612250.573,5025400.525,1059.760,top 15 conc  
444,3612258.647,5025399.987,1059.765,top 15 conc  
445,3612266.603,5025399.561,1059.773,top 15 conc  
446,3612274.652,5025399.079,1059.753,top 15 conc  
447,3612282.712,5025398.896,1059.764,top 15 conc  
448,3612290.663,5025398.732,1059.808,top 15 conc  
449,3612298.677,5025398.444,1059.744,top 15 conc  
450,3612306.760,5025398.241,1059.790,top 15 conc  
451,3612314.777,5025397.975,1059.837,top 15 conc  
452,3612322.836,5025397.815,1059.814,top 15 conc  
453,3612330.843,5025397.770,1059.873,top 15 conc  
454,3612338.881,5025397.841,1059.845,top 15 conc  
455,3612346.830,5025397.716,1059.855,top 15 conc  
456,3612354.866,5025397.589,1059.880,top 15 conc  
457,3612362.896,5025397.441,1059.915,top 15 conc  
458,3612370.927,5025397.495,1059.936,top 15 conc  
459,3612378.983,5025397.465,1059.916,top 15 conc  
460,3612387.014,5025397.475,1059.946,top 15 conc  
461,3612395.020,5025397.540,1059.909,top 15 conc  
462,3612403.113,5025397.720,1059.928,top 15 conc  
463,3612411.134,5025397.876,1059.923,top 15 conc  
464,3612419.184,5025398.044,1059.925,top 15 conc  
465,3612427.259,5025398.284,1059.929,top 15 conc  
466,3612435.305,5025398.480,1059.964,top 15 conc  
467,3612443.343,5025398.636,1059.933,top 15 conc  
468,3612451.344,5025398.706,1059.985,top 15 conc  
469,3612459.438,5025398.798,1059.931,top 15 conc  
470,3612467.403,5025398.916,1059.997,top 15 conc  
471,3612475.484,5025399.010,1059.928,top 15 conc  
472,3612483.635,5025398.923,1060.023,top 15 conc  
473,3612491.634,5025398.874,1060.011,top 15 conc  
474,3612499.720,5025398.820,1059.991,top 15 conc  
475,3612507.665,5025398.846,1060.049,top 15 conc  
476,3612515.716,5025398.901,1059.953,top 15 conc  
477,3612523.793,5025398.981,1060.053,top 15 conc  
478,3612531.850,5025399.125,1060.057,top 15 conc  
479,3612538.811,5025399.199,1060.073,top 15 conc  
480,3612539.895,5025399.239,1060.020,top 15 conc  
481,3612547.967,5025399.190,1060.028,top 15 conc  
482,3612556.014,5025399.253,1060.032,top 15 conc  
483,3612563.971,5025399.341,1060.012,top 15 conc  
484,3612572.040,5025399.424,1060.011,top 15 conc  
485,3612580.093,5025399.311,1060.035,top 15 conc  
486,3612588.149,5025399.265,1060.075,top 15 conc  
487,3612596.091,5025399.219,1060.064,top 15 conc  
488,3612604.303,5025399.180,1060.066,top 15 conc  
489,3612612.248,5025399.265,1060.090,top 15 conc  
490,3612620.252,5025399.300,1060.091,top 15 conc

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491,3612628.309,5025399.341,1060.075,top 15 conc  
492,3612636.362,5025399.419,1060.099,top 15 conc  
493,3612644.417,5025399.292,1060.135,top 15 conc  
494,3612660.505,5025399.080,1060.168,top 15 conc  
495,3612668.505,5025399.411,1060.157,top 15 conc  
496,3612676.481,5025399.388,1060.185,top 15 conc  
497,3612684.613,5025399.494,1060.146,top 15 conc  
498,3612692.648,5025399.507,1060.244,top 15 conc  
499,3612700.662,5025399.544,1060.203,top 15 conc  
500,3612708.636,5025399.656,1060.235,top 15 conc  
501,3612716.743,5025399.695,1060.214,top 15 conc  
502,3612724.796,5025399.988,1060.208,top 15 conc  
503,3612732.787,5025399.927,1060.248,top 15 conc  
504,3612739.903,5025400.057,1060.319,top 15 conc  
505,3611871.995,5025758.423,1059.314,top 18 hdpe  
506,3611878.404,5025738.189,1059.387,top 18 vcp  
507,3611870.903,5025761.304,1062.660,gs  
508,3611882.126,5025728.765,1062.624,gs  
509,3612740.786,5025400.155,1060.295,top 15 conc  
510,3612748.817,5025399.915,1060.307,top 15 conc  
511,3612756.854,5025400.182,1060.331,top 15 conc  
512,3612764.806,5025400.236,1060.321,top 15 conc  
513,3612772.855,5025400.219,1060.363,top 15 conc  
514,3612780.995,5025400.323,1060.357,top 15 conc  
515,3612788.897,5025400.434,1060.404,top 15 conc  
516,3612796.928,5025400.574,1060.404,top 15 conc  
517,3612804.844,5025400.742,1060.415,top 15 conc  
518,3612812.923,5025400.944,1060.437,top 15 conc  
519,3612820.975,5025401.323,1060.466,top 15 conc  
520,3612829.118,5025401.525,1060.476,top 15 conc  
521,3612837.169,5025401.760,1060.524,top 15 conc  
522,3612845.156,5025401.972,1060.514,top 15 conc  
523,3612852.152,5025402.319,1060.539,top 15 conc  
524,3612860.231,5025405.358,1059.747,top 6 hdpe  
525,3612853.036,5025402.478,1060.536,top 15 conc  
526,3612861.030,5025402.575,1060.563,top 15 conc  
527,3612859.334,5025403.812,1059.835,top 6 hdpe  
528,3612869.190,5025402.870,1060.553,top 15 conc  
529,3612877.250,5025403.125,1060.587,top 15 conc  
530,3612885.169,5025403.376,1060.602,top 15 conc  
531,3612893.211,5025403.493,1060.634,top 15 conc  
532,3612901.092,5025403.534,1060.664,top 15 conc  
533,3612909.170,5025403.852,1060.675,top 15 conc  
534,3612917.359,5025403.715,1060.689,top 15 conc  
535,3612925.243,5025403.712,1060.724,top 15 conc  
536,3612933.272,5025403.731,1060.696,top 15 conc  
537,3612934.684,5025403.699,1060.822,top 15 conc reducer  
538,3612935.798,5025403.761,1060.615,top 12 conc reducer  
539,3612937.299,5025403.715,1060.579,top 12 conc



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540,3612945.282,5025403.825,1060.600,top 12 conc  
541,3612953.196,5025403.799,1060.626,top 12 conc  
542,3612961.217,5025403.667,1060.646,top 12 conc  
543,3612969.251,5025403.683,1060.655,top 12 conc  
544,3612977.276,5025403.766,1060.673,top 12 conc  
545,3612985.270,5025403.695,1060.709,top 12 conc  
546,3612993.330,5025403.862,1060.749,top 12 conc  
547,3613001.339,5025403.766,1060.778,top 12 conc  
548,3613009.349,5025403.954,1060.753,top 12 conc  
549,3613016.333,5025404.057,1060.817,top 12 conc  
550,3613065.272,5025404.788,1060.884,top 12 conc  
551,3613073.077,5025404.798,1060.942,top 12 conc  
552,3613129.429,5025405.633,1061.088,top 12 conc  
553,3613137.160,5025405.711,1061.150,top 12 conc  
554,3613225.165,5025403.891,1061.294,top 12 conc  
555,3613233.135,5025403.496,1061.340,top 12 conc  
556,3613338.769,5025403.516,1062.226,fo line  
557,3613347.816,5025401.575,1061.250,tell line  
558,3613305.138,5025401.137,1061.512,top 12 conc  
559,3613313.136,5025401.230,1061.528,top 12 conc  
560,3613321.058,5025401.051,1061.534,top 12 conc  
561,3613328.971,5025401.046,1061.573,top 12 conc  
562,3613352.040,5025400.110,1061.579,top 12 vcp  
563,3613349.845,5025398.626,1061.331,top 5 vcp  
564,3613336.828,5025400.513,1061.677,top 12 vcp  
565,3613342.424,5025400.439,1061.680,top 12 conc  
566,3613342.638,5025400.513,1061.680,top 12 hdpe  
567,3613344.031,5025400.574,1060.329,top 12 fl intake  
568,3613345.646,5025400.480,1061.729,top 12 hdpe  
569,3613351.406,5025400.250,1061.640,top 12 hdpe  
570,3613349.808,5025399.641,1061.244,top 6 hdpe  
571,3611880.861,5025738.053,1059.412,top 18 vcp lat  
572,3611648.419,5024167.854,1067.151,top 12 vcp start repair  
573,3611558.908,5024167.282,1067.441,top 12 hdpe  
574,3612012.778,5029191.845,1079.246,700 -12'8"  
575,3611947.823,5025487.810,1059.313,top 5" clay tile  
576,3612286.050,5025390.141,1059.134,top 6" ads tile  
577,3612372.900,5025389.073,1059.648,fl 5" clay tile  
578,3612397.370,5025389.460,1059.588,top 5" plastic  
579,3611683.328,5024168.057,1066.854,begin repair  
580,3611695.912,5024168.878,1066.738,top 12" hdpe  
581,3611715.696,5024171.484,1066.596,top 12" hdpe  
582,3611735.254,5024175.078,1066.357,top 12" hdpe  
583,3611749.688,5024178.911,1066.183,end repair  
584,3611738.700,5024175.367,1066.004,connection for intake  
585,3611738.566,5024173.127,1066.304,connection for intake  
586,3611856.145,5024260.554,1065.658,begin repair  
587,3611862.242,5024269.031,1065.506,end repair  
588,3611950.786,5024397.856,1064.713,begin repair

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589,3611955.457,5024404.765,1064.666,end repair  
590,3611974.400,5024434.106,1064.451,begin repair  
591,3611983.567,5024448.078,1064.108,end repair  
592,3612053.306,5024630.655,1063.090,begin repair  
593,3612053.680,5024639.123,1062.955,end repair  
594,3612055.439,5024741.877,1062.412,begin repair  
595,3612055.793,5024760.650,1062.311,end repair  
596,3611538.718,5024167.382,1067.492,top 12 hdpe  
597,3611519.145,5024166.988,1067.549,top 12 hdpe  
598,3611499.166,5024166.559,1067.592,top 12 hdpe  
599,3611479.463,5024165.998,1067.667,top 12 hdpe  
600,3611459.318,5024165.989,1067.760,top 12 hdpe  
601,3611431.599,5024165.636,1067.985,top 12 vcp end repair  
602,3611856.151,5024260.502,1065.629,top 15 vcp repair  
603,3611862.296,5024268.974,1065.521,top 15 vcp repair  
604,3611923.563,5024356.552,1065.209,top 15 vcp repair  
605,3611893.856,5024312.412,1065.420,top 15 vcp repair  
606,3610875.022,5024172.919,1073.703,begin repair  
607,3610864.362,5024173.011,1073.958,end repair  
608,3610729.983,5024191.405,1074.318,end repair  
609,3610759.609,5024180.856,1073.999,begin repair  
610,3610656.138,5024218.580,1074.589,begin repair  
611,3610646.237,5024222.023,1074.739,end repair  
612,3610649.434,5024224.039,1075.262,5" clay plugged  
613,3610495.640,5024231.013,1076.083,begin repair  
614,3610484.989,5024230.100,1076.186,end repair  
615,3610486.327,5024226.305,1076.319,4" plastic tile active  
616,3611969.732,5029194.712,1079.408,700 -7'4"  
617,3613035.358,5029183.687,1092.763,700 -6'4"  
618,3613060.511,5029187.838,1093.163,700 -11'6"  
619,3613078.571,5029188.109,1093.415,700 -15'4"  
620,3613100.820,5029186.882,1093.559,700 -15'6"  
1000,3612064.579,5025432.617,1058.159,FL CLAY TILE  
1001,3612060.546,5025434.400,1061.319,GS  
1002,3612070.722,5025430.155,1061.495,GS  
1003,3612052.338,5025439.666,1061.360,GS TILELOCATE  
1004,3612038.371,5025447.158,1061.407,GS PROBED TILE  
1005,3612024.560,5025455.319,1061.392,GS PROBED TILE  
1006,3612012.477,5025462.545,1061.438,GS PROBED TILE  
1007,3611998.726,5025470.327,1061.418,GS PROBED TILE  
1008,3611985.411,5025478.195,1061.530,GS PROBED TILE  
1009,3611973.507,5025485.530,1061.588,GS PROBED TILE  
1010,3611964.542,5025490.591,1061.540,GS PROBED TILE  
1011,3611956.291,5025496.681,1061.617,GS PROBED TILE  
1012,3611963.292,5025491.019,1058.109,FL 15"CLAY  
1013,3611960.720,5025492.848,1061.648,GS  
1014,3611952.035,5025498.680,1061.680,GS DD8 Y NORTH LOCATE  
1015,3611948.316,5025506.481,1058.097,FL 18"CLAY DD8  
1016,3611947.341,5025510.097,1061.699,GS



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1017,3611943.366,5025524.853,1061.656,GS TILE LOCATE  
1018,3611930.464,5025567.825,1061.931,GS TILE LOCATE  
1019,3611912.066,5025625.752,1062.119,GS TILE LOCATE  
1020,3611895.995,5025680.320,1062.329,GS TILE LOCATE  
1021,3611894.063,5025686.801,1062.406,GS TILE LOCATE  
1022,3611871.027,5025759.937,1062.734,GS TILE LOCATE  
1023,3611870.383,5025763.438,1062.562,GS TILE INTAKE  
1024,3611856.548,5025809.799,1063.001,GS TILE LOCATE  
1025,3611952.921,5025489.930,1061.571,GS TILE LOCATE DD122  
1026,3611967.528,5025488.381,1058.061,FL EXPOSED 15"CLAY  
1027,3611972.712,5025485.459,1058.090,FL EXPOSED 15"CLAY  
1028,3611978.265,5025482.317,1058.119,FL EXPOSED 15"CLAY  
1029,3611985.567,5025477.985,1058.117,FL EXPOSED 15"CLAY  
1030,3611992.658,5025473.581,1058.237,FL EXPOSED 15"CLAY  
1031,3612001.960,5025467.917,1058.205,FL EXPOSED 15"CLAY  
1032,3612009.183,5025463.816,1058.115,FL EXPOSED 15"CLAY  
1033,3612015.002,5025460.606,1058.110,FL EXPOSED 15"CLAY  
1034,3612022.106,5025456.568,1058.092,FL EXPOSED 15"CLAY  
1035,3612029.007,5025452.334,1058.031,FL EXPOSED 15"CLAY  
1036,3612034.878,5025449.127,1057.998,FL EXPOSED 15"CLAY  
1037,3612042.189,5025445.240,1057.991,FL EXPOSED 15"CLAY  
1038,3612051.151,5025439.906,1058.023,FL EXPOSED 15"CLAY  
1039,3612064.745,5025432.360,1058.204,FL EXPOSED 15"CLAY  
1040,3612068.031,5025431.080,1058.116,FL EXPOSED 15"CLAY  
1041,3612074.153,5025429.062,1058.116,FL EXPOSED 15"CLAY  
1042,3612083.062,5025425.722,1058.234,FL EXPOSED 15"CLAY@OLD INTK  
1043,3612083.308,5025431.227,1061.468,gs  
1044,3612090.403,5025428.236,1061.571,gs  
1045,3612118.674,5025413.184,1061.450,gs  
1046,3612126.811,5025413.376,1061.401,gs  
1047,3612090.985,5025422.874,1058.167,FL EXPOSED 15"CLAY  
1048,3612098.638,5025419.962,1058.240,FL EXPOSED 15"CLAY  
1049,3612110.187,5025416.695,1061.539,GS  
1050,3612106.274,5025417.354,1058.225,FL EXPOSED 15"CLAY  
1051,3612113.829,5025414.576,1058.183,FL EXPOSED 15"CLAY  
1052,3612119.441,5025412.560,1058.257,FL EXPOSED 15"CLAY @COLLAPSETOPPIPE  
1053,3612124.218,5025410.869,1058.313,FL EXPOSED 15"CLAY @ S SIDE PLASTIC REPAIR  
1054,3612137.750,5025406.028,1058.284,FL EXPOSED 15"CLAY@2.0'NOFPLASTICREPAIR  
1055,3612145.550,5025403.959,1058.317,FL EXPOSED 15"CLAY  
1056,3612152.431,5025402.358,1061.611,GS  
1057,3612157.338,5025400.810,1061.538,GS  
1058,3612164.515,5025399.598,1061.659,GS  
1059,3612175.368,5025399.780,1061.636,GS  
1060,3612186.347,5025398.115,1061.646,GS  
1061,3612154.521,5025401.681,1058.253,FL EXPOSED 15"CLAY  
1062,3612165.392,5025399.929,1058.139,FL EXPOSED 15"CLAY@NSIDE TOPCOLLAPSE  
1063,3612194.676,5025398.172,1061.653,GS  
1064,3612203.789,5025397.432,1061.777,GS  
1065,3612216.176,5025396.219,1061.757,GS

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1066,3612227.192,5025395.815,1061.718,GS  
1067,3612167.185,5025399.639,1058.218,FL EXPOSED 15"CLAY  
1068,3612273.844,5025393.047,1061.677,GS ABOVE TILE  
1069,3612316.448,5025391.083,1061.774,GS ABOVE TILE  
1070,3612359.390,5025390.460,1061.998,GS ABOVE TILE  
1071,3612393.052,5025390.973,1062.234,GS ABOVE TILE  
1072,3612395.474,5025390.623,1062.167,GS ABOVE LATERAL LEFT  
1073,3612371.868,5025390.691,1062.119,GS ABOVE LATERAL LEFT CAPPED  
1074,3612285.712,5025392.472,1061.740,GS ABOVE LATERAL LEFT  
1075,3612441.577,5025391.631,1062.324,GS ABOVE TILE  
1076,3612491.714,5025392.546,1062.564,GS ABOVE TILE  
1077,3612541.411,5025392.909,1062.375,GS ABOVE TILE  
1078,3612590.861,5025393.775,1062.278,GS ABOVE TILE  
1079,3612640.781,5025394.199,1062.310,GS ABOVE TILE  
1080,3612670.356,5025394.655,1062.349,GS ABOVE TILE  
1081,3612576.890,5025393.469,1062.171,GS CAPPED WYE  
1082,3612477.263,5025392.350,1062.463,GS CAPPED WYE  
1083,3613379.638,5025405.613,1071.053,CL ACC E-W  
1084,3613344.424,5025401.653,1067.983,TOP 6" CMP STANDPIPE 7.21'TOPTO FL  
1085,3613343.303,5025400.927,1064.797,GS  
1086,3613343.383,5025400.353,1064.939,GS ABOVE TILE  
1087,3613341.051,5025400.169,1064.990,GS ABOVE TILE  
1088,3613338.033,5025400.583,1065.506,GS ABOVE TILE  
1089,3613330.727,5025401.103,1064.341,GS ABOVE TILE  
1090,3613327.955,5025401.167,1064.256,GS ABOVE TILE  
1091,3613325.659,5025401.172,1064.289,GS ABOVE TILE  
1092,3613334.357,5025400.763,1065.122,GS ROW FENCE E-W  
1093,3611962.185,5025491.913,1058.122,fl 15" clay tile  
1500,3610564.086,5024232.031,1079.027,GS  
1501,3610631.718,5024225.286,1078.564,GS  
1502,3610694.079,5024206.244,1077.834,GS  
1503,3610715.065,5024197.424,1077.859,field edge  
1504,3610732.422,5024189.255,1077.871,tob  
1505,3610746.559,5024185.444,1076.260,fl  
1506,3610771.998,5024178.931,1080.554,tob  
1507,3610781.006,5024176.624,1081.210,EOG  
1508,3610833.905,5024174.792,1079.687,EOG  
1509,3610838.936,5024174.603,1079.251,tob  
1510,3610847.303,5024174.222,1078.106,toe  
1511,3610876.272,5024173.378,1076.950,fl  
1512,3610925.729,5024171.530,1076.523,fl  
1513,3611693.571,5024156.155,1071.550,EOG  
1514,3611595.995,5024156.568,1072.037,EOG  
1515,3611496.871,5024156.859,1072.558,EOG  
1516,3611395.692,5024157.029,1073.582,EOG  
1517,3611296.584,5024156.546,1075.202,EOG  
1518,3611197.514,5024157.013,1077.328,EOG  
1519,3611124.028,5024158.424,1078.786,EOG  
1520,3611025.631,5024157.529,1079.872,EOG

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1521,3610925.978,5024158.264,1080.173,EOG  
1522,3610882.101,5024161.208,1080.037,EOG  
1523,3610859.968,5024164.526,1079.947,EOG  
1524,3610834.610,5024174.252,1079.650,EOG  
1525,3610812.136,5024187.437,1079.596,EOG  
1526,3610791.872,5024204.729,1079.806,EOG  
1527,3610775.482,5024228.418,1080.230,EOG  
1528,3610765.868,5024252.847,1080.470,EOG  
1529,3610741.841,5024245.416,1081.039,EOG  
1530,3610750.744,5024220.839,1081.052,EOG  
1531,3610763.400,5024197.963,1081.163,EOG  
1532,3610781.159,5024176.702,1081.189,EOG  
1533,3610802.251,5024160.635,1081.101,EOG  
1534,3610829.886,5024147.133,1080.819,EOG  
1535,3610857.633,5024138.947,1080.516,EOG  
1536,3610884.721,5024135.268,1080.551,EOG  
1537,3610912.166,5024134.264,1080.511,EOG  
1538,3611672.956,5024168.103,1068.399,fl  
1539,3611714.926,5024170.476,1068.162,toe  
1540,3611738.758,5024174.585,1069.209,tob  
1541,3611749.665,5024179.735,1069.160,field edge  
1542,3611806.020,5024174.573,1069.995,fnc ln  
1543,3611651.515,5024175.740,1071.703,fnc ln  
1544,3613377.948,5024131.485,1076.863,1.5" od ipipe yc#19957  
1545,3613368.552,5025399.230,1070.656,ea  
1546,3613368.667,5025374.335,1070.619,ea  
1547,3613368.415,5025424.458,1070.730,ea  
1548,3613365.721,5025424.675,1070.543,tb  
1549,3613365.305,5025399.229,1070.433,tb  
1550,3613365.256,5025374.296,1070.258,tb  
1551,3613353.786,5025374.659,1065.399,toe  
1552,3613353.532,5025399.934,1065.414,toe  
1553,3613354.435,5025425.387,1065.327,toe  
1554,3613347.207,5025425.343,1064.710,fl ditch  
1555,3613346.384,5025400.190,1064.767,fl ditch  
1556,3613344.918,5025375.149,1065.094,fl ditch  
1557,3613334.632,5025375.343,1065.225,fnc ln  
1558,3613334.345,5025401.013,1065.230,fnc ln  
1559,3613334.764,5025426.077,1065.330,fnc ln  
1560,3613332.021,5025426.174,1064.569,crop ln  
1561,3613331.670,5025401.062,1064.328,crop ln  
1562,3613330.837,5025375.461,1064.156,crop ln  
1563,3613278.858,5025375.660,1064.481,GS  
1564,3613278.216,5025400.719,1064.240,GS  
1565,3613277.308,5025426.021,1063.963,GS  
1566,3613227.118,5025425.088,1063.710,GS  
1567,3613227.260,5025400.448,1063.988,GS  
1568,3613228.755,5025374.988,1064.026,GS  
1569,3613178.577,5025374.284,1063.744,GS



1570,3613178.760,5025399.982,1063.808,GS  
1571,3613178.393,5025424.573,1063.468,GS  
1572,3613127.878,5025424.345,1063.531,GS  
1573,3613128.219,5025399.152,1063.385,GS  
1574,3613128.758,5025374.152,1063.436,GS  
1575,3613078.963,5025373.787,1063.138,GS  
1576,3613078.670,5025398.649,1063.317,GS  
1577,3613078.186,5025423.791,1063.223,GS  
1578,3613027.978,5025423.363,1063.171,GS  
1579,3613028.267,5025398.135,1063.383,GS  
1580,3613028.536,5025373.039,1063.181,GS  
1581,3612978.653,5025372.459,1063.083,GS  
1582,3612978.444,5025397.704,1063.078,GS  
1583,3612978.280,5025422.811,1062.824,GS  
1584,3612928.064,5025422.649,1062.778,GS  
1585,3612928.466,5025397.198,1062.813,gs  
1586,3612928.582,5025372.005,1062.897,GS  
1587,3612878.485,5025371.445,1062.592,GS  
1588,3612878.442,5025396.959,1062.702,GS  
1589,3612878.056,5025421.938,1062.769,GS  
1590,3612828.063,5025421.403,1062.720,GS  
1591,3612828.371,5025396.133,1062.620,GS  
1592,3612828.582,5025371.074,1062.674,GS  
1593,3612778.702,5025370.759,1062.619,GS  
1594,3612778.469,5025395.806,1062.640,GS  
1595,3612778.069,5025420.764,1062.724,GS  
1596,3612727.973,5025420.295,1062.656,GS  
1597,3612728.414,5025395.143,1062.670,GS  
1598,3612728.727,5025370.135,1062.574,GS  
1599,3612678.662,5025369.677,1062.387,GS  
1600,3612678.382,5025394.701,1062.405,GS  
1601,3612677.973,5025419.830,1062.545,GS  
1602,3612628.005,5025419.204,1062.289,GS  
1603,3612628.264,5025394.138,1062.291,GS  
1604,3612628.737,5025369.194,1062.335,GS  
1605,3612578.586,5025368.385,1062.080,GS  
1606,3612578.568,5025393.463,1062.317,GS  
1607,3612577.993,5025418.653,1062.037,GS  
1608,3612528.081,5025418.058,1062.392,GS  
1609,3612528.321,5025393.028,1062.475,GS  
1610,3612528.555,5025367.827,1062.284,GS  
1611,3612478.716,5025367.263,1062.051,GS  
1612,3612478.223,5025392.291,1062.351,GS  
1613,3612477.748,5025417.384,1062.471,GS  
1614,3612428.096,5025416.605,1062.278,GS  
1615,3612428.303,5025391.652,1062.178,GS  
1616,3612428.797,5025366.401,1061.996,GS  
1617,3612378.899,5025365.816,1061.835,GS  
1618,3612378.322,5025390.742,1062.119,GS

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1619,3612378.010,5025415.850,1062.016,GS  
1620,3612329.008,5025416.466,1061.774,GS  
1621,3612328.386,5025391.437,1061.884,GS  
1622,3612327.631,5025366.314,1061.646,GS  
1623,3612277.565,5025367.880,1061.656,GS  
1624,3612278.352,5025392.856,1061.691,GS  
1625,3612279.168,5025418.037,1061.653,GS  
1626,3612230.030,5025420.851,1061.411,GS  
1627,3612228.561,5025395.730,1061.704,GS  
1628,3612227.026,5025370.833,1061.693,GS  
1629,3612177.000,5025373.843,1061.664,GS  
1630,3612121.343,5025385.158,1061.556,GS  
1631,3612074.308,5025402.083,1061.495,GS  
1632,3612026.147,5025425.332,1061.389,GS  
1633,3611981.546,5025451.095,1061.499,GS  
1634,3611939.632,5025476.537,1061.682,GS  
1635,3612178.548,5025398.941,1061.580,GS  
1636,3612180.100,5025423.928,1061.421,GS  
1637,3612138.459,5025432.929,1061.301,GS  
1638,3612091.132,5025449.556,1061.396,GS  
1639,3612049.763,5025469.574,1061.267,GS  
1640,3612007.719,5025493.836,1061.531,GS  
1641,3611962.654,5025521.902,1061.543,GS  
1642,3611952.351,5025498.412,1061.677,GS  
1643,3611974.931,5025488.518,1061.787,tb  
1644,3611997.574,5025476.190,1061.534,tb  
1645,3612039.878,5025451.500,1061.473,tb  
1646,3612084.839,5025430.976,1061.546,tb  
1647,3612131.263,5025413.194,1061.323,tb  
1648,3611915.564,5025494.879,1061.780,GS  
1649,3611924.614,5025516.544,1061.782,GS  
1650,3611939.913,5025540.624,1061.729,GS  
1651,3611922.268,5025570.571,1061.868,GS  
1652,3611899.601,5025547.560,1061.809,GS  
1653,3611882.968,5025526.355,1061.976,GS  
1654,3613354.982,5025388.077,1063.509,fl 24" cmp  
1655,3613355.725,5025369.906,1065.758,edge dstrbd  
1656,3613335.478,5025367.222,1065.469,edge dstrbd  
1657,3613334.888,5025429.054,1065.106,edge dstrbd  
1658,3613362.679,5025428.107,1068.514,edge dstrbd  
1659,3613362.760,5025411.895,1068.992,edge dstrbd  
1660,3613355.454,5025410.019,1065.823,edge dstrbd  
1661,3611775.046,5024159.893,1070.180,edge dstrbd  
1662,3611769.946,5024175.996,1069.581,edge dstrbd  
1663,3611607.282,5024177.660,1071.594,edge dstrbd  
1664,3611411.806,5024179.042,1071.497,edge dstrbd  
1665,3611397.232,5024164.293,1070.870,edge dstrbd  
1666,3611557.892,5024163.181,1069.664,edge dstrbd  
1667,3610885.981,5024166.720,1078.969,edge dstrbd

6666 DD8 2020-11-10

1668,3610884.008,5024180.705,1078.832,edge dstrbd  
1669,3610853.308,5024186.035,1078.531,edge dstrbd  
1670,3610856.665,5024170.475,1078.897,edge dstrbd  
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8060,3604123.120,5025260.470,1041.236,GPS MON 8060  
8070,3618716.220,5034450.740,1112.480,GPS MON  
8070\_GNSS,3618716.220,5034450.740,1112.480,Autonomous Setup





# Drainage Utility Permit Application

## Hardin County

**Applicant:** Heart of Iowa Communication Coop - Jay Duncan

**Contact Email:** jduncan@heartofiowa.coop

**Contact Phone:** (641) 486-2211

**Utility Type:** N/A - Utility Permits Only

**Drainage District:** DDs\DD 44 (51069)

**Description of Work:** DDs 44, 62, 1, 128, 78, 63, 8, 93 & 94 - Heart of Iowa - Install fiber optic cable in rural areas of Eldora & Steamboat Rock. Will work with CGA on facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage Districts. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

\_\_\_\_\_  
Applicant Signature

\_\_\_\_\_  
Date

**Submit Form and Location Plan 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  
drainage@hardincountyia.gov

*For Office Use Only*

### Application Approval:

By:   
Board of Supervisor Chairman, Acting as Drainage District Trustee

Date: 6-7-2020

**APPROVED PERMIT #** 2020-12

- ☐ Application in TCM
- ☐ GIS Annotation
- ☐ Approval Emailed



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant: Heart of Iowa Communications Cooperative  
Company Name  
PO Box 130  
Address  
Union IA 50258-0130  
City State Zip  
Applicant Contact: Jay Duncan ( 641 ) 486 - 2211  
Name Phone  
jduncan@heartofiowa.coop  
Email  
Utility Type: Fiber Optic  
Drainage District(s) Crossed: 44, 62, 1, 128, 78, 63, 8, 93 & 94  
Facilities Crossed (specific tile, open ditch): tile and open ditch  
Description of Work: Install fiber optic cable in rural areas of Eldora and Steamboat Rock. Will work with CGA on  
*(Location plan of proposed utility must be attached.)* facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage District. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

[Signature]  
Applicant Signature

6/10/2020

Date

Submit Form and Location Plan To:

Hardin County Auditor's Office  
Attn: Drainage Clerk  
1215 Edgington Ave, Suite 1  
Eldora, IA 50627  
Fax (641) 939-8225  
[drainage@hardincountyia.gov](mailto:drainage@hardincountyia.gov)

For Office Use Only

Application Approval:

By: [Signature]  
Board of Supervisor Chairman, Acting as Drainage District Trustee

Date: 6-7-2020

APPROVED PERMIT #: \_\_\_\_\_



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## REQUIREMENTS FOR CONSTRUCTION ON, OVER, ACROSS OR BENEATH ESTABLISHED DRAINAGE DISTRICT

Upon issuance of a permit for utilities on, over, across or beneath established Hardin County Drainage Districts, the applicant shall be governed by these requirements and shall comply with all conditions contained herein.

1. The Applicant shall furnish the Drainage District, or its representative, plats showing the exact location of the proposed construction. If it is found that such locations are in conflict with the present or proposed facilities and that a more desirable location is possible, the Applicant shall review such possible alignment changes. **No construction is to commence with the drainage facility without an approved application.**
2. Applicant shall comply with Iowa One-Call requirements prior to commencing any work.
3. The Drainage District shall provide Applicant access to maps or other information regarding the location of all known drainage district facilities so that reasonable care may be taken by Applicant to avoid un-necessary damage to said drainage district facilities.
4. The Applicant shall hold the Drainage District harmless from any damage that may result to the Drainage District facility because of the construction or maintenance of the utility, and shall reimburse the Drainage District for any expenditures that the Drainage District may have to make on said Drainage District facilities resulting from Applicant's construction and installation of utilities, or their subsequent repair or modification.
5. The Applicant shall take all reasonable precaution during the construction of said utility to protect and safeguard the lives and property of the public and adjacent property owners and shall hold the Drainage District harmless from any damages or losses that may be sustained by adjacent property owners on account of such construction operations. Further, Applicant agrees to replace, repair or reimburse all damages to private property occasioned by Applicant's installation of subsequent modification or repairs.
6. The Drainage District assumes no responsibility for damages to the Applicants property occasioned by any construction or maintenance operation of said Drainage District facilities, subsequent to Applicants installation.
7. A copy of a certificate of insurance naming the County/Drainage District as additional insured for their permit work shall be provided to the County Auditor prior to installation. The limit of liability under the insurance policy shall not be less than \$1,000,000 per occurrence.
8. The Applicant agrees to give the Drainage District twenty-four (24) hours (Saturday and Sunday excluded) notice of its intention to commence construction on any lands within the jurisdiction of the Drainage District. Said notice shall be made in writing to the County Auditor or to the designated Drainage District representative.
9. The Applicant agrees to place permanent, visible markers or monuments at locations where utility crosses Drainage District facilities. These monuments or markers shall identify the owners name, address and phone number.
10. The Drainage District Trustees may appoint a representative to inspect and approve all construction across Drainage District facilities as part of this permit. All compensation, wages, mileage and other expenses for this representative will be paid by the Applicant. It will be the responsibility of the Applicant to make all contacts with private parties (adjacent owners/operators) to determine the location of private drainage facilities. Said representative will also inspect all crossing of Drainage District facilities and may, if required, observe the crossing of private drainage facilities, and shall have the authority to require the Applicant to excavate and expose the crossing of any Drainage District facility where the representative believes it prudent to visually examine Applicants crossing of the Drainage District facility. Further, said representative has the authority to suspend construction and installation by the Applicant within any Drainage District jurisdiction by verbal order to the contractor at the site and a telephone call to Applicants contact person listed on page 1 within six (6) hours of the verbal order.





# HARDIN COUNTY

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ELDORA, IA 50627  
(641) 939-8108

11. The construction and maintenance of Applicants installation shall be carried on in such a manner as to not interfere with or interrupt the function of said Drainage District facilities without the express written consent of the Drainage District Representative. In the event it becomes necessary to temporarily stop the flow of water, the following shall be completed by the Applicant:
  - a. If the crossing involves a tile line, the replacement of tile with approved materials, in the manner approved by the Drainage Districts designated representative, shall be performed as rapidly as possible. If the approved method of repair is impossible and the volume of water flowing in the tile is sufficient to create the possibility of crop loss or property damage, the Contractor will be permitted to temporarily block the tile line to prevent the flow of this tile water into the pipeline, or tile line ditch. In the event this tile line is so temporarily blocked, the Contractor will be expected to provide sufficient pumping equipment to pump the impounded tile water across the construction ditch to the undisturbed tile line. Such temporary blockages of said Drainage District tile lines will be removed as rapidly as possible and any tile repairs caused by this blockage will be immediately repaired at the Applicants expense.
  - b. If the crossing involves an open ditch that is carrying sufficient flow of water to make it necessary to place a temporary dam across said open ditch, such temporary dams may be constructed only upon approval from the Drainage District designated representative. The maximum elevation of this impounded water shall be determined by the designated Drainage District representative and all excess water must be allowed to flow across the construction ditch through either a closed metal culvert pipe or by pumping. All temporary dam structures are to be removed as soon as the crossing is completed. The construction and removal of these dams shall be in such a manner that the smooth and efficient function of the drainage ditch is not impaired, with all costs and damages borne by Applicant.
12. The Applicant will at any time subsequent to the commencement of construction, and at Applicants sole expense, reconstruct or replace its installation as may be necessary to conform to new grade or alignments resulting from maintenance or construction operations by the Drainage District in connection with any of its drainage facilities. Applicant agrees to do this within forty-five (45) days of receipt of written request from the Drainage District, or such longer time period as the Drainage District may specify, without cost to the Drainage District. Such reconstruction or realignment of Applicants improvements shall be made in accordance with and approved by the Drainage District or its designated representative. If the Applicant is unable to comply within the time period specified above, the Drainage District may cause the work to be done and the Applicant will pay the cost thereof upon receipt of a statement of such costs.
13. CROSSING OF OPEN DITCH FACILITIES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
  - a. Passage of installation in a horizontal plane five feet (5') below design grade of drainage ditch, as established by the Drainage District representative.
  - b. The above depth to extend to a point two (2) times the design base width of ditch either side of centerline of drainage ditch (measured along the centerline of utility) unless the existing base width is greater than the design bases width. If the existing base width is greater than the design with, the depth is to extend to a point two (2) times the existing width.
  - c. The rate of slope for transition from normal utility laying depth of crossings of drainage ditches shall not be steeper than 4:1.
  - d. If such ditch crossings occur at points of outlets of Drainage District or private tile lines or within twenty-five feet (25') of said outlets, such outlets must be relocated to a point not less than twenty-five feet (25') from such crossings. Such relocations shall be at the expense of the Applicant and as directed by the representative of the Drainage District.

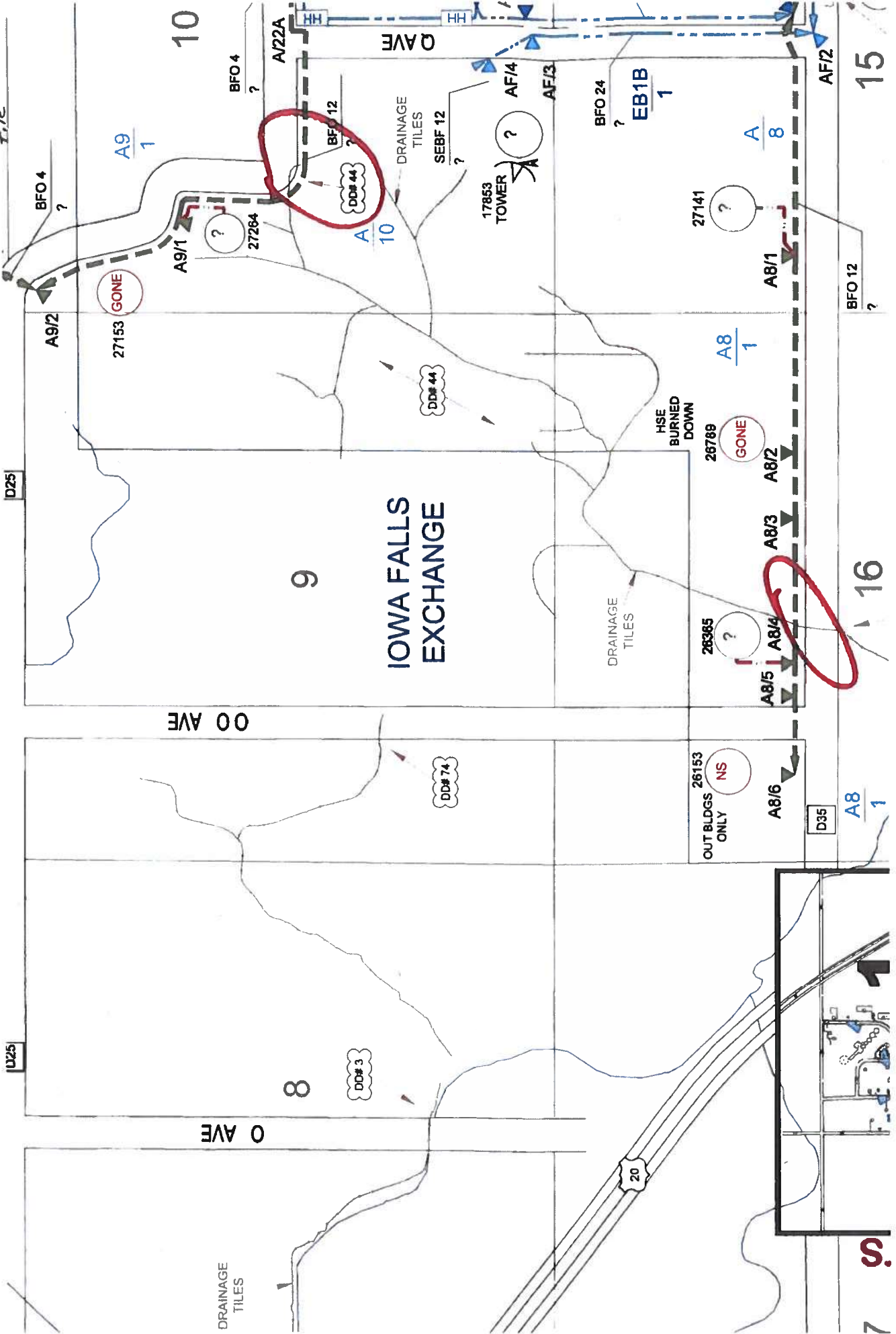


# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

14. **CROSSING OF DRAINAGE DISTRICT TILE LINES.** Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only upon the review by and approval of the designated representative of the Drainage District. Such waiver must be in writing.
  - b. A minimum of one foot (1') clearance below existing Drainage District facilities must be maintained.
  - c. At all crossings of Drainage District tile lines with the proposed utility, one of the following must be used:
    - i. Replace Drainage District tile with reinforced concrete pipe of same or larger diameter than existing tile. Concrete pipe to be 2,000 D strength (Iowa Department of Transportation approved) with standard tongue and groove joints. Pipe to have a minimum of three (3) bolt-type connectors at each joint.
    - ii. Replace Drainage District tile with cathodic protected corrugated metal pipe. Diameter of corrugated metal pipe to be a minimum of two inches (2") larger than outside diameter of tile line being replaced. (Specifications regarding gage, cathodic protection and other details to be subject to review and approval.)
    - iii. Dual wall plastic with specific approval of Drainage District representative.
    - iv. Bore new utility installation; maintain existing tile in an undisturbed state.
  - d. The length of tile to be replaced by any of the above alternates is as follows:
    - i. Eight-inch (8") tile and smaller: Six feet (6') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
    - ii. Ten inch (10") tile and larger: Ten feet (10') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
  - e. At all crossings of Drainage District tile lines where the Drainage District and private tile lines are damaged by the construction, maintenance or repair of Applicants installation shall be repaired as directed by the Drainage Districts designated representative.
15. This permit is subject to existing regulations and statutes of the State of Iowa and future regulations, which may be promulgated or enacted.
16. This application is subject to revocation by Hardin County, if in its judgment it is necessary for legitimate purposes. In such event, written notice shall be provided to permit holder.
17. Applicant agrees to pay all other legitimate costs, fees and expenses associated with its crossing of the Drainage District facility, including but not limited to, publication costs, engineering costs and legal service costs. Said costs will be paid within thirty (30) days of the mailing of the statements to the Applicant.
18. Applicant agrees to provide a copy of as-built plan of the utility route and location, showing route changes that may have taken place during construction.
19. Applicant agrees to include a copy of these requirements to all bidding specifications; or if the construction and installation contract has been let by the time this permit is approved, Applicant agrees to provide a copy of these requirements to the contractor and to advise them that they are bound by the terms of these requirements.

DD 44  
tile



is





Utility Permit #2020-12

## Utility Observation Report

General Information	
<b>Project Name and Number:</b>	Utility Permit 6772.1
<b>Drainage District Number:</b>	#44
<b>Drainage District Facility ID:</b>	Main
<b>Project Location:</b> (1/4, Sec, Twp, Rng and road)	NW-16-88-20
<b>Date of Observation:</b>	10/20/2020
<b>Observer Name/Title:</b>	Chris Sweeney

Field Observations	
<b>District facility type:</b>	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
<b>Utility Orientation:</b>	<input type="checkbox"/> Parallel <input checked="" type="checkbox"/> Crossing <input type="checkbox"/> Overhead <input type="checkbox"/> Over <input checked="" type="checkbox"/> Under <input type="checkbox"/> Same Elevation Other:
<b>Source of utility elevation and/or location:</b>	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input checked="" type="checkbox"/> Utility Reported Other:
<b>Utility Elevation:</b>	1066.6'
<b>Source of district facility elevation and/or location:</b>	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
<b>District Facility Elevation:</b> (include where measured)	1073.1' (bottom of tile)
<b>Vertical clearance from district facility:</b> (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	6.5'



### Utility Permit #2020-12

<b>Horizontal clearance from District Tile or Open Ditch centerline:</b>	NA		
<b>Tile outlets within 25-feet relocated? (If applicable)</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<b>Original tile size &amp; material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input type="checkbox"/> VCP Other: 6-inch unreinforced concrete		
<b>Tile replaced by utility?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<b>Tile replacement material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:		
<b>Condition of District tile:</b>	Intact		
<b>Signage present?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A

### Notes

Signage was not installed at time of observation and will need to be confirmed with Utility if desired by District Trustees.

CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

10-20-20

DAYS OF WEEK:

S M T W T F S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6772.1

COUNTY, ROUTE, ROAD:

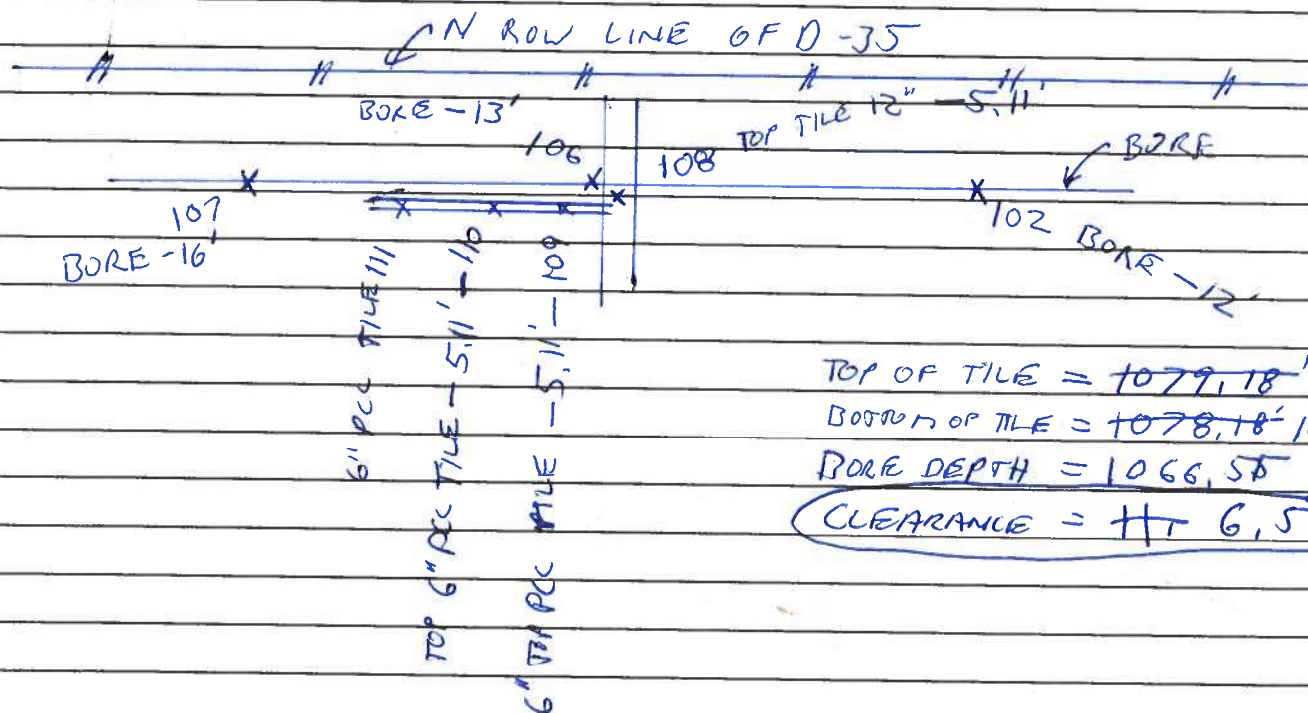
DD 44 MAIN

LOCATION:

CORR D-35

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

STARTED W/ JOB # 6867 SAVED AS 6772 DD44  
PI 1 ✓ 3 SET #34 1/2" Ø x 2.0' DR 5' ± NW OF CP  
PI 34 ✓ 3



TOP OF TILE = 1079.18' 1074.01

BOTTOM OF TILE = 1078.18' 1073.07

BORE DEPTH = 1066.58

CLEARANCE = 11' 6.52

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

Observer's Signature:

*[Signature]*

Date Prepared:

10-20-20

Reviewed by:

☐ Engineer

Date Reviewed











6772 DD44 2020-10-20 cs

1,10000.000,10000.000,1000.000,cpt  
2,10000.000,10000.000,1122.405,Autonomous Setup  
3,9954.168,9344.162,1124.477,surv mark  
4,9626.948,9924.345,1117.327,gs locate  
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6,9648.190,9924.069,1110.729,cpp8 top  
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8,9713.241,9921.523,1118.569,gs locate  
9,9753.487,9919.909,1118.850,gs locate  
10,9798.350,9918.717,1119.227,gs locate  
11,9831.169,9912.377,1119.065,gs locate  
12,9859.709,9882.751,1118.173,gs locate  
13,9873.698,9843.643,1117.398,gs locate  
14,9882.456,9812.439,1116.703,gs locate  
15,9886.663,9783.824,1116.773,gs locate  
16,9893.867,9749.343,1116.484,gs locate  
17,9899.392,9702.860,1116.451,gs locate  
18,9899.679,9674.934,1116.117,riser15 e side  
19,9905.271,9669.438,1115.893,gs locate  
20,9915.869,9653.111,1111.768,bint fl  
21,9595.439,9414.971,1114.534,tint fl  
22,9574.001,9898.485,1117.207,riser15 e side  
23,9582.440,9927.184,1110.520,tee8 top e-w-n  
24,9582.706,9925.966,1110.687,TOP 7" VCP (0.62' TOP TO FL)  
25,9582.367,9928.053,1110.570,TOP 7" VCP (0.62' TOP TO FL)  
26,9909.783,9652.971,1112.411,TOP 6" VCP (0.57' TOP TO FL)  
27,9582.536,9927.010,1110.005,FL NEW  
28,9909.784,9652.971,1111.841,FL NEW  
29,9909.365,9404.343,1119.542,IR 34 YC 19957  
30,9567.129,9405.420,1118.406,IR 34  
31,9568.745,9941.371,1116.633,IR 34  
32,9911.042,9940.349,1121.000,IR 34 YC 19957  
33,23560.910,4046.087,1039.521,HC GPS MON 8055  
34,9996.325,6702.996,1126.355,ir 12 0.5d  
35,9584.142,9918.760,1110.734,TOP 7" VCP TILE (0.65' TOP TO FL)  
36,9584.142,9918.760,1110.084,FL NEW  
37,9584.924,9919.164,1110.933,TOP 8" HDPE TILE (0.73' TO FL)  
38,9603.711,9913.281,1110.978,TOP 8" HDPE TILE (0.73' TO FL)  
39,9623.519,9910.649,1111.036,TOP 8" HDPE TILE (0.73' TO FL)  
40,9643.540,9910.187,1111.113,TOP 8" HDPE TILE (0.73' TO FL)  
41,9683.529,9908.099,1111.237,TOP 8" HDPE TILE (0.73' TO FL)  
42,9663.505,9909.167,1111.187,TOP 8" HDPE TILE (0.73' TO FL)  
43,9667.988,9914.694,1115.010,TOP 4" CPP TILE  
44,9690.184,9903.183,1116.534,TOP 4" CPP TILE  
45,9703.553,9907.271,1111.298,TOP 8" HDPE TILE (0.73' TOP TO FL)  
46,9723.505,9907.091,1111.366,TOP 8" HDPE TILE (0.73' TOP TO FL)  
47,9743.526,9906.118,1111.419,TOP 8" HDPE TILE (0.73' TOP TO FL)  
48,9763.473,9904.757,1111.494,TOP 8" HDPE TILE (0.73' TOP TO FL)  
49,9783.722,9903.679,1111.546,TOP 8" HDPE TILE (0.73' TOP TO FL)



6772 DD44 2020-10-20 cs

50,9628.403,9881.296,1120.549,BLD SE COR  
 51,9679.566,9881.115,1120.671,BLD NE COR  
 52,9760.203,9880.854,1121.486,BLD SE COR  
 53,9811.426,9880.567,1121.477,BLD NE COR  
 54,9808.970,9504.605,1121.205,BLD NW COR  
 55,9803.759,9903.317,1111.623,TOP 8" HDPE TILE (0.73' TO FL)  
 56,9584.768,9915.666,1110.709,TOP 7" VCP TILE (0.62' TOP TO FL)  
 57,9583.908,9919.862,1110.821,TOP 8"\*8"\*8" HDPE WYE TILE TO NW  
 58,9583.413,9921.929,1110.736,TOP EXISTING 8"\*8"\*8" HDPE WYE TO SW  
 59,9587.015,9918.378,1110.939,TOP 8" HDPE BAND TILE (  
 60,9823.726,9902.681,1111.670,TOP 8" HDPE TILE (0.73' TO FL)  
 61,9584.506,9917.006,1110.847,TOP 8" HDPE BAND  
 62,9585.236,9919.039,1110.935,TOP 8" HDPE TILE (0.73' TO FL)  
 63,9584.668,9915.661,1110.768,TOP 8" HDPE TILE (0.73' TO FL)  
 64,9589.434,9923.191,1111.576,TOP 8" CLAY/PLASTIC COUPLER (0.73' TO FL)  
 65,9824.419,9902.517,1111.678,TOP 8" HDPE 45 BEND (0.73'TO FL)  
 66,9835.875,9885.988,1111.742,TOP 8" HDPE TILE (0.73' TO FL)  
 67,9844.675,9867.899,1111.797,TOP 8" HDPE TILE (0.73' TO FL)  
 68,9853.083,9849.735,1111.848,TOP 8" HDPE TILE (0.73' TO FL)  
 69,9860.410,9831.099,1111.908,TOP 8" HDPE TILE (0.73' TO FL)  
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 71,9870.343,9792.306,1112.039,TOP 8" HDPE TILE (0.73' TO FL)  
 72,9875.359,9772.882,1112.107,TOP 8" HDPE TILE (0.73' TO FL)  
 73,9872.833,9782.088,1112.071,TOP 8"TO 4" REDUCERTILE TEE (0.73' TO FL)  
 74,9880.882,9753.619,1112.183,TOP 8" HDPE TILE TEE (0.73' TO FL)  
 75,9886.546,9734.361,1112.247,TOP 8" HDPE TILE TEE (0.73' TO FL)  
 76,9891.742,9714.825,1112.299,TOP 8" HDPE TILE TEE (0.73' TO FL)  
 77,9896.601,9695.407,1112.356,TOP 8" HDPE TILE TEE (0.73' TO FL)  
 78,9900.835,9689.662,1111.735,TOP 8" SW PERF TILE END PLUGGED  
 79,9903.039,9676.045,1112.399,TOP 8" HDPE TILE (0.73' TOP TO FL)  
 80,9910.741,9652.993,1112.440,TOP 6" VCP (0.57' TOP TO FL)  
 81,9901.306,9674.287,1112.094,TOP 4" PVC PIPE (0.35'TOPTOFL)  
 82,9899.630,9674.027,1112.019,TOP 4" PVC PIPE (0.35'TOPTOFL)  
 83,9899.248,9673.959,1111.628,FL PVC PIPE (0.35'TOPTOFL)  
 84,9910.661,9652.942,1112.499,TOP 8" FRATCO REDUCER  
 85,9908.273,9656.539,1112.522,TOP 8" HDPE TILE (0.73' TO FL)  
 86,9854.051,9829.838,1114.949,TOP 4" PERF CPP TILE S SIDE  
 87,9869.802,9819.884,1114.597,TOP 4" PERF CPP TILE N SIDE  
 88,9910.418,9652.844,1112.611,TOP 8" HDPE 45 BEND (0.73'TOPTOFL)  
 89,9907.216,9655.570,1112.503,TOP 8" HDPE 45 BEND (0.73'TOPTOFL)  
 90,9582.562,9927.140,1110.683,TOP 8" HDPE TEE (0.73'TOPTOFL)  
 91,9583.660,9927.409,1110.644,TOP 8" HDPE BAND  
 92,9582.223,9928.025,1110.595,TOP 8"EXTERNAL/INTERNAL FRATCO COUPLER  
 93,9583.032,9924.291,1110.782,TOP 8" HDPE BAND  
 94,9903.460,9674.420,1112.399,TOP HDPE TILE  
 95,9869.632,9781.934,1114.538,TOP 4" CPP TILE TEE  
 96,9872.108,9781.854,1112.379,TOP 4" CPP TILE TEE  
 97,9816.019,9671.970,1122.837,TOP FAN CONC  
 98,9903.039,9676.045,1111.660,FL

6772 DD44 2020-10-20 cs

99,9889.048,9674.149,1112.528,TOP 4" PVC PIPE (0.35'TOFTOFL)  
100,9902.560,9674.253,1111.822,FL TEE S  
101,9890.076,9674.184,1112.567,TOP 4" PVC GATE VALVE (0.40' TOFTOFL)  
102,9992.918,3717.508,1080.039,700 -12'  
103,9902.562,9674.199,1112.225,TOP 4" CPP  
104,9895.395,9674.072,1112.491,TOP 4" CPP  
105,9890.242,9674.429,1112.390,TOP 4" CPP  
106,9993.570,3704.399,1079.549,700 -13'  
107,9992.743,3689.590,1079.472,700 -16'  
108,9992.593,3704.475,1079.178,962? 12? -5.11  
109,9992.265,3704.359,1079.965,510 6 -5.11  
110,9992.273,3701.083,1080.990,510 6 -5.11  
111,9992.435,3694.804,1076.027,510 6  
8054,8597.084,4604.774,1102.260,Remote Elevation Benchmark  
8055,8597.083,4604.763,1102.260,8054



# Drainage Utility Permit Application

## Hardin County

**Applicant:** Heart of Iowa Communication Coop - Jay Duncan

**Contact Email:** jduncan@heartofiowa.coop

**Contact Phone:** (641) 486-2211

**Utility Type:** N/A - Utility Permits Only

**Drainage District:** DDs\DD 44 (51069)

**Description of Work:** DDs 44, **62**, 1, 128, 78, 63, 8, 93 & 94 - Heart of Iowa - Install fiber optic cable in rural areas of Eldora & Steamboat Rock. Will work with CGA on facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage Districts. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

\_\_\_\_\_  
**Applicant Signature**

\_\_\_\_\_  
**Date**

**Submit Form and Location Plan 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  
drainage@hardincountya.gov

*For Office Use Only*

### Application Approval:

**By:**   
*Board of Supervisor Chairman, Acting as Drainage District Trustee*

**Date:** 6-7-2020

**APPROVED PERMIT #** 2020-12

- ☐ Application in TCM
- ☐ GIS Annotation
- ☐ Approval Emailed





# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant: Heart of Iowa Communications Cooperative  
Company Name  
PO Box 130  
Address  
Union IA 50258-0130  
City State Zip  
Applicant Contact: Jay Duncan ( 641 ) 486 - 2211  
Name Phone  
jduncan@heartofiowa.coop  
Email  
Utility Type: Fiber Optic  
Drainage District(s) Crossed: 44, 62, 1, 128, 78, 63, 8, 93 & 94  
Facilities Crossed (specific tile, open ditch): tile and open ditch  
Description of Work: Install fiber optic cable in rural areas of Eldora and Steamboat Rock. Will work with CGA on  
*(Location plan of proposed utility must be attached.)* facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage District. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

[Signature]  
Applicant Signature

6/10/2020

Date

Submit Form and Location Plan To:

Hardin County Auditor's Office  
Attn: Drainage Clerk  
1215 Edgington Ave, Suite 1  
Eldora, IA 50627  
Fax (641) 939-8225  
[drainage@hardincountyia.gov](mailto:drainage@hardincountyia.gov)

*For Office Use Only*

Application Approval:

By: [Signature]  
Board of Supervisor Chairman, Acting as Drainage District Trustee

Date: 6-7-2020

APPROVED PERMIT #: \_\_\_\_\_



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## REQUIREMENTS FOR CONSTRUCTION ON, OVER, ACROSS OR BENEATH ESTABLISHED DRAINAGE DISTRICT

Upon issuance of a permit for utilities on, over, across or beneath established Hardin County Drainage Districts, the applicant shall be governed by these requirements and shall comply with all conditions contained herein.

1. The Applicant shall furnish the Drainage District, or its representative, plats showing the exact location of the proposed construction. If it is found that such locations are in conflict with the present or proposed facilities and that a more desirable location is possible, the Applicant shall review such possible alignment changes. **No construction is to commence with the drainage facility without an approved application.**
2. Applicant shall comply with Iowa One-Call requirements prior to commencing any work.
3. The Drainage District shall provide Applicant access to maps or other information regarding the location of all known drainage district facilities so that reasonable care may be taken by Applicant to avoid un-necessary damage to said drainage district facilities.
4. The Applicant shall hold the Drainage District harmless from any damage that may result to the Drainage District facility because of the construction or maintenance of the utility, and shall reimburse the Drainage District for any expenditures that the Drainage District may have to make on said Drainage District facilities resulting from Applicant's construction and installation of utilities, or their subsequent repair or modification.
5. The Applicant shall take all reasonable precaution during the construction of said utility to protect and safeguard the lives and property of the public and adjacent property owners and shall hold the Drainage District harmless from any damages or losses that may be sustained by adjacent property owners on account of such construction operations. Further, Applicant agrees to replace, repair or reimburse all damages to private property occasioned by Applicant's installation of subsequent modification or repairs.
6. The Drainage District assumes no responsibility for damages to the Applicants property occasioned by any construction or maintenance operation of said Drainage District facilities, subsequent to Applicants installation.
7. A copy of a certificate of insurance naming the County/Drainage District as additional insured for their permit work shall be provided to the County Auditor prior to installation. The limit of liability under the insurance policy shall not be less than \$1,000,000 per occurrence.
8. The Applicant agrees to give the Drainage District twenty-four (24) hours (Saturday and Sunday excluded) notice of its intention to commence construction on any lands within the jurisdiction of the Drainage District. Said notice shall be made in writing to the County Auditor or to the designated Drainage District representative.
9. The Applicant agrees to place permanent, visible markers or monuments at locations where utility crosses Drainage District facilities. These monuments or markers shall identify the owners name, address and phone number.
10. The Drainage District Trustees may appoint a representative to inspect and approve all construction across Drainage District facilities as part of this permit. All compensation, wages, mileage and other expenses for this representative will be paid by the Applicant. It will be the responsibility of the Applicant to make all contacts with private parties (adjacent owners/operators) to determine the location of private drainage facilities. Said representative will also inspect all crossing of Drainage District facilities and may, if required, observe the crossing of private drainage facilities, and shall have the authority to require the Applicant to excavate and expose the crossing of any Drainage District facility where the representative believes it prudent to visually examine Applicants crossing of the Drainage District facility. Further, said representative has the authority to suspend construction and installation by the Applicant within any Drainage District jurisdiction by verbal order to the contractor at the site and a telephone call to Applicants contact person listed on page 1 within six (6) hours of the verbal order.



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

11. The construction and maintenance of Applicants installation shall be carried on in such a manner as to not interfere with or interrupt the function of said Drainage District facilities without the express written consent of the Drainage District Representative. In the event it becomes necessary to temporarily stop the flow of water, the following shall be completed by the Applicant:
  - a. If the crossing involves a tile line, the replacement of tile with approved materials, in the manner approved by the Drainage Districts designated representative, shall be performed as rapidly as possible. If the approved method of repair is impossible and the volume of water flowing in the tile is sufficient to create the possibility of crop loss or property damage, the Contractor will be permitted to temporarily block the tile line to prevent the flow of this tile water into the pipeline, or tile line ditch. In the event this tile line is so temporarily blocked, the Contractor will be expected to provide sufficient pumping equipment to pump the impounded tile water across the construction ditch to the undisturbed tile line. Such temporary blockages of said Drainage District tile lines will be removed as rapidly as possible and any tile repairs caused by this blockage will be immediately repaired at the Applicants expense.
  - b. If the crossing involves an open ditch that is carrying sufficient flow of water to make it necessary to place a temporary dam across said open ditch, such temporary dams may be constructed only upon approval from the Drainage District designated representative. The maximum elevation of this impounded water shall be determined by the designated Drainage District representative and all excess water must be allowed to flow across the construction ditch through either a closed metal culvert pipe or by pumping. All temporary dam structures are to be removed as soon as the crossing is completed. The construction and removal of these dams shall be in such a manner that the smooth and efficient function of the drainage ditch is not impaired, with all costs and damages borne by Applicant.
12. The Applicant will at any time subsequent to the commencement of construction, and at Applicants sole expense, reconstruct or replace its installation as may be necessary to conform to new grade or alignments resulting from maintenance or construction operations by the Drainage District in connection with any of its drainage facilities. Applicant agrees to do this within forty-five (45) days of receipt of written request from the Drainage District, or such longer time period as the Drainage District may specify, without cost to the Drainage District. Such reconstruction or realignment of Applicants improvements shall be made in accordance with and approved by the Drainage District or its designated representative. If the Applicant is unable to comply within the time period specified above, the Drainage District may cause the work to be done and the Applicant will pay the cost thereof upon receipt of a statement of such costs.
13. CROSSING OF OPEN DITCH FACILITIES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
  - a. Passage of installation in a horizontal plane five feet (5') below design grade of drainage ditch, as established by the Drainage District representative.
  - b. The above depth to extend to a point two (2) times the design base width of ditch either side of centerline of drainage ditch (measured along the centerline of utility) unless the existing base width is greater than the design bases width. If the existing base width is greater than the design with, the depth is to extend to a point two (2) times the existing width.
  - c. The rate of slope for transition from normal utility laying depth of crossings of drainage ditches shall not be steeper than 4:1.
  - d. If such ditch crossings occur at points of outlets of Drainage District or private tile lines or within twenty-five feet (25') of said outlets, such outlets must be relocated to a point not less than twenty-five feet (25') from such crossings. Such relocations shall be at the expense of the Applicant and as directed by the representative of the Drainage District.





# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

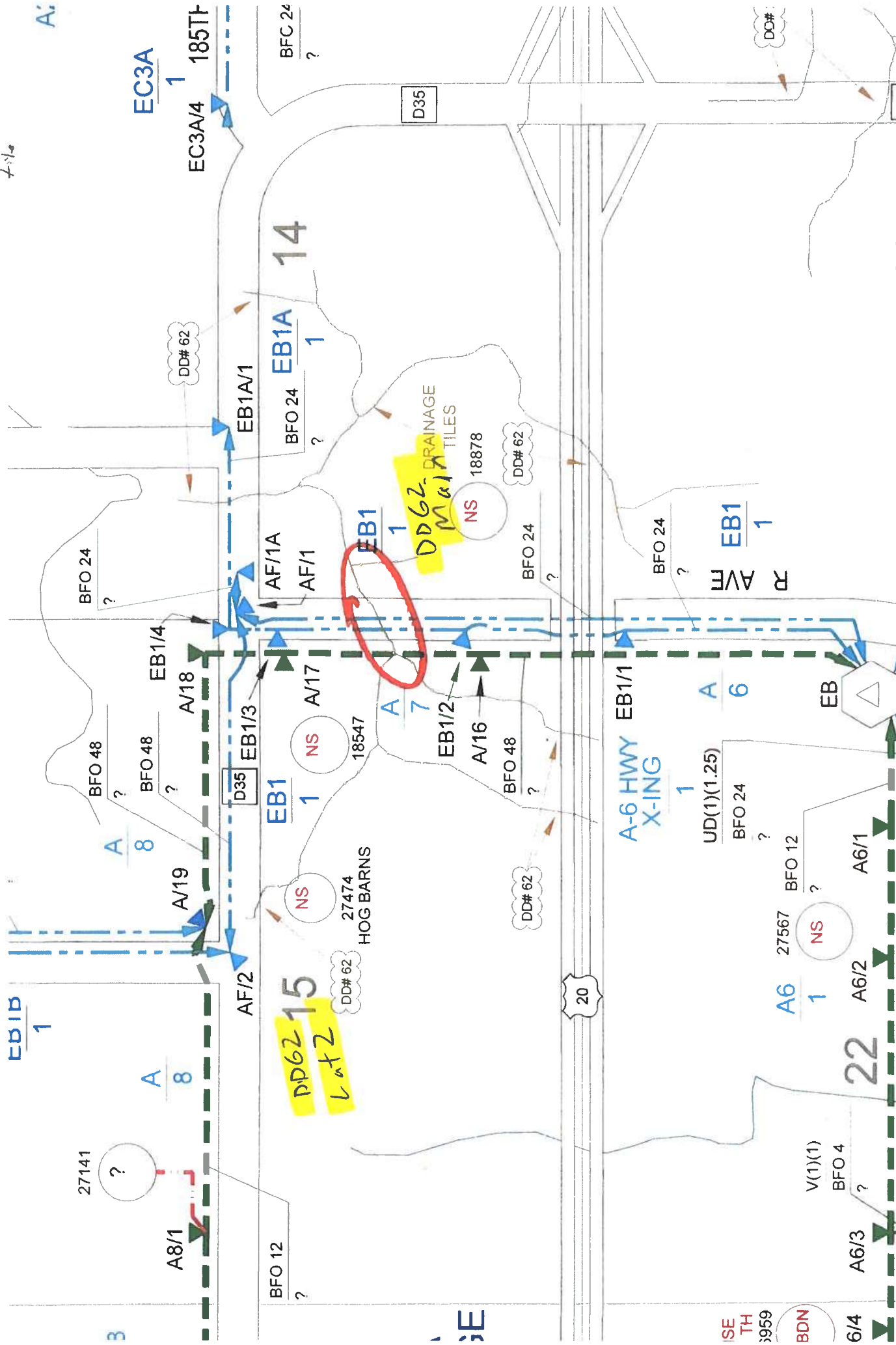
**14. CROSSING OF DRAINAGE DISTRICT TILE LINES.** Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:

- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only upon the review by and approval of the designated representative of the Drainage District. Such waiver must be in writing.
- b. A minimum of one foot (1') clearance below existing Drainage District facilities must be maintained.
- c. At all crossings of Drainage District tile lines with the proposed utility, one of the following must be used:
  - i. Replace Drainage District tile with reinforced concrete pipe of same or larger diameter than existing tile. Concrete pipe to be 2,000 D strength (Iowa Department of Transportation approved) with standard tongue and groove joints. Pipe to have a minimum of three (3) bolt-type connectors at each joint.
  - ii. Replace Drainage District tile with cathodic protected corrugated metal pipe. Diameter of corrugated metal pipe to be a minimum of two inches (2") larger than outside diameter of tile line being replaced. (Specifications regarding gage, cathodic protection and other details to be subject to review and approval.)
  - iii. Dual wall plastic with specific approval of Drainage District representative.
  - iv. Bore new utility installation; maintain existing tile in an undisturbed state.
- d. The length of tile to be replaced by any of the above alternates is as follows:
  - i. Eight-inch (8") tile and smaller: Six feet (6') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
  - ii. Ten inch (10") tile and larger: Ten feet (10') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
- e. At all crossings of Drainage District tile lines where the Drainage District and private tile lines are damaged by the construction, maintenance or repair of Applicants installation shall be repaired as directed by the Drainage Districts designated representative.

- 15. This permit is subject to existing regulations and statutes of the State of Iowa and future regulations, which may be promulgated or enacted.
- 16. This application is subject to revocation by Hardin County, if in its judgment it is necessary for legitimate purposes. In such event, written notice shall be provided to permit holder.
- 17. Applicant agrees to pay all other legitimate costs, fees and expenses associated with its crossing of the Drainage District facility, including but not limited to, publication costs, engineering costs and legal service costs. Said costs will be paid within thirty (30) days of the mailing of the statements to the Applicant.
- 18. Applicant agrees to provide a copy of as-built plan of the utility route and location, showing route changes that may have taken place during construction.
- 19. Applicant agrees to include a copy of these requirements to all bidding specifications; or if the construction and installation contract has been let by the time this permit is approved, Applicant agrees to provide a copy of these requirements to the contractor and to advise them that they are bound by the terms of these requirements.

7-1-10

A:





Utility Permit #2020-12

## Utility Observation Report

General Information	
<b>Project Name and Number:</b>	Utility Permit 6867.3
<b>Drainage District Number:</b>	#62
<b>Drainage District Facility ID:</b>	Main and Lateral #2
<b>Project Location:</b> (1/4, Sec, Twp, Rng and road)	SE-15-88-20
<b>Date of Observation:</b>	10/21/2020
<b>Observer Name/Title:</b>	Chris Sweeney

Field Observations	
<b>District facility type:</b>	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
<b>Utility Orientation:</b>	<input type="checkbox"/> Parallel <input checked="" type="checkbox"/> Crossing <input type="checkbox"/> Overhead <input type="checkbox"/> Over <input checked="" type="checkbox"/> Under <input type="checkbox"/> Same Elevation Other:
<b>Source of utility elevation and/or location:</b>	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input checked="" type="checkbox"/> Utility Reported Other:
<b>Utility Elevation:</b>	@ Lat 2 – 1103.2. @ Main – 1083.9'
<b>Source of district facility elevation and/or location:</b>	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
<b>District Facility Elevation:</b> (include where measured)	Lat 2 – 1112.1' (bottom of tile) Main – 1094.1' (flowline of tile)
<b>Vertical clearance from district facility:</b> (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	@ Lat 2 – 8.9' @ Main – 10.2'





Utility Permit #2020-12

<b>Horizontal clearance from District Tile or Open Ditch centerline:</b>	
<b>Tile outlets within 25-feet relocated? (If applicable)</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<b>Original tile size &amp; material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input checked="" type="checkbox"/> VCP Other: 6"
<b>Tile replaced by utility?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
<b>Tile replacement material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:
<b>Condition of District tile:</b>	Intact
<b>Signage present?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A

**Notes**

Signage was not installed at time of observation and will need to be confirmed with Utility if desired by District Trustees.

CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

10-20-20

DAYS OF WEEK:

S M T W T F S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6867.3

COUNTY, ROUTE, ROAD:

DD 62

LOCATION:

SEC 15

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

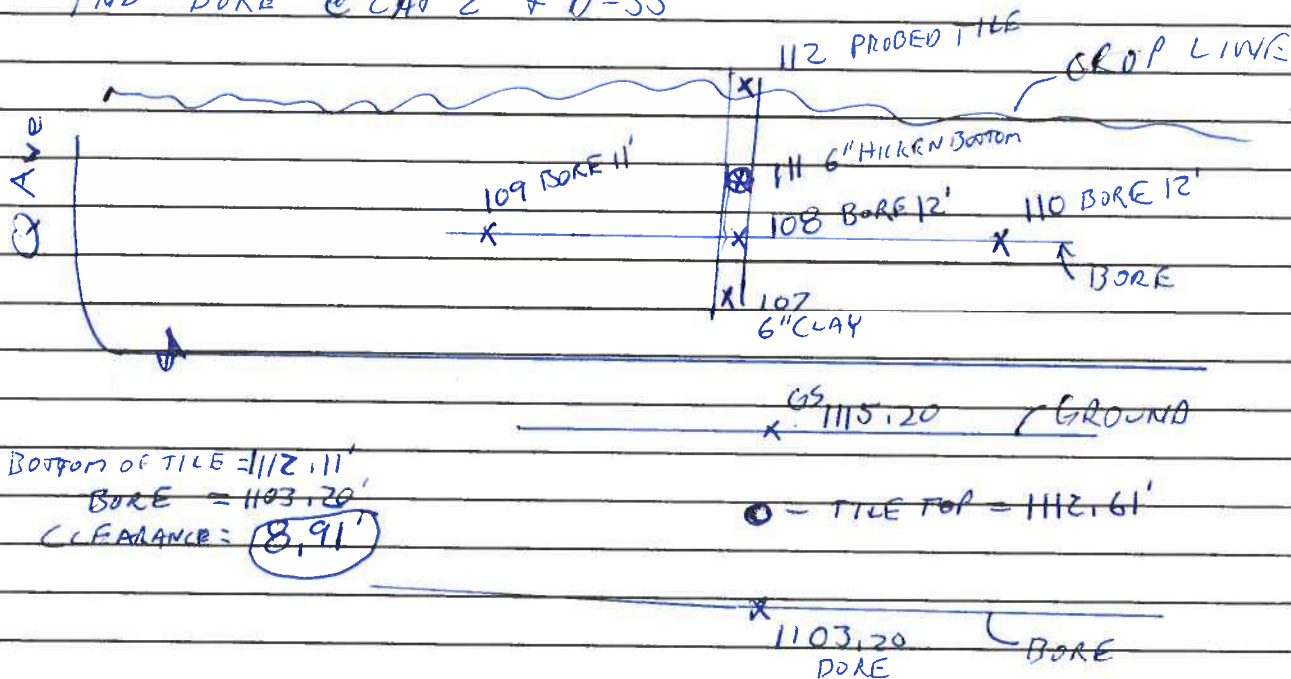
ARRIVED ON SET T1 ✓ 3

- LOOKED AT CROSSINGS @ R AVE (GPS 102) FND TILE

- DID NOT FIND BORE. WENT + TALKED TO THE CREW

THEY SAID THAT THEY HAD NOT DONE MOST OF THE  
BORES FOR THESE JOBS TODAY

- FND BORE @ LAT 2 + D-35



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

Observer's Signature:

*an [signature]*

Date Prepared:

10-20-20

Reviewed by:

Engineer

Date Reviewed



GPS #107 Looking W



2020/10/20



2020/10/20

GPS #107 Looking N



GPS #107



GPS #102



GPS #102 LOOKING N



2020/10/20



2020/10/20

GPS #102 LOOKING N,



CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

10-21-20

DAYS OF WEEK:

S M T W T F S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6867.3

COUNTY, ROUTE, ROAD:

0062

LOCATION:

SEC 15 R AVE

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

π 1 √3

TIED OUT CROSSING

TOP OF TILE = 1095.60'

GS @ CROSSING = 1103.87'

FL OF TILE = 1094.10'

DEPTH OF BORE = 1083.87'

CLEARANCE = -10.23'

106 TOP TILE - 5.11'

102 TOP 18" CLAY

34 DUNE DEPTH - 20'

RAVE

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

Observer's Signature:

*Chris Ramsey*

Date Prepared:

10-21-20

Reviewed by:

☐ Engineer

Date Reviewed



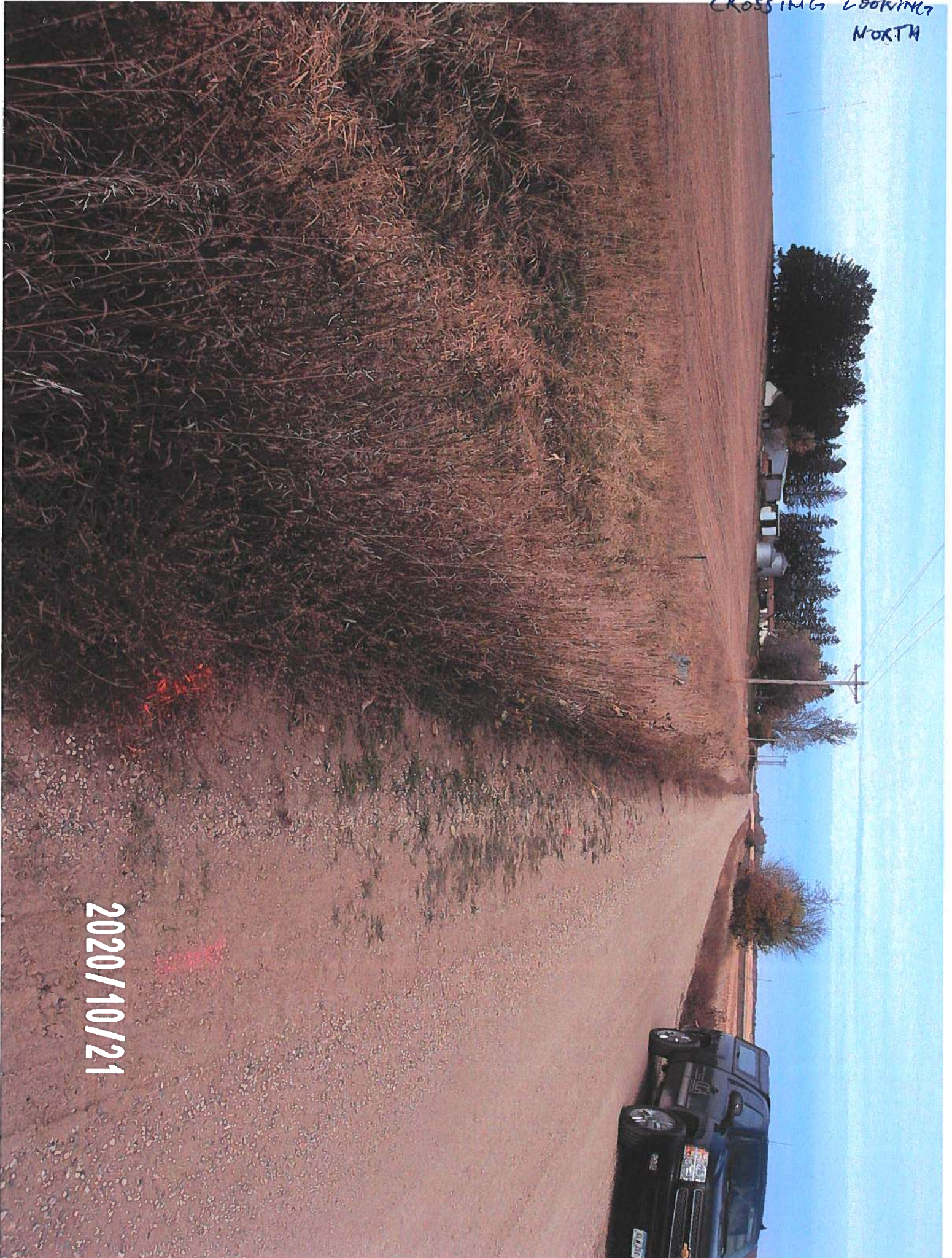
DEPTH OF BORE

2020/10/21

20.1



CROSSING LOOKING  
NORTH



2020/10/21



CROSSING LOOKING  
WEST

2020/10/21



1,10000.000,10000.000,1000.000,cpt  
 2,10000.000,10000.000,1122.405,Autonomous Setup  
 3,9954.168,9344.162,1124.477,surv mark  
 4,9626.948,9924.345,1117.327,gs locate  
 5,9651.983,9922.988,1110.692,cpp8 top  
 6,9648.190,9924.069,1110.729,cpp8 top  
 7,9672.042,9924.086,1117.812,gs locate  
 8,9713.241,9921.523,1118.569,gs locate  
 9,9753.487,9919.909,1118.850,gs locate  
 10,9798.350,9918.717,1119.227,gs locate  
 11,9831.169,9912.377,1119.065,gs locate  
 12,9859.709,9882.751,1118.173,gs locate  
 13,9873.698,9843.643,1117.398,gs locate  
 14,9882.456,9812.439,1116.703,gs locate  
 15,9886.663,9783.824,1116.773,gs locate  
 16,9893.867,9749.343,1116.484,gs locate  
 17,9899.392,9702.860,1116.451,gs locate  
 18,9899.679,9674.934,1116.117,riser15 e side  
 19,9905.271,9669.438,1115.893,gs locate  
 20,9915.869,9653.111,1111.768,bint fl  
 21,9595.439,9414.971,1114.534,tint fl  
 22,9574.001,9898.485,1117.207,riser15 e side  
 23,9582.440,9927.184,1110.520,tee8 top e-w-n  
 24,9582.706,9925.966,1110.687,TOP 7" VCP (0.62' TOP TO FL)  
 25,9582.367,9928.053,1110.570,TOP 7" VCP (0.62' TOP TO FL)  
 26,9909.783,9652.971,1112.411,TOP 6" VCP (0.57' TOP TO FL)  
 27,9582.536,9927.010,1110.005,FL NEW  
 28,9909.784,9652.971,1111.841,FL NEW  
 29,9909.365,9404.343,1119.542,IR 34 YC 19957  
 30,9567.129,9405.420,1118.406,IR 34  
 31,9568.745,9941.371,1116.633,IR 34  
 32,9911.042,9940.349,1121.000,IR 34 YC 19957  
 33,23560.910,4046.087,1039.521,HC GPS MON 8055  
 35,9584.142,9918.760,1110.734,TOP 7" VCP TILE (0.65' TOP TO FL)  
 36,9584.142,9918.760,1110.084,FL NEW  
 37,9584.924,9919.164,1110.933,TOP 8" HDPE TILE (0.73' TO FL)  
 38,9603.711,9913.281,1110.978,TOP 8" HDPE TILE (0.73' TO FL)  
 39,9623.519,9910.649,1111.036,TOP 8" HDPE TILE (0.73' TO FL)  
 40,9643.540,9910.187,1111.113,TOP 8" HDPE TILE (0.73' TO FL)  
 41,9683.529,9908.099,1111.237,TOP 8" HDPE TILE (0.73' TO FL)  
 42,9663.505,9909.167,1111.187,TOP 8" HDPE TILE (0.73' TO FL)  
 43,9667.988,9914.694,1115.010,TOP 4" CPP TILE  
 44,9690.184,9903.183,1116.534,TOP 4" CPP TILE  
 45,9703.553,9907.271,1111.298,TOP 8" HDPE TILE (0.73' TOP TO FL)  
 46,9723.505,9907.091,1111.366,TOP 8" HDPE TILE (0.73' TOP TO FL)  
 47,9743.526,9906.118,1111.419,TOP 8" HDPE TILE (0.73' TOP TO FL)  
 48,9763.473,9904.757,1111.494,TOP 8" HDPE TILE (0.73' TOP TO FL)  
 49,9783.722,9903.679,1111.546,TOP 8" HDPE TILE (0.73' TOP TO FL)  
 50,9628.403,9881.296,1120.549,BLD SE COR

6867 2020-10-20 cs

51,9679.566,9881.115,1120.671,BLD NE COR  
 52,9760.203,9880.854,1121.486,BLD SE COR  
 53,9811.426,9880.567,1121.477,BLD NE COR  
 54,9808.970,9504.605,1121.205,BLD NW COR  
 55,9803.759,9903.317,1111.623,TOP 8" HDPE TILE (0.73' TO FL)  
 56,9584.768,9915.666,1110.709,TOP 7" VCP TILE (0.62' TOP TO FL)  
 57,9583.908,9919.862,1110.821,TOP 8"\*8"\*8" HDPE WYE TILE TO NW  
 58,9583.413,9921.929,1110.736,TOP EXISTING 8"\*8"\*8" HDPE WYE TO SW  
 59,9587.015,9918.378,1110.939,TOP 8" HDPE BAND TILE (  
 60,9823.726,9902.681,1111.670,TOP 8" HDPE TILE (0.73' TO FL)  
 61,9584.506,9917.006,1110.847,TOP 8" HDPE BAND  
 62,9585.236,9919.039,1110.935,TOP 8" HDPE TILE (0.73' TO FL)  
 63,9584.668,9915.661,1110.768,TOP 8" HDPE TILE (0.73' TO FL)  
 64,9589.434,9923.191,1111.576,TOP 8" CLAY/PLASTIC COUPLER (0.73' TO FL)  
 65,9824.419,9902.517,1111.678,TOP 8" HDPE 45 BEND (0.73'TO FL)  
 66,9835.875,9885.988,1111.742,TOP 8" HDPE TILE (0.73' TO FL)  
 67,9844.675,9867.899,1111.797,TOP 8" HDPE TILE (0.73' TO FL)  
 68,9853.083,9849.735,1111.848,TOP 8" HDPE TILE (0.73' TO FL)  
 69,9860.410,9831.099,1111.908,TOP 8" HDPE TILE (0.73' TO FL)  
 70,9865.692,9811.794,1111.972,TOP 8" HDPE TILE (0.73' TO FL)  
 71,9870.343,9792.306,1112.039,TOP 8" HDPE TILE (0.73' TO FL)  
 72,9875.359,9772.882,1112.107,TOP 8" HDPE TILE (0.73' TO FL)  
 73,9872.833,9782.088,1112.071,TOP 8"TO 4" REDUCERTILE TEE (0.73' TO FL)  
 74,9880.882,9753.619,1112.183,TOP 8" HDPE TILE TEE (0.73' TO FL)  
 75,9886.546,9734.361,1112.247,TOP 8" HDPE TILE TEE (0.73' TO FL)  
 76,9891.742,9714.825,1112.299,TOP 8" HDPE TILE TEE (0.73' TO FL)  
 77,9896.601,9695.407,1112.356,TOP 8" HDPE TILE TEE (0.73' TO FL)  
 78,9900.835,9689.662,1111.735,TOP 8" SW PERF TILE END PLUGGED  
 79,9903.039,9676.045,1112.399,TOP 8" HDPE TILE (0.73' TOP TO FL)  
 80,9910.741,9652.993,1112.440,TOP 6" VCP (0.57' TOP TO FL)  
 81,9901.306,9674.287,1112.094,TOP 4" PVC PIPE (0.35'TOPTOFL)  
 82,9899.630,9674.027,1112.019,TOP 4" PVC PIPE (0.35'TOPTOFL)  
 83,9899.248,9673.959,1111.628,FL PVC PIPE (0.35'TOPTOFL)  
 84,9910.661,9652.942,1112.499,TOP 8" FRATCO REDUCER  
 85,9908.273,9656.539,1112.522,TOP 8" HDPE TILE (0.73' TO FL)  
 86,9854.051,9829.838,1114.949,TOP 4" PERF CPP TILE S SIDE  
 87,9869.802,9819.884,1114.597,TOP 4" PERF CPP TILE N SIDE  
 88,9910.418,9652.844,1112.611,TOP 8" HDPE 45 BEND (0.73'TOPTOFL)  
 89,9907.216,9655.570,1112.503,TOP 8" HDPE 45 BEND (0.73'TOPTOFL)  
 90,9582.562,9927.140,1110.683,TOP 8" HDPE TEE (0.73'TOPTOFL)  
 91,9583.660,9927.409,1110.644,TOP 8" HDPE BAND  
 92,9582.223,9928.025,1110.595,TOP 8"EXTERNAL/INTERNAL FRATCO COUPLER  
 93,9583.032,9924.291,1110.782,TOP 8" HDPE BAND  
 94,9903.460,9674.420,1112.399,TOP HDPE TILE  
 95,9869.632,9781.934,1114.538,TOP 4" CPP TILE TEE  
 96,9872.108,9781.854,1112.379,TOP 4" CPP TILE TEE  
 97,9816.019,9671.970,1122.837,TOP FAN CONC  
 98,9903.039,9676.045,1111.660,FL  
 99,9889.048,9674.149,1112.528,TOP 4" PVC PIPE (0.35'TOPTOFL)



6867 2020-10-20 cs

100,9902.560,9674.253,1111.822,FL TEE S  
101,9890.076,9674.184,1112.567,TOP 4" PVC GATE VALVE (0.40' TOPTOFL)  
102,8906.666,11962.637,1095.596,962 18  
103,9902.562,9674.199,1112.225,TOP 4" CPP  
104,9895.395,9674.072,1112.491,TOP 4" CPP  
105,9890.242,9674.429,1112.390,TOP 4" CPP  
106,8902.554,11956.186,1100.794,962 18 -5.11  
107,9990.260,9654.414,1112.609,962 6  
108,9990.752,9654.623,1115.204,700 12' to bore  
109,9990.482,9644.270,1115.253,700 11' to bore  
110,9991.911,9670.210,1115.297,700 12' to bore  
111,9994.213,9654.630,1113.725,922 6 hick  
112,10000.329,9655.161,1117.796,962 6 -5.11  
8054,8597.084,4604.774,1102.260,Remote Elevation Benchmark  
8055,8597.083,4604.763,1102.260,8054



# Drainage Utility Permit Application

## Hardin County

**Applicant:** Heart of Iowa Communication Coop - Jay Duncan

**Contact Email:** jduncan@heartofiowa.coop

**Contact Phone:** (641) 486-2211

**Utility Type:** N/A - Utility Permits Only

**Drainage District:** DDs\DD 44 (51069)

**Description of Work:** DDs 44, 62, 1, 128, 78, 63, 8, 93 & 94 - Heart of Iowa - Install fiber optic cable in rural areas of Eldora & Steamboat Rock. Will work with CGA on facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage Districts. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

\_\_\_\_\_  
Applicant Signature

\_\_\_\_\_  
Date

**Submit Form and Location Plan 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  
drainage@hardincountyiowa.gov

*For Office Use Only*

### Application Approval:

By:   
Board of Supervisor Chairman, Acting as Drainage District Trustee

Date: 6-7-2020

APPROVED PERMIT # 2020-12

- ☐ Application in TCM
- ☐ GIS Annotation
- ☐ Approval Emailed





# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant: Heart of Iowa Communications Cooperative  
Company Name  
PO Box 130  
Address  
Union IA 50258-0130  
City State Zip  
Applicant Contact: Jay Duncan ( 641 ) 486 - 2211  
Name Phone  
jduncan@heartofiowa.coop  
Email  
Utility Type: Fiber Optic  
Drainage District(s) Crossed: 44, 62, 1, 128, 78, 63, 8, 93 & 94  
Facilities Crossed (specific tile, open ditch): tile and open ditch  
Description of Work: Install fiber optic cable in rural areas of Eldora and Steamboat Rock. Will work with CGA on  
*(Location plan of proposed utility must be attached.)* facility crossings.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage District. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

[Signature]  
Applicant Signature

6/10/2020

Date

Submit Form and Location Plan To:

Hardin County Auditor's Office  
Attn: Drainage Clerk  
1215 Edgington Ave, Suite 1  
Eldora, IA 50627  
Fax (641) 939-8225  
[drainage@hardincountyia.gov](mailto:drainage@hardincountyia.gov)

For Office Use Only

Application Approval:

By: [Signature]  
Board of Supervisor Chairman, Acting as Drainage District Trustee

Date: 6-7-2020

APPROVED PERMIT #: \_\_\_\_\_



# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## REQUIREMENTS FOR CONSTRUCTION ON, OVER, ACROSS OR BENEATH ESTABLISHED DRAINAGE DISTRICT

Upon issuance of a permit for utilities on, over, across or beneath established Hardin County Drainage Districts, the applicant shall be governed by these requirements and shall comply with all conditions contained herein.

1. The Applicant shall furnish the Drainage District, or its representative, plats showing the exact location of the proposed construction. If it is found that such locations are in conflict with the present or proposed facilities and that a more desirable location is possible, the Applicant shall review such possible alignment changes. **No construction is to commence with the drainage facility without an approved application.**
2. Applicant shall comply with Iowa One-Call requirements prior to commencing any work.
3. The Drainage District shall provide Applicant access to maps or other information regarding the location of all known drainage district facilities so that reasonable care may be taken by Applicant to avoid un-necessary damage to said drainage district facilities.
4. The Applicant shall hold the Drainage District harmless from any damage that may result to the Drainage District facility because of the construction or maintenance of the utility, and shall reimburse the Drainage District for any expenditures that the Drainage District may have to make on said Drainage District facilities resulting from Applicant's construction and installation of utilities, or their subsequent repair or modification.
5. The Applicant shall take all reasonable precaution during the construction of said utility to protect and safeguard the lives and property of the public and adjacent property owners and shall hold the Drainage District harmless from any damages or losses that may be sustained by adjacent property owners on account of such construction operations. Further, Applicant agrees to replace, repair or reimburse all damages to private property occasioned by Applicant's installation of subsequent modification or repairs.
6. The Drainage District assumes no responsibility for damages to the Applicants property occasioned by any construction or maintenance operation of said Drainage District facilities, subsequent to Applicants installation.
7. A copy of a certificate of insurance naming the County/Drainage District as additional insured for their permit work shall be provided to the County Auditor prior to installation. The limit of liability under the insurance policy shall not be less than \$1,000,000 per occurrence.
8. The Applicant agrees to give the Drainage District twenty-four (24) hours (Saturday and Sunday excluded) notice of its intention to commence construction on any lands within the jurisdiction of the Drainage District. Said notice shall be made in writing to the County Auditor or to the designated Drainage District representative.
9. The Applicant agrees to place permanent, visible markers or monuments at locations where utility crosses Drainage District facilities. These monuments or markers shall identify the owners name, address and phone number.
10. The Drainage District Trustees may appoint a representative to inspect and approve all construction across Drainage District facilities as part of this permit. All compensation, wages, mileage and other expenses for this representative will be paid by the Applicant. It will be the responsibility of the Applicant to make all contacts with private parties (adjacent owners/operators) to determine the location of private drainage facilities. Said representative will also inspect all crossing of Drainage District facilities and may, if required, observe the crossing of private drainage facilities, and shall have the authority to require the Applicant to excavate and expose the crossing of any Drainage District facility where the representative believes it prudent to visually examine Applicants crossing of the Drainage District facility. Further, said representative has the authority to suspend construction and installation by the Applicant within any Drainage District jurisdiction by verbal order to the contractor at the site and a telephone call to Applicants contact person listed on page 1 within six (6) hours of the verbal order.





# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

11. The construction and maintenance of Applicants installation shall be carried on in such a manner as to not interfere with or interrupt the function of said Drainage District facilities without the express written consent of the Drainage District Representative. In the event it becomes necessary to temporarily stop the flow of water, the following shall be completed by the Applicant:
  - a. If the crossing involves a tile line, the replacement of tile with approved materials, in the manner approved by the Drainage Districts designated representative, shall be performed as rapidly as possible. If the approved method of repair is impossible and the volume of water flowing in the tile is sufficient to create the possibility of crop loss or property damage, the Contractor will be permitted to temporarily block the tile line to prevent the flow of this tile water into the pipeline, or tile line ditch. In the event this tile line is so temporarily blocked, the Contractor will be expected to provide sufficient pumping equipment to pump the impounded tile water across the construction ditch to the undisturbed tile line. Such temporary blockages of said Drainage District tile lines will be removed as rapidly as possible and any tile repairs caused by this blockage will be immediately repaired at the Applicants expense.
  - b. If the crossing involves an open ditch that is carrying sufficient flow of water to make it necessary to place a temporary dam across said open ditch, such temporary dams may be constructed only upon approval from the Drainage District designated representative. The maximum elevation of this impounded water shall be determined by the designated Drainage District representative and all excess water must be allowed to flow across the construction ditch through either a closed metal culvert pipe or by pumping. All temporary dam structures are to be removed as soon as the crossing is completed. The construction and removal of these dams shall be in such a manner that the smooth and efficient function of the drainage ditch is not impaired, with all costs and damages borne by Applicant.
12. The Applicant will at any time subsequent to the commencement of construction, and at Applicants sole expense, reconstruct or replace its installation as may be necessary to conform to new grade or alignments resulting from maintenance or construction operations by the Drainage District in connection with any of its drainage facilities. Applicant agrees to do this within forty-five (45) days of receipt of written request from the Drainage District, or such longer time period as the Drainage District may specify, without cost to the Drainage District. Such reconstruction or realignment of Applicants Improvements shall be made in accordance with and approved by the Drainage District or its designated representative. If the Applicant is unable to comply within the time period specified above, the Drainage District may cause the work to be done and the Applicant will pay the cost thereof upon receipt of a statement of such costs.
13. CROSSING OF OPEN DITCH FACILITIES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
  - a. Passage of installation in a horizontal plane five feet (5') below design grade of drainage ditch, as established by the Drainage District representative.
  - b. The above depth to extend to a point two (2) times the design base width of ditch either side of centerline of drainage ditch (measured along the centerline of utility) unless the existing base width is greater than the design bases width. If the existing base width is greater than the design with, the depth is to extend to a point two (2) times the existing width.
  - c. The rate of slope for transition from normal utility laying depth of crossings of drainage ditches shall not be steeper than 4:1.
  - d. If such ditch crossings occur at points of outlets of Drainage District or private tile lines or within twenty-five feet (25') of said outlets, such outlets must be relocated to a point not less than twenty-five feet (25') from such crossings. Such relocations shall be at the expense of the Applicant and as directed by the representative of the Drainage District.

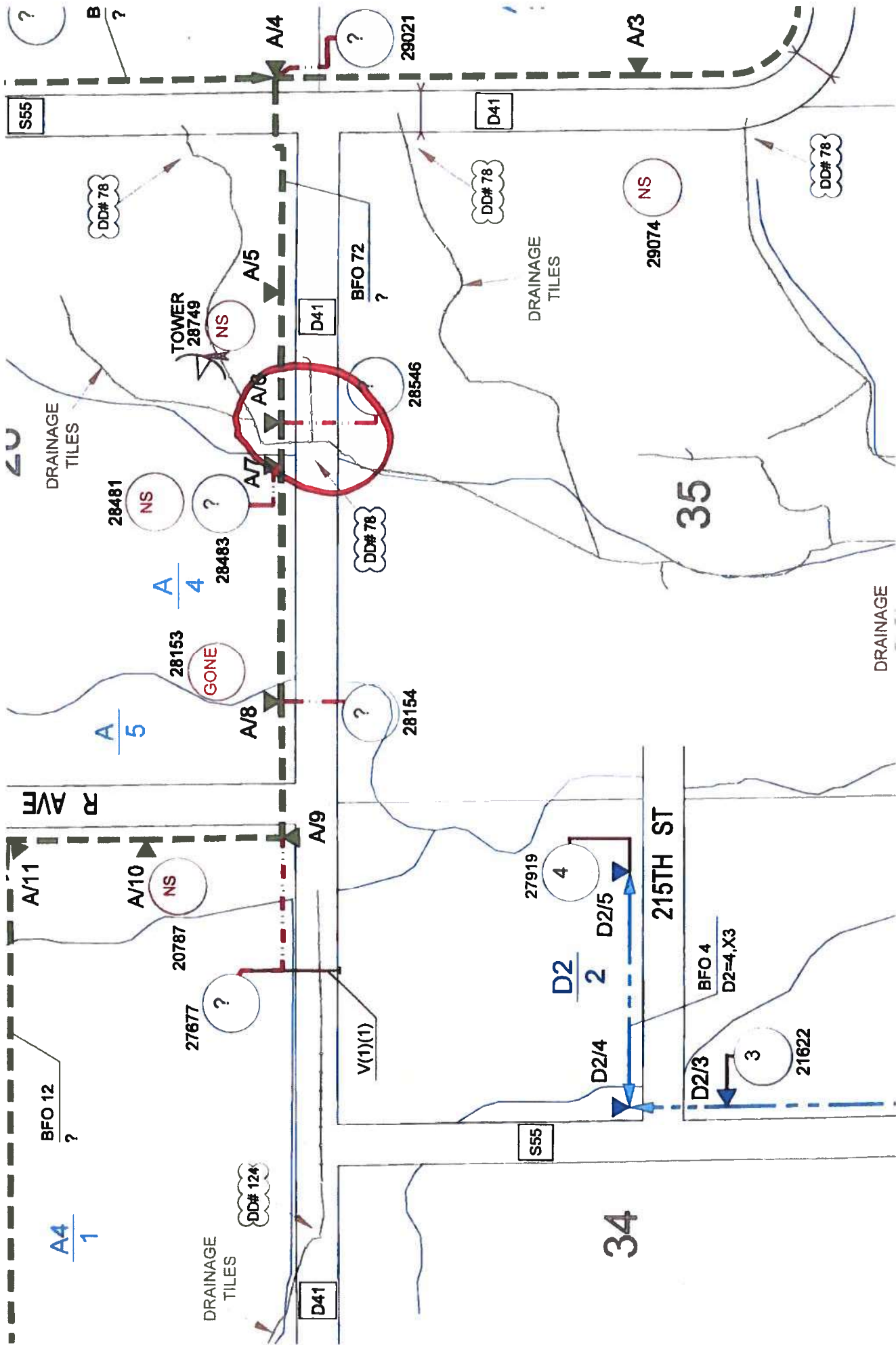


# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

- 14. CROSSING OF DRAINAGE DISTRICT TILE LINES.** Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only upon the review by and approval of the designated representative of the Drainage District. Such waiver must be in writing.
  - b. A minimum of one foot (1') clearance below existing Drainage District facilities must be maintained.
  - c. At all crossings of Drainage District tile lines with the proposed utility, one of the following must be used:
    - i. Replace Drainage District tile with reinforced concrete pipe of same or larger diameter than existing tile. Concrete pipe to be 2,000 D strength (Iowa Department of Transportation approved) with standard tongue and groove joints. Pipe to have a minimum of three (3) bolt-type connectors at each joint.
    - ii. Replace Drainage District tile with cathodic protected corrugated metal pipe. Diameter of corrugated metal pipe to be a minimum of two inches (2") larger than outside diameter of tile line being replaced. (Specifications regarding gage, cathodic protection and other details to be subject to review and approval.)
    - iii. Dual wall plastic with specific approval of Drainage District representative.
    - iv. Bore new utility installation; maintain existing tile in an undisturbed state.
  - d. The length of tile to be replaced by any of the above alternates is as follows:
    - i. Eight-inch (8") tile and smaller: Six feet (6') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
    - ii. Ten inch (10") tile and larger: Ten feet (10') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
  - e. At all crossings of Drainage District tile lines where the Drainage District and private tile lines are damaged by the construction, maintenance or repair of Applicants installation shall be repaired as directed by the Drainage Districts designated representative.
- 15.** This permit is subject to existing regulations and statutes of the State of Iowa and future regulations, which may be promulgated or enacted.
- 16.** This application is subject to revocation by Hardin County, if in its judgment it is necessary for legitimate purposes. In such event, written notice shall be provided to permit holder.
- 17.** Applicant agrees to pay all other legitimate costs, fees and expenses associated with its crossing of the Drainage District facility, including but not limited to, publication costs, engineering costs and legal service costs. Said costs will be paid within thirty (30) days of the mailing of the statements to the Applicant.
- 18.** Applicant agrees to provide a copy of as-built plan of the utility route and location, showing route changes that may have taken place during construction.
- 19.** Applicant agrees to include a copy of these requirements to all bidding specifications; or if the construction and installation contract has been let by the time this permit is approved, Applicant agrees to provide a copy of these requirements to the contractor and to advise them that they are bound by the terms of these requirements.

DD 78  
+tile







Utility Permit #2020-12

## Utility Observation Report

General Information	
<b>Project Name and Number:</b>	Utility Crossing #6666.4
<b>Drainage District Number:</b>	#78
<b>Drainage District Facility ID:</b>	Main
<b>Project Location:</b> (1/4, Sec, Twp, Rng and road)	SE-26-88-20
<b>Date of Observation:</b>	10/23 & 10/29/2020
<b>Observer Name/Title:</b>	Chris Sweeney

Field Observations	
<b>District facility type:</b>	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
<b>Utility Orientation:</b>	<input type="checkbox"/> Parallel <input checked="" type="checkbox"/> Crossing <input type="checkbox"/> Overhead <input type="checkbox"/> Over <input checked="" type="checkbox"/> Under <input type="checkbox"/> Same Elevation Other:
<b>Source of utility elevation and/or location:</b>	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input checked="" type="checkbox"/> Utility Reported Other:
<b>Utility Elevation:</b>	1032'
<b>Source of district facility elevation and/or location:</b>	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
<b>District Facility Elevation:</b> (include where measured)	1045.7' (flowline)
<b>Vertical clearance from district facility:</b> (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	13.6'



# Utility Permit #2020-12

<b>Horizontal clearance from District Tile or Open Ditch centerline:</b>	
<b>Tile outlets within 25-feet relocated? (If applicable)</b>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<b>Original tile size &amp; material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input checked="" type="checkbox"/> VCP Other: 12-inch
<b>Tile replaced by utility?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
<b>Tile replacement material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:
<b>Condition of District tile:</b>	Intact
<b>Signage present?</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A

Notes
<p>Signage was not installed at time of observation and will need to be confirmed with Utility if desired by District Trustees.</p>

Inspector's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

10-29-20  
10-25-20

DAYS OF WEEK:

S M T W T F S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6688.4

COUNTY, ROUTE, ROAD:

DD78

LOCATION:

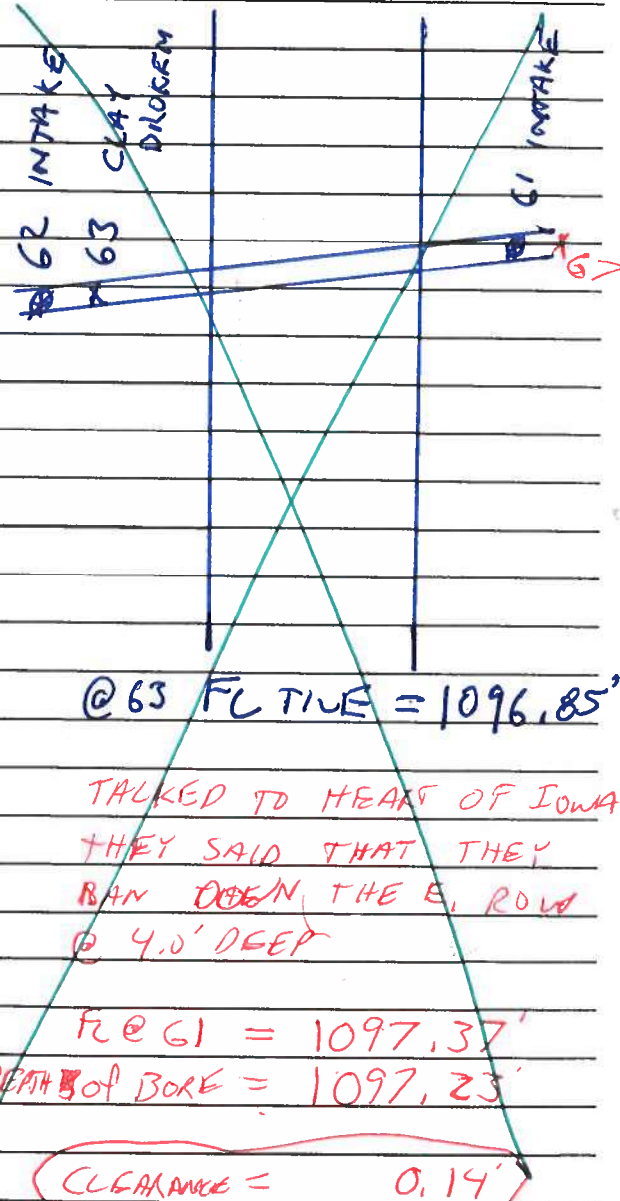
S+55

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

π 2 SET 59

π 59 ✓ 302

TIED OUT PIPE LOCATIONS



FL TIE @ 64 = 1045.66'

BORE DEPTH = 1032.04'

CLEARANCE = 13.62'

@ 63 FL TIE = 1096.85'

TALKED TO HEART OF IOWA  
THEY SAID THAT THEY  
BAY DOWN THE E. ROW  
@ 4.0' DEEP

FL @ 61 = 1097.37'

DEPTH OF BORE = 1097.23'

CLEARANCE = 0.14'

\* NOT IN DISTRICT

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

Observer's Signature:

*Ann Army*

Date Prepared:

10-23-20

Reviewed by:

Engineer

Date Reviewed



Bore Depth @ 64



Bore @ 64 Looking E.



6688 DD78 2020-10-30 cs

1,5000.000,5000.000,100.000,CPT  
1\_GNSS,3606848.526,5018937.552,1106.864,Autonomous Setup  
2,3604079.030,5025333.700,1041.420,GPS 8060  
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3,3602703.090,5004263.550,1064.070,GPS 8053  
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4,3603086.333,5015230.794,1008.315,FL 18"CMP  
5,3603085.078,5015229.708,1009.736,FL 6"CMP  
6,3603086.791,5015258.272,1009.356,FL 15"CONC TILE  
7,3603090.090,5015267.935,1013.767,GS WASHOUT  
8,3603091.046,5015252.422,1012.962,GS WASHOUT  
9,3603089.972,5015235.429,1011.506,GS WASHOUT  
10,3603081.563,5015236.306,1011.579,GS WASHOUT  
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15,3603157.955,5015495.990,1017.609,GS  
16,3603210.176,5015589.603,1018.247,GS  
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18,3603354.891,5015681.488,1017.450,FL SWALE  
19,3603483.842,5015682.621,1018.579,FL SWALE  
20,3603627.047,5015679.163,1018.817,FL SWALE  
21,3603774.118,5015675.972,1019.810,FL SWALE  
22,3603905.693,5015676.723,1021.314,FL SWALE  
23,3604015.590,5015673.593,1022.614,FL SWALE  
24,3604076.792,5015667.579,1024.096,FNL EW  
25,3604085.836,5015631.816,1018.560,TOP 15"CLAYTILE  
26,3604096.129,5015624.124,1024.095,GS BLOWOUT  
27,3604089.696,5015619.214,1023.816,GS BLOWOUT  
28,3604077.835,5015623.277,1024.134,GS BLOWOUT  
29,3604079.774,5015636.071,1024.104,GS BLOWOUT  
30,3604091.021,5015642.765,1024.155,GS BLOWOUT  
31,3604077.996,5015929.733,1021.434,FNL LOW AREA  
32,3602759.407,5015643.300,1017.733,PP EOHL EW  
33,3603092.227,5015307.214,1015.536,GS TILELOCATE  
34,3603098.909,5015362.307,1016.525,GS TILELOCATE  
35,3603109.461,5015435.303,1017.005,GS TILELOCATE  
36,3603120.912,5015507.042,1017.746,GS TILELOCATE  
37,3603129.608,5015578.378,1018.258,GS TILELOCATE  
38,3603137.025,5015629.941,1016.927,GS TILELOCATE  
39,3603141.200,5015655.283,1015.600,GS TILELOCATE  
40,3603147.944,5015694.168,1017.865,GS TILELOCATE  
41,3603169.393,5015762.981,1018.721,GS TILELOCATE  
42,3603201.250,5015827.992,1018.662,GS TILELOCATE  
43,3603241.797,5015881.054,1018.736,GS TILELOCATE  
44,3603279.503,5015907.735,1018.790,GS TILELOCATE  
45,3603294.901,5015915.386,1018.806,GS TILELOCATE  
46,3604066.639,5015648.787,1023.182,GS TILELOCATE

6688 DD78 2020-10-30 cs

47,3604049.081,5015665.347,1022.814,GS TILELOCATE  
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49,3603969.411,5015741.671,1022.766,GS TILELOCATE  
50,3603916.443,5015797.008,1022.324,GS TILELOCATE  
51,3603865.149,5015850.882,1022.162,GS TILELOCATE  
52,3603820.520,5015899.137,1021.713,GS TILELOCATE  
53,3603767.463,5015955.066,1021.203,GS TILELOCATE  
54,3603722.278,5015993.438,1020.906,GS TILELOCATE  
55,3604100.741,5015631.504,1024.009,GS TILELOCATE  
56,3604127.918,5015635.854,1024.297,GS TILELOCATE  
57,3604188.668,5015624.886,1024.565,GS TILELOCATE  
58,3604237.162,5015616.370,1024.843,GS TILELOCATE  
59,3606818.745,5018930.535,1106.463,cpt 34 ir  
60,3608065.975,5018953.325,1112.616,scf isp 58  
61,3609137.231,5018980.366,1097.369,922 6" cmp fl  
62,3609128.199,5018890.197,1096.588,922 6" cmp fl  
63,3609133.658,5018897.054,1096.851,963 8"  
64,3608098.559,5016439.700,1051.773,962 12" -5.11  
65,3608099.004,5016423.062,1053.040,700 -21'  
66,3608100.126,5016466.906,1052.512,700 -20'  
67,3609138.165,5018986.157,1101.228,700 -4'  
100,3608530.173,5017621.551,1089.817,FNL N S  
101,3608991.012,5017612.360,1086.046,FNL N S  
102,3608760.215,5017634.123,1080.344,INTK 12"HICK  
103,3608836.461,5017642.501,1081.157,GS HOLE TERRACE  
104,3608847.250,5017638.731,1081.432,GS HOLE TERRACE  
104\_1,3598437.157,5115989.875,1013.908,Base Setup  
105,3608853.659,5017630.417,1081.717,GS HOLE TERRACE  
106,3608827.281,5017639.013,1081.136,GS HOLE TERRACE  
107,3608831.249,5017626.370,1081.374,GS HOLE TERRACE  
108,3608836.299,5017615.550,1085.308,GS HOLE TERRACE  
109,3608837.903,5017605.050,1080.644,GS HOLE TERRACE  
110,3608839.838,5017595.769,1076.769,GS HOLE TERRACE  
111,3608848.483,5017591.812,1076.583,GS HOLE TERRACE  
112,3608852.126,5017602.399,1078.372,GS HOLE TERRACE  
113,3608859.113,5017613.420,1084.538,GS HOLE TERRACE  
114,3608807.059,5017564.615,1070.794,FL 7"CLAY GOOD  
115,3608863.777,5017377.514,1072.313,INTK 6"HICK  
116,3608867.470,5017377.197,1072.618,TOE  
117,3608867.344,5017367.432,1076.287,GS TOP TERRACE  
118,3608866.782,5017358.649,1072.444,TOE  
119,3608895.940,5017352.469,1067.515,FL 7"CLAY  
120,3608890.085,5017353.645,1069.318,FL 4"CLAY  
121,3608861.717,5017200.676,1066.070,FL WASHOUT  
122,3608894.335,5017231.809,1067.104,FL 4"CLAY DAYLIGHT  
123,3608894.722,5017236.714,1067.107,FL 4"CLAY DAYLIGHT  
124,3608777.336,5017027.412,1064.584,GS WATER ENDS  
125,3608838.111,5017343.431,1071.667,GS BLOWOUT  
126,3608897.345,5017335.880,1071.708,GS TILE LOCATE



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127,3608903.959,5017287.080,1070.435,GS TILE LOCATE  
128,3608911.917,5017241.259,1069.135,GS TILE LOCATE  
129,3608908.589,5017188.981,1068.884,GS TILE LOCATE  
130,3608895.912,5017124.231,1068.123,GS TILE LOCATE  
131,3608876.490,5017063.488,1066.518,GS TILE LOCATE  
132,3608851.896,5016993.603,1065.473,GS TILE LOCATE  
133,3608830.152,5016934.423,1064.747,GS TILE LOCATE  
134,3608793.737,5016860.427,1063.743,GS TILE LOCATE  
135,3608773.929,5016817.919,1063.088,GS TILE LOCATE  
136,3608784.920,5016847.870,1058.791, TOP 7"VCP TILE  
137,3603171.194,5015501.057,1017.941,GS  
138,3603121.248,5015507.626,1017.866,GS  
139,3603071.114,5015514.086,1017.940,GS  
140,3603064.395,5015467.364,1017.595,GS  
141,3603114.338,5015457.055,1017.308,GS  
142,3603134.846,5015454.293,1017.472,GS  
143,3603164.108,5015450.843,1017.560,GS  
144,3603157.273,5015401.098,1017.507,GS  
145,3603124.871,5015405.489,1017.032,GS  
146,3603106.890,5015408.286,1016.813,GS  
147,3603057.320,5015414.769,1016.922,GS  
148,3603050.412,5015365.234,1015.921,GS  
149,3603085.039,5015360.593,1016.511,GS  
150,3603100.932,5015358.148,1016.638,GS  
151,3603150.556,5015351.462,1017.136,GS  
152,3603143.754,5015302.139,1017.444,GS  
153,3603108.568,5015306.590,1016.152,GS  
154,3603093.756,5015309.013,1016.051,GS  
155,3603043.590,5015315.811,1015.523,GS  
156,3603090.808,5015278.074,1014.467,tb wshout  
157,3603036.886,5015266.316,1013.276,GS  
158,3603081.788,5015259.849,1013.275,tb wshout  
159,3603083.562,5015260.584,1009.233,toe wshout  
160,3603088.886,5015259.467,1009.410,toe wshout  
161,3603091.536,5015259.011,1013.458,tb wshout  
162,3603114.089,5015255.802,1014.964,GS  
163,3603136.961,5015252.498,1015.833,GS  
164,3603092.562,5015231.013,1010.904,tb  
165,3603087.127,5015230.908,1008.305,TOE  
166,3603084.379,5015231.101,1008.177,TOE  
167,3603109.148,5015228.861,1011.615,GS  
168,3603133.223,5015225.491,1011.982,GS  
169,3603082.222,5015231.583,1010.963,tb  
170,3603066.783,5015234.233,1012.049,GS  
171,3603033.279,5015238.770,1012.211,GS  
172,3603092.998,5015211.158,1009.600,tb  
173,3603094.711,5015211.543,1008.573,TOE  
174,3603096.282,5015212.447,1007.733,TOE  
175,3603097.270,5015213.234,1009.291,tb

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176,3603102.725,5015216.510,1010.515,GS  
177,3603119.339,5015222.349,1011.136,GS  
178,3603134.505,5015227.974,1012.307,GS  
179,3603150.671,5015232.246,1015.398,GS  
180,3603097.570,5015208.982,1007.165,cl  
181,3603132.273,5015198.066,1007.659,cl  
182,3603132.979,5015199.438,1007.630,toe  
183,3603130.631,5015196.416,1007.790,toe  
184,3603133.353,5015200.186,1008.968,tb  
185,3603129.912,5015195.910,1009.404,tb  
186,3603127.476,5015191.817,1010.890,GS  
187,3603122.171,5015179.226,1011.979,GS  
188,3603115.956,5015170.098,1013.622,GS  
189,3603108.058,5015159.810,1014.100,GS  
190,3603137.742,5015204.683,1010.035,GS  
191,3603142.130,5015212.985,1011.060,GS  
192,3603157.758,5015233.240,1016.366,GS  
193,3603166.881,5015250.301,1017.341,GS  
194,3603187.781,5015213.329,1017.424,GS  
195,3603181.214,5015207.551,1016.688,GS  
196,3603161.680,5015190.318,1010.122,tb  
197,3603157.120,5015187.173,1006.447,toe  
198,3603152.651,5015187.358,1006.812,toe  
199,3603150.100,5015184.980,1010.371,tb  
200,3603139.127,5015173.880,1010.935,GS  
201,3603118.062,5015156.099,1013.503,GS  
202,3603110.456,5015149.276,1013.902,GS  
203,3603163.650,5015154.135,1006.770,toe  
204,3603161.112,5015154.800,1009.939,tb  
205,3603137.296,5015157.320,1010.766,GS  
206,3603116.620,5015156.102,1013.470,GS  
207,3603167.077,5015152.237,1005.487,toe  
208,3603169.311,5015151.895,1009.086,tb  
209,3603178.449,5015150.006,1010.526,GS  
210,3603192.475,5015149.644,1016.198,GS  
211,3603209.832,5015152.053,1017.533,GS  
212,3603135.629,5015086.905,1009.166,tb  
213,3603130.459,5015087.528,1006.765,toe  
214,3603143.585,5015084.972,1009.685,GS  
215,3603155.743,5015084.002,1013.680,GS  
216,3603190.867,5015083.294,1015.977,GS  
217,3603118.919,5015085.853,1009.436,tb  
218,3603123.436,5015085.404,1006.781,TOE  
219,3603106.641,5015086.724,1012.785,GS  
220,3603086.888,5015086.806,1014.321,GS  
221,3603068.964,5015088.168,1015.335,GS  
222,3604085.918,5015566.146,1024.790,trl  
223,3604137.304,5015570.739,1025.232,trl  
224,3604190.535,5015563.312,1025.205,trl

225,3604252.711,5015548.885,1025.308,tr1  
226,3604281.856,5015563.257,1025.427,tr1  
227,3604260.024,5015591.304,1025.243,tr1  
228,3604229.474,5015608.555,1025.270,tr1  
229,3604191.415,5015613.739,1024.868,tr1  
230,3604126.389,5015621.162,1024.751,tr1  
231,3604095.160,5015624.979,1023.636,tr1  
232,3604082.206,5015593.006,1024.264,tr1  
233,3603986.581,5015815.529,1023.268,GS  
234,3603944.115,5015772.834,1022.651,GS  
235,3603901.743,5015730.376,1022.721,GS  
236,3603937.237,5015695.033,1021.796,GS  
237,3603979.596,5015737.621,1022.937,GS  
238,3604021.711,5015780.128,1024.725,GS  
239,3604057.386,5015745.055,1025.168,GS  
240,3604014.812,5015702.285,1023.151,GS  
241,3603981.606,5015668.897,1021.948,GS  
242,3603972.494,5015659.973,1022.383,GS  
243,3604008.135,5015624.475,1023.089,GS  
244,3604047.215,5015664.025,1022.796,GS  
245,3604068.387,5015685.216,1024.057,GS  
246,3604080.714,5015697.756,1024.813,GS  
247,3604092.624,5015709.749,1024.781,GS  
248,3604128.087,5015674.547,1024.679,GS  
249,3604099.651,5015645.722,1024.678,GS  
250,3604074.547,5015620.305,1024.348,GS  
251,3604066.462,5015612.485,1023.586,GS  
252,3604045.200,5015591.311,1022.886,GS  
253,3604038.356,5015584.055,1023.446,GS  
254,3604078.559,5015561.918,1024.816,GS  
255,3604081.455,5015590.684,1024.132,GS  
256,3604083.166,5015604.515,1024.494,GS  
257,3604085.005,5015615.771,1023.790,GS  
258,3604087.714,5015644.395,1024.346,GS  
259,3604090.190,5015672.220,1024.427,GS  
260,3604093.105,5015702.004,1024.439,GS  
261,3604142.640,5015696.714,1024.704,GS  
262,3604137.406,5015644.683,1024.631,GS  
263,3604135.247,5015622.164,1024.390,GS  
264,3604131.163,5015582.496,1024.761,GS  
265,3604127.748,5015552.405,1024.723,GS  
266,3604177.157,5015542.304,1024.944,GS  
267,3604184.294,5015616.886,1025.193,GS  
268,3604190.119,5015667.988,1024.829,GS  
269,3604193.243,5015699.937,1024.753,GS  
270,3604242.807,5015693.543,1025.063,GS  
271,3604238.046,5015645.648,1024.617,GS  
272,3604235.150,5015616.336,1024.897,GS  
273,3604230.274,5015573.728,1025.228,GS



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274,3604227.634,5015546.567,1025.262,GS  
275,3604225.900,5015526.884,1024.851,GS  
276,3604275.580,5015521.145,1025.168,GS  
277,3604282.045,5015582.802,1025.314,GS  
278,3604284.541,5015612.884,1024.489,GS  
279,3604292.606,5015688.521,1025.758,GS  
280,3604342.757,5015686.485,1026.735,GS  
281,3604334.486,5015606.412,1025.650,GS  
282,3604327.867,5015539.670,1024.933,GS  
283,3604321.909,5015480.881,1025.155,GS  
284,3604371.325,5015472.056,1025.396,GS  
285,3604376.084,5015519.210,1024.737,GS  
286,3604381.678,5015573.513,1025.794,GS  
287,3604384.228,5015601.411,1026.732,GS  
288,3604391.872,5015675.485,1027.977,GS  
289,3604441.921,5015673.220,1029.430,GS  
290,3604436.615,5015622.586,1028.865,GS  
291,3604434.025,5015596.189,1027.675,GS  
292,3604429.192,5015551.973,1025.996,GS  
293,3604425.035,5015508.104,1025.025,GS  
294,3604419.298,5015455.233,1025.713,GS  
295,3604464.701,5015404.320,1025.685,GS  
296,3604471.512,5015469.380,1025.631,GS  
297,3604474.443,5015499.853,1025.099,GS  
298,3604477.893,5015532.939,1025.931,GS  
299,3604483.746,5015591.331,1028.364,GS  
300,3604489.754,5015649.498,1030.769,GS  
301,3604491.944,5015671.192,1030.932,GS  
302,3600099.495,5017559.308,1026.191,CPT  
303,3604079.056,5025333.693,1041.145,gps mon 8060  
304,3603092.226,5015307.477,1012.547,top 16" vcp 1.48 to fl  
305,3603084.707,5015234.824,1008.495,fl outlet  
306,3602703.081,5004263.424,1063.974,gps mon 8053  
307,3603092.226,5015307.824,1011.060,fl 16" cmp  
308,3603084.707,5015234.824,1009.600,fl cmp outlet  
309,3603083.881,5015289.431,1014.650,GS  
310,3603096.866,5015287.158,1014.767,GS  
311,3603090.290,5015288.084,1012.280,top 18" hdpe  
312,3603089.309,5015310.325,1015.739,GS  
313,3603093.556,5015273.633,1014.226,GS  
314,3603088.713,5015273.308,1011.762,top 18" hdpe  
315,3603084.291,5015233.471,1010.516,TOP 18" CMP  
316,3603107.791,5015422.293,1012.605,top 16" vcp 1.48 to fl  
317,3603108.607,5015428.350,1012.756,top 16" vcp 1.48 to fl  
318,3603102.417,5015422.574,1016.717,GS  
319,3603112.350,5015419.828,1016.808,GS  
320,3603110.518,5015440.275,1012.958,top 16" vcp 1.45 to fl  
321,3603105.930,5015440.673,1017.011,GS  
322,3603114.686,5015459.328,1017.081,GS ABOVE TILE

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323,3600081.220,5016436.894,1011.965,FENCE NORTH  
324,3600018.399,5016437.373,1012.835,FENCE S&W  
325,3600059.114,5015359.098,1004.310,MAG NAIL TOP CMP  
326,3603112.620,5015454.461,1012.927,TOP 16" CLAY TILE (1.41'TOFTOFL)  
327,3603121.223,5015509.303,1017.714,GS  
328,3603119.744,5015499.207,1017.661,GS  
329,3600032.332,5017204.144,1016.823,CL 28650 225TH HOG SITE DRIVE  
330,3600066.027,5015029.514,1004.054,CL 28231 GRAVEL DRIVE  
331,3603121.303,5015513.069,1013.180,TOP 16" CLAY TILE (1.37'TOFTOFL)  
332,3603119.651,5015502.854,1013.156,TOP 16" CLAY TILE (1.45'TOFTOFL)  
333,3603142.192,5015657.792,1015.640,GS GRASS WATERWAY  
334,3603142.511,5015663.721,1015.907,GS GRASS WATERWAY  
335,3603143.645,5015669.603,1016.202,GS GRASS WATERWAY  
336,3603144.961,5015675.854,1016.501,GS GRASS WATERWAY  
337,3603142.367,5015667.991,1013.459,TOP 16" CONC PIPE (1.45'TOFTO FL)  
338,3603141.830,5015663.842,1013.725,TOP 16" CLAY PIPE (1.39'TOFTO FL)  
339,3603143.465,5015675.528,1013.519,TOP 16" CONC PIPE (1.45'TOFTO FL)  
340,3603144.075,5015680.523,1016.705,GS ABOVE TILE  
341,3603133.745,5015683.353,1017.663,GRASS WATERWAY ESIDE  
342,3603147.723,5015691.975,1017.579,GRASS WATERWAY ESIDE  
343,3603167.983,5015700.029,1017.782,GRASS WATERWAY ESIDE  
344,3603174.055,5015651.980,1017.139,GRASS WATERWAY WSIDE  
345,3603146.587,5015635.955,1016.748,GRASS WATERWAY WSIDE  
346,3603119.394,5015621.509,1016.694,GRASS WATERWAY WSIDE  
347,3603141.080,5015657.672,1013.656,TOP 16" CLAY TILE (1.39'TOFTOFL)  
348,3603140.416,5015649.988,1015.870,GS WATERWAY  
349,3603138.332,5015639.265,1016.197,GS WATERWAY  
350,3603137.320,5015631.789,1016.774,GS WATERWAY  
351,3603148.754,5015696.036,1018.094,GS ABOVE TILE  
352,3603151.775,5015707.495,1018.498,GS ABOVE TILE  
353,3603149.147,5015697.824,1013.865,TOP 16" CLAY TILE (1.37'TOFTOFL)  
354,3603135.857,5015621.510,1013.383,top 16" vcp 1.45 to fl  
355,3603131.215,5015622.236,1017.057,GS  
356,3603148.457,5015695.965,1018.044,GS  
357,3603149.163,5015697.835,1013.874,top 16" vcp  
358,3603150.502,5015662.361,1015.634,GS  
359,3603159.525,5015733.595,1014.062,top 16" vcp  
360,3603135.857,5015621.510,1012.040,FL 15" VCP  
361,3603159.525,5015733.595,1012.670,FL 15" VCP  
362,3603132.407,5015631.525,1016.606,GS  
363,3603135.823,5015621.699,1013.751,TOP 18" HDPE  
364,3603137.226,5015630.731,1013.816,TOP 18" HDPE  
365,3603138.239,5015638.354,1013.997,TOP 18" PCCPIPE  
366,3603139.351,5015646.238,1013.971,TOP 18" PCC PIPE  
367,3603136.130,5015654.771,1015.591,GS  
368,3603140.844,5015654.105,1013.946,TOP 18" PCC PIPE  
369,3603142.121,5015662.006,1013.962,TOP 18" PCC PIPE  
370,3603143.387,5015669.936,1013.996,TOP 18" PCC PIPE  
371,3603144.771,5015677.794,1014.072,TOP 18" PCC PIPE

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372,3603148.680,5015697.142,1014.032,top 18" hdpe  
373,3603159.338,5015733.231,1017.904,top 15" vcp end repair  
374,3603153.638,5015716.227,1018.129,top 18" hdpe  
375,3603183.600,5015655.954,1017.278,gs cop damage9  
376,3603167.364,5015582.666,1018.343,gs cop damage9  
377,3603144.898,5015591.264,1018.190,gs cop damage9  
378,3603130.992,5015601.964,1018.090,gs cop damage9  
379,3603113.754,5015598.549,1017.586,gs cop damage9  
380,3603116.575,5015618.764,1016.734,gs cop damage9  
381,3603109.124,5015670.499,1017.787,gs cop damage9  
382,3603116.404,5015690.921,1018.418,gs cop damage9  
383,3603116.703,5015708.168,1018.497,gs cop damage9  
384,3603115.171,5015718.774,1018.504,gs cop damage9  
385,3603122.511,5015721.108,1018.618,gs cop damage9  
386,3603123.870,5015733.291,1018.701,gs cop damage9  
387,3603130.737,5015743.360,1018.589,gs cop damage9  
388,3603140.387,5015751.036,1018.581,gs cop damage9  
389,3603161.591,5015786.476,1018.485,gs cop damage9  
390,3603176.853,5015772.685,1018.566,gs cop damage9  
391,3603176.398,5015755.602,1018.669,gs cop damage9  
392,3603172.185,5015750.781,1018.621,gs cop damage9  
393,3603185.007,5015748.400,1018.633,gs cop damage9  
394,3603187.310,5015763.501,1018.747,gs cop damage9  
395,3603203.647,5015761.688,1018.784,gs cop damage9  
396,3603201.092,5015743.172,1018.900,gs cop damage9  
397,3603211.102,5015738.542,1018.857,gs cop damage9  
398,3603210.547,5015733.662,1018.908,gs cop damage9  
399,3603200.382,5015728.390,1018.894,gs cop damage9  
400,3603191.752,5015705.984,1018.026,gs cop damage9  
401,3603173.351,5015699.774,1017.262,gs cop damage9  
402,3603146.220,5015688.880,1017.493,gs cop damage9  
403,3603130.276,5015681.575,1017.572,gs cop damage9  
404,3603065.475,5015286.568,1014.749,gs cop damage9  
405,3603071.605,5015294.389,1014.800,gs cop damage9  
406,3603082.525,5015324.717,1015.681,gs cop damage9  
407,3603088.544,5015331.962,1016.041,gs cop damage9  
408,3603093.686,5015366.159,1016.425,gs cop damage9  
409,3603062.510,5015442.736,1016.955,gs cop damage9  
410,3603063.641,5015450.173,1017.032,gs cop damage9  
411,3603076.675,5015453.234,1017.043,gs cop damage9  
412,3603081.459,5015470.414,1017.335,gs cop damage9  
413,3603092.957,5015487.349,1017.521,gs cop damage9  
414,3603080.674,5015492.974,1017.713,gs cop damage9  
415,3603079.905,5015503.045,1017.689,gs cop damage9  
416,3603098.083,5015513.342,1017.912,gs cop damage9  
417,3603099.863,5015521.645,1017.771,gs cop damage9  
418,3603083.888,5015530.844,1017.787,gs cop damage9  
419,3603083.098,5015538.565,1017.848,gs cop damage9  
420,3603089.525,5015538.258,1017.873,gs cop damage9



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421,3603090.659,5015548.646,1017.769,gs cop damage9  
422,3603098.996,5015543.681,1018.030,gs cop damage9  
423,3603157.067,5015544.280,1018.257,gs cop damage9  
424,3603157.505,5015532.768,1017.949,gs cop damage9  
425,3603153.497,5015528.428,1017.882,gs cop damage9  
426,3603164.725,5015508.254,1017.602,gs cop damage9  
427,3603160.435,5015498.515,1017.496,gs cop damage9  
428,3603148.588,5015466.376,1017.290,gs cop damage9  
429,3603150.992,5015453.741,1017.171,gs cop damage9  
430,3603148.573,5015453.337,1017.155,gs cop damage9  
431,3603144.417,5015430.825,1016.992,gs cop damage9  
432,3603146.327,5015414.075,1017.027,gs cop damage9  
433,3603128.468,5015406.500,1016.850,gs cop damage9  
434,3603115.060,5015383.111,1016.564,gs cop damage9  
435,3603101.190,5015329.214,1016.451,gs cop damage9  
436,3603113.288,5015323.240,1016.643,gs cop damage9  
437,3603122.202,5015310.830,1016.602,gs cop damage9  
438,3603125.849,5015292.985,1016.314,gs cop damage9  
439,3603121.998,5015272.823,1015.389,gs cop damage9  
440,3603116.796,5015264.653,1014.964,gs cop damage9  
441,3602989.413,5015223.553,1016.445,gs cop damage9  
442,3602987.873,5015201.965,1017.308,gs cop damage9  
443,3602982.420,5015189.417,1018.309,gs cop damage9  
444,3602970.996,5015181.267,1018.871,gs cop damage9  
445,3602951.096,5015173.745,1019.146,gs crop damage  
446,3602910.060,5015225.719,1018.167,gs crop damage  
447,3602911.624,5015226.863,1018.060,gs crop damage  
448,3602887.280,5015259.019,1017.971,gs crop damage  
449,3602871.051,5015275.517,1017.755,gs crop damage  
450,3602849.047,5015293.143,1017.606,gs crop damage  
451,3602823.184,5015308.402,1017.462,gs crop damage  
452,3602794.497,5015317.916,1017.071,gs crop damage  
453,3602766.300,5015323.815,1017.047,gs crop damage  
454,3602718.651,5015322.775,1016.699,gs crop damage  
455,3602668.150,5015323.050,1016.847,gs crop damage  
456,3602667.982,5015320.566,1016.963,gs crop damage  
457,3602658.473,5015320.856,1016.976,gs crop damage  
458,3602658.247,5015323.059,1016.960,gs crop damage  
459,3601522.310,5015327.491,1013.993,gs crop damage  
460,3601520.584,5015330.193,1013.693,gs crop damage  
461,3600324.593,5015334.804,1005.855,gs crop damage  
462,3600305.927,5015335.876,1006.062,gs crop damage  
463,3600284.295,5015335.441,1006.175,gs crop damage  
464,3600259.053,5015337.058,1006.064,gs crop damage  
465,3600237.389,5015341.959,1005.969,gs crop damage  
466,3600200.047,5015354.216,1005.882,gs crop damage  
467,3600164.585,5015365.427,1005.956,gs crop damage  
468,3600138.768,5015369.518,1006.297,gs crop damage  
469,3600111.209,5015372.303,1006.018,gs crop damage

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470,3600077.058,5015369.259,1006.151,gs crop damage  
471,3600074.811,5015385.185,1006.387,gs crop damage  
472,3600095.458,5015383.489,1006.376,gs crop damage  
473,3600120.574,5015384.507,1006.258,gs crop damage  
474,3600138.982,5015384.072,1006.405,gs crop damage  
475,3600169.777,5015378.358,1006.308,gs crop damage  
476,3600204.290,5015368.249,1006.319,gs crop damage  
477,3600247.426,5015352.930,1006.092,gs crop damage  
478,3600262.628,5015349.241,1006.267,gs crop damage  
479,3600291.333,5015347.541,1006.419,gs crop damage  
480,3601287.942,5015343.564,1012.529,gs crop damage  
481,3601287.864,5015346.006,1012.406,gs crop damage  
482,3601303.518,5015345.841,1012.439,gs crop damage  
483,3601303.504,5015343.372,1012.504,gs crop damage  
484,3601544.954,5015342.122,1013.651,gs crop damage  
485,3601545.103,5015339.976,1013.603,gs crop damage  
486,3601645.008,5015339.621,1014.397,gs crop damage  
487,3601645.149,5015341.802,1014.303,gs crop damage  
488,3601700.382,5015341.340,1014.806,gs crop damage  
489,3601699.879,5015339.348,1014.841,gs crop damage  
490,3602013.043,5015337.967,1016.483,gs crop damage  
491,3602013.586,5015340.337,1016.473,gs crop damage  
492,3602022.055,5015339.961,1016.385,gs crop damage  
493,3602022.052,5015337.709,1016.403,gs crop damage  
494,3602209.909,5015336.997,1016.041,gs crop damage  
495,3602210.501,5015339.414,1016.025,gs crop damage  
496,3602746.480,5015337.396,1016.735,gs crop damage  
497,3602767.641,5015340.779,1016.914,gs crop damage  
498,3602782.791,5015349.877,1016.509,gs crop damage  
499,3602794.228,5015358.019,1016.181,gs crop damage  
500,3602812.407,5015379.345,1014.581,gs crop damage  
501,3602828.319,5015370.751,1014.754,gs crop damage  
502,3602810.939,5015357.208,1015.903,gs crop damage  
503,3602786.717,5015334.180,1016.799,gs crop damage  
504,3602798.644,5015330.339,1016.874,gs crop damage  
505,3602822.347,5015322.001,1017.247,gs crop damage  
506,3602845.472,5015309.814,1017.344,gs crop damage  
507,3602867.747,5015294.496,1017.352,gs crop damage  
508,3602888.130,5015275.684,1017.608,gs crop damage  
509,3602888.130,5015272.373,1017.685,gs crop damage  
510,3602902.256,5015255.730,1017.801,gs crop damage  
511,3602908.942,5015247.083,1017.810,gs crop damage  
512,3602917.008,5015245.713,1017.431,gs crop damage  
513,3602922.565,5015232.690,1017.762,gs crop damage  
514,3602934.636,5015216.938,1018.003,gs crop damage  
515,3602946.561,5015209.141,1018.111,gs crop damage  
516,3602958.239,5015210.470,1017.870,gs crop damage  
517,3602965.874,5015220.901,1016.966,gs crop damage  
518,3602969.004,5015237.421,1016.170,gs crop damage

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519,3602958.223,5015266.108,1015.645,gs crop damage  
520,3602971.009,5015249.706,1015.704,gs crop damage  
521,3602983.990,5015232.603,1015.945,gs crop damage  
522,3604079.658,5015636.933,1018.567,TOP 15" CLAY TILE (1.27'TOFTO FL)  
523,3604245.892,5015613.888,1019.331,TOP EXIST 15" HDPE PERF TILE  
524,3604284.099,5015604.178,1019.468,TOP 15" HDPE PERF TILE (1.32'TOP TOFL)  
525,3604282.396,5015604.935,1019.481,TOP 15" HDPE PERF TILE (1.32'TOP TOFL)  
526,3604332.738,5015578.746,1025.273,GS TILE LOCATE  
527,3604395.171,5015539.846,1025.383,GS TILE LOCATE  
528,3604394.761,5015530.746,1025.218,GS TILE LOCATE  
529,3604393.519,5015547.318,1025.423,GS TILE LOCATE  
530,3604389.117,5015550.398,1025.479,GS TILE LOCATE  
531,3604382.035,5015553.590,1025.493,GS TILE LOCATE  
532,3604369.955,5015558.685,1025.473,GS TILE LOCATE  
533,3604356.333,5015565.461,1025.524,GS TILE LOCATE  
534,3604395.627,5015518.797,1024.886,GS TILE LOCATE  
535,3604114.329,5015633.679,1024.297,Cogo  
536,3604279.020,5015606.417,1024.582,GS ABOVE TILE  
537,3604286.802,5015603.549,1024.264,GS ABOVE TILE  
538,3604076.818,5015533.481,1025.908,WFP FENCE E-W  
539,3604076.892,5015458.174,1029.806,WFP FENCE E-W  
540,3604076.313,5015652.238,1024.037,WFP FENCE E-W  
541,3604077.873,5015697.658,1024.060,WFP FENCE E-W  
542,3604078.663,5015792.001,1028.437,WFP FENCE E-W  
543,3604081.899,5015634.844,1018.655,TOP 15" HDPE 22.5 BEND (1.35'TOFTOFL)  
544,3604101.363,5015632.530,1018.732,TOP 15" HDPE DW NONPERF RIB S OF BELL END DAY  
(1.35'TOFTOFL)  
545,3604097.037,5015663.651,1024.468,GS CORN DAMAGE 1  
546,3604108.541,5015650.976,1024.346,GS CORN DAMAGE 1  
547,3604124.618,5015642.972,1024.335,GS CORN DAMAGE 1  
548,3604161.287,5015628.274,1024.432,GS CORN DAMAGE 1  
549,3604190.629,5015622.759,1024.448,GS CORN DAMAGE 1  
550,3604227.504,5015615.961,1024.637,GS CORN DAMAGE 1  
551,3604257.760,5015609.282,1024.876,GS CORN DAMAGE 1  
552,3604260.624,5015608.419,1024.928,GS CORN DAMAGE 1  
553,3604285.638,5015597.058,1024.363,GS CORN DAMAGE 1  
554,3604293.085,5015586.943,1024.290,GS CORN DAMAGE 1  
555,3604294.039,5015577.633,1024.296,GS CORN DAMAGE 1  
556,3604290.669,5015565.839,1024.712,GS CORN DAMAGE 2  
558,3604268.313,5015547.799,1025.285,GS CORN DAMAGE 2  
559,3604277.615,5015552.140,1025.173,GS CORN DAMAGE 2  
560,3604254.870,5015545.083,1025.058,GS CORN DAMAGE 2  
561,3604247.501,5015545.075,1024.999,GS CORN DAMAGE 3  
562,3604232.520,5015546.914,1025.108,GS CORN DAMAGE 3  
563,3604209.891,5015550.835,1024.931,GS CORN DAMAGE 3  
564,3604201.234,5015552.689,1024.935,GS CORN DAMAGE 3  
565,3604187.526,5015555.784,1024.896,GS CORN DAMAGE 3  
566,3604172.275,5015558.087,1024.860,GS CORN DAMAGE 3  
567,3604150.931,5015554.572,1024.758,GS CORN DAMAGE 3



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568,3604133.747,5015551.179,1024.607,GS CORN DAMAGE 3  
569,3604102.994,5015544.941,1024.738,GS CORN DAMAGE 3  
570,3604120.834,5015630.058,1018.820,TOP 15" HDPE DW NONPERF RIB S OF BELL  
(1.35'TOPTOFL)  
571,3604140.319,5015627.519,1018.900,TOP 15" DW HDPE NONPERF 1ST (1.35'TOPTOFL)  
572,3604159.944,5015625.669,1018.981,TOP 15" DW HDPE NONPERF 2ND (1.35'TOPTOFL)  
573,3604179.478,5015623.701,1019.055,TOP 15" DW HDPE NONPERF 3RD (1.35'TOPTOFL)  
574,3604198.998,5015621.048,1019.130,TOP 15" DW HDPE NONPERF 1ST (1.35'TOPTOFL)  
575,3604218.380,5015617.996,1019.209,TOP 15" DW HDPE NONPERF 2ND (1.35'TOPTOFL)  
576,3604237.547,5015614.620,1019.288,TOP 15" DW HDPE NONPERF 3RD (1.35'TOPTOFL)  
577,3604257.002,5015611.499,1019.370,TOP 15" DW HDPE NONPERF 4TH (1.35'TOPTOFL)  
578,3604245.187,5015540.741,1024.840,GS CORN DAMAGE 3  
579,3604236.234,5015541.323,1024.866,GS CORN DAMAGE 3  
580,3604234.555,5015536.384,1024.863,GS CORN DAMAGE 3  
581,3604225.710,5015538.057,1024.843,GS CORN DAMAGE 3  
582,3604226.715,5015545.053,1024.899,GS CORN DAMAGE 3  
583,3604198.970,5015550.626,1024.949,GS CORN DAMAGE 3  
584,3604194.691,5015543.921,1024.811,GS CORN DAMAGE 3  
585,3604180.575,5015546.786,1024.798,GS CORN DAMAGE 3  
586,3604178.596,5015542.272,1024.798,GS CORN DAMAGE 3  
587,3604164.416,5015543.685,1024.792,GS CORN DAMAGE 3  
588,3604163.543,5015541.214,1024.742,GS CORN DAMAGE 3  
589,3604154.900,5015541.758,1024.638,GS CORN DAMAGE 3  
590,3604154.488,5015539.274,1024.578,GS CORN DAMAGE 3  
591,3604145.330,5015539.546,1024.585,GS CORN DAMAGE 3  
592,3604136.470,5015531.333,1024.722,GS CORN DAMAGE 3  
593,3604126.324,5015530.252,1024.771,GS CORN DAMAGE 3  
594,3604125.349,5015532.616,1024.755,GS CORN DAMAGE 3  
595,3604114.134,5015524.021,1025.276,GS CORN DAMAGE 3  
596,3604106.966,5015530.256,1025.162,GS CORN DAMAGE 3  
597,3604104.675,5015535.796,1025.015,GS CORN DAMAGE 3  
598,3604299.642,5015556.142,1024.665,GS CORN DAMAGE 2  
599,3604292.971,5015548.349,1024.869,GS CORN DAMAGE 2  
600,3604279.224,5015538.599,1025.118,GS CORN DAMAGE 2  
601,3604274.071,5015533.861,1025.065,GS CORN DAMAGE 2  
602,3604265.686,5015531.536,1025.019,GS CORN DAMAGE 2  
603,3604256.945,5015535.754,1024.961,GS CORN DAMAGE 2  
604,3604276.039,5015607.096,1019.461,TOP 15" HDPE DW NONPERF 1ST (1.35'TOPTOFL)  
605,3604096.259,5015667.037,1024.333,GS CORN DAMAGE 1  
606,3604107.940,5015664.906,1024.506,GS CORN DAMAGE 1  
607,3604115.836,5015666.640,1024.565,GS CORN DAMAGE 1  
608,3604117.538,5015664.128,1024.575,GS CORN DAMAGE 1  
609,3604121.961,5015662.095,1024.581,GS CORN DAMAGE 1  
610,3604143.135,5015664.190,1024.716,GS CORN DAMAGE 1  
611,3604166.342,5015659.976,1024.791,GS CORN DAMAGE 1  
612,3604167.600,5015662.898,1024.722,GS CORN DAMAGE 1  
613,3604173.572,5015662.164,1024.696,GS CORN DAMAGE 1  
614,3604173.250,5015659.435,1024.758,GS CORN DAMAGE 1  
615,3604206.550,5015656.516,1024.711,GS CORN DAMAGE 1

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616,3604224.235,5015654.362,1024.439,GS CORN DAMAGE 1  
617,3604250.822,5015649.356,1024.510,GS CORN DAMAGE 1  
618,3604259.261,5015647.516,1024.664,GS CORN DAMAGE 1  
619,3604260.143,5015649.246,1024.645,GS CORN DAMAGE 1  
620,3604276.399,5015645.046,1025.097,GS CORN DAMAGE 1  
621,3604287.069,5015641.249,1025.201,GS CORN DAMAGE 1  
622,3604294.337,5015633.965,1025.214,GS CORN DAMAGE 1  
623,3604293.840,5015618.985,1024.685,GS CORN DAMAGE 1  
624,3604304.464,5015610.282,1024.890,GS CORN DAMAGE 1  
625,3604312.012,5015599.592,1024.922,GS CORN DAMAGE 1  
626,3604308.343,5015597.151,1024.939,GS CORN DAMAGE 1  
627,3604308.812,5015585.779,1024.967,GS CORN DAMAGE 1  
628,3604309.004,5015574.206,1024.934,GS CORN DAMAGE 1  
629,3604298.553,5015572.199,1024.481,GS CORN DAMAGE 1  
630,3604293.315,5015572.642,1024.415,GS CORN DAMAGE 1  
631,3604283.903,5015604.298,1019.473, TOP 15" DW HDPE NONPERF (1.35'TOFTOFL)  
632,3604399.485,5015518.683,1019.920, TOP EXISTING 14" CLAY TILE (1.25'TOFTOFL)  
633,3604291.662,5015600.361,1019.523, TOP 15" HDPE DW NONPERF RIB S OF BELL 1ST 8.7'  
(1.35'TOFTOFL)  
634,3604307.957,5015589.602,1019.603, TOP 15" HDPE DW NONPERF RIB S OF BELL 2ND  
(1.35'TOFTOFL)  
635,3604323.122,5015577.264,1019.650, TOP 15" HDPE DW NONPERF RIB S OF BELL 3RD  
(1.35'TOFTOFL)  
636,3604313.269,5015588.866,1019.564, TOP 15" HDPE SW PERF TILE (REMOVE TO NW)  
637,3604337.238,5015563.534,1019.750, TOP 15" HDPE DW NONPERF RIB S OF BELL 4TH  
(1.35'TOFTOFL)  
638,3604351.024,5015549.692,1019.807, TOP 15" HDPE DW PERF TILE RIB S OF BELL 1ST  
(1.35'TOFTOFL)  
639,3604380.376,5015523.850,1019.952, TOP 15" HDPE DW PERF TILE RIB S OF BELL 3RD  
(1.35'TOFTOFL)  
640,3604365.347,5015536.232,1019.887, TOP 15" HDPE DW PERF TILE RIB S OF BELL 2ND  
(1.35'TOFTOFL)  
641,3604352.503,5015551.081,1019.750,Cogo  
642,3604368.795,5015540.006,1019.750,Cogo  
643,3604384.060,5015527.554,1019.750,Cogo  
644,3604376.692,5015523.980,1018.672, FL ABANDONED 15" CLAY TILE TO S  
646,3604383.061,5015521.609,1019.975, TOP 15" HDPE 22.5 BEND



# Drainage Utility Permit Application

## Hardin County

**Applicant:** Casey Huff

**Contact Email:** chuff@midlandpower.coop

**Contact Phone:** (515) 709-3908

**Utility Type:** N/A - Utility Permits Only

**Drainage District:** DDs\Big 4 Main (51193)

**Description of Work:** Midland Power Coop - DD Big 4 & DD 46 - Setting poles along B Ave. starting at Hwy D20, Alden twp., Sec. 16 for 1 mile, heading east along 120th for 1 mile.

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beaneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage Districts. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

\_\_\_\_\_  
**Applicant Signature**

\_\_\_\_\_  
**Date**

**Submit Form and Location Plan 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  
drainage@hardincountyia.gov

*For Office Use Only*

### Application Approval:

**By:** \_\_\_\_\_ **Date:** \_\_\_\_\_  
*Board of Supervisor Chairman, Acting as Drainage District Trustee*

**APPROVED PERMIT #** \_\_\_\_\_ **2020-14**

- ☐ Application in TCM
- ☐ GIS Annotation
- ☐ Approval Emailed





# HARDIN COUNTY

1215 EDGINGTON AVE., SUITE 1  
ELDORA, IA 50627  
(641) 939-8108

## HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant:

Midland Power Cooperative  
Company Name

PO Box 368  
Address

Boone IA 50036  
City State Zip

Applicant Contact:

Casuy Huff (515) 709-3908  
Name Phone

chuff@midlandpower.coop  
Email

Utility Type:

Primary overhead electrical

Drainage District(s) Crossed:

Big 4, DD 46

Facilities Crossed (specific tile, open ditch):

Description of Work:

(Location plan of  
proposed utility must  
be attached.)

Setting poles along B Ave starting at Hwy  
D20, Alden Township Sections 16 for  
1 mile, heading east along 120th for 1 mile

Pursuant to Code of Iowa Section 468.186, approval is hereby requested for the right, privilege and authority to construct, operate and maintain utilities on, over, across or beneath established Hardin County Drainage Districts, subject to the attached Requirements for Construction On, Over, Across or Beneath Established Drainage District. Failure to comply with said requirements shall be ground for revocation of the permit by the Hardin County Board of Supervisors.

[Signature]  
Applicant Signature

10/6/20  
Date

Submit Form and Location Plan To:

Hardin County Auditor's Office  
Attn: Drainage Clerk  
1215 Edgington Ave, Suite 1  
Eldora, IA 50627  
Fax (641) 939-8225  
[drainage@hardincountyia.gov](mailto:drainage@hardincountyia.gov)

For Office Use Only

Application Approval:

By: \_\_\_\_\_  
Board of Supervisor Chairman, Acting as Drainage District Trustee

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

APPROVED PERMIT #: \_\_\_\_\_



## REQUIREMENTS FOR CONSTRUCTION ON, OVER, ACROSS OR BENEATH ESTABLISHED DRAINAGE DISTRICT

Upon issuance of a permit for utilities on, over, across or beneath established Hardin County Drainage Districts, the applicant shall be governed by these requirements and shall comply with all conditions contained herein.

1. The Applicant shall furnish the Drainage District, or its representative, plats showing the exact location of the proposed construction. If it is found that such locations are in conflict with the present or proposed facilities and that a more desirable location is possible, the Applicant shall review such possible alignment changes. **No construction is to commence with the drainage facility without an approved application.**
2. Applicant shall comply with Iowa One-Call requirements prior to commencing any work.
3. The Drainage District shall provide Applicant access to maps or other information regarding the location of all known drainage district facilities so that reasonable care may be taken by Applicant to avoid un-necessary damage to said drainage district facilities.
4. The Applicant shall hold the Drainage District harmless from any damage that may result to the Drainage District facility because of the construction or maintenance of the utility, and shall reimburse the Drainage District for any expenditures that the Drainage District may have to make on said Drainage District facilities resulting from Applicant's construction and installation of utilities, or their subsequent repair or modification.
5. The Applicant shall take all reasonable precaution during the construction of said utility to protect and safeguard the lives and property of the public and adjacent property owners and shall hold the Drainage District harmless from any damages or losses that may be sustained by adjacent property owners on account of such construction operations. Further, Applicant agrees to replace, repair or reimburse all damages to private property occasioned by Applicant's installation of subsequent modification or repairs.
6. The Drainage District assumes no responsibility for damages to the Applicants property occasioned by any construction or maintenance operation of said Drainage District facilities, subsequent to Applicants installation.
7. A copy of a certificate of insurance naming the County/Drainage District as additional insured for their permit work shall be provided to the County Auditor prior to installation. The limit of liability under the insurance policy shall not be less than \$1,000,000 per occurrence.
8. The Applicant agrees to give the Drainage District twenty-four (24) hours (Saturday and Sunday excluded) notice of its intention to commence construction on any lands within the jurisdiction of the Drainage District. Said notice shall be made in writing to the County Auditor or to the designated Drainage District representative.
9. The Applicant agrees to place permanent, visible markers or monuments at locations where utility crosses Drainage District facilities. These monuments or markers shall identify the owners name, address and phone number.
10. The Drainage District Trustees may appoint a representative to inspect and approve all construction across Drainage District facilities as part of this permit. All compensation, wages, mileage and other expenses for this representative will be paid by the Applicant. It will be the responsibility of the Applicant to make all contacts with private parties (adjacent owners/operators) to determine the location of private drainage facilities. Said representative will also inspect all crossing of Drainage District facilities and may, if required, observe the crossing of private drainage facilities, and shall have the authority to require the Applicant to excavate and expose the crossing of any Drainage District facility where the representative believes it prudent to visually examine Applicants crossing of the Drainage District facility. Further, said representative has the authority to suspend construction and installation by the Applicant within any Drainage District jurisdiction by verbal order to the contractor at the site and a telephone call to Applicants contact person listed on page 1 within six (6) hours of the verbal order.



11. The construction and maintenance of Applicants installation shall be carried on in such a manner as to not interfere with or interrupt the function of said Drainage District facilities without the express written consent of the Drainage District Representative. In the event it becomes necessary to temporarily stop the flow of water, the following shall be completed by the Applicant:
  - a. If the crossing involves a tile line, the replacement of tile with approved materials, in the manner approved by the Drainage Districts designated representative, shall be performed as rapidly as possible. If the approved method of repair is impossible and the volume of water flowing in the tile is sufficient to create the possibility of crop loss or property damage, the Contractor will be permitted to temporarily block the tile line to prevent the flow of this tile water into the pipeline, or tile line ditch. In the event this tile line is so temporarily blocked, the Contractor will be expected to provide sufficient pumping equipment to pump the impounded tile water across the construction ditch to the undisturbed tile line. Such temporary blockages of said Drainage District tile lines will be removed as rapidly as possible and any tile repairs caused by this blockage will be immediately repaired at the Applicants expense.
  - b. If the crossing involves an open ditch that is carrying sufficient flow of water to make it necessary to place a temporary dam across said open ditch, such temporary dams may be constructed only upon approval from the Drainage District designated representative. The maximum elevation of this impounded water shall be determined by the designated Drainage District representative and all excess water must be allowed to flow across the construction ditch through either a closed metal culvert pipe or by pumping. All temporary dam structures are to be removed as soon as the crossing is completed. The construction and removal of these dams shall be in such a manner that the smooth and efficient function of the drainage ditch is not impaired, with all costs and damages borne by Applicant.
12. The Applicant will at any time subsequent to the commencement of construction, and at Applicants sole expense, reconstruct or replace its installation as may be necessary to conform to new grade or alignments resulting from maintenance or construction operations by the Drainage District in connection with any of its drainage facilities. Applicant agrees to do this within forty-five (45) days of receipt of written request from the Drainage District, or such longer time period as the Drainage District may specify, without cost to the Drainage District. Such reconstruction or realignment of Applicants improvements shall be made in accordance with and approved by the Drainage District or its designated representative. If the Applicant is unable to comply within the time period specified above, the Drainage District may cause the work to be done and the Applicant will pay the cost thereof upon receipt of a statement of such costs.
13. CROSSING OF OPEN DITCH FACILITIES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
  - a. Passage of installation in a horizontal plane five feet (5') below design grade of drainage ditch, as established by the Drainage District representative.
  - b. The above depth to extend to a point two (2) times the design base width of ditch either side of centerline of drainage ditch (measured along the centerline of utility) unless the existing base width is greater than the design bases width. If the existing base width is greater than the design with, the depth is to extend to a point two (2) times the existing width.
  - c. The rate of slope for transition from normal utility laying depth of crossings of drainage ditches shall not be steeper than 4:1.
  - d. If such ditch crossings occur at points of outlets of Drainage District or private tile lines or within twenty-five feet (25') of said outlets, such outlets must be relocated to a point not less than twenty-five feet (25') from such crossings. Such relocations shall be at the expense of the Applicant and as directed by the representative of the Drainage District.





14. CROSSING OF DRAINAGE DISTRICT TILE LINES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only upon the review by and approval of the designated representative of the Drainage District. Such waiver must be in writing.
  - b. A minimum of one foot (1') clearance below existing Drainage District facilities must be maintained.
  - c. At all crossings of Drainage District tile lines with the proposed utility, one of the following must be used:
    - i. Replace Drainage District tile with reinforced concrete pipe of same or larger diameter than existing tile. Concrete pipe to be 2,000 D strength (Iowa Department of Transportation approved) with standard tongue and groove joints. Pipe to have a minimum of three (3) bolt-type connectors at each joint.
    - ii. Replace Drainage District tile with cathodic protected corrugated metal pipe. Diameter of corrugated metal pipe to be a minimum of two inches (2") larger than outside diameter of tile line being replaced. (Specifications regarding gage, cathodic protection and other details to be subject to review and approval.)
    - iii. Dual wall plastic with specific approval of Drainage District representative.
    - iv. Bore new utility installation; maintain existing tile in an undisturbed state.
  - d. The length of tile to be replaced by any of the above alternates is as follows:
    - i. Eight-inch (8") tile and smaller: Six feet (6') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
    - ii. Ten inch (10") tile and larger: Ten feet (10') either side of centerline of proposed installation, measured at right angles to the centerline of installation.
  - e. At all crossings of Drainage District tile lines where the Drainage District and private tile lines are damaged by the construction, maintenance or repair of Applicants installation shall be repaired as directed by the Drainage Districts designated representative.
15. This permit is subject to existing regulations and statutes of the State of Iowa and future regulations, which may be promulgated or enacted.
16. This application is subject to revocation by Hardin County, if in its judgment it is necessary for legitimate purposes. In such event, written notice shall be provided to permit holder.
17. Applicant agrees to pay all other legitimate costs, fees and expenses associated with its crossing of the Drainage District facility, including but not limited to, publication costs, engineering costs and legal service costs. Said costs will be paid within thirty (30) days of the mailing of the statements to the Applicant.
18. Applicant agrees to provide a copy of as-built plan of the utility route and location, showing route changes that may have taken place during construction.
19. Applicant agrees to include a copy of these requirements to all bidding specifications; or if the construction and installation contract has been let by the time this permit is approved, Applicant agrees to provide a copy of these requirements to the contractor and to advise them that they are bound by the terms of these requirements.

# Midland Power Cooperative

Name: Phone 1:  
Srv Map Loc: 1276-6616 Phone 2:  
Equip Map Loc: Staked By: CASSANDRA A HUFF  
911 Addr: Acct #:

Loan Project: 317-1 City: TWP: 89N Section(s): 16  
Budget Code#: 01 County: Hardin Range: 22W Tax Dist:

Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY LD	#	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE
chuff.1	E	40-3	1	C2.21P-4/0		1	H1.1-1/0	1	E1.1	1	F1.12							
Remove guy pole	C		1	C7.1-1/0														
chuff.2	42 C	35-3	1	C6.21-1/0	1/0-ACSR	1	H1.1-#2	3	E1.1	3	F1.12							
	C				2-ACSR													
chuff.3	244 C	(3) P1.1-1/0	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2											
	C	35-3			2-ACSR													
chuff.4	238 C	40-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2											
	C				2-ACSR													
chuff.5	225 C	40-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2											
	C				2-ACSR													
chuff.6	243 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2											
	C				2-ACSR													
chuff.7	225 C	(3) P1.1-1/0	1	C1.11-1/0	2-ACSR	1	H1.1-#2											
	C	35-3			1/0-ACSR													
chuff.8	230 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2											
	C				2-ACSR													
chuff.9	234 C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2											
	C				1/0-ACSR													
chuff.10	229 C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2											
	C				1/0-ACSR													

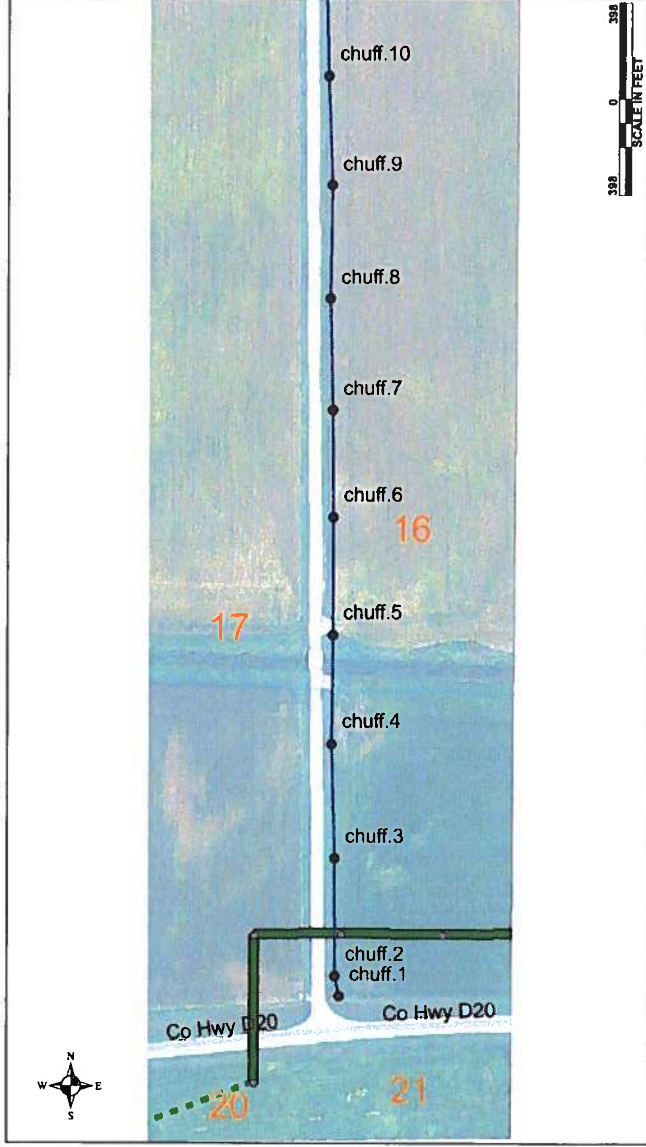
# Midland Power Cooperative

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 Acct #: \_\_\_\_\_  
 Phone 1: \_\_\_\_\_  
 Phone 2: \_\_\_\_\_  
 Staked By: CASSANDRA A HUFF

Loan Project: 317-1  
 Budget Code#: 01  
 City: \_\_\_\_\_  
 County: Hardin  
 TWP: 89N  
 Range: 22W  
 Section(s): 16  
 Tax Dist: \_\_\_\_\_

Comments: 2 mile line rebuild to 1/0-acsr

Directions:





# Midland Power Cooperative

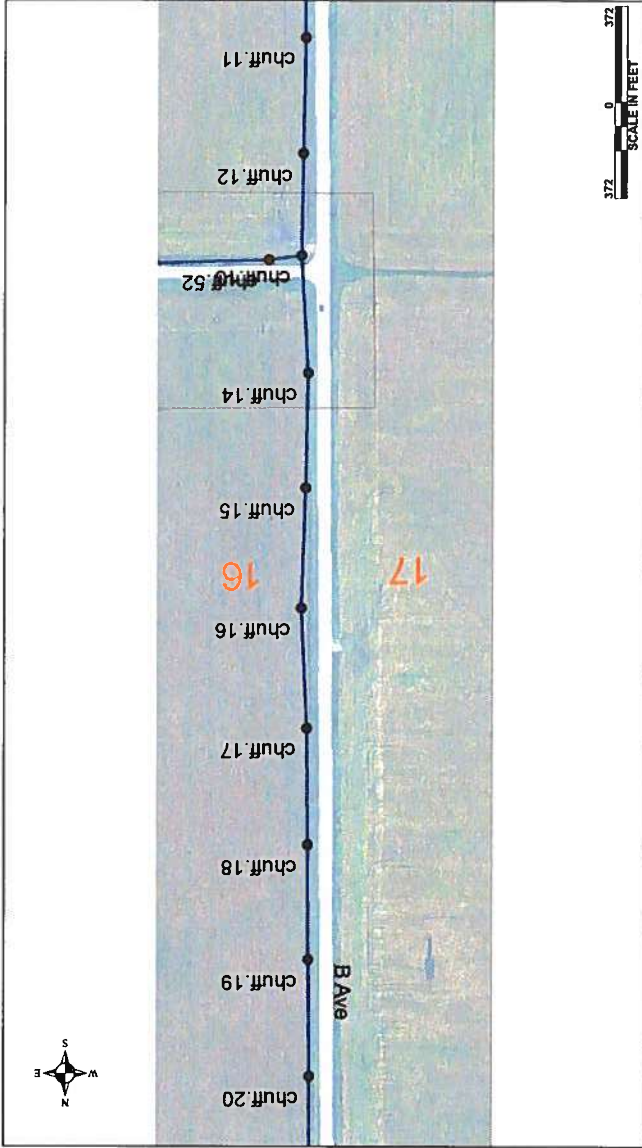
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Srv Map Loc: 1276-6616 Phone 2:  
Equip Map Loc: Staked By: CASSANDRA A HUFF  
911 Addr: Loan Project: 317-1 City: TWP: 89N Section(s): 16  
Acct #: Budget Code#: 01 County: Hardin Range: 22W Tax Dist:

Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY	GUY LD	#	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE
chuff.11	230 C	35-3	1	C1.11-1/0	2-ACSR	1	H1.1-#2												
	C	(3)			1/0-ACSR														
		P1.1-1/0																	
chuff.12	227 C	40-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2												
	C				2-ACSR														
chuff.13	197 C	40-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2												
	C		1	A5.1-1/0	2-ACSR														
chuff.14	227 C	40-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2												
	C				2-ACSR														
chuff.15	225 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2												
	C	(3)			2-ACSR														
		P1.1-1/0																	
chuff.16	231 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2												
	C				2-ACSR														
chuff.17	232 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2												
	C				2-ACSR														
chuff.18	226 C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2												
	C				1/0-ACSR														
chuff.19	222 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2												
	C	(3)			2-ACSR														
		P1.1-1/0																	
chuff.20	225 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2												
	C				2-ACSR														
chuff.52	65 C		1	A6.1-1/0	1/0-ACSR	1	H1.1-1/0		1	E1.1		1	F1.12						

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Loan Project: 317-1 City: TWP: 89N Section(s): 16  
 Budget Code#: 01 County: Hardin Range: 22W Tax Dist:



Comments: 2 mile line rebuild to 1/0-acsr

Directions:

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Loan Project: 317-1 City: TWP: 89N Section(s): 16  
County: Hardin Range: 22W Tax Dist:

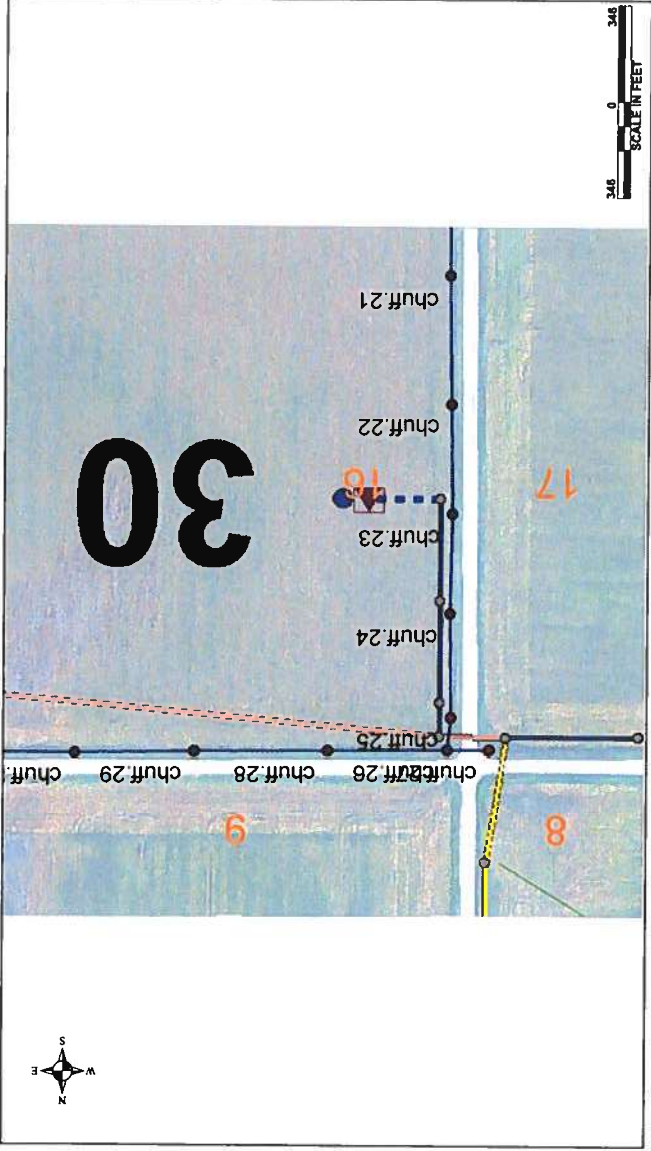
Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY	GUY LD	#	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE
chuff.21	221 C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2												
	C				1/0-ACSR														
chuff.22	231 C	40-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2												
	C	(3)			2-ACSR														
	P1.1-1/0																		
chuff.23	199 E		1	UA1															
1276-030	C	40-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2												
	C				2-ACSR														
chuff.24	179 C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2												
	C				1/0-ACSR														
chuff.25	186 C	35-3	1	C6.21-1/0	2-ACSR	1	H1.1-#2		3	E1.1			3	F1.12					
	C				1/0-ACSR														
chuff.26	59 C	40-3	1	C1.11-1/0	2-ACSR	1	H1.1-1/0												
	C		1	C7.1-1/0	1/0-ACSR														
chuff.27	77 C	40-3	1	C7.1-1/0	1/0-ACSR	1	H1.1-#2		4	E1.1			4	F1.12					
	C		2	A5.21-1/0	2-ACSR														
chuff.28	215 C	35-3	1	C1.11-1/0	2-ACSR	1	H1.1-#2												
	C	(3)			1/0-ACSR														
	P1.1-1/0																		
chuff.29	242 C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2												
	C				1/0-ACSR														
chuff.30	216 C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2												
	C				1/0-ACSR														



Midland Power Cooperative

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911 Addr: Loan Project: 317-1 City: TWP: 89N Section(s): 16  
Acct #: Budget Code#: 01 County: Hardin Range: 22W Tax Dist:



Comments: 2 mile line rebuild to 1/0-acsr

Directions:

# Midland Power Cooperative

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Loan Project: 317-1 City: TWP: 89N Section(s): 16  
 Budget Code#: 01 County: Hardin Range: 22W Tax Dist:

Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY	GUY LD	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE
chuff.31	216 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2											
	C				2-ACSR													
chuff.32	211 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2											
	C	(3)			2-ACSR													
		P1.1-1/0																
chuff.33	214 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2											
	C				2-ACSR													
chuff.34	216 C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2											
	C				1/0-ACSR													
chuff.35	231 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2											
	C				2-ACSR													
chuff.36	240 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2											
	C	(3)			2-ACSR													
		P1.1-1/0																
chuff.37	226 C	40-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2											
	C				2-ACSR													
chuff.38	203 C	40-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2		1	E1.1	1	F1.12	1	G1.3-1/0		1	J2.1T-1/0	
1276-028	C				2-ACSR													
chuff.39	241 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2											
	C				2-ACSR													
chuff.40	216 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2											
	C	(3)			2-ACSR													
		P1.1-1/0																

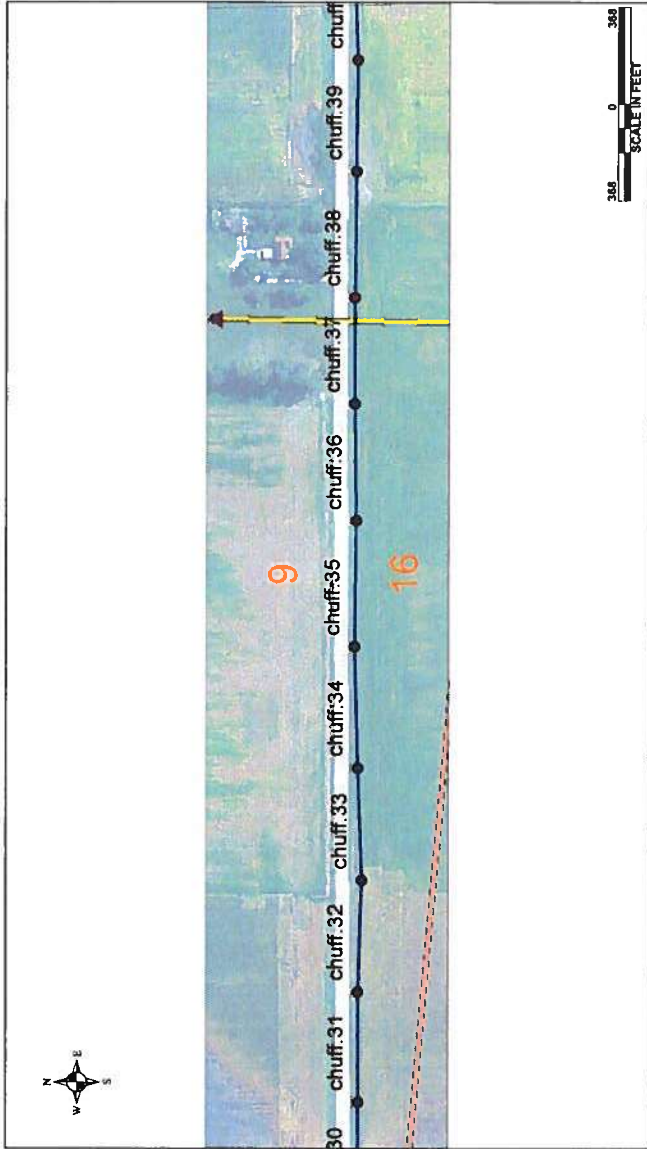
Midland Power Cooperative

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Budget Code#: 01 County: Hardin Range: 22W Tax Dist:

Comments: 2 mile line rebuild to 1/0-acsr

Directions:





# Midland Power Cooperative

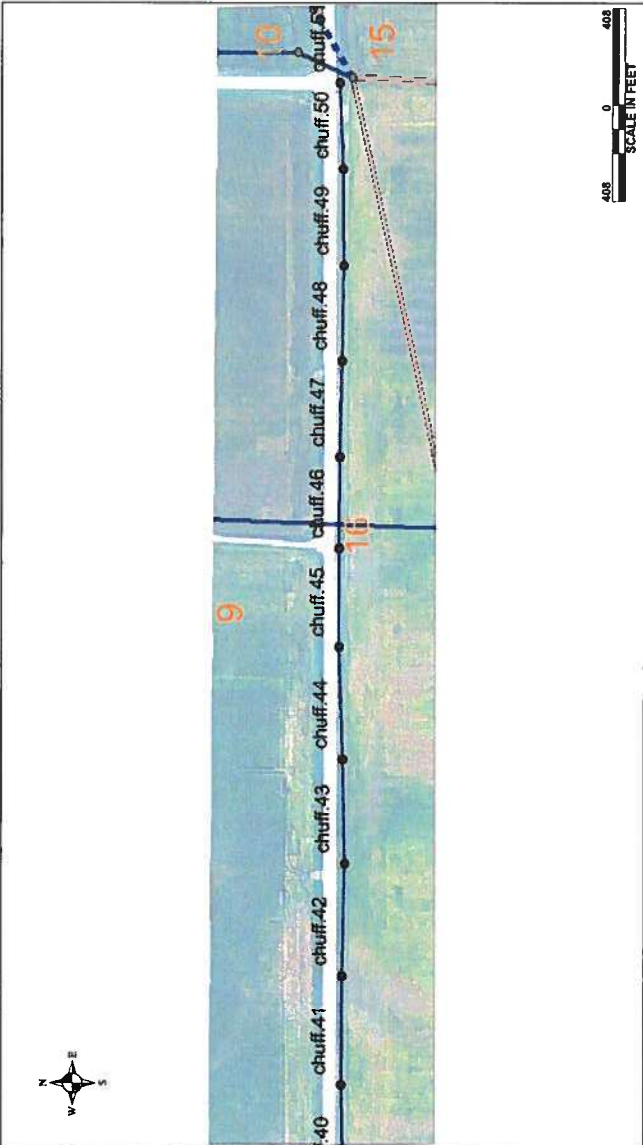
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911 Addr: Loan Project: 317-1 City: TWP: 89N Section(s): 16  
Acct #: Budget Code#: 01 County: Hardin Range: 22W Tax Dist:

Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY	GUY LD	#	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE
chuff.41	235 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2												
	C				2-ACSR														
chuff.42	231 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2												
	C				2-ACSR														
chuff.43	239 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2												
	C				2-ACSR														
chuff.44	222 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2												
	C	(3)			2-ACSR														
		P1.1-1/0																	
chuff.45	237 C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2												
	C				1/0-ACSR														
chuff.46	208 C	40-3	1	A5.1-1/0	1/0-ACSR	1	H1.1-#2		2 E1.1					2 F1.12					
1276-025	C		1	C1.11-1/0	2-ACSR														
chuff.47	197 C	40-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2												
	C				1/0-ACSR														
chuff.48	203 C	35-3	1	C1.11-1/0	2-ACSR	1	H1.1-#2												
	C	(3)			1/0-ACSR														
		P1.1-1/0																	
chuff.49	201 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2												
	C				2-ACSR														
chuff.50	204 C	40-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2												
	C				1/0-ACSR														
chuff.51	187 C	40-3	1	C7.1-1/0	2-ACSR	1	H1.1-#2		1 E1.1					1 F1.12					
	C		1	A5.1-1/0	1/0-ACSR				1 E1.4										
	C		1	UA1															

Midland Power Cooperative

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Comments: 2 mile line rebuild to 1/0-acsr

Directions:

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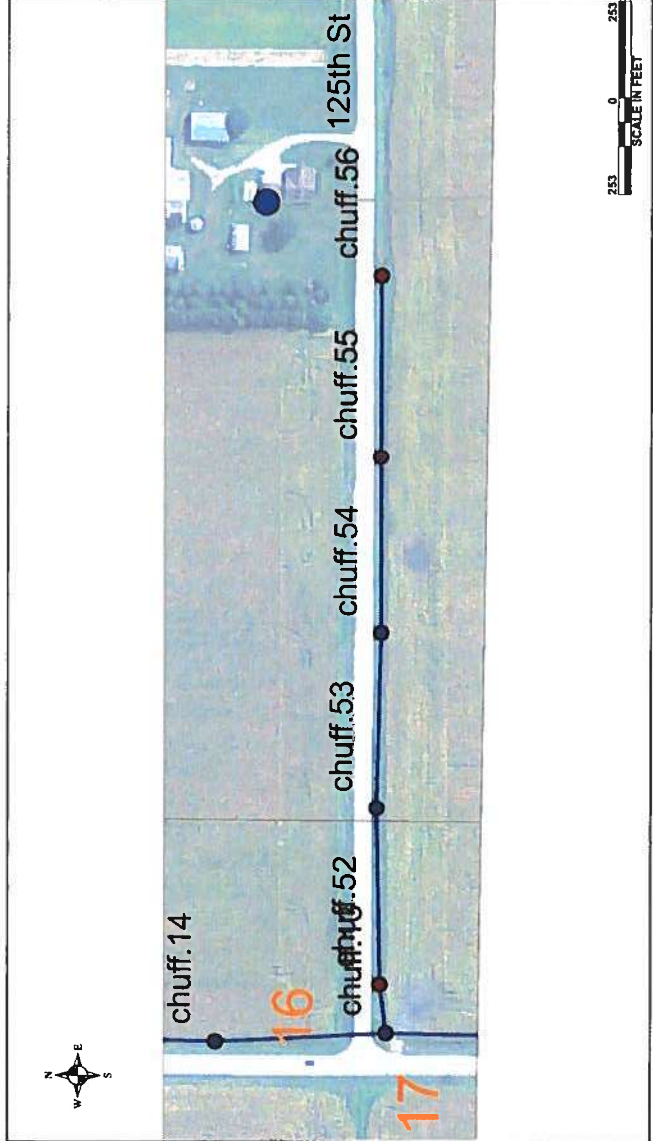
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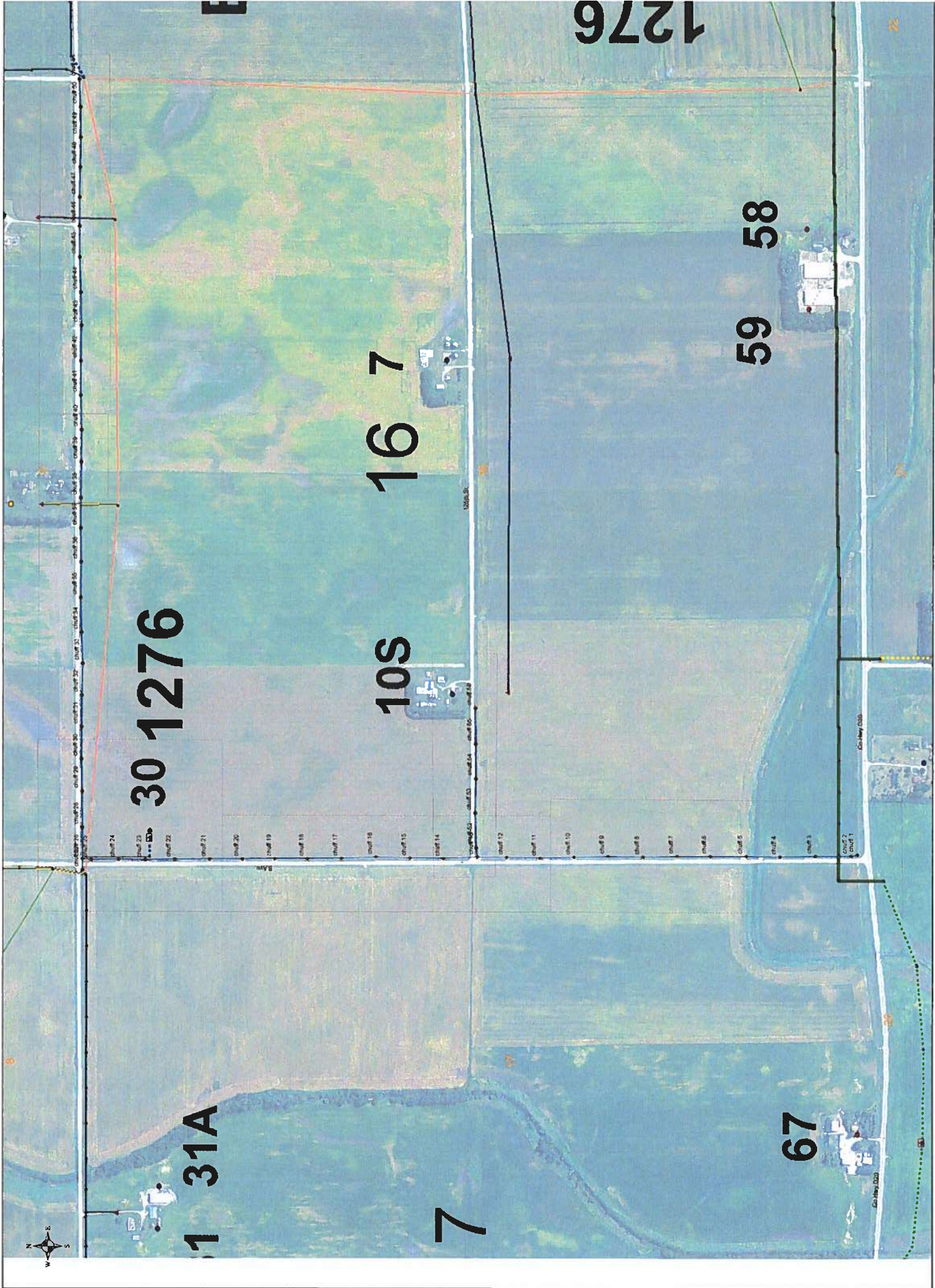
Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY LD	#	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE
chuff.53	232 C	40-5	1	A1.1-1/0	1/0-ACSR													
chuff.54	231 C	40-5	1	A1.1-1/0	1/0-ACSR													
chuff.55	232 C	40-5	1	A1.1-1/0	1/0-ACSR													
chuff.56	239 R	40-5	1	A4.1-1/0														
1276-010	C	40-5	1	A5.1-1/0	1/0-ACSR													
	C		1	A6.1-1/0														

Comments: 2 mile line rebuild to 1/0-acsr

Directions:











Utility Permit #2020-14

## Utility Observation Report

General Information	
<b>Project Name and Number:</b>	Utility Permit 6885
<b>Drainage District Number:</b>	#46
<b>Drainage District Facility ID:</b>	Lateral 5
<b>Project Location:</b> (1/4, Sec, Twp, Rng and road)	NE-16-89-22
<b>Date of Observation:</b>	10/20/2020
<b>Observer Name/Title:</b>	Chris Sweeney, Observer

Field Observations	
<b>District facility type:</b>	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
<b>Utility Orientation:</b>	<input type="checkbox"/> Parallel <input type="checkbox"/> Crossing <input checked="" type="checkbox"/> Overhead <input type="checkbox"/> Over <input type="checkbox"/> Under <input type="checkbox"/> Same Elevation Other: Electrical poles embedded vertically
<b>Source of utility elevation and/or location:</b>	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other: Above ground
<b>Utility Elevation:</b>	NA
<b>Source of district facility elevation and/or location:</b>	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
<b>District Facility Elevation:</b> (include where measured)	NA
<b>Vertical clearance from district facility:</b> (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	NA



Utility Permit #2020-14

<b>Horizontal clearance from District Tile or Open Ditch centerline:</b>	149.2' east of west power pole 80.5' west of east power pole		
<b>Tile outlets within 25-feet relocated? (If applicable)</b>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
<b>Original tile material:</b>	<input type="checkbox"/> RCP <input type="checkbox"/> DW HDPE Other: 6"	<input type="checkbox"/> CMP	<input type="checkbox"/> SW HDPE <input checked="" type="checkbox"/> VCP
<b>Tile replaced by utility?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
<b>Tile replacement material:</b>	<input type="checkbox"/> RCP Other:	<input type="checkbox"/> CMP	<input checked="" type="checkbox"/> N/A
<b>Condition of District tile:</b>			
<b>Signage present?</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A

Notes
Signage was not installed at time of observation and will need to be confirmed with Utility if desired by District Trustees.



CONSTRUCTION ENGINEERING  
OBSERVATION REPORT

DATE:

6885 10-20-20

DAYS OF WEEK:

S M T W T F S

SHEET NO.

1 OF 1

PROJECT NUMBER:

6885

COUNTY, ROUTE, ROAD:

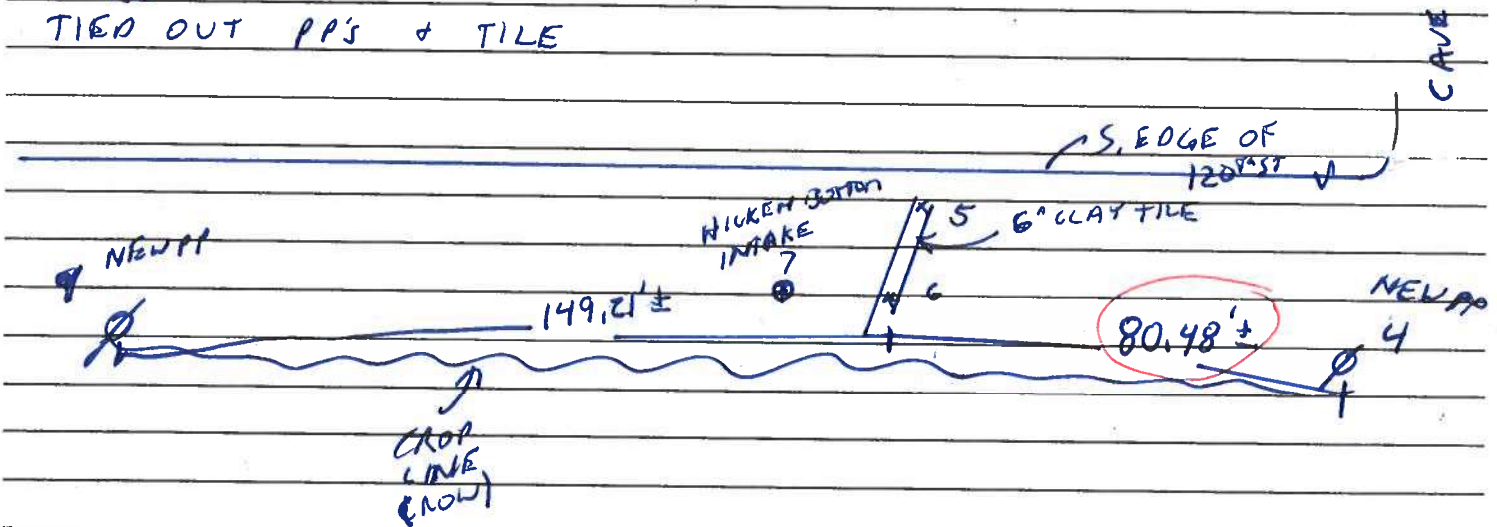
120<sup>th</sup> St

LOCATION:

0046 LATS

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

STARTED NEW JOB GPS MONS N+S ARE DESTROYED  
SET 3/4" Ø 120' IR, 0.5' DEEP, IN NE DRIVE IN NE QUAD  
OF THE INTERSECTION OF 120<sup>th</sup> St + C Ave. IR IS 10' S. OF GUY  
WIRE  
TIED OUT PPS & TILE



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

Observer's Signature:

Chris [Signature]

Date Prepared:

10-20-2020

Reviewed by:

☐ Engineer

Date Reviewed









6885 DD46 2020-10-20 cs

1,10000.000,10000.000,1000.000,ir 34 0.4d  
2,10000.000,10000.000,1000.000,Autonomous Setup  
3,9928.554,9969.057,1001.043,334 e-w-n 324 s  
4,9890.484,8532.552,994.242,928 1.0n  
5,9902.151,8456.084,988.515,962 6"  
6,9894.054,8452.152,988.515,962 6"  
7,9894.448,8446.441,990.303,922 6" hick  
8,9886.499,8447.704,992.200,300  
9,9889.254,8303.022,995.226,928 1.0n