

AGENDA
REGULAR DRAINAGE MEETING
Wednesday, December 16, 2020 9:30 AM

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

To access the meeting call: 1-(312)-626-6799, when prompted enter meeting ID code: 820 7567 2007

You can also access the meeting online at:
<https://us02web.zoom.us/j/82075672007>

1. Open Meeting
2. Approve Agenda
3. Approve Minutes

Documents:

[12_09_20 - DRAINAGE MINUTES.PDF](#)

4. Approve Claims For Payment

Documents:

[PAYABLES-DRAINAGE PUBLICATION 12_18_20.PDF](#)

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

Documents:

[2020-4 DD 128 ONLY - UTILITY CROSSING SUMMARY 12_11_20.PDF](#)

6. DD 14 WO 291- Discuss W Possible Action - Tile Repairs

Documents:

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

7. DD Big 4 - WO 2020-2 - Discuss W Possible Action - Utility Crossing Summary

Documents:

[2020-2 DD BIG 4 ONLY - UTILITY CROSSING SUMMARY 12_09_20.PDF](#)

8. DD Big 4 WO 2020-3 - Discuss W Possible Action - Utility Crossing Summary

Documents:

[2020-3 DD BIG 4 - UTILITY CROSSING SUMMARY 12_09_20.PDF](#)

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

Documents:

[2020-5 DD BIG 4 - UTILITY CROSSING SUMMARY 12_09_20.PDF](#)

10. DD Big 4 - WO 2020-14 - Discuss W Possible Action - Utility Crossing Summary

Documents:

[2020-14 DD BIG 4 - UTILITY CROSSING SUMMARY 12_09_20.PDF](#)

11. DD's 93, 94, & 128 WO 2020-12 - Discuss W Possible Action - Utility Crossing Summary

Documents:

[2020-12 DD 93 ONLY - UTILITY CROSSING SUMMARY 12_09_20.PDF](#)

[2020-12 DD 94 ONLY - UTILITY CROSSING SUMMARY 12_09_20.PDF](#)

[2020-12 DD 128 ONLY - UTILITY CROSSING SUMMARY 12_09_20.PDF](#)

12. Discuss W Possible Action - Aureon Drainage Utility Permits 2019-1, 2019-2 & 2019-4

Documents:

[2019-4 AUREON AS-BUILTS - PROVIDED 10_15_20.PDF](#)

13. Other Business

14. Adjourn Meeting

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

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

12/9/2020 - 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; 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 Hoffman to approve the minutes of Drainage Meeting dated 12-02-20 and Drainage District 14 Landowner Meeting dated 11-18-20. Second by McClellan. All ayes. Motion carried.

4. Discuss W Possible Action - Hands On Completion

Contractor Hands On has submitted a letter detailing completion on projects in DD's Big 4, 41, 77, 123, and 143. Also included in the letter document is Pay Estimate Number 6. Gallentine stated this is the multi-district project that Hands On was awarded a couple of years ago, they have submitted lien waivers so we went ahead and did as-builts and a completion letter, and a pay estimate on everything except DD 128. Gallentine still has to check with Dean Bright on that one, this finalizes everything else. Gallentine stated we recommend that the Trustees accept the project and that they issue final payment to Hands On in the amount of \$15,266.03. Gallentine stated we also recommend you contact landowners where this work occurred to make sure they don't have any damage before you pay Hands On. Smith stated she does have one damage claim submitted by Chris Blome and he had turned that into clerk Schlemme, quite a while ago, Smith stated that she had communicated with Gallentine on acres on this claim in DD 41 on Work Order 194, Blome had .07 acres of soybean damage as verified by CGA. Blome also ended up seeding a waterway, CGA had verified .94 acres of waterway damage, Blome submitted an invoice for having his own contractor seed the waterway for \$214.00. Smith stated the soybean damage came to \$37.62, with the waterway seeding it comes to a total of \$251.62.

Gallentine stated typically the contractor is not liable for crop damages, that is a district expense, but as for the seeding, Handsaker was supposed to reseed that, so that may be something the Trustees would like to think about deducting from Hands On's final payment. Hoffman asked if Gallentine would suggest holding off on final payment until we get a mailing out to landowners asking if there are any crop damages for those that had work done on their land, and ask for a reply of 30 days from date of mailing. Gallentine stated yes, especially with the holidays, he would send out letters to landowners stating do you have damage claims from this work, we can not authorize payment for them until after the holidays because people are traveling or busy.

Motion by Hoffman to instruct the Drainage Clerk to send out a letter to landowners requesting any landowners in DD's Big 4, 41, 77, 123, and 143 where construction occurred, to return damage claims, if any, by January 8, 2021 to be approved. Second by McClellan.

In additional discussion on the motion, Granzow asked if Gallentine would get a hold of Dean Bright in that time frame too. Hoffman asked if we could get a hold of Jacob Handsaker and communicate that as well, Gallentine stated this he would let Handsaker know and that this included everything except DD 128 as Gallentine still has to speak with Bright, once he gets a hold of Bright, Gallentine will prepare a completion letter for DD 128. Gallentine stated none of this on today's Pay Estimate 6 includes DD 128 money, it is all the other districts.

All ayes. Motion carried.

5. Other Business

Legal Invoice - Smith stated she had received an invoice from Davis Brown Law for general advice, pertaining to all of our Drainage Utility Permit discussions regarding wind turbines, and our closed session meeting, the amount was \$1,001.00 and Smith stated she was not sure if the Trustees would like this invoice paid out of Rural Services as we have done in the past. Hoffman stated you could put that in for next week's claims. Smith stated in the past

those claims had been paid by McLeland, which would now be Jamie Geisler. Hoffman stated that would be ok. Smith will pass the invoice on top Accounts Payable for payment.

Work Orders - Gallentine stated contractor Seward completed two work orders last week, and if the weather holds, he hopes Seward will get some more work orders completed next week.

Estimate for DD 14 - Hoffman asked what the status was on the estimate for replacing 500' of tile or work up to \$35,000 on the lower end of the DD 14 tile. Gallentine stated he would be working on that in the next couple weeks and hopes to have it done in a few weeks.

DD 14 WO 291 - Granzow stated it has been brought to his attention that Ron Vierkandt is legally responsible to the repairs on that tile, not the district. McClellan asked if that was the one where the two private tile had been inserted too far and opposite of one another. Granzow stated yes, the discovery the district should pay for but the costs of the actual repair should go back to Vierkandt, because his contractor was the one who made the damages. Granzow asked if Gallentine had received any information on that as they were going to send it to Gallentine. Gallentine has not heard anything about that at all but would like to see what code section that is because he always likes to learn more. Granzow stated this would have come from the drainage attorney that is part of the group we never joined that Gallentine is a part of, Gallentine stated the IDDA. Granzow replied yes, and thinks we need to look at that because if that bill needs to go to Ron Vierkandt then it should, for the portion of the repair. Gallentine stated he thought Seward would be able to split out the costs since he did the repair and generated the invoice. Granzow stated it was brought up in the DD 14 landowner meeting which Granzow missed, and Granzow did not think everyone was clear about that. Hoffman asked if we can prompt Seward to get that split made so it is ready and waiting. Granzow stated yes, Smith stated she would reach out to contractor Seward. McClellan stated she did not know who Granzow talked to and asked if he could get a code section on that. Granzow stated they were supposed to get a hold of Gallentine on that. Gallentine stated that Granzow was not at that meeting but thought that Vierkandt mentioned the he felt pretty bad and thought he almost thought he should pay for it. McClellan and Smith concurred that Vierkandt mentioned that. Granzow stated if Vierkandt stated he should pay for it, we should honor his wishes, but he was not at the meeting and knows it was brought up. Granzow stated he does not think we are legally bound to charge him for the discovery of it, but he was the one that prompted the discovery at that point, we are talking about \$24,000, Vierkandt need to get back to his contractor and the contractor can reimburse Vierkandt, but our duty is to charge Vierkandt. Granzow stated from what he got out of this, he did not get it from the attorney, he got it second hand and they are supposed to get a hold of Gallentine as he is part of that group.

Gallentine stated he has not run into this much, but wouldn't doubt it because if you damage a tile you are liable for that damage. Granzow asked if Gallentine could possibly reach out to the IDDA attorney, that is who gave the advice to one of the people that called Granzow. Gallentine stated the IDDA just has one attorney as counsel and Gallentine knows who that is, Granzow asked for the attorney's name. Gallentine stated it was Doug Strike, Granzow stated that could have been it if there is only one. McClellan asked if Strike had been there for a number of years. Gallentine stated yes, he has been on for 5 or 10 years after they parted ways with Hudson.

Smith asked if any portion of CGA's invoices need to be split out as well or will that just be the contractor work. Granzow stated the entire cost for that yes. Gallentine stated CGA could split their bill as well. Granzow stated then Vierkandt can recoup those costs from his contractor. Smith stated those claims have been paid by us, once we determine the final amount would that look like Smith sending an invoice to Vierkandt for reimbursement to the district, because the claims to Honey Creek and CGA have already been paid by us. Granzow stated that would be how we would have to handle it, and asked if that is what the other Trustees would want. McClellan and Hoffman stated yes. Granzow stated we can get the numbers together and put it on another agenda for discussion. Smith will reach out to Seward for the split. Granzow stated maybe Gallentine could have an answer for us by then from the attorney as well. Gallentine stated he will get a hold of Doug Strike, Gallentine has worked with Strike on other questions and Strike has answered questions for Gallentine before. Granzow stated he did not think we need to get attorney Richards involved as it looks pretty cut and dried.

6. Adjourn Meeting

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



Hardin County

Drainage Claims with Pay Date of 12/18/2020

Description	Vendor	Amount
DD 11 WO 294 Eng Svcs Aft 9/25/20-11/27/20	Clapsaddle-Garber Assoc	527.60
DD 82 WO 301 Eng Svcs Aft 10/20/20-11/30/20	Clapsaddle-Garber Assoc	267.80
DD 9 WO 229 Eng Svcs Aft 10/30/20 to 11/27/20	Clapsaddle-Garber Assoc	8,924.80
DD 14 WO 291 Eng Svcs Aft 8/28/20 - 11/30/20	Clapsaddle-Garber Assoc	416.00
DD 14 WO 290 Eng Svcs Aft 10/30/20 - 11/30/20	Clapsaddle-Garber Assoc	364.80
DD 20 WO 302 Eng Svcs to 11/20/20 Invest. Blowout	Clapsaddle-Garber Assoc	490.75
DD 25 WO 209 - Eng Svcs Aft 10/30/20 to 11/27/20	Clapsaddle-Garber Assoc	645.60
DD 55-3 WO 201 Eng Svcs Aft 10/30/20 - 12/03/20	Clapsaddle-Garber Assoc	637.20
DD 128 WO 127 Eng Svcs Aft 7/31/20 to 11/27/20	Clapsaddle-Garber Assoc	340.00

Total Regular Payables:	795.40
Total Stamped Warrants:	11,819.15



HARDIN COUNTY

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

HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant: Interstate Power & Light Company / Alliant Energy
Company Name
410 Lawler St
Address
Iowa Falls IA 50126
City State Zip
Applicant Contact: Chris Jess (641) 648 - 7605
Name Phone
chrisjess@alliantenergy.com
Email
Utility Type: Electric
Drainage District(s) Crossed: ~~1, 78, 128~~
Facilities Crossed (specific tile, open ditch): ~~near LAT 8 of D.D. 78, LAT 1 & LAT 3 of D.D. 128~~
Description of Work: Install a new 25,000volt, underground, electric system, consisting of 1-phase & 3-phase #1AL cable and
2" & 4" duct by means of plowing and boring along and crossing under county highway S55 & D35 in
the public ROW. The electric system will be built to NESC standards. IPL WR 4175021
(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.

Tony VAUGHN SENIOR MAINTENANCE OPERATIONS IOWA FALLS TVA
Applicant Signature

3-9-2020
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

For Office Use Only

Application Approval:

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

Date: _____

APPROVED PERMIT #: 2020-4



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.

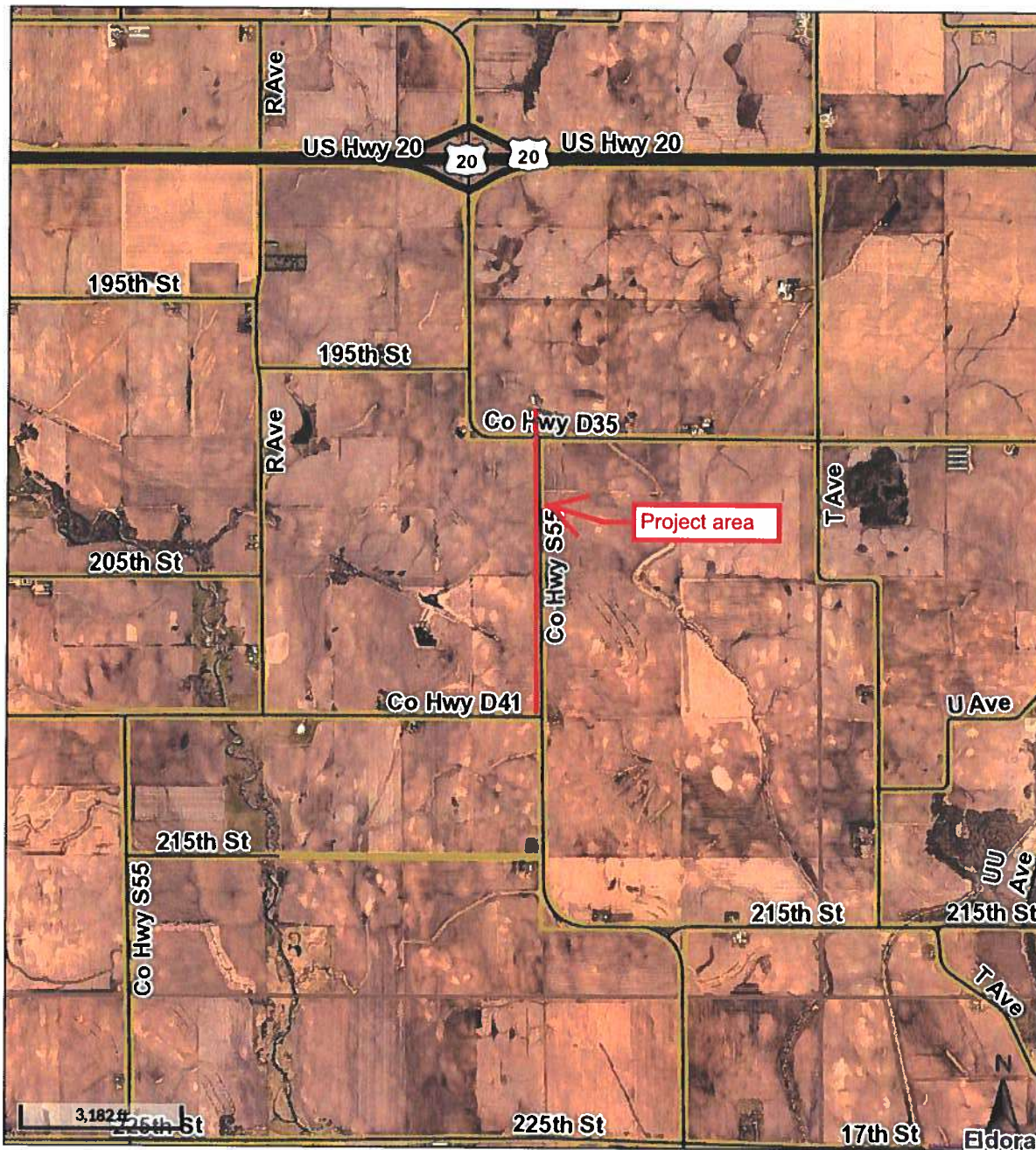


11. The construction and maintenance of Applicants installation shall be carried on in such a manner as to not interfere with or interrupt the function of said Drainage District facilities without the express written consent of the Drainage District Representative. In the event it becomes necessary to 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.

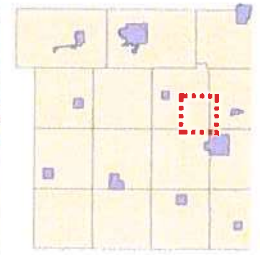


14. CROSSING OF DRAINAGE DISTRICT TILE LINES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only 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.

Beacon™ Hardin County, IA



Overview

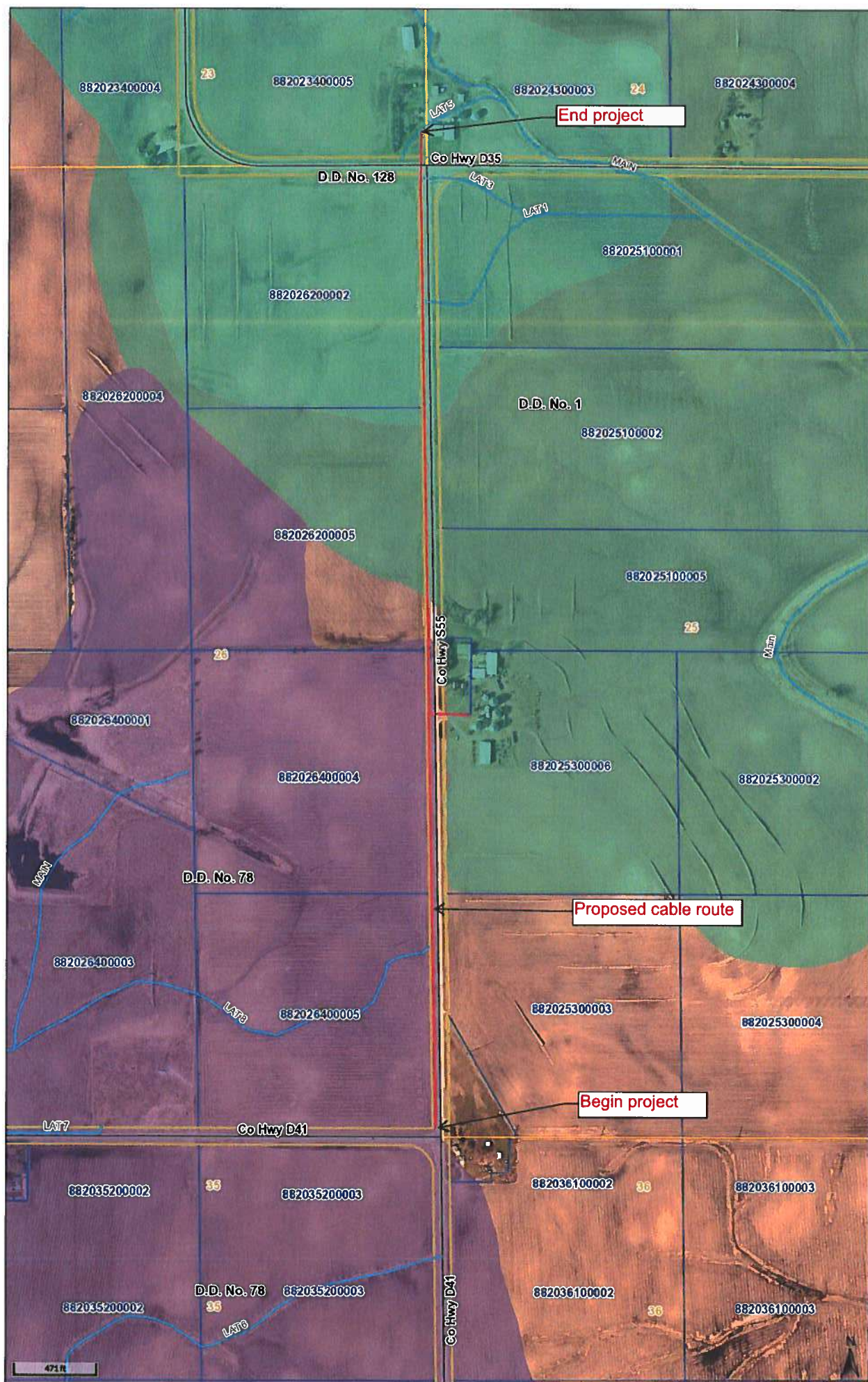


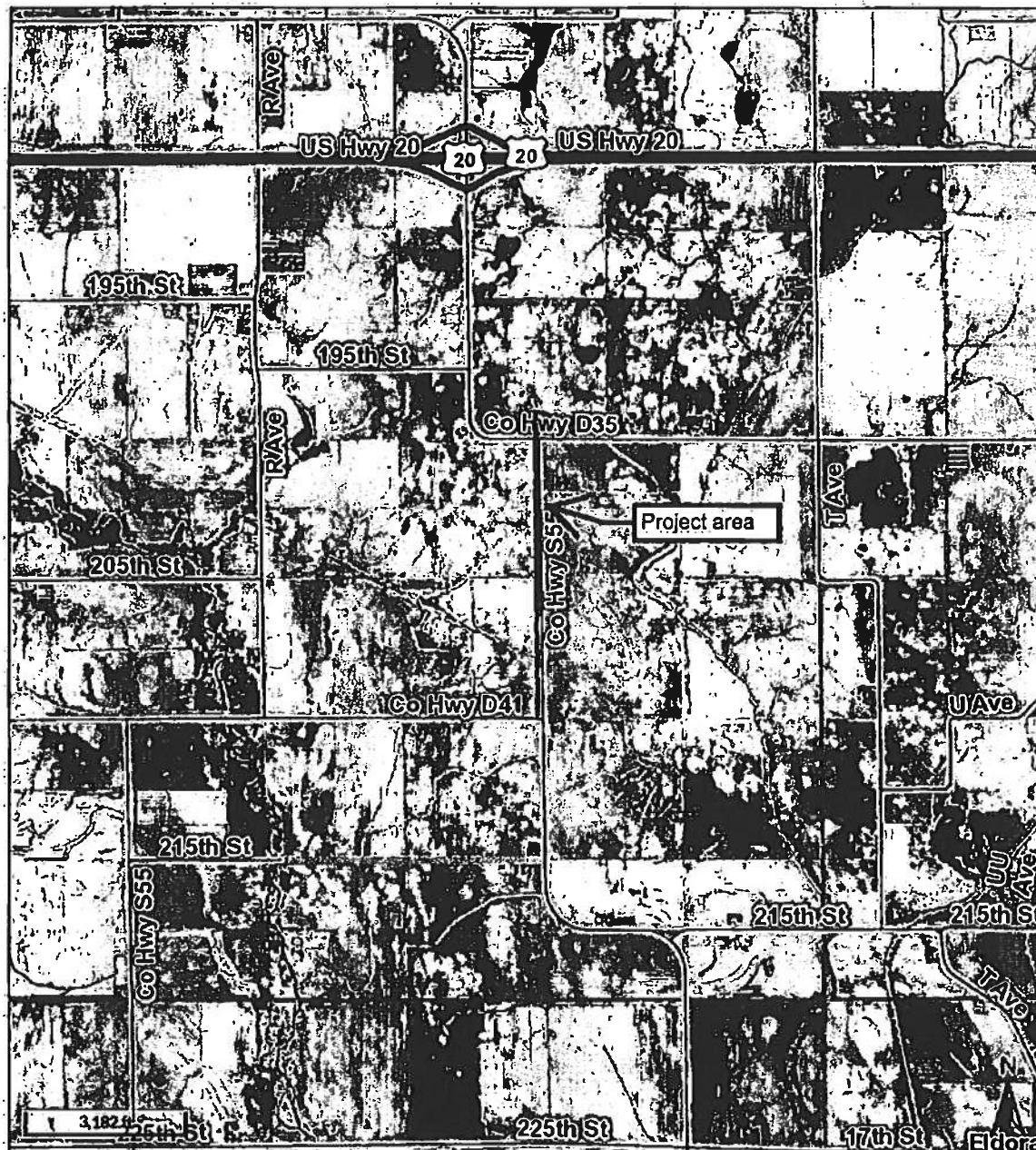
Legend

-  Corporate Limits
-  Political Township
- Roads**
 -  County Road
 -  Federal Highway
 -  Local Road
 -  State Highway
 -  Town Road
 -  Road ROW

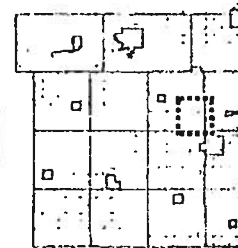
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Overview

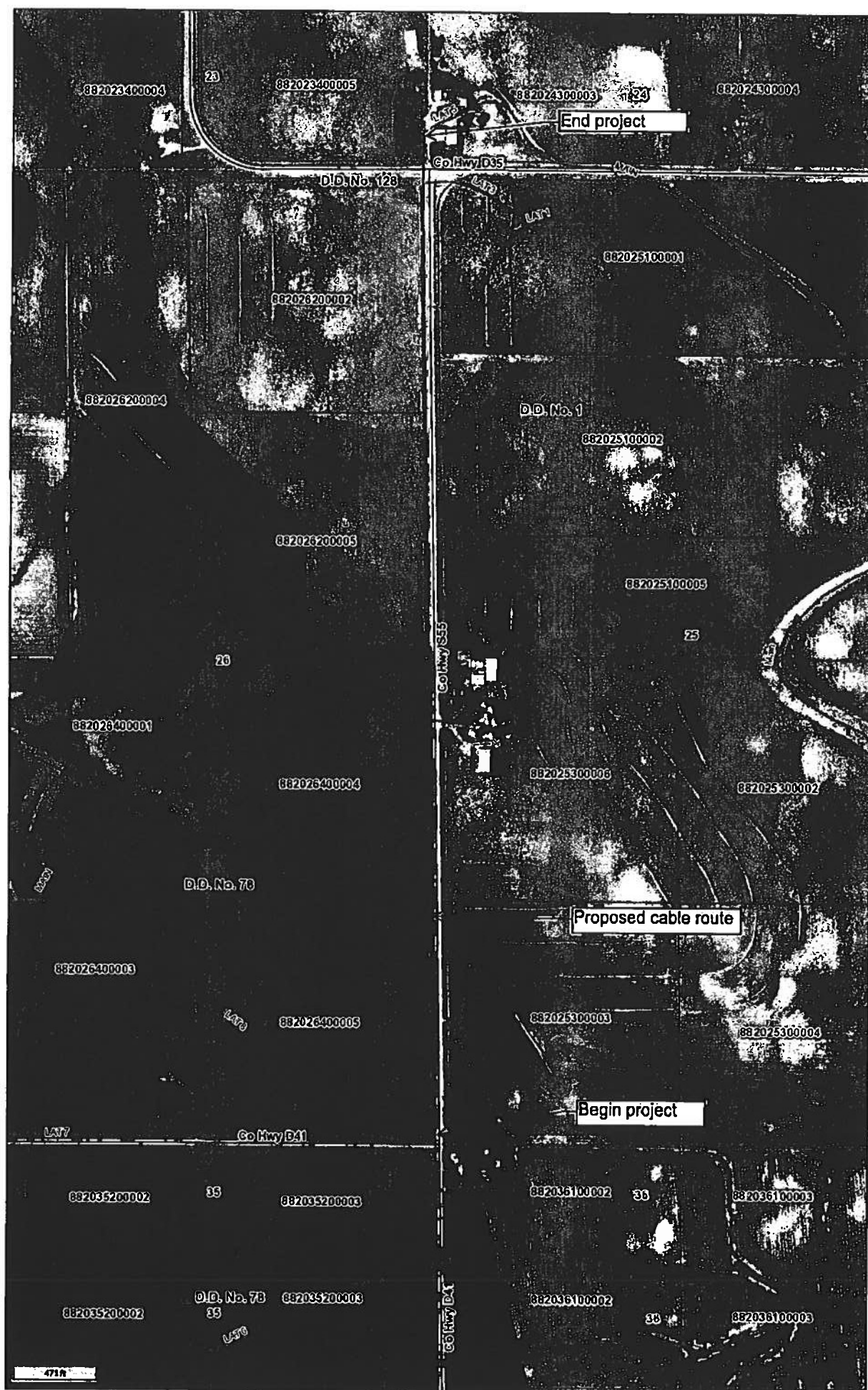


Legend

- ☐ Corporate Limits
- ☐ Political Township
- Roads**
 - County Road
 - Federal Highway
 - Local Road
 - State Highway
 - Town Road
 - Road ROW

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HARDIN COUNTY UTILITY PERMIT APPLICATION



Permit No: UT-20-009

☒ Underground
☒ Aerial

☒ Permanent Installation
☐ Temporary Installation

This is a Utility Permit Application for telecommunications, electric, gas, water and sewer utilities. The applicant agrees to comply with the following permit requirements. Compliance shall be determined by the sole discretion of the County Engineer as deemed necessary to promote public health, safety, and general welfare. These requirements shall apply unless waived in writing by the County Engineer prior to installation.

APPLICANT NAME: Interstate Power & Light Company / Alliant Energy

STREET ADDRESS: 410 Lawler St

CITY: Iowa Falls STATE: IA ZIP: 50128

PHONE: 641-648-7805 FAX: _____ CONTACT PERSON: Chris Jess

TYPE OF WORK: Install a new 1-phase & 3-phase #1AL cable, 25,000volt, underground, electric system, in order to remove the existing overhead electric lines on the route along the west side of Co Hwy S55. The electric system will be built to NESC standards WR4175021

1. LOCATION PLAN

An applicant shall file a completed location plan as an attachment to this Utility Permit Application. The location plan shall set forth the location of the proposed line on the secondary road system and include a description of the proposed installation.

2. WRITTEN NOTICE

At least five (5) working days prior to the proposed installation, an applicant shall file with the County Engineer a written notice stating the time, date, location, and nature of the proposed installation.

3. INSPECTION

The County Engineer may provide a full-time inspector during the installation of all lines to ensure compliance with this Utility Permit. The inspector shall have the right, during reasonable hours and after showing proper identification, to enter any installation site in the discharge of the inspector's official duties, and to make any inspection or test that is reasonably necessary to protect the public health, safety, and welfare.

4. INSPECTION FEES

The applicant shall pay actual costs directly attributable to the installation inspection conducted by the County Engineer. Within thirty (30) days after completion of the installation, the County Engineer shall submit a statement for inspection services rendered. The applicant agrees to reimburse the county within thirty (30) days of billing.

5. REQUIREMENTS

The installation inspector shall assure that the following requirements have been met:

- A. Construction signing shall comply with the Manual on Uniform Traffic Control Devices
- B. Depth - (Add additional depth if ditch has silted to the thickness of the deposited silt.) The minimum depth of cover shall be as follows:

Telecommunications.....	36"	Electric.....	48"
Gas.....	48"	Water.....	60"
Sewer.....	60"		
- C. Minimum roadway overhead clearance for utility lines shall be 20 feet.
- D. The applicant shall use reference markers in the right-of-way (ROW) boundary to locate line and changes in alignment as required by the County Engineer. A permanent warning tape shall be placed one (1) foot above all underground utility lines.
- E. All tie line locations shall be marked with references located in the ROW line.
- F. No underground utility lines shall cross over a crossroad drainage structure without approval from the County Engineer.
- G. Residents along the utility route shall have uninterrupted access to the public roads. An all weather access shall be maintained for residents adjacent to the project.
- H. After construction, granular surfacing shall be added to the road by the applicant to restore the road to its original condition. After surfacing has been applied, the road surface shall be reviewed by the County Engineer once the road has been saturated, to determine if additional surfacing on the roadway by the applicant is necessary.
- I. All damaged areas within the ROW shall be repaired and restored to at least their former condition by the applicant or the cost of any repair work caused to be performed by the county will be assessed against the applicant.
- J. Areas disturbed during construction which present an erosion problem shall be solved by the applicant in a manner approved by the County Engineer.
- K. All trenches, excavations, and utilities that are knifed shall be properly tamped.
- L. All utilities shall be located between the bottom of the backslope and the bottom of the foreslope, unless otherwise approved in writing by the County Engineer prior to installation.
- M. Road crossing shall be bored. The depth below the road surface shall match the minimum depth of cover for the respective utility.

DD 128

DD 1

DD 78

The County Engineer may halt the installation at any time if the applicant's work does not meet the requirements set forth in this Utility Permit Application.

Violation of this permit is a county infraction under Iowa Code Section 331.307, punishable by a civil penalty of \$100 for each violation. Each day that a violation occurs or is permitted to exist by the applicant constitutes a separate offense.

The utility company shall save this county harmless of any damages resulting from the applicant's operations. A copy of a certificate of insurance naming this county as an additional insured for the permit work shall be filed in the County Engineer's Office prior to installation. The minimum limits of liability under the insurance policy shall be \$1,000,000.

No applicant shall install any lines unless such applicant has obtained a Utility Permit from the County Engineer and has agreed in writing that said installation will comply with all ordinances and requirements of the county for such work. Applicants agree to hold the county free from liability for all damage to applicant's property which occurs proximately as a result of the applicant's failure to comply with said ordinances or requirements.

The applicant shall, at any time subsequent to installation of utility lines, at the applicant's own expense, relocate or remove such lines as may become necessary to conform to new grades, alignment or widening of ROW resulting from maintenance or construction operations for highway improvements.

COMPANY: Interstate Power & Light Company / Alliant Energy

SENIOR MANAGER OPERATIONS LOW FIVE

RECOMMENDED FOR APPROVAL:

COUNTY ENGINEER

APPROVAL:

CHAIRMAN, BOARD OF SUPERVISORS

PAVED ROAD INSTALLATION

SHOULDER LINE

GRAVEL ROAD INSTALLATION

CENTRELINE OF ROAD

INSTALL WITNESS POSTS

DRAINAGE STRUCTURE

VARIES

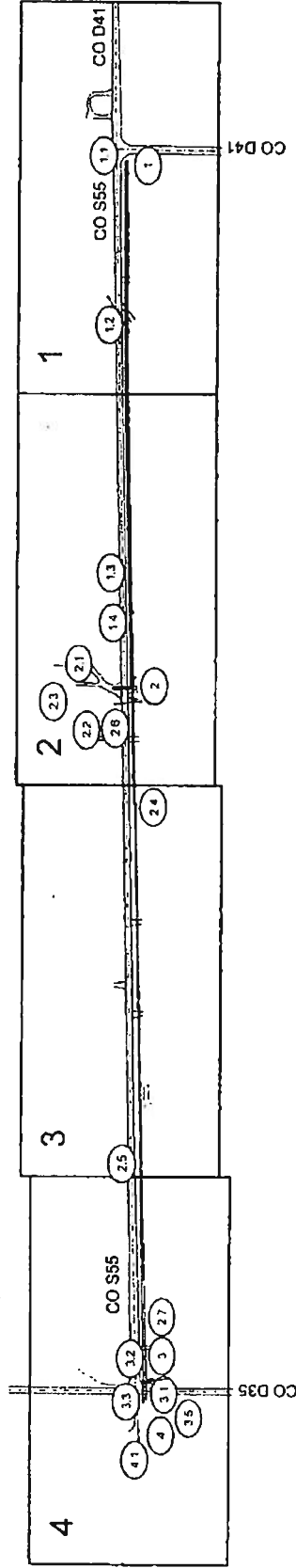
40'

10'

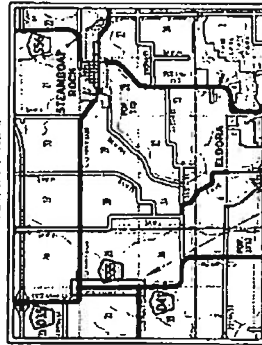
2'-3'

Diagram illustrating the installation of a drainage structure. The structure is shown embedded in a ditch, with the road surface above it. The installation line is indicated, and the structure is labeled "DRAINAGE STRUCTURE". The distance from the structure to the edge of the road is marked as "5' MIN".

UTILITIES SHOWN ON THIS PLAN ARE INDICATED IN ACCORDANCE WITH AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT LOCATION AND DEPTHS OF ALL UTILITIES FROM FIELD VERIFICATION AND CONVEYING THAT INFORMATION TO THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW NECA CODE AND ALLIANT ENERGY, INC. CONSTRUCTION STANDARDS AT ALL TIMES. GUYING, ANCHORING, POLE LOCATION AND CONDUCTOR ARE SHOWN TO REFLECT GENERAL REAL WORLD LOCATIONS AND DIRECTIONS. AND SHOULD NOT BE INTERPRETED AS EXACT. SOME INTENDED STRUCTURE LOCATIONS AND DIRECTIONS ARE MANIPULATED FOR DRAWING NEATNESS AND CLARITY. FIELD VERIFICATION IS REQUIRED PRIOR TO CONSTRUCTION. RIGHT OF WAY AND PARCELS ARE DEPICTED IN ACCORDANCE WITH AVAILABLE GIS DATA.



VICINITY MAP

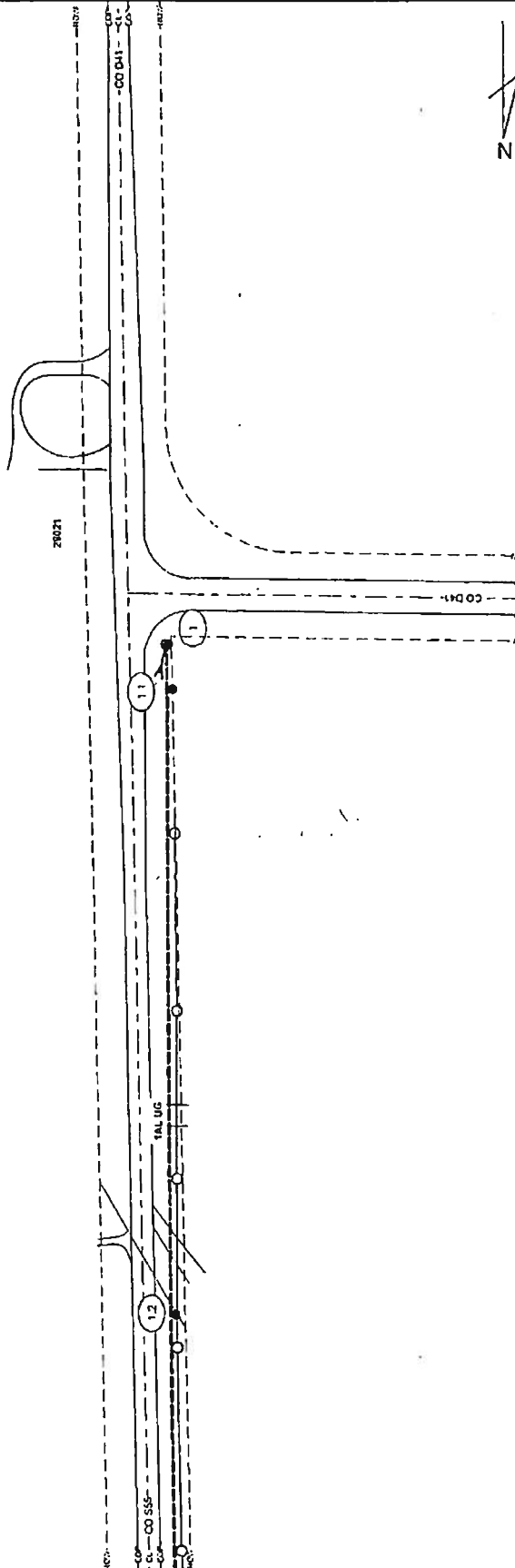


PROJECT LOCATION

		4175021		ELDORA, IA
7/20/2019 J.C.	11/13/2019 J.C.	11/13/2019 J.C.	11/13/2019 J.C.	11/13/2019 J.C.
11/13/2019 J.C.	11/13/2019 J.C.	11/13/2019 J.C.	11/13/2019 J.C.	11/13/2019 J.C.
OVERVIEW				

SYMBOL LEGEND	LINE TYPES
① TRANSMISSION LINE AND SUPPORTS NEW ② TRANSMISSION LINE AND SUPPORTS EXISTING ③ TRANSFORMER (T) AND DISCONNECT (D) NEW ④ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ⑤ TRANSFORMER (T) AND DISCONNECT (D) NEW ⑥ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ⑦ TRANSFORMER (T) AND DISCONNECT (D) NEW ⑧ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ⑨ TRANSFORMER (T) AND DISCONNECT (D) NEW ⑩ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ⑪ TRANSFORMER (T) AND DISCONNECT (D) NEW ⑫ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ⑬ TRANSFORMER (T) AND DISCONNECT (D) NEW ⑭ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ⑮ TRANSFORMER (T) AND DISCONNECT (D) NEW ⑯ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ⑰ TRANSFORMER (T) AND DISCONNECT (D) NEW ⑱ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ⑲ TRANSFORMER (T) AND DISCONNECT (D) NEW ⑳ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㉑ TRANSFORMER (T) AND DISCONNECT (D) NEW ㉒ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㉓ TRANSFORMER (T) AND DISCONNECT (D) NEW ㉔ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㉕ TRANSFORMER (T) AND DISCONNECT (D) NEW ㉖ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㉗ TRANSFORMER (T) AND DISCONNECT (D) NEW ㉘ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㉙ TRANSFORMER (T) AND DISCONNECT (D) NEW ㉚ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㉛ TRANSFORMER (T) AND DISCONNECT (D) NEW ㉜ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㉝ TRANSFORMER (T) AND DISCONNECT (D) NEW ㉞ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㉟ TRANSFORMER (T) AND DISCONNECT (D) NEW ㊱ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㊲ TRANSFORMER (T) AND DISCONNECT (D) NEW ㊳ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㊴ TRANSFORMER (T) AND DISCONNECT (D) NEW ㊵ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㊶ TRANSFORMER (T) AND DISCONNECT (D) NEW ㊷ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㊸ TRANSFORMER (T) AND DISCONNECT (D) NEW ㊹ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㊺ TRANSFORMER (T) AND DISCONNECT (D) NEW ㊻ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㊼ TRANSFORMER (T) AND DISCONNECT (D) NEW ㊽ TRANSFORMER (T) AND DISCONNECT (D) EXISTING ㊾ TRANSFORMER (T) AND DISCONNECT (D) NEW ㊿ TRANSFORMER (T) AND DISCONNECT (D) EXISTING 	1. TRANSMISSION LINE AND SUPPORTS NEW 2. TRANSMISSION LINE AND SUPPORTS EXISTING 3. TRANSFORMER (T) AND DISCONNECT (D) NEW 4. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 5. TRANSFORMER (T) AND DISCONNECT (D) NEW 6. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 7. TRANSFORMER (T) AND DISCONNECT (D) NEW 8. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 9. TRANSFORMER (T) AND DISCONNECT (D) NEW 10. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 11. TRANSFORMER (T) AND DISCONNECT (D) NEW 12. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 13. TRANSFORMER (T) AND DISCONNECT (D) NEW 14. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 15. TRANSFORMER (T) AND DISCONNECT (D) NEW 16. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 17. TRANSFORMER (T) AND DISCONNECT (D) NEW 18. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 19. TRANSFORMER (T) AND DISCONNECT (D) NEW 20. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 21. TRANSFORMER (T) AND DISCONNECT (D) NEW 22. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 23. TRANSFORMER (T) AND DISCONNECT (D) NEW 24. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 25. TRANSFORMER (T) AND DISCONNECT (D) NEW 26. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 27. TRANSFORMER (T) AND DISCONNECT (D) NEW 28. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 29. TRANSFORMER (T) AND DISCONNECT (D) NEW 30. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 31. TRANSFORMER (T) AND DISCONNECT (D) NEW 32. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 33. TRANSFORMER (T) AND DISCONNECT (D) NEW 34. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 35. TRANSFORMER (T) AND DISCONNECT (D) NEW 36. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 37. TRANSFORMER (T) AND DISCONNECT (D) NEW 38. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 39. TRANSFORMER (T) AND DISCONNECT (D) NEW 40. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 41. TRANSFORMER (T) AND DISCONNECT (D) NEW 42. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 43. TRANSFORMER (T) AND DISCONNECT (D) NEW 44. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 45. TRANSFORMER (T) AND DISCONNECT (D) NEW 46. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 47. TRANSFORMER (T) AND DISCONNECT (D) NEW 48. TRANSFORMER (T) AND DISCONNECT (D) EXISTING 49. TRANSFORMER (T) AND DISCONNECT (D) NEW 50. TRANSFORMER (T) AND DISCONNECT (D) EXISTING

UTILITIES SHOWN ON THIS PLAN ARE INDICATED IN ACCORDANCE WITH AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES FROM FIELD VERIFICATION AND CONTACT WITH UTILITY OWNERS. CONTRACTOR IS TO FOLLOW NESC CODE AND ALUMINUM ERECTION ASSOCIATION CONSTRUCTION STANDARDS AT ALL TIMES. CUTTING, ANCHORS, POLE LOCATION AND CONDUCTOR ARE SHOWN TO REFLECT GENERAL REAL WORLD LOCATIONS AND DIRECTION, AND SHOULD NOT BE INTERPRETED AS EXACT. CONTRACTOR SHALL VERIFY ALL LOCATIONS AND DIRECTIONS PRIOR TO CONSTRUCTION. HEIGHT OF WAY AND PARCELS ARE DEPICTED IN CONFORMANCE WITH AVAILABLE CAD DATA.



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
<p>ALLIANT ENERGY HAS DETERMINED THAT ENGINEERING BRING TO THE LEVEL OF PROFESSIONAL ENGINEERING IS NOT REQUIRED OR NEEDED FOR THIS PLAN. A WITNESS ENGINEER DOES NOT REVIEW THE PLAN SET INCLUDING ALL CALCULATIONS OR ANALYSIS FOR THE INTENT OF PROVIDING PROFESSIONAL ENGINEERING SERVICES. ALL PROFESSIONAL ENGINEERING OR DESIGN ISSUES OR QUESTIONS SHALL BE DIRECTED TO ALLIANT ENERGY. ALLIANT ENERGY WILL USE INDUSTRY STANDARDS FOR REVIEWS AND COMPLETION OF THE SCOPE OF SERVICES FOR ALLIANT ENERGY ENGINEERING SERVICES.</p>																																																																																																			

LINE TYPES

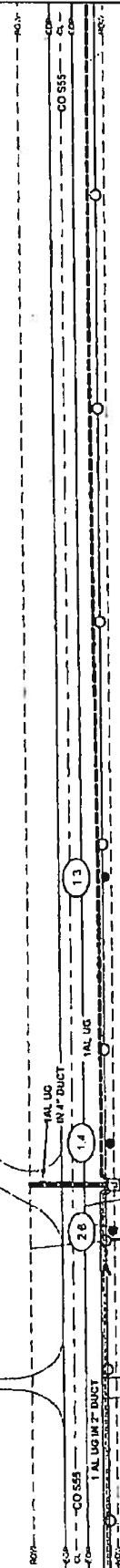
NO TWO LINES SHOULD BE
HIGHER THAN LINE 3
AND TWO LINES SHOULD
BE LOWER THAN LINE 3
ON THE SAME
PAGE OF THE PLAN

SYMBOL LEGEND

- [illegible]



4175021	EL DORA, IA
PERMITTED BY J.C.	DATE 11/11/2019
CONTRACTOR J.D.	DATE 3/5/2020
DESIGNED BY J.C.	DATE 11/18/2019
OWNER J.C.	APPROVAL DATE



N

ALLIANT ENERGY HAS DEDICATED THAT ENGINEERING RISING TO THE LEVEL OF PROFESSIONAL ENGINEERING IS NOT REQUIRED OR INTENDED FOR THIS PLAN. A RITE TECH ENGINEER DOES NOT REVIEW THE PLANS SET, INCLUDING ALL CALCULATIONS OR ANALYSIS, FOR THE INTENT OF PROVIDING PROFESSIONAL ENGINEERING SERVICES. ALL PROFESSIONAL ENGINEERING OR DESIGN ISSUES OR QUESTIONS SHALL BE DIRECTED TO ALLIANT ENERGY. RITE TECH WILL USE INDUSTRY STANDARDS FOR REVIEWS AND COMPLIANCE FOR ALLIANT ENERGY.

LINE TYPES

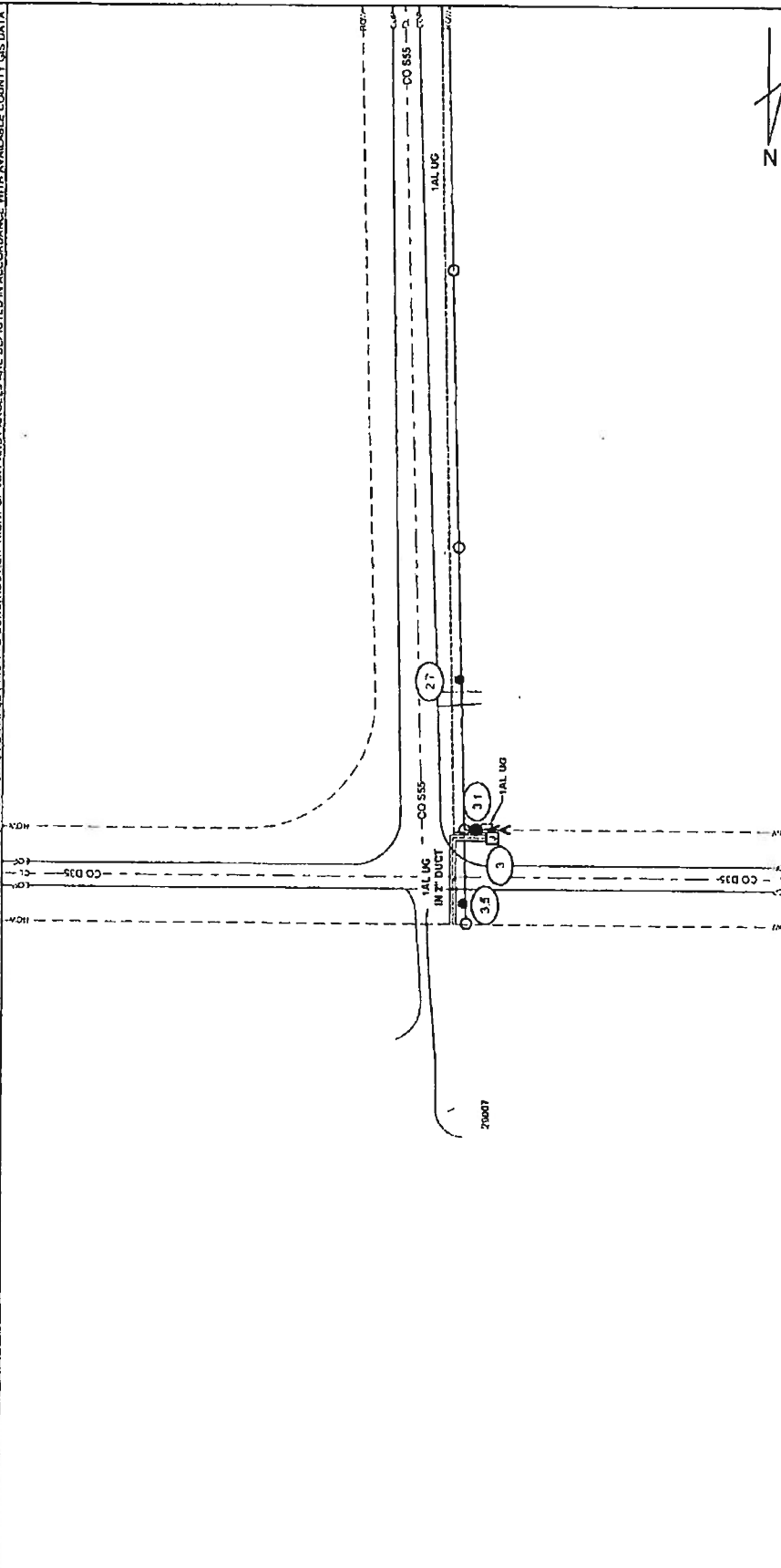
SYMBOL LEGEND

[illegible]

4175021	FILED BY	DATE	
	J.G.	11/13/2019	
	CREATED BY	DATE	
	J.D.	3/5/2020	
	DELETED BY	DATE	
	J.G.	11/18/2019	
	ISSUE PC	APPROVAL DATE	

ELDORA, IA

[illegible]

[illegible][illegible]



Utility Permit #2020-04

Utility Observation Report

General Information	
Project Name and Number:	Utility Crossing 6935.4
Drainage District Number:	#128
Drainage District Facility ID:	Laterals 1 & 3
Project Location: (1/4, Sec, Twp, Rng and road)	NW 25-88-20
Date of Observation:	10-29-2020
Observer Name/Title:	Chris Sweeney

Field Observations	
District facility type:	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
Utility Orientation:	<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:
Source of utility elevation and/or location:	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input checked="" type="checkbox"/> Utility Reported Other:
Utility Elevation:	Lat 3: 1098.6'
Source of district facility elevation and/or location:	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
District Facility Elevation: (include where measured)	Lat 3: 1099.1' (Flowline)
Vertical clearance from district facility: (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	Lat 3: ½ foot



Utility Permit #2020-04

Horizontal clearance from District Tile or Open Ditch centerline:	NA		
Tile outlets within 25-feet relocated? (If applicable)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Original tile size & material:	<input type="checkbox"/> RCP <input type="checkbox"/> DW HDPE	<input type="checkbox"/> CMP	<input type="checkbox"/> SW HDPE <input checked="" type="checkbox"/> VCP
	Other: Lat 3: 6"		
Tile replaced by utility?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Tile replacement material:	<input type="checkbox"/> RCP	<input type="checkbox"/> CMP	<input checked="" type="checkbox"/> N/A
	Other:		
Condition of District tile:	Existing VCP tile on Lat 3 in poor condition and possibly collapsed.		
Signage present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A

Notes

No signage was observed at the time of site visit.

The Lateral 1 tile wasn't found by Heart of Iowa, so there is no information to report on said tile. Further investigation may be conducted if so desired by the District Trustees.

The clearance between the Lateral 3 tile and the utility reported location is only ½ foot, which is no guarantee that the District tile wasn't impacted as this clearance is solely based on a located depth, and not an exposed depth. It is recommended that the utility expose their line to definitively determine no damage was done to the district facility. The District Trustees may also request the utility to lower their installation.

A piece of the Lateral 3 tile was found to be broken in the observation excavation, with the VCP material in generally poor condition. CGA recommends an investigation into the condition of the tile in this area be conducted while the repair is being completed.

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

10-29-2020

PROJECT NUMBER:

6935.4

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD:

DN #128

SHEET NO.

1 OF 1

LOCATION:

RD 35 +555

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

AZ ✓3

ARRIVED ON SITE AND LOCATOR WAS ON SITE, ALLIANT
ARRIVED ON SITE & WE STARTED LOCATING TILE

PIPE FL = 1099.06
DEPTH OF BORE = 1098.59

CLEARANCE = 0.47'

LOCATES IN
DITCH BOTTOM
ARE 4'2" - 6'2"
DEEP

389-349

342

341

11308

1307

ALLIANT ENERGY IN
DITCH BORE

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

342



2020/10/29



2020/10/29

@342 Looking N.

LOOKING N, THROUGH
389-349



2020/10/29

6935 dd128 2020-10-29 cs

1,3618716.220,5034450.740,1112.480,GPS 8070
1_GNSS,3618716.220,5034450.740,1112.480,Autonomous Setup
2,3618431.652,5024119.946,1096.825,CPT IRS 3/4 .5DOWN
3,3618541.632,5024119.731,1101.936,SPK TOP6X6 SE GUARDRAILEND
4,3616008.561,5024081.184,1067.548,T PST .2UP
5,3616008.785,5024080.851,1067.040,WCP W S
6,3616030.079,5023952.479,1054.201,FL TILE
7,3616025.718,5023946.227,1058.608,GS FL
8,3616012.070,5023944.425,1058.608,INTK RISER 6"STEEL
9,3616232.193,5024081.348,1059.209,INTK RISER 6"PLASTIC
10,3616262.864,5024094.402,1059.400,FL CMP6'ELIPT
11,3616316.825,5024131.090,1067.362,(O) IN 8/3/06 NE CONC PARA
12,3613379.518,5022353.385,1054.663,FL RCB(8X5.3)DOUBLE
13,3613024.649,5022139.613,1053.096,GS FL
14,3612789.096,5022029.961,1053.166,GS FL
15,3612371.788,5021990.910,1053.057,GS FL
16,3612064.010,5021950.352,1052.724,GS FL
17,3611859.787,5021902.019,1053.261,GS FL
18,3611543.792,5021573.965,1052.694,GS FL
19,3611524.781,5021502.129,1052.382,FNC N S
20,3611487.914,5021501.370,1051.329,GS FL
21,3611225.628,5021165.745,1050.379,GS FL
22,3611007.524,5020844.512,1050.177,GS FL
23,3610734.176,5020806.234,1049.023,GS FL
24,3610615.852,5020935.412,1047.663,GS FL
25,3610426.190,5021111.354,1047.195,GS FL
26,3610407.436,5021099.635,1043.215,FL+- 24" TILE BLOWOUT
27,3610411.782,5021101.814,1047.723,GS
28,3610102.044,5021521.828,1043.524, TOP CONC HEADWALL
29,3610102.207,5021522.289,1039.293,FL TILE
30,3610119.806,5021455.149,1041.478,FL TILE26"
31,3610129.122,5021521.122,1045.777,FNC
32,3610772.063,5021515.618,1052.609,SCF ALUMNCAP19957
33,3604123.029,5025260.423,1041.397,GPS MON8060
34,3604166.072,5024352.095,1031.310,CLDD1 CLBRIDGE
35,3602869.484,5024249.875,1029.465,TB RR C+CN
36,3602857.888,5024234.131,1029.474,TB RR C+CN
37,3602824.513,5024260.745,1030.270,TB RR C+CN
38,3602837.122,5024273.538,1030.300,TB RR C+CN
39,3603037.456,5024316.434,1021.884,TB
40,3602786.986,5024233.137,1021.786,WCP RR RW
41,3602836.531,5024233.675,1026.252,CMP TOP
42,3602866.997,5024262.455,1027.021,CMP TOP
43,3602877.186,5024270.009,1016.870,FL CMP +-
44,3603033.773,5024323.545,1017.091,W0
45,3603016.509,5024312.423,1021.350,TB
46,3602969.034,5024307.050,1014.990,1+00 FL
47,3603170.097,5024306.158,1016.013,3+00 FL
48,3603175.772,5024311.181,1018.432, TOP PLASTIC TILE

6935 dd128 2020-10-29 cs

49,3603266.305,5024303.820,1022.572,TB
50,3603351.889,5024222.437,1016.730,5+00 FL
51,3603543.569,5024165.948,1017.381,7+00 FL
52,3603676.000,5024187.922,1023.894,TB
53,3603681.997,5024190.676,1021.786,WO
54,3603689.617,5024184.783,1023.851,TB
55,3603741.371,5024148.940,1017.206,9+00 FL
56,3603865.811,5024082.401,1017.735,10+00
57,3603906.609,5024126.531,1017.535,11+00 FL
58,3604046.339,5024281.771,1019.286,13+00 FL
59,3604182.458,5024334.867,1028.926,NW BRDG ABUT
60,3604231.661,5024356.869,1018.003,15+00 fl
61,3604426.761,5024313.330,1019.392,17+00 fl
62,3604617.824,5024253.977,1020.614,19+00 fl
63,3604786.546,5024146.644,1021.556,21+00 fl
64,3604960.753,5024048.267,1021.371,23+00 fl
65,3605117.667,5023924.432,1021.654,25+00 fl
66,3605296.917,5023836.072,1021.865,27+00 fl
67,3605462.279,5023723.526,1023.437,29+00 fl
68,3605642.640,5023636.848,1023.002,31+00 fl
69,3605815.415,5023536.009,1023.599,33+00 fl
70,3605977.599,5023419.077,1023.853,35+00 fl
71,3606163.462,5023345.120,1024.165,37+00 fl
72,3606356.228,5023292.286,1026.285,39+00 fl
73,3606551.309,5023247.561,1026.265,41+00 fl
74,3606737.078,5023173.170,1026.901,43+00 fl
75,3606937.035,5023177.772,1027.931,45+00 fl
76,3607136.939,5023187.644,1027.271,47+00 fl
77,3607336.513,5023175.893,1028.975,49+00 fl
78,3607531.320,5023129.884,1028.556,51+00 fl
79,3607724.100,5023076.358,1028.828,53+00 fl
80,3607919.441,5023033.739,1031.569,55+00 fl
81,3608085.549,5022922.371,1031.553,57+00 fl
82,3608285.513,5022914.666,1032.125,59+00 fl
83,3608471.791,5022842.074,1033.081,61+00 fl
84,3608669.663,5022813.233,1034.133,63+00 fl
85,3608843.076,5022713.615,1033.579,65+00 fl
86,3608971.040,5022559.939,1034.393,67+00 fl
87,3609109.349,5022415.417,1036.096,69+00 fl
88,3609244.760,5022268.451,1036.798,71+00 fl
89,3609407.514,5022152.168,1036.012,73+00 fl
90,3609580.076,5022050.948,1036.305,75+00 fl
91,3609746.796,5021940.532,1037.227,77+00 fl
92,3609875.131,5021787.131,1039.328,79+00 fl
93,3609986.501,5021621.091,1039.325,81+00 fl
94,3613446.612,5022372.187,1052.897,fl
95,3613537.401,5022414.253,1054.313,fl
96,3613624.372,5022463.677,1054.146,fl
97,3613623.231,5022465.419,1055.155,gs

6935 dd128 2020-10-29 cs

98,3613711.941,5022511.979,1054.764,fl
99,3613711.415,5022513.172,1055.434,gs
100,3613800.740,5022558.173,1055.150,fl
101,3613799.799,5022559.795,1055.654,gs
102,3613888.796,5022605.546,1055.062,fl
103,3613887.538,5022607.830,1056.018,gs
104,3613974.241,5022657.631,1055.440,fl
105,3614061.194,5022707.232,1055.845,fl
106,3614146.556,5022759.400,1056.194,fl
107,3614229.577,5022815.155,1055.954,fl
108,3614313.034,5022870.434,1056.390,fl
109,3614397.579,5022924.005,1056.214,fl
110,3614482.166,5022977.426,1056.770,fl
111,3614564.800,5023033.847,1056.791,fl
112,3614606.704,5023124.605,1056.645,fl
113,3614651.686,5023213.982,1056.860,fl
114,3614694.210,5023304.526,1058.227,fl
115,3614761.855,5023378.266,1057.432,fl
116,3614853.484,5023418.452,1058.283,fl
117,3614948.869,5023448.473,1059.187,fl
118,3615045.459,5023474.499,1059.694,fl
119,3615144.965,5023484.939,1058.174,fl
120,3615242.625,5023506.479,1058.022,fl
121,3615337.942,5023536.850,1058.083,fl
122,3615430.592,5023574.559,1058.105,fl
123,3615521.378,5023616.526,1058.278,fl
124,3615604.591,5023672.053,1058.413,fl
125,3615687.025,5023728.518,1058.389,fl
126,3615770.027,5023784.114,1058.367,fl
127,3615854.060,5023838.412,1058.734,fl
128,3615937.492,5023893.406,1058.647,fl
129,3616024.075,5023943.426,1058.557,fl
130,3616110.969,5023992.810,1059.102,fl
131,3616195.054,5024047.085,1060.002,fl
132,3613417.714,5022362.151,1062.143,n headwall rcb
133,3613446.718,5022414.624,1058.447,gs
134,3613456.845,5022398.463,1057.858,gs
135,3613464.293,5022387.091,1056.148,tb
136,3613466.576,5022382.874,1054.239,toe
137,3613467.998,5022380.798,1053.886,fl
138,3613469.517,5022377.887,1054.110,toe
139,3613470.582,5022375.908,1056.542,tb
140,3613474.621,5022370.255,1057.624,gs
141,3613479.706,5022362.306,1058.431,gs
142,3613500.287,5022330.042,1058.502,gs
143,3613583.767,5022385.259,1058.421,gs
144,3613573.179,5022404.493,1057.745,gs
145,3613570.168,5022410.259,1057.412,gs
146,3613565.634,5022418.794,1057.420,tb

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147,3613562.293,5022424.172,1055.761,gs
148,3613560.531,5022427.504,1054.220,toe
149,3613559.524,5022428.933,1054.628,gs fl
150,3613558.500,5022431.059,1054.179,toe
151,3613556.946,5022433.619,1056.284,gs
152,3613550.195,5022445.720,1058.561,tb
153,3613535.431,5022472.857,1060.483,gs
154,3613622.592,5022521.775,1060.263,gs
155,3613632.358,5022502.569,1059.153,gs
156,3613637.461,5022492.232,1059.006,tb
157,3613641.868,5022484.221,1057.154,gs
158,3613644.945,5022477.741,1055.392,toe
159,3613646.738,5022474.690,1055.506,gs cl
160,3613647.842,5022472.456,1055.101,toe
161,3613649.444,5022468.489,1057.203,gs
162,3613653.120,5022461.933,1058.272,tb
163,3613659.750,5022449.392,1057.807,gs
164,3613668.047,5022432.646,1057.979,gs
165,3613755.990,5022480.381,1058.251,gs
166,3613737.866,5022509.078,1058.237,tb
167,3613733.131,5022516.091,1057.035,gs
168,3613730.847,5022519.628,1054.975,toe
169,3613730.333,5022520.533,1054.679,gs cl
170,3613729.727,5022520.963,1055.046,toe
171,3613729.342,5022522.030,1055.745,gs
172,3613727.338,5022525.380,1056.298,gs
173,3613724.567,5022529.538,1058.611,tb
174,3613719.001,5022538.385,1058.617,gs
175,3613702.156,5022564.796,1060.370,gs
176,3613789.341,5022613.707,1059.554,gs
177,3613805.844,5022585.197,1058.923,gs
178,3613806.682,5022583.438,1059.354,tb
179,3613810.915,5022576.092,1058.355,gs
180,3613813.572,5022571.412,1055.495,toe
181,3613815.224,5022568.442,1055.148,gs cl
182,3613816.208,5022567.518,1054.703,toe
183,3613818.162,5022563.359,1056.843,gs
184,3613823.212,5022555.068,1058.520,tb
185,3613831.414,5022540.427,1058.550,gs
186,3613839.375,5022527.053,1058.639,gs
187,3613927.194,5022574.891,1059.060,gs
188,3613915.149,5022594.402,1058.822,gs
189,3613909.717,5022602.863,1058.970,tb
190,3613907.144,5022606.836,1058.132,gs
191,3613904.218,5022611.549,1056.741,gs
192,3613903.077,5022613.341,1055.159,toe
193,3613901.480,5022616.020,1055.641,gs cl
194,3613899.627,5022618.907,1055.523,toe
195,3613898.106,5022621.823,1056.886,gs

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196,3613892.274,5022631.821,1059.093,tb
197,3613888.496,5022637.044,1058.328,gs
198,3613874.333,5022659.762,1059.490,gs
199,3613962.021,5022707.987,1060.092,gs
200,3613973.951,5022684.556,1058.271,gs
201,3613976.387,5022679.846,1058.509,gs
202,3613977.248,5022678.327,1059.056,tb
203,3613981.148,5022670.422,1057.625,gs
204,3613983.178,5022666.460,1055.832,toe
205,3613984.138,5022663.825,1055.616,gs cl
206,3613986.130,5022660.431,1055.436,toe
207,3613987.355,5022657.111,1057.543,gs
208,3613991.987,5022647.685,1059.308,tb
209,3613995.568,5022641.853,1059.005,gs
210,3614007.539,5022618.813,1059.503,gs
211,3614094.368,5022668.662,1059.921,gs
212,3614076.955,5022695.246,1059.930,tb
213,3614071.891,5022703.945,1058.064,gs
214,3614069.716,5022706.984,1055.983,toe
215,3614068.346,5022709.132,1055.829,gs cl
216,3614067.234,5022710.921,1055.301,toe
217,3614065.177,5022714.041,1056.606,gs
218,3614062.405,5022718.516,1058.238,gs
219,3614056.641,5022726.801,1059.344,tb
220,3614055.576,5022728.536,1058.666,gs
221,3614039.913,5022752.677,1059.992,gs
222,3614124.338,5022806.509,1059.470,gs
223,3614134.260,5022789.610,1059.029,gs
224,3614140.430,5022778.681,1059.447,tb
225,3614144.752,5022770.918,1058.370,GS
226,3614146.814,5022767.408,1057.387,gs
227,3614148.513,5022764.793,1056.116,toe
228,3614150.191,5022762.374,1056.149,gs cl
229,3614151.477,5022759.418,1056.047,toe
230,3614153.012,5022755.845,1058.086,gs
231,3614161.297,5022742.410,1060.303,tb
232,3614174.511,5022719.965,1060.452,gs
233,3614261.181,5022770.018,1060.976,gs
234,3614247.616,5022792.747,1060.585,tb
235,3614239.513,5022806.908,1058.881,gs
236,3614235.809,5022812.345,1057.774,gs
237,3614234.830,5022814.786,1055.407,toe
238,3614233.250,5022818.015,1056.505,gs cl
239,3614231.769,5022820.157,1055.582,toe
240,3614229.457,5022823.589,1057.360,gs
241,3614227.505,5022826.668,1058.833,tb
242,3614221.642,5022836.547,1059.109,gs
243,3614209.727,5022855.892,1059.438,gs
244,3614292.616,5022911.935,1060.136,gs

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245,3614304.733,5022895.535,1059.570,gs
246,3614309.090,5022889.730,1059.682,tb
247,3614314.490,5022882.686,1058.806,gs
248,3614317.830,5022878.200,1055.656,toe
249,3614319.200,5022876.024,1056.485,gs cl
250,3614320.327,5022874.223,1056.157,toe
251,3614322.340,5022870.871,1057.512,gs
252,3614340.063,5022847.844,1061.279,tb
253,3614352.190,5022831.428,1061.531,gs
254,3614436.858,5022884.785,1062.200,gs
255,3614424.567,5022901.918,1061.626,tb
256,3614413.327,5022917.061,1059.279,gs
257,3614407.794,5022925.562,1057.999,gs
258,3614406.420,5022926.944,1056.077,toe
259,3614404.618,5022929.327,1057.148,gs cl
260,3614403.683,5022931.087,1057.083,toe
261,3614400.226,5022936.670,1058.476,gs
262,3614397.245,5022941.238,1059.976,gs
263,3614390.880,5022947.339,1060.706,tb
264,3614377.798,5022965.790,1060.975,gs
265,3614460.009,5023022.989,1061.449,gs
266,3614470.041,5023008.993,1060.998,gs
267,3614473.644,5023004.385,1061.263,tb
268,3614480.015,5022994.683,1060.303,gs
269,3614484.158,5022989.920,1058.364,gs
270,3614487.724,5022985.116,1057.554,gs
271,3614489.238,5022983.053,1056.187,toe
272,3614489.883,5022980.299,1056.285,gs cl
273,3614491.199,5022976.672,1057.271,toe
274,3614496.712,5022971.100,1059.672,gs
275,3614506.698,5022957.238,1062.426,tb
276,3614518.076,5022941.268,1063.159,gs
277,3614793.137,5017453.571,1128.882,IRS CPT 3/4X2
278,3614755.640,5017503.159,1130.143,SMN
279,3614777.412,5017543.471,1127.177,IRF 5/8
280,3614486.383,5017534.165,1116.600,FL CMP3.5
281,3614486.584,5017535.769,1117.325,INTK BEEHIVE
282,3614485.144,5017542.985,1117.754,GS
283,3614489.231,5017549.972,1117.028,GS
284,3614500.882,5017550.380,1118.968,FNL
285,3614492.791,5017537.387,1119.079,UGFO
286,3614512.071,5017537.903,1118.918,UGFO
287,3614447.966,5017538.181,1118.710,UGFO
288,3614459.648,5017549.426,1119.268,UGFO
289,3614456.756,5017549.895,1119.370,FNL
290,3614484.327,5017555.147,1116.887,GS INTK
291,3614485.966,5017562.384,1120.967,GS TOP TERRACE
292,3614509.894,5017561.105,1120.524,GS TOP TERRACE
293,3614536.302,5017558.794,1120.205,GS TOP TERRACE

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294,3614462.082,5017560.072,1121.028,GS TOP TERRACE
295,3614426.463,5017557.598,1120.043,GS TOP TERRACE
296,3614520.249,5017575.670,1116.570,GS FL
297,3614533.640,5017617.599,1115.886,GS FL
298,3614543.294,5017646.644,1115.541,GS FL
299,3614580.462,5017675.850,1115.068,GS FL
300,3614612.508,5017727.884,1114.068,GS FL SUCKHOLE
301,3614628.569,5017767.884,1113.968,GS FL
302,3614640.280,5017794.549,1113.792,GS FL ROCK PILE
303,3614641.234,5017842.018,1112.817,GS FL
304,3614642.396,5017910.589,1112.408,GS FL
305,3614602.790,5017982.276,1111.999,GS FL
306,3614557.938,5018047.642,1110.957,GS FL
307,3614504.449,5018110.170,1109.727,GS FL
308,3614492.817,5018162.958,1109.117,GS INTK
309,3614497.599,5018098.934,1109.880,GS
310,3614506.553,5018039.945,1111.156,GS
311,3614517.509,5017941.838,1113.255,GS
312,3614517.570,5017855.638,1115.551,GS
313,3614509.646,5017783.273,1118.531,GS
314,3614494.193,5017717.020,1118.264,GS
315,3614477.850,5017644.339,1117.487,GS
316,3614469.510,5017600.140,1117.120,GS
317,3614484.836,5018385.593,1105.146,GS SUCK HOLE
318,3614475.159,5018419.634,1104.775,GS SUCK HOLE
319,3614234.627,5018801.265,1096.455,OUTLET AREA DD128
320,3614234.717,5018798.718,1095.082,OUTLET 5"CLAY
321,3614236.953,5018799.160,1095.722,OUTLET 6"CLAY
322,3613705.040,5019316.964,1085.078,GS INTKE STEEL
323,3613867.625,5019183.632,1088.217,GS FL
324,3613878.602,5019066.952,1088.414,GS FL
325,3613967.430,5018895.964,1088.501,GS FL
326,3614220.187,5018811.932,1095.639,CMP 15"TOP
327,3614236.184,5018795.561,1096.045,CMP 15"TOP
328,3614248.007,5018783.000,1096.608,CMP 15"TOP
329,3614240.855,5018775.910,1095.827,TOP 5"CLAY
330,3614249.648,5018780.584,1096.897,TOP 6"CLAY
331,3614604.344,5017736.928,1112.157,TOP 6"CONC MAIN
332,3614606.204,5017734.003,1112.860,TOP 6"CONC LAT
333,3614476.244,5018420.001,1102.297,TOP 6"CONC
334,3614476.904,5018417.629,1102.362,TOP 6"CLAY
335,3614245.529,5018833.767,1102.355,CPT 1/2IRS
336,3614437.206,5018503.348,1100.680,CMP TOP 8"
337,3614437.421,5018501.016,1104.109,GS
338,3614441.511,5018530.021,1103.543,FL SWALE
339,3614462.549,5018476.922,1104.027,FL SWALE
340,3614450.011,5018498.877,1103.816,FL SWALE
341,3613340.690,5018791.043,1099.057,963 6
342,3613345.487,5018785.269,1101.922,915 -3'4"

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343,3612491.169,5018802.418,1109.219,915 -4'5"
344,3612464.931,5018802.463,1109.758,915 -4'3"
345,3612424.884,5018803.747,1110.342,915 -4'9"
346,3612386.732,5018804.023,1111.124,915 -5'2"
347,3612386.706,5018804.210,1111.156,915 -5'2"
348,3612340.266,5018804.309,1111.990,915 -4'6"
349,3612279.979,5018804.328,1113.284,915 -4'2"
350,3614220.014,5018811.967,1095.417,cmp 15" top 1.23' to fl
351,3614213.305,5018811.852,1093.724,toe
352,3614216.867,5018809.509,1094.039,toe
353,3614220.698,5018808.924,1094.278,toe
354,3614221.229,5018811.862,1093.924,toe
355,3614221.468,5018816.374,1093.934,toe
356,3614220.324,5018823.641,1094.283,toe
357,3614213.736,5018825.482,1094.044,toe
358,3614208.588,5018814.750,1093.675,toe
359,3614210.258,5018817.890,1093.374,fl ditch
360,3614216.948,5018814.257,1093.291,fl ditch
361,3614215.560,5018814.870,1093.560,fl ditch
362,3614218.096,5018813.634,1093.721,fl ditch
363,3614219.924,5018812.120,1093.524,fl ditch
364,3614209.900,5018802.186,1097.828,gs boulders/dirt
365,3614198.048,5018791.226,1100.862,TB
366,3614175.333,5018770.209,1102.698,gs grass
367,3614167.586,5018757.459,1104.905,gs grass
368,3614161.371,5018748.735,1105.311,shed e side
368_REF1,3614160.939,5018749.637,1105.151,Ref. Pt.
368_REF2,3614162.296,5018749.115,1104.872,Ref. Pt.
369,3614220.970,5018813.416,1093.879,fl ditch
370,3614223.085,5018814.961,1094.157,toe
371,3614224.420,5018816.904,1095.637,gs boulders/dirt
372,3614228.000,5018818.739,1096.310,gs boulders
373,3614233.702,5018821.342,1099.053,gs boulders
374,3614243.132,5018833.163,1101.554,tb
375,3614246.162,5018835.781,1102.236,gs grass/field
376,3614265.142,5018851.528,1102.680,gs field
377,3614302.253,5018877.566,1104.371,gs field
378,3614330.610,5018832.122,1104.358,gs field
379,3614292.704,5018801.730,1102.522,gs field
380,3614255.590,5018772.849,1101.286,gs field
381,3614249.291,5018770.613,1101.332,gs grass/field
382,3614224.746,5018746.015,1101.885,gs grass
383,3614202.845,5018734.767,1104.703,gs grass
384,3614193.417,5018727.133,1105.093,gs grass
385,3614190.939,5018727.463,1104.979,gs grass
386,3614189.947,5018727.596,1105.173,shed n side
387,3612510.895,5018803.999,1108.937,915 -4'10"
388,3612590.727,5018809.455,1109.278,915 -4'9"
389,3612666.330,5018805.331,1107.725,915 -6'2"

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390,3614192.178,5018744.539,1104.869,shed ne cor
390_REF1,3614192.380,5018745.518,1104.897,Ref. Pt.
390_REF2,3614193.175,5018744.468,1104.841,Ref. Pt.
391,3614199.801,5018751.307,1104.465,gs grass
392,3614213.868,5018760.874,1102.454,gs grass
393,3614221.382,5018781.294,1100.979,gs
394,3614220.864,5018797.864,1098.687,gs
395,3614224.861,5018803.931,1098.074,gs
396,3614229.342,5018796.410,1099.432,gs
397,3614227.619,5018806.769,1098.071,gs
398,3614230.982,5018805.919,1098.012,gs
399,3614233.740,5018807.543,1099.111,gs
400,3614233.124,5018812.658,1099.092,gs
401,3614229.172,5018812.645,1097.645,gs
402,3614225.088,5018808.717,1096.414,gs
403,3614223.968,5018809.308,1095.007,gs
404,3614221.748,5018806.335,1095.551,gs
405,3614220.464,5018808.103,1095.053,gs
406,3614243.983,5018814.285,1101.414,tb
407,3614250.215,5018813.824,1101.815,gs grass/field
408,3614251.908,5018792.021,1101.396,gs grass/field
409,3614254.376,5018780.175,1101.182,gs grass/field
410,3614252.419,5018776.561,1100.234,gs
411,3614247.377,5018784.832,1099.280,gs
412,3614242.594,5018794.341,1099.001,gs
413,3614237.899,5018798.182,1098.503,gs
414,3614245.585,5018801.264,1101.164,gs
415,3614247.601,5018788.822,1101.393,gs
416,3614252.943,5018781.032,1101.169,gs
417,3614253.550,5018775.188,1101.136,gs
418,3614247.096,5018773.354,1101.326,gs
419,3614240.492,5018771.574,1100.358,gs
420,3614235.321,5018769.850,1101.546,gs
421,3614240.562,5018767.875,1101.375,gs
422,3614237.385,5018787.277,1100.497,gs
423,3614243.598,5018782.977,1100.264,gs
424,3614244.140,5018781.716,1099.585,gs
425,3614245.209,5018778.198,1100.746,gs
426,3614244.097,5018840.280,1101.823,sfp
427,3614235.150,5018848.834,1101.073,sfp
428,3614211.326,5018862.179,1100.060,sfp
429,3614184.937,5018873.383,1100.127,sfp
430,3614151.920,5018881.641,1100.161,sfp
431,3614122.307,5018881.494,1099.334,sfp
432,3614219.460,5018852.545,1099.652,conc broken se cor
433,3614216.516,5018847.195,1098.386,conc broken sw cor
434,3614228.667,5018833.855,1098.640,conc broken ww cor
435,3614238.279,5018838.148,1100.537,conc broken ne cor
436,3614227.695,5018845.076,1100.006,shrub

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437,3614192.851,5018859.949,1098.101,trd 6
438,3614192.297,5018859.522,1098.101,trd 6
439,3614202.387,5018821.495,1093.433,toe
440,3614203.856,5018822.673,1093.286,fl ditch
441,3614149.342,5018814.331,1100.444,gs dead tree pile
442,3614172.525,5018797.355,1101.338,gs dead tree pile
443,3614196.579,5018785.507,1101.347,gs dead tree pile
444,3614205.529,5018791.776,1100.061,gs dead tree pile
445,3614194.832,5018813.762,1097.337,gs dead tree pile
446,3614185.844,5018829.195,1095.087,gs dead tree pile
447,3614165.016,5018829.127,1097.560,gs dead tree pile
448,3614177.953,5018825.939,1099.185,trd 10"
448_REF1,3614177.365,5018823.509,1099.326,Ref. Pt.
448_REF2,3614175.509,5018825.412,1099.044,Ref. Pt.
449,3614201.381,5018819.366,1095.346,gs
450,3614205.320,5018825.113,1093.686,toe
451,3614205.495,5018826.900,1095.448,gs
452,3614209.038,5018826.794,1095.487,gs
453,3614209.846,5018824.968,1093.607,toe
454,3614219.184,5018836.516,1096.886,gs
455,3614224.600,5018854.973,1100.443,tb
456,3614238.588,5018844.648,1101.108,tb
457,3614241.490,5018848.025,1101.755,gs grass/field
458,3614219.570,5018862.248,1100.759,gs grass/field
459,3614191.861,5018839.415,1095.203,gs
460,3614190.770,5018837.907,1093.103, toe
461,3614189.382,5018835.486,1093.208,toe
462,3614188.402,5018833.235,1094.976,gs
463,3614185.528,5018828.480,1095.192,gs
464,3614175.493,5018838.337,1093.776,gs
465,3614175.554,5018838.939,1092.798,toe
466,3614176.587,5018840.990,1092.657,toe
467,3614177.970,5018844.141,1095.062,gs
468,3614185.314,5018857.109,1096.395,gs
469,3614188.136,5018863.754,1097.966,gs
470,3614191.802,5018867.824,1099.628,tb
471,3614194.740,5018873.613,1100.393,gs grass/field
472,3614175.919,5018840.174,1093.018,fl ditch
473,3614211.571,5018901.999,1102.366,gs field
474,3614236.388,5018933.422,1104.626,gs field
475,3614171.209,5018833.734,1095.554,gs grass
476,3614158.169,5018819.218,1100.231,tb
477,3614151.759,5018806.719,1101.146,gs grass
478,3614132.682,5018781.962,1102.194,gs grass
479,3614123.038,5018771.819,1103.722,gs grass
480,3614110.060,5018760.309,1104.932,gs grass
481,3614108.147,5018755.799,1104.889,shed e side
481_REF1,3614107.107,5018758.613,1104.794,Ref. Pt.
481_REF2,3614109.840,5018758.276,1104.985,Ref. Pt.

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482,3614098.175,5018791.630,1101.480,gs pile branches & stalks
483,3614118.746,5018794.728,1101.270,gs pile branches & stalks
484,3614126.087,5018804.493,1100.493,gs pile branches & stalks
485,3614120.059,5018809.808,1099.867,gs pile branches & stalks
486,3614105.250,5018809.618,1099.736,gs pile branches & stalks
487,3614094.496,5018805.716,1099.992,gs pile branches & stalks
488,3614078.656,5018818.897,1095.527,gs tree area
489,3614104.021,5018836.731,1094.134,gs tree area
490,3614112.849,5018849.981,1092.468,gs tree area
491,3614155.895,5018839.631,1094.987,gs tree area
492,3614154.219,5018832.280,1095.570,gs tree area
493,3614136.229,5018823.100,1098.695,gs tree area
494,3614101.506,5018810.744,1099.113,gs tree area
495,3614046.947,5018848.852,1093.362,gs tree area
496,3614058.668,5018840.907,1093.523,gs tree area
497,3614090.546,5018852.808,1093.709,gs tree area
498,3614149.694,5018865.151,1094.959,gs tree area
499,3614152.435,5018878.655,1099.947,gs tree area
500,3614118.000,5018879.233,1099.166,gs tree area
501,3614071.385,5018865.856,1097.398,gs tree area
502,3614045.967,5018865.054,1096.145,gs tree area
503,3614043.289,5018872.698,1096.516,sfp
504,3614063.659,5018871.770,1097.331,sfp
505,3614084.601,5018873.050,1098.188,sfp
506,3614160.743,5018854.060,1095.008,wfp 10"
507,3614159.149,5018850.325,1094.466,wfp 10"
508,3614156.777,5018849.112,1093.990,wfp 10"
509,3614161.614,5018847.305,1094.020,wfp 6"
510,3614160.310,5018842.165,1093.128,wfp 12"
511,3614161.289,5018842.185,1094.808,wood plank se cor 3" wide
512,3614160.874,5018839.867,1094.751,wood plank s side 3" wide
513,3614160.096,5018836.330,1095.069,wfp 12" nside
514,3614154.979,5018840.130,1094.623,wfp 8" nside
515,3614161.719,5018834.666,1095.371,trd 3"
516,3614163.059,5018837.556,1094.999,gs boulder pile
517,3614163.448,5018831.803,1096.108,gs boulder pile
518,3614155.907,5018831.270,1096.036,gs boulder pile
519,3614155.419,5018837.094,1094.741,gs boulder pile
520,3614167.302,5018842.788,1094.209,gs
521,3614167.931,5018843.473,1092.595,toe / fl
522,3614168.695,5018845.006,1092.963,fl ditch
523,3614169.392,5018846.392,1093.147,toe
524,3614169.610,5018848.280,1094.935,gs
525,3614162.676,5018848.113,1094.066,gs
526,3614161.760,5018846.503,1092.920,toe
527,3614160.595,5018844.481,1092.202,fl ditch
528,3614160.793,5018840.870,1092.402,toe
529,3614160.593,5018839.934,1094.583,gs
530,3614163.478,5018863.481,1094.792,gs

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531,3614164.728,5018870.158,1097.263,gs
532,3614166.137,5018875.712,1099.904,tb
533,3614157.340,5018835.868,1094.928,gs
534,3614156.637,5018828.967,1096.604,gs
535,3614148.425,5018822.065,1099.244,tb
536,3614128.094,5018844.143,1094.148,gs
537,3614128.587,5018846.530,1092.991,toe
538,3614129.081,5018849.097,1092.779,fl ditch
539,3614129.766,5018851.646,1093.128,toe
540,3614130.084,5018853.312,1093.883,gs
541,3614131.692,5018838.397,1094.688,gs
542,3614129.765,5018832.793,1096.673,gs
543,3614131.315,5018822.087,1098.735,tb
544,3614129.454,5018809.615,1100.141,gs
545,3614128.345,5018868.189,1094.865,gs
546,3614126.323,5018878.308,1099.350,tb
547,3614127.878,5018884.895,1099.827,gs grass/field
548,3614128.468,5018911.619,1101.938,gs field
549,3614131.051,5018959.855,1105.321,gs field
550,3614093.482,5018969.602,1104.469,gs field
551,3614086.066,5018929.663,1101.464,gs field
552,3614080.169,5018889.827,1099.073,gs field
553,3614077.517,5018878.049,1098.439,gs field/grass
554,3614080.671,5018862.515,1097.538,tb
555,3614079.677,5018842.651,1092.682,boulder top 2.5'od
556,3614085.707,5018843.612,1092.732,gs
557,3614085.520,5018844.314,1091.186,toe
558,3614084.312,5018845.821,1090.947,fl ditch
559,3614084.604,5018847.815,1091.308,toe
560,3614081.963,5018847.829,1093.005,GS
561,3614081.804,5018824.055,1093.759,GS
562,3614077.839,5018806.512,1099.597,tb
563,3614076.146,5018792.794,1101.290,gs
564,3614070.899,5018764.293,1104.667,gs
565,3614067.082,5018747.445,1104.889,gs
566,3614071.529,5018747.886,1104.910,shed s side
566_REF1,3614068.556,5018747.487,1104.938,Ref. Pt.
566_REF2,3614069.078,5018749.615,1104.883,Ref. Pt.
567,3614073.022,5018760.289,1105.005,shed se cor
567_REF1,3614073.327,5018761.241,1105.084,Ref. Pt.
567_REF2,3614072.038,5018760.469,1104.926,Ref. Pt.
568,3614067.444,5018828.862,1092.943,gs
569,3614066.546,5018830.059,1090.713,toe
570,3614066.395,5018831.291,1090.830,fl ditch
571,3614065.636,5018832.450,1090.854,toe
572,3614064.798,5018834.617,1093.196,tb
573,3614052.099,5018831.484,1091.516,top 1.5' od boulder
574,3614041.473,5018832.306,1092.645,gs
575,3614041.598,5018833.465,1090.263,toe

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576,3614041.852,5018834.174,1090.021,fl ditch
577,3614042.169,5018835.252,1090.391,toe
578,3614042.012,5018837.019,1092.990,gs
579,3614031.002,5018841.631,1092.229,gs
580,3614030.064,5018841.014,1090.280,toe
581,3614027.315,5018839.447,1090.379,toe
582,3614026.546,5018838.908,1092.570,gs
583,3614031.741,5018837.261,1090.260,fl ditch
584,3614028.768,5018840.357,1090.205,fl ditch
585,3614028.727,5018843.031,1090.025,fl ditch
586,3614032.948,5018834.373,1092.245,gs
587,3614034.632,5018834.251,1090.680,gs
588,3614037.757,5018833.244,1092.402,gs
589,3614035.858,5018832.338,1091.897,gs
590,3614039.991,5018828.796,1092.310,gs
591,3614038.213,5018831.219,1092.701,gs
592,3614040.451,5018829.919,1092.638,gs
593,3614039.192,5018825.254,1093.562,gs
594,3614034.486,5018828.390,1093.245,gs
595,3614027.440,5018828.870,1093.311,gs
596,3614035.314,5018807.579,1100.061,tb
597,3614032.245,5018794.630,1100.881,gs
598,3614025.935,5018780.831,1101.966,edge drive
599,3614018.919,5018739.550,1102.615,gs drive
600,3614036.266,5018856.846,1093.142,gs
601,3614042.091,5018856.909,1093.584,gs broken conc
602,3614043.575,5018861.950,1095.085,gs broken conc
603,3614038.683,5018863.357,1095.085,gs broken conc
604,3614034.201,5018859.232,1093.090,gs broken conc
605,3614040.756,5018869.332,1096.398,tb
606,3614040.939,5018883.877,1097.124,gs grass/field
607,3614047.891,5018922.716,1099.181,gs field
608,3614054.026,5018966.729,1101.694,gs field
609,3613952.770,5018900.610,1092.293,sfp
610,3613957.240,5018908.310,1090.936,sfp
611,3613967.709,5018916.819,1091.345,sfp
612,3613981.799,5018924.494,1095.281,sfp
613,3614009.817,5018895.997,1096.335,sfp
614,3614035.090,5018868.421,1095.745,gs tree area
615,3614014.518,5018881.363,1095.198,gs tree area
616,3613987.501,5018909.082,1094.613,gs tree area
617,3613982.130,5018906.100,1092.855,gs tree area
618,3614008.854,5018873.431,1093.469,gs tree area
619,3614028.412,5018862.150,1092.985,gs tree area
620,3614036.741,5018813.137,1099.192,rr tie pile
621,3614022.156,5018812.730,1099.209,rr tie pile
622,3614010.174,5018808.351,1100.281,rr tie pile
623,3614011.452,5018804.684,1100.514,rr tie pile
624,3614020.569,5018802.669,1100.563,rr tie pile

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625,3614027.444,5018803.863,1100.496,rr tie pile
626,3614037.333,5018808.204,1100.022,rr tie pile
627,3614025.824,5018850.011,1092.335,gs
628,3614027.259,5018850.006,1090.350,toe
629,3614028.367,5018850.402,1090.137,fl ditch
630,3614029.951,5018850.593,1090.193,toe
631,3614030.734,5018851.128,1092.427,gs
632,3614025.090,5018859.111,1092.024,gs
633,3614024.617,5018858.535,1090.154,toe
634,3614024.277,5018857.083,1090.095,fl ditch
635,3614022.190,5018855.186,1090.859,toe
636,3614021.695,5018853.555,1092.749,gs
637,3614016.695,5018855.299,1092.349,gs
638,3614016.852,5018856.792,1090.162,toe
639,3614016.741,5018857.812,1090.069,fl ditch
640,3614015.169,5018859.128,1090.230,toe
641,3614013.912,5018860.562,1092.581,gs
642,3614006.527,5018856.829,1091.981,gs
643,3614006.463,5018855.834,1089.891,toe
644,3614006.028,5018854.438,1090.013,fl ditch
645,3614005.603,5018852.539,1090.196,toe
646,3614005.526,5018850.644,1092.450,gs
647,3614007.939,5018854.518,1090.062,fl ditch
648,3614010.247,5018853.043,1091.738,gs
649,3614009.245,5018852.538,1090.370,gs
650,3614008.458,5018851.977,1090.393,gs
651,3614007.021,5018850.505,1092.233,gs
652,3614009.403,5018848.781,1092.145,gs
653,3614010.598,5018849.130,1090.836,gs
654,3614012.471,5018849.888,1092.591,gs
655,3614012.356,5018844.647,1092.568,gs
656,3614014.243,5018844.494,1092.591,gs
657,3614014.333,5018846.399,1092.555,gs
658,3614013.429,5018845.597,1091.711,gs
659,3614026.595,5018829.131,1093.354,gs
660,3614013.034,5018830.247,1094.013,gs
661,3613999.066,5018838.849,1093.929,gs
662,3614004.067,5018830.675,1094.791,gs
663,3614004.414,5018829.176,1094.497,gs
664,3614004.741,5018827.677,1095.454,gs
665,3613995.764,5018831.993,1096.859,trd 4" s side
666,3613991.628,5018833.506,1098.512,trd 16"od cluster
666_REF1,3613988.265,5018831.341,1098.814,Ref. Pt.
666_REF2,3613988.294,5018835.717,1098.210,Ref. Pt.
667,3613984.467,5018836.904,1097.663,junk area
668,3613980.252,5018836.462,1097.653,junk area
669,3613980.630,5018841.627,1096.364,junk area
670,3613983.667,5018841.293,1096.207,junk area
671,3613981.849,5018842.398,1096.634,trd 12" od cluster

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672,3613966.849,5018812.994,1100.092,burn pile area
673,3613974.626,5018810.386,1100.275,burn pile area
674,3613983.589,5018821.128,1099.594,burn pile area
675,3613968.038,5018824.314,1099.522,burn pile area
676,3613963.251,5018812.680,1100.125,edge drive
677,3613988.647,5018799.069,1100.255,edge drive
678,3613992.356,5018817.512,1099.488,trd 6"
679,3613996.075,5018819.319,1098.353,trd 12" stump
680,3614008.781,5018821.591,1096.263,gs
681,3614008.291,5018820.052,1097.333,gs
682,3614007.762,5018817.313,1097.717,gs
683,3614007.021,5018815.427,1098.861,tb
684,3614005.947,5018811.284,1099.904,gs
685,3613997.405,5018810.289,1100.046,gs
686,3613995.189,5018809.984,1099.665,gs
687,3613993.493,5018811.143,1099.852,gs
688,3613994.171,5018813.451,1099.114,gs
689,3613995.095,5018813.475,1098.097,gs
690,3613996.738,5018813.260,1097.907,gs
691,3613997.742,5018813.226,1099.586,gs
692,3613998.792,5018814.538,1099.176,tb
693,3613997.223,5018816.069,1096.765,tb
694,3613996.710,5018814.641,1097.280,gs
695,3613996.063,5018814.744,1097.162,gs
696,3613996.270,5018816.321,1096.660,toe
697,3613993.371,5018815.426,1096.782,toe
698,3613993.196,5018812.792,1099.380,tb
699,3613989.571,5018812.173,1099.682,tb
700,3613988.552,5018817.181,1099.528,tb
701,3613995.540,5018819.977,1098.383,tb
702,3613999.213,5018820.803,1097.553,gs
703,3613999.135,5018822.395,1097.497,gs
704,3613994.158,5018821.076,1098.239,gs
705,3613989.346,5018820.676,1099.062,gs
706,3613991.231,5018827.510,1098.298,tb
707,3613992.500,5018826.864,1096.927,gs
708,3613996.841,5018826.993,1095.677,gs
709,3613990.417,5018814.407,1097.228,rcp 5" top 0.46' to fl
710,3613990.694,5018814.604,1096.575,fl
711,3613990.875,5018814.176,1096.801,toe
712,3613990.164,5018814.799,1096.804,toe
713,3613989.751,5018814.425,1097.484,gs
714,3613990.300,5018813.838,1097.457,gs
715,3613994.444,5018816.328,1096.572,fl
716,3613994.235,5018816.897,1096.946,toe
717,3613994.640,5018815.965,1096.785,toe
718,3613996.931,5018817.337,1097.110,cmp 6" top 0.52' to fl
719,3613996.232,5018816.976,1096.493,fl
720,3613997.316,5018818.486,1096.595,toe

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721,3613998.061,5018816.874,1096.709,toe
722,3614000.081,5018819.156,1096.345,fl
723,3614000.979,5018818.593,1096.634,gs
724,3613999.541,5018819.482,1096.486,gs
725,3614001.257,5018821.689,1097.602,gs
726,3614000.468,5018821.844,1096.287,fl
727,3613999.206,5018822.147,1097.664,gs
728,3614001.712,5018824.947,1095.801,gs
729,3614001.507,5018826.607,1095.198,gs
730,3614001.308,5018828.666,1095.367,gs
731,3613999.403,5018835.058,1094.844,gs
732,3613984.106,5018835.410,1098.275,TB
733,3613993.813,5018847.376,1092.903,gs
734,3614002.449,5018840.717,1093.607,gs
735,3614000.195,5018834.566,1094.900,gs
736,3613996.896,5018827.885,1095.815,gs
737,3613990.669,5018828.137,1098.393,tb
738,3614010.772,5018827.967,1094.541,gs
739,3614011.032,5018830.025,1093.951,gs
740,3614006.934,5018831.877,1093.991,gs
741,3614006.005,5018832.739,1094.726,gs
742,3614024.307,5018830.364,1093.439,gs
743,3614101.979,5018847.355,1093.832,gs
744,3614102.161,5018849.895,1091.692,toe
745,3614102.090,5018851.776,1091.487,fl ditch
746,3613983.742,5018865.580,1091.247,gs
747,3613983.735,5018866.532,1089.682,toe
748,3613984.055,5018867.636,1089.774,fl ditch
749,3613984.462,5018868.851,1089.355,toe
750,3613985.424,5018871.503,1092.427,GS
751,3613988.491,5018888.489,1092.397,GS
752,3613994.466,5018907.372,1095.850,tb
753,3613997.955,5018912.399,1095.946,gs grass/field
754,3614009.859,5018955.188,1098.327,gs field
755,3614019.858,5018994.937,1100.906,gs field
756,3613984.937,5018862.438,1091.677,fmisc metalgate
757,3613982.298,5018853.890,1092.805,gs
758,3613972.795,5018837.385,1099.083,tb
759,3613977.774,5018843.206,1095.987,gs
760,3613975.256,5018829.573,1098.984,fmisc metal gate e&s
761,3613959.502,5018829.215,1099.260,fmisc metal gate n & fnb s
762,3613973.419,5018823.193,1099.568,gs
763,3613969.627,5018809.369,1100.167,edge drive
764,3613961.938,5018790.034,1100.304,edge drive
765,3613956.056,5018769.898,1101.178,gs grass
766,3614104.197,5018854.087,1091.737,toe
767,3614105.547,5018855.653,1093.319,gs
768,3613967.687,5018860.620,1093.437,gs
769,3613974.541,5018852.658,1093.843,gs

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770,3613975.776,5018846.256,1096.119,gs
771,3613971.460,5018840.739,1098.087,gs
772,3613967.030,5018846.928,1094.994,gs
773,3613963.769,5018848.641,1094.742,gs
774,3613962.107,5018845.434,1094.997,gs
775,3613963.949,5018843.739,1097.435,gs
776,3613960.930,5018846.288,1097.465,gs
777,3613959.239,5018840.374,1098.563,tb
778,3613970.802,5018837.807,1099.032,tb
779,3613954.057,5018855.652,1098.072,tb
780,3613961.965,5018858.535,1095.769,gs
781,3613949.875,5018866.162,1096.859,gs tree area
782,3613955.044,5018867.672,1096.151,gs tree area
783,3613955.255,5018883.921,1093.416,gs tree area
784,3613943.465,5018918.517,1093.015,gs tree area
785,3613933.394,5018936.997,1090.776,gs tree area
786,3613911.585,5018959.685,1091.337,gs tree area
787,3613868.565,5019044.401,1090.625,gs tree area
788,3613852.211,5019050.863,1094.423,gs tree area /fnmisc metal gate
789,3613853.535,5019034.918,1095.821,gs tree area fnmisc metal gate
790,3613859.675,5019020.731,1095.425,gs tree area fnmisc metal gate
791,3613876.239,5018964.256,1097.343,gs tree area fnmisc metal gate
792,3613890.580,5018957.893,1096.361,gs tree area fnmisc metal gate
793,3613920.841,5018922.983,1095.778,gs tree area fnmisc metal gate
794,3613943.475,5018881.684,1096.302,fnmisc metal gate end
795,3613968.993,5018880.986,1091.290,gs
796,3613969.551,5018881.159,1089.544,toe
797,3613970.724,5018881.659,1089.393,fl ditch
798,3613971.632,5018882.941,1089.078,toe
799,3613972.801,5018883.778,1091.411,gs
800,3613954.816,5018919.481,1090.689,gs
801,3613956.106,5018919.825,1088.691,toe
802,3613957.007,5018920.019,1088.697,fl ditch
803,3613958.906,5018920.300,1089.189,toe
804,3613959.584,5018920.451,1090.594,gs
805,3613970.374,5018923.566,1091.916,gs
806,3613973.958,5018925.266,1093.934,gs
807,3613979.742,5018928.472,1095.541,tb
808,3613983.523,5018930.978,1095.797,gs grass/field
809,3614018.643,5018952.037,1098.646,gs field
810,3614051.270,5018963.602,1101.398,gs field
811,3613959.659,5018927.288,1090.587,gs
812,3613959.002,5018927.191,1088.595,toe
813,3613958.148,5018927.019,1088.373,fl ditch
814,3613956.868,5018926.895,1088.744,toe
815,3613956.245,5018926.937,1090.771,gs
816,3613948.854,5018918.881,1091.063,gs
817,3613948.932,5018899.867,1093.310,fnb rem to east
818,3613962.952,5018888.027,1091.435,gs rock boulders

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819,3613958.692,5018887.514,1091.845,gs rock boulders
820,3613957.078,5018885.927,1092.501,gs rock boulders
821,3613957.560,5018883.905,1092.833,gs rock boulders
822,3613965.458,5018881.917,1091.597,gs rock boulders
823,3613927.595,5018836.390,1099.761,fnb nw-se
824,3613941.098,5018849.191,1098.905,gs pasture
825,3613920.557,5018827.444,1100.128,gs grass
826,3613897.170,5018822.743,1100.708,eog drive
827,3613896.425,5018809.213,1100.710,eog drive
828,3613934.409,5018802.135,1100.214,eog drive
829,3613888.455,5018845.389,1101.478,fnb nw-se
830,3613870.633,5018849.506,1104.805,fnb nw & elec fence e
831,3613869.368,5018849.174,1104.692,shed nw cor
831_REF1,3613870.215,5018848.641,1104.618,Ref. Pt.
831_REF2,3613869.599,5018848.201,1104.766,Ref. Pt.
832,3613870.022,5018852.629,1105.550,gs
833,3613872.548,5018866.655,1104.224,gs
834,3613872.250,5018886.796,1103.520,gs
835,3613870.097,5018887.635,1104.106,elec fence w&s
836,3613869.402,5018886.263,1104.480,shed ne cor
836_REF1,3613869.268,5018887.254,1104.296,Ref. Pt.
836_REF2,3613870.400,5018886.202,1104.663,Ref. Pt.
837,3613934.402,5018914.542,1095.582,tb
838,3613928.241,5018909.180,1096.302,fmisc metal gate
839,3613895.012,5018896.637,1098.778,gs pasture
840,3613879.374,5018891.216,1101.788,gs pasture
841,3613875.277,5018890.114,1102.413,gs pasture
842,3613862.225,5018889.253,1104.454,gs pasture
843,3613861.728,5018895.209,1103.231,gs pasture
844,3613950.852,5018938.296,1090.969,gs
845,3613951.589,5018938.568,1088.827,toe
846,3613952.589,5018939.255,1088.679,fl ditch
847,3613953.985,5018940.415,1088.889,toe
848,3613954.746,5018940.715,1090.287,gs
849,3613943.171,5018950.650,1090.648,gs
850,3613942.073,5018950.365,1089.008,toe
851,3613941.103,5018949.766,1088.751,fl ditch
852,3613939.340,5018948.655,1089.372,toe
853,3613938.343,5018948.137,1090.984,gs
854,3613926.962,5018961.586,1090.328,gs
855,3613927.520,5018962.323,1088.939,toe
856,3613928.280,5018963.072,1088.797,fl ditch
857,3613929.783,5018964.573,1088.954,toe
858,3613930.375,5018965.339,1090.686,gs
859,3613934.673,5018969.818,1090.704,gs
860,3613940.724,5018974.336,1093.751,tb
861,3613945.223,5018977.703,1094.745,gs grass/field
862,3613978.781,5018998.936,1098.083,gs field
863,3614018.397,5019015.036,1102.237,gs field

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864,3613903.114,5019006.637,1090.391,gs broken conc
865,3613900.991,5019016.361,1090.289,gs broken conc
866,3613902.952,5019016.550,1090.371,gs broken conc
867,3613905.003,5019007.240,1090.359,gs broken conc
868,3613869.961,5019047.513,1090.187,gs
869,3613872.067,5019048.237,1088.917,toe
870,3613873.254,5019048.659,1089.036,fl ditch
871,3613874.834,5019048.978,1089.030,toe
872,3613876.067,5019049.384,1090.479,gs
873,3613880.143,5019050.237,1090.434,gs
874,3613881.868,5019051.091,1089.830,gs
875,3613895.214,5019054.669,1090.171,gs
876,3613903.966,5019055.964,1092.232,gs
877,3613906.868,5019056.664,1093.062,gs field/grass
878,3613943.189,5019058.102,1096.959,gs field
879,3613971.624,5019058.291,1099.554,gs field
880,3613864.750,5019046.035,1091.441,gs
881,3613857.325,5019045.842,1094.163,gs
882,3613849.633,5019045.209,1095.486,tb
883,3613827.036,5019038.847,1100.630,gs pasture
884,3613819.755,5019035.631,1101.467,gs pasture
885,3613801.355,5019030.557,1102.008,gs pasture
886,3613785.597,5019028.276,1102.154,gs pasture
887,3613783.933,5019025.206,1102.282,shed se cor /fmisc metal gate
887_REF1,3613782.936,5019025.118,1102.273,Ref. Pt.
887_REF2,3613783.651,5019026.166,1102.290,Ref. Pt.
888,3613797.215,5019052.938,1099.890,fmisc metal gate
889,3613807.342,5019078.513,1096.394,fmisc metal gate
890,3613817.389,5019090.563,1094.853,fmisc metal gate
891,3613844.775,5019092.911,1092.809,fmisc metal gate
892,3613874.256,5019099.867,1089.981,fmisc metal gate
893,3613803.809,5019027.645,1102.945,gs
894,3613824.465,5019029.233,1101.734,gs
895,3613824.002,5019027.661,1102.040,shed ne cor
895_REF1,3613823.950,5019028.659,1102.020,Ref. Pt.
895_REF2,3613825.000,5019027.718,1102.060,Ref. Pt.
896,3613877.260,5019072.990,1089.776,gs
897,3613877.818,5019073.072,1088.854,toe
898,3613879.949,5019072.867,1088.483,fl ditch
899,3613880.467,5019072.971,1088.210,toe
900,3613881.144,5019073.321,1089.879,gs
901,3613883.378,5019073.357,1089.846,gs
902,3613884.727,5019073.315,1089.605,gs
903,3613875.462,5019082.546,1089.773,gs
904,3613874.479,5019082.943,1088.031,toe
905,3613873.129,5019082.950,1088.064,fl ditch
906,3613871.510,5019083.102,1088.107,toe
907,3613870.887,5019083.523,1089.950,gs
908,3613867.940,5019099.904,1089.604,gs

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909,3613868.994,5019099.985,1088.987,toe
910,3613871.074,5019099.026,1088.738,fl ditch
911,3613872.147,5019098.919,1088.823,toe
912,3613857.895,5019095.943,1090.526,gs
913,3613843.150,5019091.977,1093.190,gs
914,3613814.604,5019086.512,1095.181,gs
915,3613800.616,5019057.842,1099.198,gs
916,3613822.411,5019068.566,1096.610,gs
917,3613838.887,5019063.796,1095.537,gs
918,3613825.962,5019039.825,1100.804,gs
919,3613796.253,5019042.949,1101.166,gs
920,3613783.515,5019045.980,1100.854,gs grass
921,3613786.317,5019093.167,1097.328,gs grass/field
922,3613816.072,5019090.643,1094.912,gs grass/field
923,3613833.682,5019095.102,1093.469,gs grass/field
924,3613846.979,5019121.922,1090.626,gs grass/field
925,3613839.500,5019155.162,1089.435,gs grass/field
926,3613822.167,5019186.138,1088.935,gs grass/field
927,3613802.373,5019203.638,1088.481,gs grass/field
928,3613863.507,5019118.106,1089.688,trd 4"
929,3613863.466,5019113.998,1089.828,trd 6"
930,3613877.813,5019109.243,1089.795,gs
931,3613878.427,5019108.919,1088.509,toe
932,3613879.845,5019107.987,1088.620,fl ditch
933,3613881.280,5019106.840,1088.474,toe
934,3613881.915,5019106.280,1089.690,gs
935,3613899.743,5019117.093,1091.048,trd 20" cluster
936,3613893.409,5019133.484,1089.574,trd 48" cluster
937,3613896.051,5019136.618,1089.792,trd 6"
938,3613890.156,5019155.988,1090.608,trd 12" cluster
939,3613879.041,5019100.457,1089.666,gs
940,3613895.457,5019102.166,1089.606,gs
941,3613902.654,5019103.054,1091.238,gs
942,3613908.416,5019102.936,1093.543,gs grass/field
943,3613949.343,5019103.329,1097.638,gs field
944,3613992.015,5019100.941,1102.854,gs field
945,3613902.444,5019068.304,1091.901,trd 20" cluster
946,3613957.472,5018910.125,1089.635,fl 6" cmp
947,3613957.862,5018909.561,1090.645,gs
948,3613957.261,5018909.378,1090.888,gs
949,3613956.663,5018910.610,1090.849,gs
950,3613957.046,5018911.689,1090.681,gs
951,3613957.870,5018912.730,1089.123,toe
952,3613959.298,5018913.310,1089.136,fl ditch
953,3613906.119,5019132.604,1093.299,gs grass/field
954,3613890.910,5019168.208,1091.131,gs grass/field
955,3613878.636,5019143.881,1089.296,fl ditch
956,3613880.028,5019144.945,1089.097,toe
957,3613879.168,5019144.306,1089.578,gs

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958,3613856.477,5019134.360,1089.308,gs
959,3613845.357,5019132.280,1090.165,gs grass/field
960,3613806.738,5019123.751,1093.721,gs field
961,3613784.592,5019119.362,1095.564,gs field
962,3613889.842,5019146.951,1089.371,toe
963,3613895.657,5019151.835,1091.949,gs grass/field
964,3613940.848,5019161.237,1096.110,gs field
965,3613979.783,5019166.644,1100.753,gs field
966,3613977.015,5019211.416,1098.853,gs field
967,3613973.641,5019230.973,1097.552,gs field
968,3613965.887,5019254.229,1097.721,gs field
969,3613919.833,5019243.823,1093.282,gs field
970,3613927.169,5019225.405,1093.448,gs field
971,3613934.257,5019202.425,1094.703,gs field
972,3613887.577,5019188.361,1090.887,gs field
973,3613875.486,5019209.862,1090.035,gs field
974,3613842.355,5019244.973,1089.140,gs field
975,3613837.957,5019233.030,1088.568,gs grass/field
976,3613870.393,5019197.404,1089.713,gs grass/field
977,3613872.805,5019196.197,1089.844,gs grass/field
978,3613868.486,5019194.031,1088.729,gs
979,3613864.886,5019191.119,1088.581,gs
980,3613864.095,5019190.951,1088.036,toe
981,3613863.037,5019190.348,1087.961,fl ditch
982,3613862.815,5019189.775,1087.915,toe
983,3613860.162,5019188.918,1088.466,toe
984,3613859.053,5019188.212,1088.810,gs
985,3613840.843,5019176.724,1088.272,gs
986,3613837.750,5019174.885,1088.839,gs
987,3613828.036,5019174.807,1089.059,gs grass/field
988,3613788.840,5019162.179,1091.782,gs field
989,3613767.494,5019154.703,1093.346,gs field
990,3613815.623,5019214.726,1087.756,trd 10"
991,3613838.140,5019204.956,1087.782,trd4"
992,3613826.960,5019201.988,1088.057,trd6"
993,3613826.581,5019196.907,1088.423,trd 8"
994,3613845.394,5019194.054,1088.473,trd 6"
995,3613849.717,5019187.115,1088.777,trd 8"
996,3613855.649,5019180.468,1088.966,trd 8"
997,3613855.237,5019181.267,1088.889,trd 6"
998,3613857.046,5019179.716,1088.867,trd 6"
999,3613861.588,5019179.462,1088.941,trd 6"
1000,3613945.789,5019309.474,1098.569,gs field
1001,3613906.553,5019284.169,1094.066,gs field
1002,3613866.447,5019258.499,1090.551,gs field
1003,3613833.788,5019236.167,1088.450,gs field/grass
1004,3613831.006,5019234.765,1088.578,gs
1005,3613824.681,5019231.878,1087.990,gs
1006,3613823.536,5019231.398,1087.633,toe

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1007,3613821.280,5019230.186,1087.439,fl ditch
1008,3613814.065,5019223.097,1087.498,toe
1009,3613802.844,5019215.930,1087.707,gs
1010,3613797.003,5019211.865,1088.314,gs
1011,3613795.146,5019209.646,1088.550,gs grass/field
1012,3613756.545,5019187.521,1091.666,gs field
1013,3613701.864,5019196.270,1093.412,gs field
1014,3613733.023,5019227.333,1089.592,gs field
1015,3613748.788,5019243.158,1088.159,gs field/grass
1016,3613759.480,5019255.729,1086.976,gs
1017,3613760.018,5019256.290,1086.481,toe
1018,3613761.452,5019258.051,1086.300,fl ditch
1019,3613762.858,5019260.256,1086.619,toe
1020,3613763.444,5019261.169,1087.009,gs
1021,3613768.394,5019267.079,1087.095,gs
1022,3613780.237,5019280.335,1087.991,gs grass/field
1023,3613783.096,5019280.359,1088.060,gs field
1024,3613816.659,5019311.100,1090.903,gs field
1025,3613863.579,5019356.692,1094.538,gs field
1026,3613728.289,5019280.811,1086.056,fl ditch
1027,3613726.062,5019275.864,1086.440,toe
1028,3613721.364,5019271.044,1086.977,gs
1029,3613719.916,5019269.738,1087.650,gs
1030,3613715.668,5019265.151,1087.768,gs field
1031,3613695.310,5019222.198,1090.639,gs field
1032,3613677.501,5019184.689,1094.895,gs field
1033,3613726.892,5019295.615,1086.458,gs
1034,3613731.576,5019301.106,1087.360,gs
1035,3613736.425,5019308.174,1088.227,gs
1036,3613739.663,5019313.604,1087.545,gs grass/field
1037,3613764.811,5019351.134,1090.654,gs field
1038,3613787.995,5019395.963,1094.161,gs field
1039,3613797.217,5019412.848,1095.590,gs field
1040,3613728.261,5019437.048,1091.786,gs field
1041,3613708.703,5019391.386,1088.489,gs field
1042,3613691.867,5019348.042,1086.062,gs field
1043,3613689.983,5019343.839,1085.474,gs grass/field
1044,3613688.994,5019341.675,1085.654,gs
1045,3613688.401,5019340.053,1086.324,gs
1046,3613686.320,5019337.226,1086.425,gs
1047,3613669.413,5019310.309,1084.373,fl ditch
1048,3613666.175,5019306.114,1084.737,gs
1049,3613665.385,5019304.497,1085.091,gs
1050,3613659.650,5019295.328,1086.130,gs field
1051,3613627.288,5019203.469,1091.186,gs field
1052,3613716.144,5019331.865,1086.736,gs grass/field
1053,3613714.768,5019328.660,1087.103,gs
1054,3613712.713,5019325.139,1088.209,gs
1055,3613714.415,5019324.090,1087.802,gs

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1056,3613712.190,5019319.457,1086.371,gs
1057,3613707.011,5019314.884,1085.705,gs
1058,3613706.909,5019314.634,1085.127,toe
1059,3613706.025,5019313.939,1084.556,fl ditch
1060,3613704.755,5019313.117,1084.822,toe
1061,3613703.757,5019312.769,1085.911,gs
1062,3613699.002,5019305.595,1086.124,gs
1063,3613698.512,5019303.188,1086.793,gs
1064,3613695.561,5019298.327,1087.682,gs
1065,3613694.563,5019295.117,1087.947,gs
1066,3613687.124,5019281.249,1086.831,gs
1067,3613680.381,5019287.822,1086.566,gs
1068,3613689.172,5019298.392,1087.039,gs
1069,3613685.339,5019298.124,1085.884,gs
1070,3613679.754,5019298.512,1085.589,gs
1071,3613680.773,5019304.006,1085.481,gs
1072,3613688.380,5019306.399,1086.242,gs
1073,3613690.554,5019308.004,1087.791,gs
1074,3613694.272,5019309.228,1086.967,gs
1075,3613699.377,5019308.062,1086.488,gs
1076,3613698.418,5019306.270,1086.022,gs
1077,3613695.300,5019307.137,1085.957,gs boulders
1078,3613694.555,5019305.252,1086.344,gs boulders
1079,3613695.904,5019301.420,1086.928,gs boulders
1080,3613690.608,5019300.287,1086.229,gs boulders
1081,3613690.255,5019303.101,1086.823,gs boulders
1082,3613689.177,5019305.891,1086.623,gs boulders
1083,3613681.888,5019301.763,1085.799,gs boulders
1084,3613682.052,5019299.559,1085.596,gs boulders
1085,3613687.180,5019311.702,1085.544,gs
1086,3613690.274,5019312.633,1087.558,gs
1087,3613694.953,5019314.138,1087.184,gs
1088,3613698.251,5019315.231,1086.056,gs
1089,3613700.592,5019322.608,1086.151,gs
1090,3613695.760,5019328.640,1088.534,gs
1091,3613693.860,5019331.395,1088.206,gs
1092,3613686.564,5019334.281,1086.287,gs
1093,3613688.838,5019340.612,1086.238,gs
1094,3613690.126,5019342.057,1085.510,gs
1095,3613698.322,5019338.895,1085.969,gs
1096,3613698.339,5019334.883,1087.143,gs
1097,3613698.273,5019331.522,1088.124,gs
1098,3613704.962,5019320.334,1085.790,gs
1099,3613705.496,5019322.488,1086.621,gs
1100,3613707.282,5019326.684,1087.599,gs
1101,3613708.228,5019328.542,1088.019,gs
1102,3613710.782,5019333.028,1086.667,gs
1103,3613703.952,5019333.832,1087.117,gs boulders
1104,3613702.533,5019336.658,1088.196,gs boulders

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1105,3613705.326,5019336.654,1086.372,gs boulders
1106,3613706.410,5019339.849,1086.622,gs boulders
1107,3613703.677,5019339.079,1087.475,gs boulders
1108,3613702.685,5019339.129,1087.531,gs boulders
1109,3613701.824,5019340.949,1086.205,gs boulders
1110,3613699.230,5019338.455,1086.038,gs boulders
1111,3613699.674,5019335.066,1087.028,gs boulders
1112,3613700.876,5019335.337,1087.776,gs boulders
1113,3613727.987,5019319.175,1087.450,gs
1114,3613726.300,5019316.424,1088.293,gs
1115,3613717.765,5019313.124,1086.498,gs
1116,3613712.958,5019302.175,1086.117,gs
1117,3613712.244,5019301.760,1085.389,toe
1118,3613711.736,5019301.135,1085.307,fl ditch
1119,3613710.992,5019300.762,1085.553,toe
1120,3613710.336,5019299.859,1086.081,gs
1121,3613706.980,5019296.404,1086.336,gs
1122,3613701.384,5019288.526,1087.776,gs
1123,3613695.720,5019277.759,1087.483,gs
1124,3613702.527,5019314.607,1085.833,gs
1125,3613703.061,5019314.661,1085.186,toe
1126,3613704.336,5019315.380,1082.585,fl ditch
1127,3613705.212,5019316.868,1084.875,toe
1128,3613705.299,5019316.327,1083.188,fl dtch
1129,3613706.329,5019314.791,1084.773,toe
1130,3613705.954,5019315.059,1084.034,fl ditch
1131,3613704.640,5019313.486,1084.635,toe
1132,3613705.077,5019314.537,1082.857,fl ditch
1133,3613719.788,5019285.721,1085.932,fl ditch
1134,3613724.677,5019292.172,1086.274,fl ditch
1135,3613714.030,5019297.767,1085.382,fl ditch
1136,3613714.799,5019298.627,1085.671,toe
1137,3613712.829,5019297.223,1085.667,toe
1138,3613711.570,5019297.024,1086.209,gs
1139,3613714.830,5019300.137,1086.310,gs
1140,3613728.411,5019289.922,1086.341,trd 6"
1141,3613751.136,5019289.747,1087.940,trd 6"
1142,3613754.188,5019270.740,1086.920,trd 6"
1143,3613913.535,5018956.688,1091.189,gs
1144,3613911.621,5018956.192,1091.878,gs end fnb rem from west
1145,3613903.994,5018946.265,1095.784,TB
1146,3613899.271,5018954.809,1096.137,top 2.0' boulder
1147,3613899.050,5018947.261,1096.383,fmisc metal gate
1148,3613877.320,5018934.790,1098.621,gs pasture
1149,3613865.153,5018927.741,1100.548,gs pasture
1150,3613837.537,5018916.972,1102.637,se cor horse shed
1151,3613834.596,5018931.972,1101.319,gs
1152,3613848.058,5018917.625,1102.299,gs
1153,3613854.351,5018917.333,1101.646,shed ne cor horse

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1154,3613854.279,5018900.317,1102.845,shed nw cor horse
1155,3613837.026,5018900.801,1103.308,shed sw cor horse
1156,3613838.977,5018893.969,1103.834,gs
1157,3613838.647,5018890.891,1104.172,gs
1158,3613838.606,5018888.429,1104.773,gs
1159,3613830.397,5018967.343,1101.374,wfp 6"
1160,3613835.163,5018953.226,1100.799,gs
1161,3613848.905,5018962.656,1100.112,gs
1162,3613840.129,5018968.722,1100.908,wfp 6"
1163,3613838.869,5018978.184,1100.862,wfp 6"
1164,3613837.364,5018996.583,1100.730,wfp 6"
1165,3613830.001,5019028.345,1100.248,gs
1166,3613831.016,5018998.096,1101.118,gs
1167,3613863.334,5019004.685,1096.232,fmisc metal gate/ tb
1168,3613901.782,5019000.089,1090.163,gs
1169,3613895.998,5019000.221,1090.425,gs
1170,3613894.338,5019000.705,1089.618,toe
1171,3613891.248,5019001.008,1089.178,fl ditch
1172,3613890.562,5019000.268,1089.306,toe
1173,3613890.018,5018998.814,1090.357,gs
1174,3613883.876,5018997.286,1090.730,gs
1175,3613905.447,5019004.522,1090.266,gs
1176,3613912.766,5019007.594,1091.436,gs
1177,3613922.841,5019011.948,1093.634,gs grass/field
1178,3613963.945,5019028.103,1098.008,gs field
1179,3614009.674,5019041.110,1103.078,gs field
1180,3613825.018,5019026.449,1102.307,gs
1181,3613827.335,5018998.862,1102.394,gs
1182,3613825.911,5018997.376,1102.145,shed nw cor
1182_REF1,3613826.379,5018997.554,1102.141,Ref. Pt.
1182_REF2,3613826.190,5018996.960,1102.148,Ref. Pt.
1183,3613704.967,5019315.529,1091.712,top 8" cmp slotted stndpipe 10.17'to fl
1184,3613660.875,5019321.121,1084.329,trd 6"
1185,3613605.803,5019360.254,1083.065,trd 6"
1186,3613676.347,5019442.001,1086.558,gs field
1187,3613655.010,5019387.646,1085.058,gs field
1188,3613643.246,5019360.841,1084.564,gs grass/field
1189,3613640.894,5019354.116,1084.065,gs
1190,3613639.843,5019352.674,1084.383,gs
1191,3613630.264,5019335.512,1083.250,gs
1192,3613629.360,5019334.749,1082.709,fl ditch
1193,3613628.210,5019332.471,1083.329,gs
1194,3613620.496,5019318.604,1084.525,gs grass/field
1195,3613608.576,5019276.909,1087.134,gs field
1196,3613605.527,5019233.631,1088.718,gs field
1197,3613560.828,5019262.493,1089.417,gs field
1198,3613588.013,5019323.648,1085.707,gs field
1199,3613597.749,5019335.339,1083.601,gs grass/field
1200,3613602.841,5019331.811,1083.650,wet area lateral?

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1201,3613603.010,5019347.749,1082.949,gs
1202,3613596.545,5019337.961,1083.185,gs
1203,3613603.459,5019349.369,1082.661,fl ditch
1204,3613605.112,5019350.504,1082.907,GS
1205,3613607.406,5019352.846,1082.857,GS
1206,3613613.015,5019360.122,1083.820,GS
1207,3613618.309,5019366.879,1084.188,GS
1208,3613623.890,5019374.274,1084.296,GS grass/field
1209,3613646.685,5019414.532,1084.637,GS field
1210,3613664.489,5019457.438,1085.286,GS field
1211,3613628.846,5019480.205,1083.251,GS field
1212,3613603.864,5019439.797,1082.444,GS field
1213,3613582.762,5019410.390,1083.348,GS grass/field
1214,3613579.179,5019406.735,1083.925,GS crossing
1215,3613555.223,5019383.078,1084.836,GS crossing/field
1216,3613524.865,5019348.767,1085.752,GS field
1217,3613497.496,5019318.363,1087.870,GS field
1218,3613563.914,5019367.239,1084.634,GS field
1219,3613565.525,5019370.057,1084.251,GS grass/field
1220,3613563.263,5019381.303,1084.527,GS
1221,3613567.985,5019382.063,1082.595,GS
1222,3613572.852,5019380.924,1081.899,fl ditch
1223,3613570.179,5019383.651,1081.430,fl ditch
1224,3613568.289,5019384.669,1081.345,fl ditch
1225,3613578.052,5019386.644,1081.621,fl ditch
1226,3613574.086,5019386.927,1081.378,fl ditch
1227,3613568.173,5019384.905,1082.451,cmp 12" top 1.08' to fl
1228,3613572.499,5019388.263,1082.415,cmp 12" top 1.12' to fl
1229,3613574.628,5019382.877,1081.902,gs
1230,3613571.306,5019385.690,1081.847,gs
1231,3613569.013,5019387.841,1083.511,gs
1232,3613567.963,5019384.938,1082.598,gs
1233,3613572.058,5019388.799,1082.589,gs
1234,3613574.033,5019388.767,1081.470,gs
1235,3613573.773,5019391.412,1083.717,gs
1236,3613583.795,5019396.086,1083.806,gs
1237,3613582.635,5019391.832,1082.635,gs
1238,3613571.198,5019415.241,1083.273,gs
1239,3613564.859,5019417.470,1081.771,gs
1240,3613560.990,5019406.187,1081.461,gs
1241,3613563.340,5019403.602,1082.879,gs
1242,3613558.585,5019398.555,1082.914,gs
1243,3613556.275,5019401.261,1080.982,gs
1244,3613554.801,5019396.454,1082.878,gs
1245,3613552.644,5019396.666,1080.965,gs
1246,3613551.729,5019395.274,1083.275,gs
1247,3613559.126,5019402.855,1081.510,cmp 12" top 0.94' to fl
1248,3613554.549,5019396.736,1081.419,cmp 12" fl
1249,3613553.943,5019397.463,1080.867,fl ditch

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1250,3613558.781,5019402.874,1080.474,fl ditch
1251,3613482.399,5019379.315,1083.665,gs grass/field
1252,3613489.826,5019387.753,1084.069,gs field
1253,3613521.937,5019438.375,1081.796,gs grass/field
1254,3613528.479,5019443.751,1080.795,gs
1255,3613531.967,5019446.322,1080.530,fl ditch
1256,3613535.210,5019448.905,1080.933,gs
1257,3613540.882,5019454.969,1080.829,gs grass/field
1258,3613550.099,5019464.223,1081.203,gs field
1259,3613583.444,5019499.263,1081.399,gs field
1260,3613611.500,5019530.683,1081.368,gs field
1261,3613570.758,5019562.818,1080.722,gs field
1262,3613538.369,5019525.872,1080.942,gs field
1263,3613510.298,5019498.676,1080.429,gs field
1264,3613505.951,5019495.024,1080.386,gs grass/field
1265,3613494.173,5019481.340,1079.890,fl ditch
1266,3613480.466,5019463.259,1082.014,gs
1267,3613509.202,5019448.636,1081.888,gs grass/field
1268,3613493.001,5019456.178,1082.145,gs grass/field
1269,3613485.945,5019453.316,1082.437,gs grass/field
1270,3613483.314,5019418.302,1082.825,gs grass/field
1271,3613479.317,5019418.308,1082.510,fnb start
1272,3613477.404,5019441.276,1082.410,fnb e-w
1273,3613477.058,5019454.341,1082.293,fnb e-w
1274,3613475.652,5019459.067,1081.663,tped
1275,3613475.700,5019463.047,1081.280,sign tele cable n-s
1276,3613475.551,5019452.352,1082.014,sign tele cable e-w
1277,3613475.756,5019465.513,1081.660,fnb end
1278,3613476.398,5019475.423,1081.041,gs
1279,3613475.394,5019483.836,1079.526,gs
1280,3613474.800,5019494.280,1079.756,gs
1281,3613473.367,5019501.571,1080.305,gs
1282,3613471.923,5019530.891,1080.058,gs
1283,3613473.075,5019537.898,1079.454,gs grass/field
1284,3613468.006,5019566.409,1079.115,gs grass/field
1285,3613479.648,5019566.869,1079.870,gs field
1286,3613506.955,5019523.461,1080.555,gs field
1287,3613499.799,5019515.171,1080.404,gs field
1288,3613494.869,5019511.655,1079.702,gs field
1289,3613493.228,5019510.839,1080.003,gs grass/field
1290,3613490.433,5019508.380,1079.967,gs
1291,3613479.915,5019499.480,1080.449,gs
1292,3613468.004,5019465.071,1079.377,toe
1293,3613460.265,5019466.283,1079.613,fl ditch
1294,3613457.849,5019496.484,1078.992,fl ditch
1295,3613461.411,5019496.133,1079.258,gs
1296,3613472.749,5019491.639,1079.677,gs
1297,3613458.809,5019528.258,1078.391,fl ditch
1298,3613461.599,5019528.633,1078.877,gs

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1299,3613469.930,5019527.856,1079.762,gs
1300,3613451.944,5019526.565,1079.316,toe
1301,3613453.693,5019498.919,1079.271,toe
1302,3613452.945,5019457.063,1079.770,toe
1303,3613531.948,5019422.480,1081.624,gs gass/field
1304,3613526.547,5019415.922,1082.863,gs field
1305,3613545.405,5019391.280,1084.026,gs field
1306,3613547.398,5019396.518,1082.793,gs grass/field
1307,3612764.794,5018801.150,1105.952,915 -5'5"
1308,3612812.220,5018806.143,1106.680,915 -6'2"
1309,3612414.793,5018819.746,1113.654,700 -4'
1310,3612443.454,5018819.382,1113.125,700 -4'
1311,3612473.410,5018818.743,1112.699,700 -4'
1312,3612523.979,5018882.285,1105.783,300 ditch
1313,3612484.796,5018884.515,1106.512,300 ditch
1314,3612440.823,5018881.763,1107.129,300 ditch
1315,3612412.483,5018881.955,1107.802,300 ditch
1316,3613346.475,5018795.561,1100.371,422 36"
1317,3613346.982,5018868.428,1098.227,422 36"
5000,3614261.810,5019730.206,1093.312,GS
5001,3614262.867,5019813.752,1093.046,GS
5002,3614263.452,5019898.063,1092.785,GS
5003,3614263.971,5019983.574,1093.821,GS
5004,3614264.937,5020066.768,1094.528,GS
5005,3614264.297,5020147.224,1094.530,GS
5006,3614183.618,5020144.484,1091.002,GS
5007,3614182.990,5020060.964,1090.873,GS
5008,3614182.412,5019977.330,1091.370,GS
5009,3614182.008,5019897.406,1092.429,GS
5010,3614180.502,5019812.912,1093.462,GS
5011,3614179.442,5019733.819,1094.902,GS
5012,3614109.562,5019737.983,1097.668,GS
5013,3614110.797,5019819.606,1096.620,GS
5014,3614111.328,5019901.060,1098.309,GS
5015,3614112.771,5019980.678,1096.840,GS
5016,3614114.161,5020062.643,1094.420,GS
5017,3614116.567,5020147.352,1092.369,GS
5018,3614051.186,5020145.656,1098.194,GS
5019,3614047.936,5020066.945,1102.791,GS
5020,3614044.422,5019987.808,1104.676,GS
5021,3614043.965,5019909.577,1103.854,GS
5022,3614043.173,5019826.542,1101.541,GS
5023,3614042.337,5019746.105,1100.718,GS
5024,3613994.573,5019746.843,1101.647,GS
5025,3613995.051,5019828.852,1101.989,GS
5026,3613996.155,5019909.847,1103.372,GS
5027,3613996.644,5019991.654,1103.579,GS
5028,3613998.053,5020063.907,1103.129,GS
5029,3613996.883,5020147.085,1101.678,GS

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5030,3613943.591,5020149.260,1102.351,GS
5031,3613940.800,5020070.100,1102.305,GS
5032,3613938.065,5019990.718,1100.481,GS
5033,3613937.403,5019912.996,1100.478,GS
5034,3613937.682,5019834.054,1101.404,GS
5035,3613936.651,5019756.875,1101.061,GS
5036,3613881.337,5019760.681,1098.378,GS
5037,3613882.193,5019824.092,1099.388,GS
5038,3613882.846,5019899.195,1096.841,GS
5039,3613883.221,5019955.762,1095.445,GS
5040,3613883.924,5020036.011,1096.703,GS
5041,3613882.797,5020148.043,1099.961,GS
5042,3613813.041,5020148.817,1095.914,GS
5043,3613812.579,5020097.107,1097.924,GS
5044,3613811.834,5020056.288,1098.214,GS
5045,3613811.060,5019985.210,1094.567,GS
5046,3613810.656,5019937.236,1093.609,GS
5047,3613809.675,5019861.816,1094.941,GS
5048,3613809.384,5019781.882,1094.175,GS
5049,3613991.776,5019864.018,1102.340,GS ROCK+SAND
5050,3613965.708,5019908.137,1102.094,GS ROCK+SAND
5051,3613955.033,5019945.627,1102.019,GS ROCK+SAND
5052,3613952.820,5019995.109,1102.170,GS ROCK+SAND
5053,3613936.631,5020050.549,1101.719,GS ROCK+SAND
5054,3613958.160,5020088.700,1103.047,GS ROCK+SAND
5055,3614011.264,5020103.994,1102.604,GS ROCK+SAND
5056,3614047.998,5020115.465,1099.764,GS ROCK+SAND
5057,3614079.114,5020077.947,1098.220,GS ROCK+SAND
5058,3614097.364,5020026.141,1097.658,GS ROCK+SAND
5059,3614105.084,5019966.763,1098.312,GS ROCK+SAND
5060,3614104.189,5019919.046,1099.413,GS ROCK+SAND
5061,3614070.115,5019882.122,1101.986,GS ROCK+SAND
5062,3614021.639,5019877.894,1103.224,GS ROCK+SAND
5063,3614022.456,5019928.090,1104.240,GS ROCK+SAND
5064,3614022.948,5019987.074,1104.599,GS ROCK+SAND
5065,3614024.613,5020045.260,1103.467,GS ROCK+SAND
5066,3613984.368,5020031.389,1102.800,GS ROCK+SAND
5067,3613975.470,5019985.187,1103.155,GS ROCK+SAND
5068,3614059.203,5019958.840,1104.287,GS ROCK+SAND
5069,3614061.247,5020004.518,1103.732,GS ROCK+SAND
5070,3614055.689,5020044.156,1103.064,GS ROCK+SAND
7000,3613579.865,5019462.547,1078.897,top vcp 8
7001,3613674.655,5019350.617,1081.694,top 8 hdp y
7002,3613675.868,5019350.258,1081.759,top 8 hdp y
7003,3613676.022,5019348.805,1081.738,top 8 hdp y
7004,3614250.041,5018779.988,1096.868,top 8 vcp
7005,3613685.580,5019350.430,1082.064,new tile
7006,3613700.679,5019344.314,1085.688,new tile
7007,3613730.028,5019328.550,1086.808,new tile

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7008,3613752.394,5019311.642,1088.533,new tile
7009,3613773.964,5019293.030,1088.754,new tile
7010,3613789.407,5019280.881,1088.219,new tile
7011,3613808.847,5019263.438,1088.268,new tile
7012,3613832.970,5019242.188,1088.587,new tile
7013,3613860.565,5019215.479,1089.374,new tile
7014,3613882.569,5019190.212,1090.438,new tile
7015,3613898.726,5019165.625,1091.860,new tile
7016,3613909.531,5019138.780,1093.296,new tile
7017,3613917.201,5019106.245,1093.704,new tile
7018,3613921.141,5019070.009,1095.045,new tile
7019,3613927.213,5019034.050,1094.237,new tile
7020,3613942.174,5018999.362,1095.181,new tile
7021,3613961.557,5018969.339,1095.660,new tile
7022,3613988.417,5018936.550,1096.676,new tile
7023,3614013.864,5018912.466,1096.820,new tile
7024,3614047.433,5018889.832,1097.166,new tile
7025,3614087.517,5018877.092,1095.892,new tile
7026,3614125.690,5018876.057,1097.743,new tile
7027,3614161.525,5018873.285,1097.156,new tile
7028,3614196.316,5018860.867,1098.113,new tile
7029,3614255.910,5018771.108,1096.921,top 8 vcp
7030,3614249.764,5018780.178,1096.828,top 8 vcp
7031,3613676.534,5019346.573,1081.843,new tile p
7032,3613676.679,5019324.836,1083.559,new tile p
7033,3613681.161,5019295.957,1085.048,new tile p
7034,3613689.533,5019271.298,1086.807,new tile p
7035,3613709.441,5019247.063,1088.417,new tile p
7036,3613739.804,5019226.340,1089.385,new tile p
7037,3613774.046,5019209.303,1088.773,new tile p
7038,3613801.344,5019192.523,1088.752,new tile p
7039,3613826.404,5019167.836,1089.278,new tile p
7040,3613842.619,5019139.036,1089.929,new tile p
7041,3613849.116,5019110.349,1090.853,new tile p
7042,3613852.137,5019082.239,1090.487,new tile p
7043,3613854.504,5019052.224,1093.210,new tile p
7044,3613860.490,5019018.711,1094.495,new tile p
7045,3613867.880,5018985.902,1095.593,new tile p
7046,3613879.366,5018956.504,1097.143,new tile p
7047,3613896.399,5018927.148,1097.042,new tile p
7048,3613916.208,5018898.530,1096.250,new tile p
7049,3613932.910,5018876.059,1097.326,new tile p
7050,3613958.478,5018843.829,1096.870,new tile p
7051,3613975.811,5018821.215,1098.978,new tile p
7052,3614215.414,5018849.881,1098.880,new tile
7054,3613898.954,5018863.533,1094.111,new tile 6 p
7055,3613925.589,5018885.676,1093.722,new tile p tee
7056,3614250.075,5018779.967,1096.921,top 8"hdpe
7057,3614229.986,5018836.936,1095.529,top 8"hdpe

6935 dd128 2020-10-29 cs

7058,3614241.373,5018820.305,1095.939,top 8"hdpe
7059,3614250.678,5018802.281,1096.271,top 8"hdpe
7060,3614253.030,5018785.078,1096.516,top 8"hdpe
7061,3614252.033,5018777.022,1097.033,top 8"hdpe y
7062,3614216.578,5018848.802,1095.306,top 8"hdpe y
7063,3614224.333,5018829.493,1095.495,top 8"hdpe
7064,3614224.684,5018828.806,1095.282,top 6"hdpe
7065,3614229.193,5018819.740,1095.409,top 6"hdpe
7066,3614230.569,5018816.411,1095.378,top 6"hdpe
7067,3614233.028,5018803.728,1095.543,top 6"hdpe
7068,3614237.005,5018790.298,1095.653,top 6"hdpe
7069,3613983.010,5018807.874,1097.719,top 6"vcp
7070,3613993.671,5018799.214,1097.379,top 6"hdpe
7071,3613975.996,5018820.566,1095.489,top 6"hdpe
7072,3613985.617,5018810.178,1096.722,top 6"tee



Drainage Work Order Request For Repair

Hardin County

Date: 4/15/2020

Work Order #: WO00000291

Drainage District: DDs\DD 14 (51027)

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

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

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

Contact Phone: (641) 847-3273

Contact Email: jsweeney@cgaconsultants.com

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

Description:

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

Repair labor, materials and equipment: _____

Repaired By: _____ Date: _____

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

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

For Office Use Only

Approved: _____ Date: _____



Drainage Work Order Request For Repair

Hardin County

Date 4/20/2020

Work Order # _____

District # #14

Lateral Lat 2 & Main

Fund # _____

Township _____

Section 27, 34, 35wp 88

Rge 22 Qtr Sec _____

Repair Requested By Cynthia Iorger, Ronald Vierkandt, James Vierkandt

Address 15898 Co Hwy D41

Phone _____

Landowner Same

Address Same

Phone _____

Request Taken By _____

Available for Repair Now? ☒ Yes

Date Available _____

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

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

Repair labor, materials and equipment _____

Potential Wetlands? ☐ Yes-Repair existing tile only

☐ No-Repair and maintain tile

Repaired By: _____

Date: _____

Please send statement for services to:

Phone (641) 939-8111

Fax (641) 939-8245

Hardin County Auditor's Office

Attn: Tina Schlemme

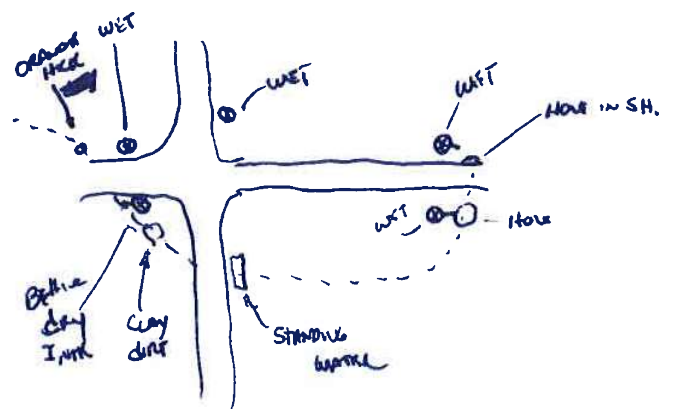
1215 Edgington Ave, Suite 1

Eldora, IA 50627

For Office Use Only

Approved: _____

Date: _____



226300002

D. No. 42

23100002

235100004

Drainage District:

#14 Main and Lateral 2

Investigation and Repair Summary:

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



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

See attached Tabulated Contractor Time and Materials sheet.

Additional Actions Recommended:

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



Tabulated Contractor Time and Materials

Date	Totals	7/7/2020	7/8/2020	7/9/2020	7/13/2020
Workman (hrs)	82 2/3	20	21 3/4	36 1/4	4 2/3
Mini Excavator (hrs)	25 1/3	6 1/3	7	9	3
Skidloader (hrs)	26	6 1/3	7 3/4	9	3
CCTV inspection (ft.)	90		90		
4" Single Wall HDPE Tile (ft.)	162/5			162/5	
5" Single Wall HDPE Tile (ft.)	82/3			82/3	
6" Single Wall HDPE Tile (ft.)	22/5				22/5
8" Dual Wall HDPE Tile (ft.)	7 1/2			7 1/2	
15" Dual Wall HDPE Tile (ft.)	23/5			23/5	
4"x5"x5" HDPE Tee (ea.)	1			1	
5"x8"x8" HDPE Tee (ea.)	2			2	
4" Coupler (ea.)	3			3	
5" Coupler (ea.)	2			2	
6" Coupler (ea.)	1				1
Rock Bedding	Yes				
Concrete Collars	Yes				
Rock Bedding	Yes				
Crop Damage (ac.)	1/2			1/2	

Tabulated Defects

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

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/07/2020

DAYS OF WEEK:

S M ☒ W T F S

PROJECT NUMBER:

HARDIN DD WO # 292

COUNTY, ROUTE, ROAD:

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

SHEET NO.

1 OF 4

LOCATION:

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

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

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

JOB # 6844 DD 14 SURVEY

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

3:00 P.M. GPS BASE WAS SET UP WITH OBSERVER LOOKING OVER
INFORMATION FOR A GOOD PLACE TO START CHECKING.
CREW WAS NOW @ INTERSECTION OF ^{CO HWY D-41} & CO HWY S-27 WITH EQUIPMENT.
OBSERVER TOLD CREW TO CHECK INTAKES TO SEE IF THEY ARE DRY OR
WET & THEN START RUNNING LOCATOR CABLE THROUGH
INTAKES TO FIND OBSTRUCTION.

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

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

3:30 P.M. OBSERVER CHECKED GPS INTO GPS # 21 SURVEY MARK NAIL
FLUSH IN AGE IN CO HWY S-27 ABOUT 2632' \pm SOUTH OF CO HWY D-41 WITH
BOTH HORIZONTAL AND VERTICAL POSITION CHECKING GOOD.

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

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

Observer's Signature:

Dean Penning

Date Prepared:

07/07/2020

Reviewed by:

☐ Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/07/2020

DAYS OF WEEK:

S M W T F S

PROJECT NUMBER: HARDIN DD WO# 292

6844.5/DD#14

COUNTY, ROUTE, ROAD: INTERSECTION OF CO HWY
S-27 & CO HWY D41

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

SHEET NO.

2 OF 4

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

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

JOB# 6844 DD14, SURVEY

HOLE HAS 2.0' TO 2.5' OF WATER SITING IN
HOLE. OBSERVER ALSO NOTICED THAT FL OF DITCH ON BOTH EAST
& WEST SIDES OF CO HWY S27 IN SAME AREA WAS SATURATED
BUT NO WATER STANDING IN DITCH. OBSERVER CALLED ADAM
THAT HOLE THAT SOMEONE PREVIOUSLY EXCAVATED HAS
WATER SITING IN IT AND BOTH DITCHES ARE SATURATED SO
I WOULD SAY TILE IS PLUGGED DOWN STREAM.

3:44 P.M. PICTURE #404B SEE PICTURE FOR DETAILS.

3:50 P.M. OBSERVER AND CREW STARTED PUSHING LOCATE CABLE
THROUGH BEEHIVE INTAKE. LOCATE CABLE HIT A SPOT WHILE
PUSHING WITH SOME RESISTENCE BUT PUSHED THROUGH THIS
AREA (GPS# 235 @ 65.7') (OFFSET JOINT?). OBSERVER LOCATED
THIS SPOT FOR DOCUMENTATION, OBSERVER CONTINUED TO
PUSH LOCATE CABLE UNTIL IT HIT SOMETHING HARD. THIS TIME
CABLE COULD NOT PUSH ANY FURTHER DOWNSTREAM.

5:20 P.M. OBSERVER HAD LOCATING DEVICE HOOKED UP AGAIN AND STARTED
TO LOCATE TILE IN FIELD AND SHOOTING WITH GPS. SINCE
LOCATING END WAS NOT CABLE OBSERVER GUESSED WHERE HEAD
WAS LOCATED BY SIGNAL STRENGTH. OBSERVER TAPED CABLE AT
INSIDE EDGE OF INTAKE ABOVE TOP OF 6" CLAY TILE OUTLET AND
PULLED CABLE OUT OF TILE. OBSERVER LAYED CABLE ALONG
GRAVEL SHOULDER AND SHOT LENGTH WITH GPS FROM TAPE
TO END OF CABLE. OBSERVER CREATED A POINT ON POLYLINE
AT THIS FOOTAGE.

6:00 P.M. CREW ASKED OBSERVER WHICH WAY WAS SHORTER TO GET
OUT IN FIELD TO EXCAVATE AT OBSTRUCTION. OBSERVER SAID
ALONG LOCATES FROM N ROW OF CO HWY D-41. OBSERVER

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

Observer's Signature:

Dean Penning

Date Prepared

07/07/2020

Reviewed by:



Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/07/2020

PROJECT NUMBER: HARDIN DD WO# 292
6844.5 / DD#14
COUNTY, ROUTE, ROAD: INTERSECTION OF CO HWY
S-27 & CO HWY D-41
LOCATION: SE 1/4 SE 1/4 27-88-22, NE 1/4 NE 1/4 34-88-22,
8, NW 1/4 NW 1/4 35-88-22, INVESTIGATE
FOR PLUGGED TILE DD 14 MAIN OR LAT 2

DAYS OF WEEK:

S M W T F S

SHEET NO.

3 OF 4

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

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

JOB# 6844 DD14, SURVEY

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

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

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

7:15 P.M. PICTURE # 4049 &

PICTURE # 4050 SEE PICTURE FOR DETAIL

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

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

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

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

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

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

QUANTITIES

ADAM 2:40 - 9 6 1/3 HOURS
PERRY 2:40 - 8 5 1/3 HOURS
DYLAN 2:40 - 8 5 1/3 HOURS

KOLBELO SK85CS MINI EXCAVATOR 6 1/3 HOURS
CASE TR340 TRACKED SKIDLOADER 6 1/3 HOURS

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

Observer's Signature:

Dean Penning

Date Prepared:

07/07/2020

Reviewed by:



Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/07/2020

PROJECT NUMBER: HARDIN DD WO # 292

DAYS OF WEEK:

S M W T F S

COUNTY, ROUTE, ROAD: 6844.5 / DD # 14
INTERSECTION OF CO HWY
S-27 & CO HWY D41

SHEET NO.

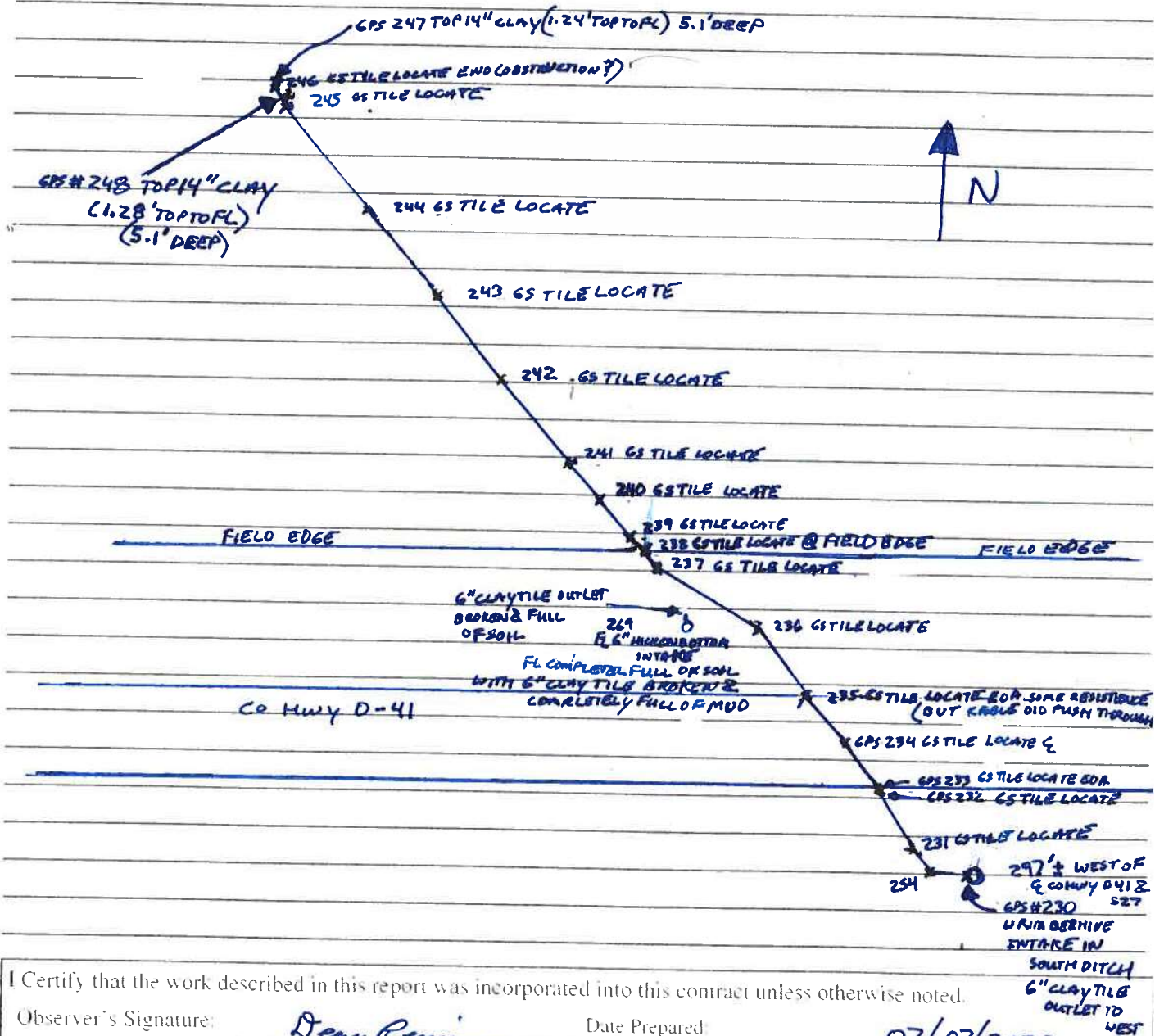
4 OF 4

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

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

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

JOB # 6844 DD14 SURVEY



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

Observer's Signature:

Dean Penning

Date Prepared:

07/07/2020

Reviewed by:

Engineer

Date Reviewed

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



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

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



NOT
CAVING
DOWN



07/08/2020

S	M	T	W	T	F	S
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1 OF 5

JOB# 6844 0014. SURVEY

Users: Ryken Standard Forms and Procedures\Company Forms\Construction Engineering Observation Report (1)

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/08/2020

PROJECT NUMBER:

NARROW DOWN # 292

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD:

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

SHEET NO.

2 OF 5

LOCATION:

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

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

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

JOB # 6844 DD14, SURVEY

8:51 A.M. PICTURE # 4051, 8:52 A.M. PICTURE # 4052

& PICTURE # 4053 SEE PICTURES FOR DETAILS.

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

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

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

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

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

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

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

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

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

Observer's Signature:

Dean Penning

Date Prepared:

7/08/2020

Reviewed by:

Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/08/2020

PROJECT NUMBER:

HARDIN DDW04252

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD:

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

SHEET NO.

3 OF 5

LOCATION:

SE 1/4 SE 1/4 27-28-22, NE 1/4 NE 1/4 34-28-22,
8 NW 1/4 NW 1/4 35-28-22 INVESTIGATE
FOR PLUGGED TILE DD14 MAIN OR LAT 2

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

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

JOB# 6844 DD14, SURVEY

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

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

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

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

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

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

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

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

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

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

Observer's Signature:

Dean Perry

Date Prepared:

7/08/2020

Reviewed by:

Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/08/2020

PROJECT NUMBER:

HARDIN DDWO# 292

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD:

6844.5/DD#14
INTERSECTION OF HWY
5-27 & CO HWY/D41

SHEET NO.

4 OF 5

LOCATION:

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

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

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

JOB# 6844 DD14, SURVEY

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

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

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

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

19.0' END TELEVISION 5" HDPE SW PERF TILE FROM WEST & FROM EAST

THAT TIE IN AT SAME LOCATION WITH CLAY TILE SIDES CRACKED

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

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

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

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

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

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

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

10.1' LATERAL LEFT

LATERAL RIGHT @ 2 O'CLOCK

84.1' CHUNK OF TILE IN FL

2:16 P.M. 69.8' TEE. END CAMERA. PAUL ENDED CAMERA THINKING

IF HE WENT ANY FURTHER CAMERA WOULD GET STUCK IN CONNECTION

8" TO 14" CONNECTION IN GOOD CONDITION WITH GOOD FLOW

IN MAIN. PAUL AND OBSERVER LOCATED APPROXIMATE LOCATION

OF MAIN/LAT 2 CONNECTION AND SHOT WITH GPS.

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

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

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

3:10 P.M. PAUL WAS WONDERING IF ANYTHING ELSE NEEDS TELEVISIONED. LEE

SAID SINCE WE HAVE BLOCKAGE ISSUE RESOLVED THERE IS NO REASON
TO TELEVISION ANYTHING MORE. PAUL LEFT SITE FOR DAY. PAUL WILL DROP

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

Observer's Signature:

Dean Penny

Date Prepared:

7/08/2020

Reviewed by:

Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/08/2020

PROJECT NUMBER:

HARDIN DD W0 #292

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD:

6844.5/00H14
5-27 & CO HWY 041
INTERSECTION OF COMWY

SHEET NO.

5 OF 5

LOCATION:

SE 1/4 SE 1/4 27-38-22, NE 1/4 NE 1/4 34-58-22
& NW 1/4 NW 1/4 35-08-22 INVESTIGATE
FOR PLUGGED THE DD14 MAIN OR LAT 2

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

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

JOB # 6844 DD14 SURVEY

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

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

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

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

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

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

QUANTITIES

ADAM 8-12:15 1:45-4:30 7 HOURS 12:15-1:15 HOUR GETTING BAR
1:15-1:45 1/2 HOUR LETTING TRACK BACK ON MINI EXCAVATOR
PERRY 8-12:15, 12:45-4:15 7 3/4 HOUR
12:15-12:45 1/2 HOUR LUNCH
DYLAN 8-12:15, 12:45-4:15 7 3/4 HOUR
12:15-12:45 1/2 HOUR

PAUL WITH CAMERA EQUIPMENT 2 1/3 HOURS

KOLBELCO SK 85CS MINI EXCAVATOR 7 HOURS

CASE TR 340 TRACKED SKID LOADER 7 3/4 HOURS

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

Observer's Signature:

Dean Penning

Date Prepared:

07/08/2020

Reviewed by:

Engineer

Date Reviewed



Clapsaddle-Garber Associates, Inc.

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

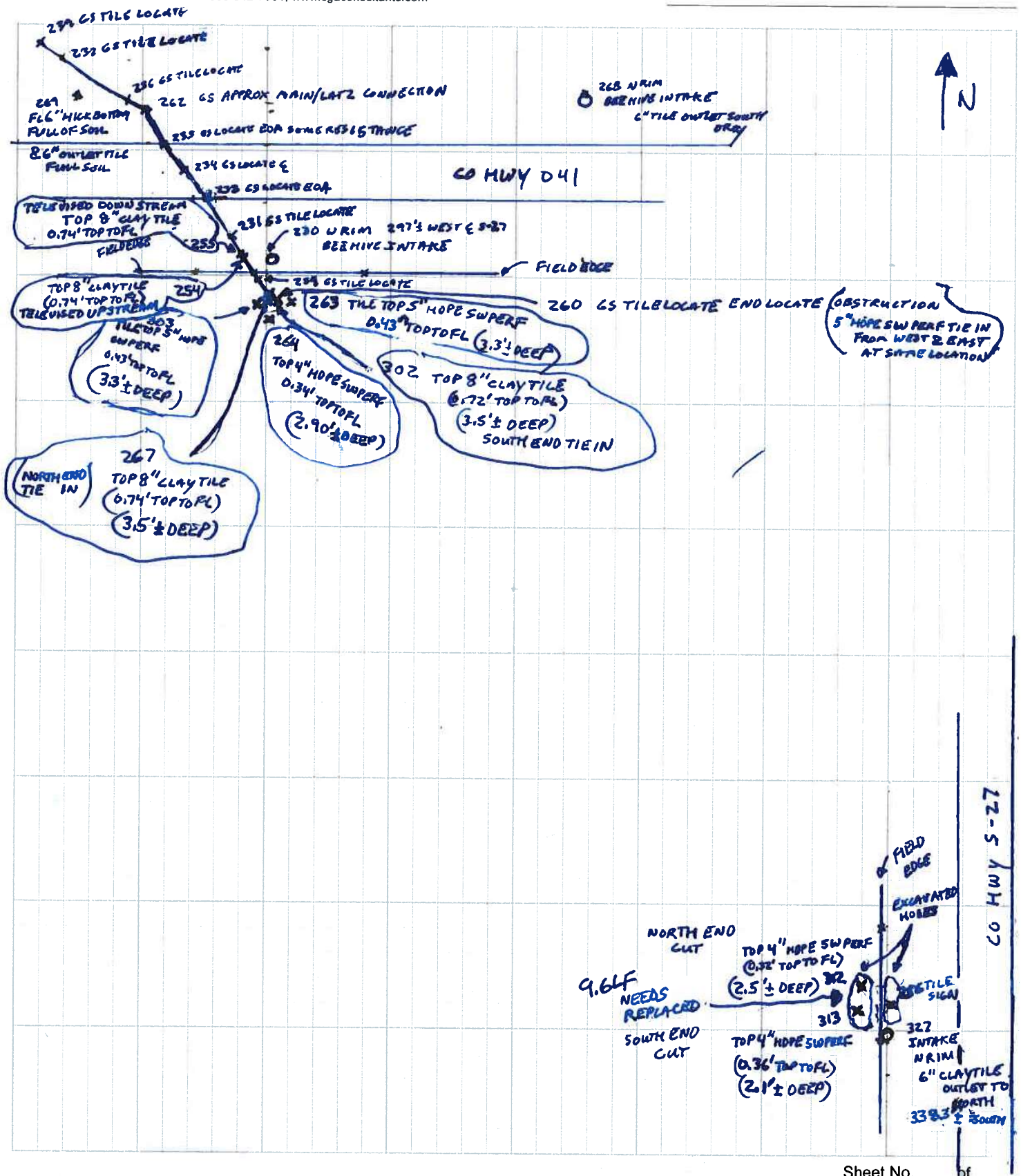
365.6
300.657

6844.5 / DO#14

07/08/2020

D.R.A.

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



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



(3.7' ± DEEP)

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

07/08/2020
08:51

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



N

07/08/2020
08:52

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

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



THINKS
THIS TILE
IS
ABANDONED



07/08/2020
08:52

PICTURE #4054 IS LOOKING EAST IN SOUTH DITCH CO HWY 04/
297[±] WEST OF E CO HWY 5-27 SHOWING CREW EXPOSING LATZ TILE
WEST OF BEEHIVE INTAKE SO CREW CAN RUN LOCATE CABLE UPSTREAM
TO CHECK FOR PLUGGED TILE.



N
↖



N
↗

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

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



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

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



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

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

PICTURE # 4060 IS LOOKING UPSTREAM INSIDE 8" CLAY TILE @ 21.3' UPSTREAM FROM BEEHIVE INTAKE SHOWING 5" PERF SW HOPE TILE FROM EAST & FROM WEST CONNECTING AT SAME LOCATION WITH SIDES CRACKED AND TOP CAVING DOWN WITH TILE PLUGGED UPSTREAM WITH SOIL & ROOTS



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

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



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

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



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

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



N

GPS#253
TOP 8" CLAY TILE

GPS#254
TOP 8" CLAY
TILE

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

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



5" HOPE SUPER TILE



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

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



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

07/08/2020
17:32

GPS#247 TOP 14" CLAY 1.24' TOP TO FL



268
NRIM
BEEHIVE
INTAKE

N
→

07/08/2020
17:39

PICTURE # 4072 IS LOOKING WEST SHOWING BEEHIVE
INTAKE IN NORTH DITCH OF CO HWY 04/ 170.8' ± WEST OF &
CO HWY 5-27

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/09/2020

DAYS OF WEEK:

S M T W Th F S

SHEET NO.

1 OF 6

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

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

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

7:40 A.M. OBSERVER LEFT OFFICE FOR JOBSITE
8:20 A.M. OBSERVER ARRIVED ON SITE AND SET GPS BASE ON GPS#23

3/4" IRON ROD 0.2' DEEP SW CORNER FIELD DRIVE IN SE QUADRANT
OF CO HWY D41 & CO HWY S27.

8:40 A.M. ADAM ON SITE AND DROPPED OFF CONCRETE MIXER

8:45 A.M. OBSERVER HAD GPS BASE SETUP AND CHECKED INTO GPS#21 SURVEY
MARK NAIL FLUSH IN AGL IN CO HWY S-27 ABOUT 2632' ± SOUTH OF
E CO HWY D-41 WITH BOTH HORIZONTAL AND VERTICAL POSITION CHECKING
GOOD.

8:58 A.M. PICTURE#4088, 9:08 A.M. PICTURE#4089, & 9:18 A.M. PICTURE#4090 SEE PICTURE
FOR DETAILS.

9:30 A.M. OBSERVER STARTED SHOOTING CORN DAMAGE ON NORTH SIDE
OF CO HWY D41. ADAM LEFT SITE TO GET ANOTHER
LOAD OF 1" CLEAN ROCK WITH TRUCK AND DUMP TRAILER.

9:30 A.M. PICTURE#4091, 9:38 A.M. PICTURE#4092 SEE PICTURES FOR DETAILS

9:40 A.M. RON VIERKANDT STOPPED ON SITE AND OBSERVER INFORMED

9:45 A.M. RON THAT CREW WILL BE WORKING ON MAKING TILE TODAY

10:00 A.M. OBSERVER FINISHED SHOOTING CORN DAMAGE #1 SHOTS

(SEE SHEET FOR LOCATION OF CORN DAMAGE#1) GPS#270 TO GPS#300 0.371 ACRES. ALSO ADAM WAS
BACK WITH LOAD OF 1" CLEAN ROCK, SITE WAS
ALSO RECEIVING RAIN (RADAR SHOWED IT WOULD NOT LAST LONG)

10:20 A.M. RAIN WAS DONE AT SITE

10:55 A.M. PICTURE#4093 AND PICTURE#4094 SEE PICTURE FOR DETAILS

10:30 A.M. CREW WAS PREPPING 14" CLAY TILE REPAIR 168' ± NORTH
OF E OF CO HWY D41 IN FIELD.

11:56 A.M. PICTURE#4095, 12:02 PICTURE#4096, & 12:03 PICTURE#4097 SEE PICTURE FOR DETAILS

11:00 A.M. CARSON ARRIVED ON SITE

12:34 P.M. PICTURE#4098 & 12:43 PICTURE#4099 SEE PICTURE FOR DETAILS.

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

Observer's Signature:

Dean Penning

Date Prepared:

07/09/2020

Reviewed by:



Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/09/2020

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

DAYS OF WEEK:

S M T W Th F S

SHEET NO.

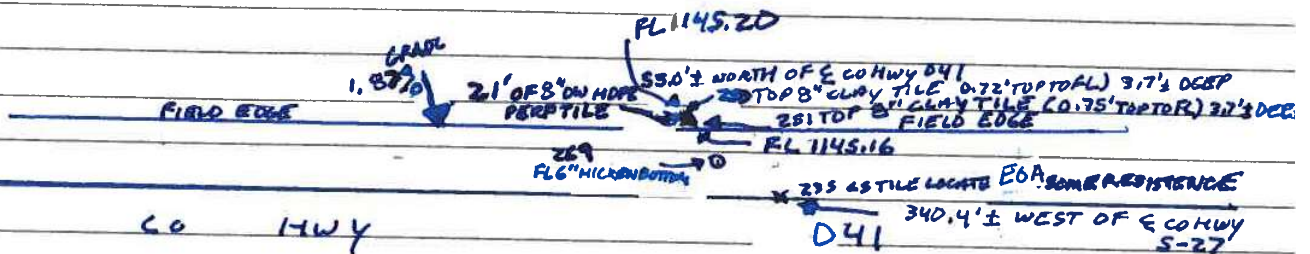
2 OF 6

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

REPAIRS NORTH OF
CO HWY D41

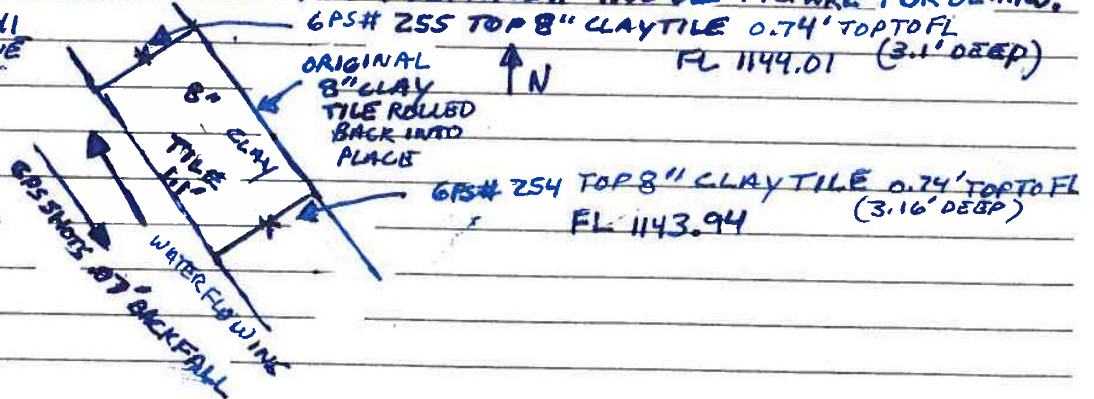
168'± NORTH OF E CO HWY D41

FL 1142.99
GPS 147 TOP 14" CLAY 1.24' TOPTO FL (5.1'± DEEP)
2.6 LF 15" OW HOPE NONPERF TILE
GPS 148 TOP 14" CLAY 1.28' TOPTO FL (5.1'± DEEP)
FL 1143.03



1:00 P.M. CREW STARTED FIXING TILE ON SOUTH SIDE OF CO HWY D41
1:20 P.M. PICTURE # 4102, 1:27 PICTURE# 4103 SEE PICTURE FOR DETAILS
1:58 P.M. PICTURE# 4104 & 2:02 PICTURE# 4105 & PICTURE# 4106 SEE PICTURE FOR DETAILS
2:08 P.M. PICTURE# 4107 & 2:21 P.M. PICTURE# 4108 SEE PICTURE FOR DETAILS.

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



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

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

Observer's Signature:

Dean Penning

Date Prepared:

07/09/2020

Reviewed by:

☐ Engineer

Date Reviewed

07/09/2020

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

3 OF 6

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

3:26 P.M. PICTURE# 4114 & 3:46 P.M. PICTURE#

Row

5th HOPE SWPCT
THE TIE IN
CONNECTIONS TO
LATERAL HZ

OUT JOINT CONNECTION
3/4 CONCRETE COLLAR

(295' ± WEST OF E CO HWY 5-27
46.5' ± SOUTH OF E CO HWY 041.
267 TOP 8" CLAY TILE (0.74' TOPTO FL) 3

2.2 LF OF 5" HOPE
PERFITLE

GPS#307 TOP 5" x 5" X 1/4"
HONEY TREE
3.5' LOOP

3/4 concrete
column

5" HDPE
INTERNAL
SNAP COUPLER

6PSH 303 TOP EXISTING
5" HOPE PERK
THE (0.4)' TOP TO
3.3' ± DEEP
FL 1144.59'

GPS 305
TOP 8" x 8" x 3
HOPE TREE
(3.55' OVER)

3/4 CONCRETE COLLAR
1.0' x 1.5' 6" x 6" SQUARE
WIRE MESH
2.0' x 2.0' FABRIC

FL 1144.61

GPS # 263 TOP 5" HOPS PERB
0.43' TOP TO FL 3.11' DIA

GPS#308 TOP 5" HOPE PERF TILE @ THE

1.2 LF OF 8" DIA HDPE NON PERFTILE
CPS # 302 TOP 8" CLAY TILE

0.72' TOPTO FL
BUTT JOINT (3.47' DEEP)

JOINT CONNECTION
WITH 3/4 CONCRETE
COLLAR

4" HOPE INTERNAL
SMA COUPLER

8.34' TOP TO FL 2.9' ± DEEP
FL 1145.091

6PS#302 TOP 8" CLAY 1144.85
-0.72
1144.13

$$\frac{1144.13 - 1144.03}{3.30} = .0303/\text{FT} \quad \text{GRADE 8" LATERAL \#2}$$

GPS# 267 TOP 8" CLAY 1144.77
- 0.74
1144.03

Observer's Signature: _____

Date Prepared:

Reviewed by:

☐ Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/09/2020

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

DAYS OF WEEK:

S M T W Th F S

SHEET NO.

4 OF 6

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

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

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

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

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

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

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

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

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

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

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

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

QUANTITIES

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

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

LARSON 11 TO 7 8 HOURS

KOLBELCO SK 85 CS MINI EXCAVATOR 10 TO 7 9 HOURS

CASE TR 340 TRACKED SKIDLOADER 10 TO 7 9 HOURS

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

8" CLAY REPAIR N. OF D41 1/2 HOUR

8" CLAY REPAIR SOUTH D41 1/2 HOUR

REST OF CONCRETE COLLARS. 1 HOUR

REPAIRS

① 14" CLAY TILE REPAIR (NORTH OF D41) 2.6 LF 15" Ø DW HOPE WOOD PERF TILE
2- 2.0 X 3.5' ENGINEERING FABRIC
11.0' X 4.0' & 1.5' X 4.0' 6" X 6" SQUARE WIRE MESH

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

Observer's Signature:

Dean Penning

Date Prepared:

07/09/2020

Reviewed by:

☐ Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/09/2020

PROJECT NUMBER:

HARDIN DD W0# 292

DAYS OF WEEK:

S M T W Th F S

COUNTY, ROUTE, ROAD:

6844.5/00H14

SHEET NO.

5 OF 6

LOCATION:

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

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

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

② 8" CLAY TILE REPAIR (NORTH OF D41)

2.0' X 3.0' ENGINEER FABRIC

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

2.1 LF 8" DW HDPE NONPERF TILE

8- 60LB BAGS OF QUIKRETE HIGH STRENGTH CONCRETE

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

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

2.0' X 2.0' ENGINEERING FABRIC

5- 60LB BAGS OF QUIKRETE HIGH STRENGTH CONCRETE

④ 5" HDPE PERF TILE TIE IN REPAIR

(HA) 8" MAIN
(TOTAL 5.35 LF)

1.2 LF 8" Ø DW NONPERF TILE, HDPE 8" X 8" X 5" TEE,
0.7 LF 8" Ø DW NONPERF TILE, HDPE 8" X 8" X 5" TEE,
& 1.0 LF 8" Ø DW NONPERF TILE

④B EAST 5" PERF TILE TIE IN

5" HDPE INTERNAL SNAP COUPLER

3.8 LF OF 5" HDPE PERF TILE

④C WEST 5" PERF TILE TIE IN

2.2 LF OF 5" Ø HDPE 8W PERF TILE, 5" X 5" X 4" HDPE TEE,

2.7 LF OF 5" Ø HDPE 8W PERF TILE, 5" Ø HDPE INTERNAL

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

8.4" HDPE INTERNAL SNAP COUPLER

④D 3/4 CONCRETE COLLARS

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

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

Observer's Signature:

Dean Penning

Date Prepared:

07/09/2020

Reviewed by:

Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/09/2020

PROJECT NUMBER:

MADON DD WO # 292

DAYS OF WEEK:

S M T W 0 F S

COUNTY, ROUTE, ROAD:

6844.5/DD#14
INTERSECTION OF CO
HWY 5-27 & CO HWY D41

SHEET NO.

6 OF 6

LOCATION:

SE 1/4 SE 1/4 27-88-22 NE 1/4 NE 1/4 27-88-22
2 NW 1/4 NW 1/4 35-88-22 INVESTIGATE
FOR PLUGGED TILE DD#14 MAIN DITCH

NO 60'S TO LOW 80'S CLOUDY
NO MORNING & MID AFTERNOON
RAIN SHOWER WITH SUNSHINE & LATE
AFTERNOON

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

- JOB # 6844. DD#14 SURVEY
- 1.5' X 2.0' ENGINEERING FABRIC OVER BOTH 8" X 8" X 15" HOPE TEE TO 5" HOPE SW PERF TILE SLID IN CONNECTION
 - 1.5' X 2.0' ENGINEER FABRIC OVER BOTH 5" HOPE TO 5" HOPE INTERNAL COUPLER CONNECTIONS.
 - 1.5' X 2.0' ENGINEERING FABRIC OVER 4" HOPE TO 4" HOPE INTERNAL COUPLER CONNECTION, 4" HOPE SLID IN CONNECTION ON 5" X 5" X 4" HOPE TEE, & AROUND 5" X 5" X 4" TEE CONNECTIONS
 - 26 - 60 LB BAGS OF QUIKRETE HIGH STRENGTH CONCRETE.

⑤ HOLE IN 8" HOPE NON PERF TILE REPAIR

2.0 X 2.0 ENGINEER FABRIC

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

4 - 60 LB BAGS OF QUIKRETE HIGH STRENGTH CONCRETE.

⑥ 4" HOPE PERF TILE REPAIR

9.8 LF 4" HOPE PERF TILE WITH 2 4" INTERNAL ^{SNAP} COUPLERS

LOAD #1 MARTIN MARIETTA TICKET # 302243 1" CLEAN ROCK 7.58 TONS

LOAD #2 MARTIN MARIETTA TICKET # 1" CLEAN ROCK TONS

CORN DAMAGE #1 0.371 AC CORN DAMAGE #2 0.043 AC CORN DAMAGE #3 0.051 AC

ADDITIONAL ACTIONS - FINE GRADE & SEED; SOUTH DITCH CO HWY D41,
NORTH DITCH CO HWY D41, & WEST DITCH CO HWY 527
WET LAND AREA DISTURBED BY REPAIR

- 14" CLAY TILE REPAIR (NOF D41) SOIL WAS MIXED WITH CORN STALKS
NOW EXTRA SOIL BUT WILL SETTLE DUE TO STALKS MIXED WITH SOIL.
- 8" CLAY TILE AT GPS# 250 TO GPS# 251 (BELOW MAIN TILE) (ABOVE MAIN TILE) DAM CROSSING NORTH D41 APPEARS TO BE
ABANDONED
- 6" HILKEN BOTTOM FULL OF SOIL ALONG WITH OUTLET TILE BEING
CRACKED AND FULL OF SOIL (MAY NEED REPLACED SOMETIME) (GPS# 269)
STILL HAVE BEEHIVE INTAKE TO EAST IN NORTH DITCH OF CO HWY D41
(1 MI E WEST OF CO HWY 527)

I Certify that the work

in this report was incorporated into this contract unless otherwise noted.

Observer's Signature:

Dean Penny

Date Prepared:

07/09/2020

Reviewed by:

Engineer

Date Reviewed

68445/00 #14 07/09/2020
LARS # 270 TO LARS # 301 0.371 ACRES CORN, DAMAGE #1

Beacon - Hardin County X

Beacon Hardin County, IA

https://beacon.schneidercorp.com/Application.aspx?AppID=140&LayerID=1772&PageTypeID=1&PageID=932

Map Search Comp Search

Log In

search...

Beacon

Hardin County, IA

Layer List Legend

Quick Links

Property Search

View Map

Drainage District Search

Layers

Addresses

Corporate Limits

Political Townships

Geographic Townships

Sections

Subdivision Annotation

Subdivisions

Lot Annotation

Lot Lines

Road Dimensions

Roads

Road ROW

Railroad Annotation

Railroads

Railroad ROW

Water

Parcel Dimensions

Parcels

Drainage Tiles

Drainage Districts

Cartography

Landuse

Soils

Enterprise Zones

Conservation Property

Structures

Garden Winds Turbines

Airport Protected

Airspace Surfaces

Two Mile Boundary

School Districts

Voting Districts

LOMR

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6844.5/DO#14 07/09/2020 CORN DRAINAGE #2 VERSUS 10 01-21-21, 0.073 ACRES
CORN DRAINAGE #3 (6844.5/DO#14 07/09/2020) 0.051 ACRES

- Quick Links:
Property Search
View Map
Drainage District Search
- Layers:
☐ Address
☒ Corporate Limits
☒ Political Townships
☐ Geographic Townships
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☐ Subdivisions
☐ Lot Annotation
☐ Lot Lines
☒ Road Dimensions
☐ Road ROW
☐ Railroad Annotation
☐ Railroads
☐ Railroad ROW
☐ Water
☐ Parcel Dimensions
☒ Parcels

002234200002

100 ft

002234200003

002234200003

15898 Co Hwy D41

CORN DRAINAGE #3

CORN DRAINAGE #2

Co Hwy D41

Co Hwy D27

4951922.B8, 3607641.D9

esri

Parcel ID: 882234200003
Alt ID: 2840100000
Address: 15898 CO HWY D41
Owner: Verhardt, Ronald R - Trust Verhardt, Carol Jean - Trust (Deed)
Acres: 18.69
View: Report | Pictometry Imagery

District: 13000
Brief Tax Description: E1/2 NE NE SEC34-T88N-R22W (Note: Not to be used on legal documents)

Parcel ID: 882234200003
Sec/Twp/Rng: 34-88-22
Property Address: 15898 CO HWY D41
HARDIN
Class: AD
Acreage: 18.69
Alternate ID: 2840100000
Owner Address: Verhardt, Ronald R - Trust Verhardt, Carol Jean - Trust
15898 Highway D41
Alden IA 50006-9141

PICTURE # 4088 SHOWING PILE OF DEBRIS PULLED OUT OF TILE
 (WHERE 8" CLAY TILE SECTION WAS ROLLED OUT IN SOUTH DITCH OF
 CO HWY D41) BEFORE IT WENT DOWNSTREAM AFTER PLUGGED
 TILE WAS OPENED



N ↑



PICTURE # 4089 IS LOOKING NE INSIDE TILE WYE ACCESS LID
 ON SOUTH SIDE OF CO HWY D41 1195.6' ± WEST OF E CO HWY S27
 SHOWING TILE IS STILL FLOWING GOOD AT THIS LOCATION

GPS# 88

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



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

PICTURE# 4092 IS LOOKING NW FROM SOUTH DITCH
OF CO HWY D41 SHOWING CORN DAMAGE OUT TO
TILE REPAIR.



↑
NW



→
W

PICTURE# 4093 IS LOOKING WEST SHOWING CORN DAMAGE
TO TILE REPAIR - LOOKING TOWARDS 20825th CO HWY 527
GRAVEL DRIVE OFF CO HWY D41.

PICTURE # 4094 IS LOOKING SE TOWARDS CONWY041
 @ CORN DAMAGE / TO TILE REPAIR



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

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

615# 2.0'x3.5' FABRIC WITH 1.0'x4.0' WIRE MESH OVER JOINT BEFORE COLLARS POURED



615# 2.0'x3.5' FABRIC & 1.5'x4.0' WIRE MESH OVER JOINT BEFORE COLLARS POURED

07/09/2020
12:02



07/09/2020
12:03

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

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



WILL CONNECT
 TOGETHER
 IN CASE
 ANY TILE
 UPSTREAM
 IS CONNECTED
 YES



GPS #251

TILE TOP 8" CLAY

0.75' TOPTOFL
 2" MUD IN FL
 (3.7' ± DEEP)



GPS #250

TILE TOP 8" CLAY

0.75' TOPTOFL
 2" MUD IN FL
 3.7' ± DEEP

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

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



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

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



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

NA

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



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

PICTURE #4104 IS LOOKING NW SHOWING 2.0'X2.0' ENGINEERING FABRIC & 1.5'X20' 6"X6" SQUARE WIRE MESH OVER JOINT FOR 8" CLAY TILE SECTION ROLLED BACK INTO PLACE BEFORE $\frac{3}{4}$ CONCRETE COLLAR POURED.



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

PICTURE # 4106 IS LOOKING NORTH SHOWING $\frac{3}{4}$ " CONCRETE COLLAR POURED FOR 8" CLAY TILE SECTION ROLLED BACK INTO PLACE 9'5" WEST OF BEHIND ENTIRE. CREW USED 5-60LB BAGS OF QUIKRETE HIGH STRENGTH / GSH255



CONCRETE ON COLLAR

GSH254



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

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



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

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

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



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



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

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

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



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



302

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

PICTURE #4112 IS LOOKING E EAST SHOWING $\frac{3}{4}$ CONCRETE COLLARS POURED (USED 17 QUIKRETE HIGH STRENGTH CONCRETE BAGS



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

GPS# 303 TOP 5"
HOPE PERF TILE
0.43' TOP TO FL

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



N ↓

6' 6" LF OF
4" HOPE SW
PERF TILE

GPS# 303
TOP 5" HOPE
PERF TILE
0.43' TOP TO FL

GPS# 302 TOP OF
5" 85" x 4" HOPE
TEE

07/09/2020
15:20

21' LF OF 5" HOPE PERF TILE

PICTURE # 4113

IS LOOKING SE SHOWING 4" HOPE PERF TILE TIED INTO 5" HOPE PERF TILE TIED INTO 8" HOPE NOW PERF LAT 2 WITH $\frac{3}{4}$ CONCRETE COLLARS (USED 17 QUIKRETE CONCRETE BAGS)

PICTURE #4114 IS LOOKING NE SHOWING 5" HDPE SW PERF TILE TIE IN CONNECTION INTO 8" HDPE LATERAL #2.

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



5" HDPE
INTERNAL
SNAP COUPLER

3.0 LF OF
5" HDPE
PERF TILE

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



GPS#263
5" HDPE
SW PERF
TILE

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

PICTURE #4115

IS LOOKING SE AT 5" HDPE SW PERF TILE TIE IN CONNECTIONS $\frac{3}{4}$ CONCRETE COLLARS. (USED 9-6016 BAGS OF QUIKRETE HIGH STRENGTH CONCRETE)

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



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



GPS #311
TOP 8" HOPE
NONPERF



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

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



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

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



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

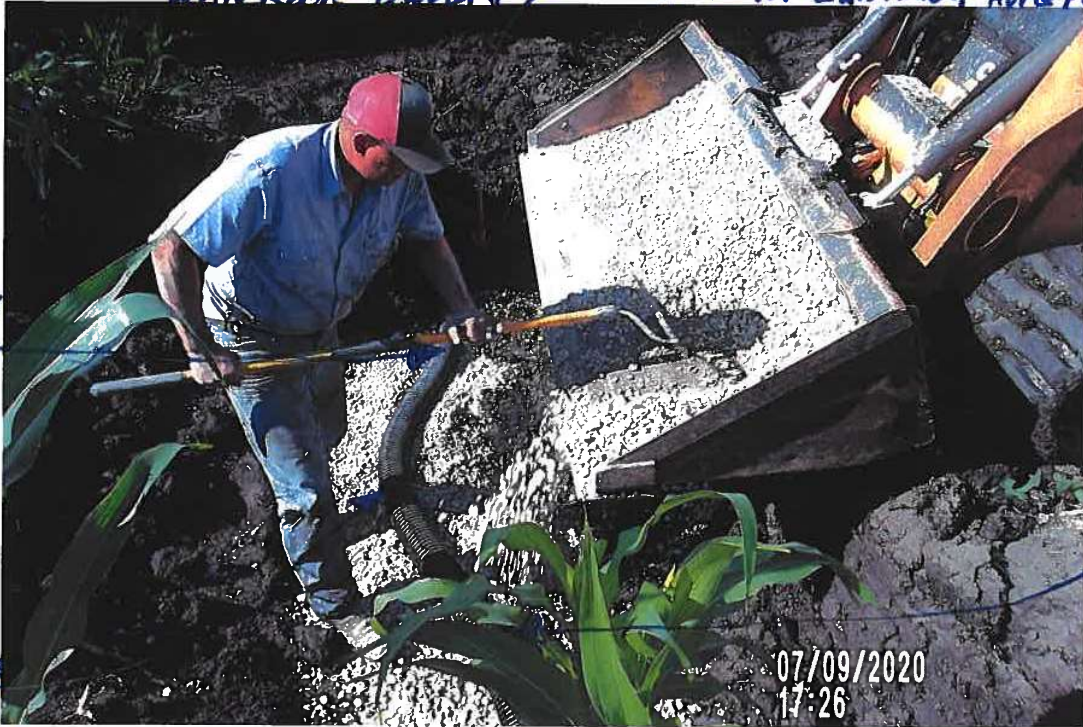
PICTURE # 4123 IS LOOKING NORTH SHOWING 9.8 LF
 OF 4" HDPE SW PERF TILE INSTALLED WITH 4" HDPE
 INTERNAL COUPLERS AND OFF TO SIDE SOME FOR FIRMER GROUND & BEDDED
 WITH ROCK UNDER. GPS # 312 TOP EXISTING 4" HDPE PERF TILE

(0.32' TOP TO FL)
 GRADE ON
 TILE
 2.02%

↑ N

GPS # 313
 TOP 4" HDPE
 PERF TILE
 0.38' TOP TO
 FL

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



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

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



↑

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

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



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

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



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

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



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

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



(GPS#331 TO
GPS#330)

N
↙

[illegible]

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/13/2020

PROJECT NUMBER:

HARDIN DD WO# 292

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD:

6844.5 DD#14
538.5' ± EAST OF CO HWY
527 & 42 ± SOUTH OF E CO HWY D41

SHEET NO.

1 OF 2

LOCATION:

35-88-22. NW 1/4 NW 1/4. INVESTIGATE
BLOWOUT SOUTH DITCH EAST OF
18" BEEHIVE INTAKE

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

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

JOB# 6844 DD14 SURVEY
07/10/2020 PERRY AND TR340 TRACKED SKIDLOADER
FINISHED BACKFILLING REST OF HOLES LEFT OPEN 2 HOURS

7:15 A.M. ADAM CALLED OBSERVER THAT HE WILL BE ON SITE

AROUND 10:00 A.M. TO REPAIR BLOWOUT IN SOUTH DITCH
OF D41 EAST OF BEEHIVE INTAKE

7:20 A.M. OBSERVER NOTIFIED LEE THAT ADAMS CREW WOULD BE
WORKING TODAY

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

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

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

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

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

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

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

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

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

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

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

Observer's Signature:

Adam Perry

Date Prepared:

07/13/2020

Reviewed by:

☐ Engineer

Date Reviewed

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

07/13/2020

PROJECT NUMBER:

HARROWDOWN #292

DAYS OF WEEK:

S M T W T F S

COUNTY, ROUTE, ROAD:

6844.5 DDH14
538.5' ± EAST OF COMWY
527 & 42' SOUTH OF ECHWYD1

SHEET NO.

2 OF 2

LOCATION:

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

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

JOB # 68440014 SURVE

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

11:06 AM PICTURE #4141 & 11:08 AM PICTURE #

4142. SEE PICTURE FOR DETAILS.

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

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

1:10 PM CREW BACK ON SITE WITH SUPPLIES

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

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

2:30 PM OBSERVER AND CREW LEFT SITE.

QUANTITIES

PERRY,
ADAM

9:50 - 11:30
11:30 - 1:10

1:10 - 2:30

3 HOURS

1 1/2 HOURS GETTING SUPPLIES

KOLBELLO SK85CS MINIE EXCAVATOR 3 HOURS

CASETR 340 TRACKED SKID LOADER 3 HOURS

2.4 LF OF 6" HDPE SW PERF TILE, 6" HDPE INTERNAL SNAP COUPLER

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

WIRE MESH, 8.5 - 60 LB BAGS QUIKRETE HIGH STRENGTH CONCRETE
MIX

OUTLET DRY
TILE

340 18" BEEHIVE N RIM

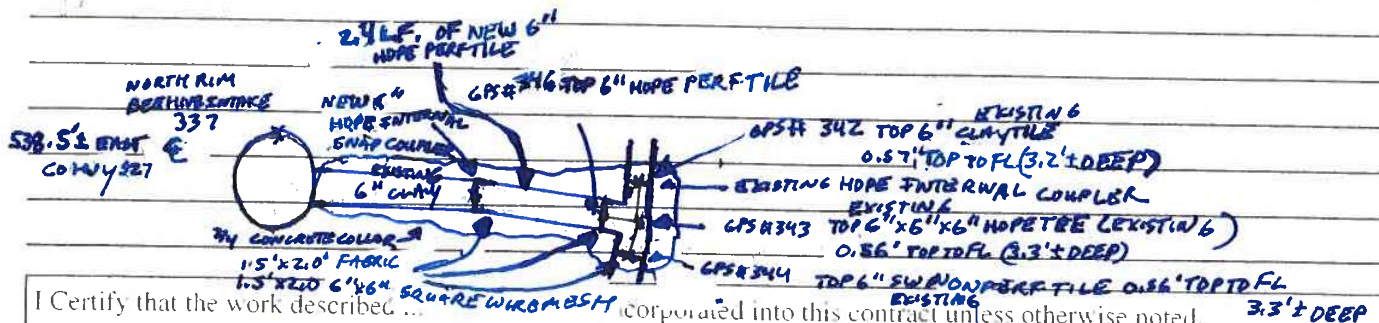
341 TOP 18" ACP 1.71' TOP TO FL

339 63 BLINDOUT SHOULDER

041

338 TOP 18" CMP 1.54' TOP TO FL

CO-MAN



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

Observer's Signature:

Dianna Penning

Date Prepared:

07/13/2020

Reviewed by:

Engineer

Date Reviewed

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

GPS# 337
18" BEEHIVE
INTAKE
N RIM



CD HWY 41

N
→

DIP IN
GRAVEL
SHOULDER
WITH
FRESH
ROCK

PICTURE# 4139 IS LOOKING WEST ON NORTH SHOULDER
OF CD HWY 41 SHOWING SINK HOLE PER RANDY'S REPORT
WITH A LITTLE DIP IN ALL 2 GRAVEL AND APPEARS SOMEONE HAS
PUT FRESH ROCK IN SINK HOLE.

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

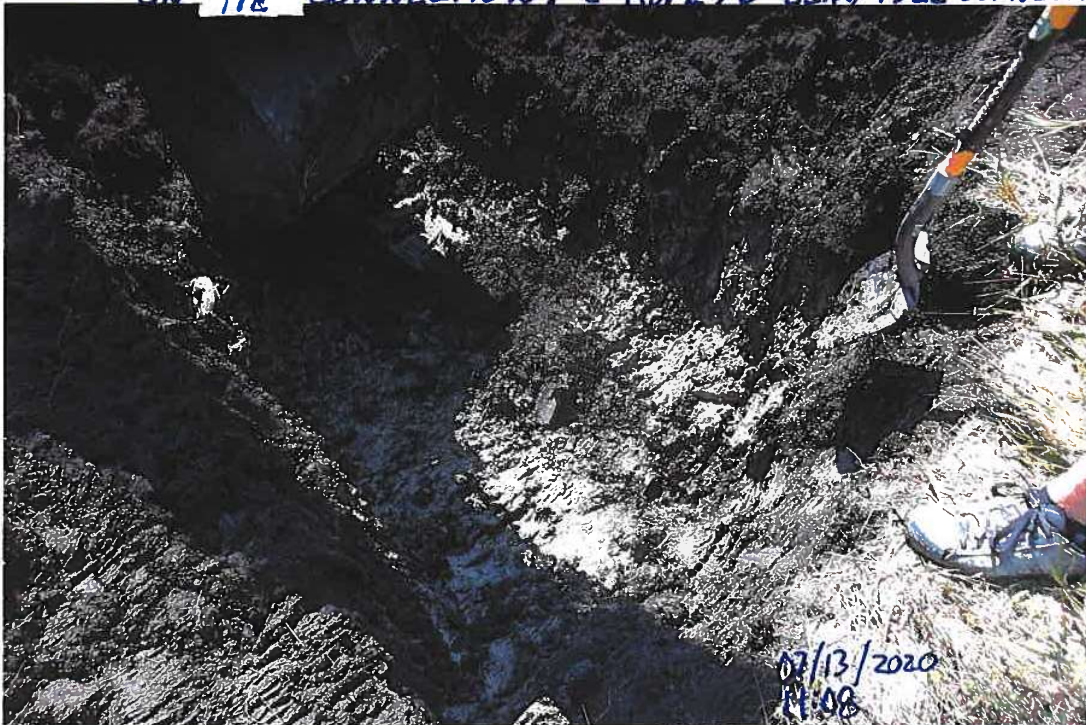


SINKHOLE
 EAST OF
 BEEHIVE
 INTAKE

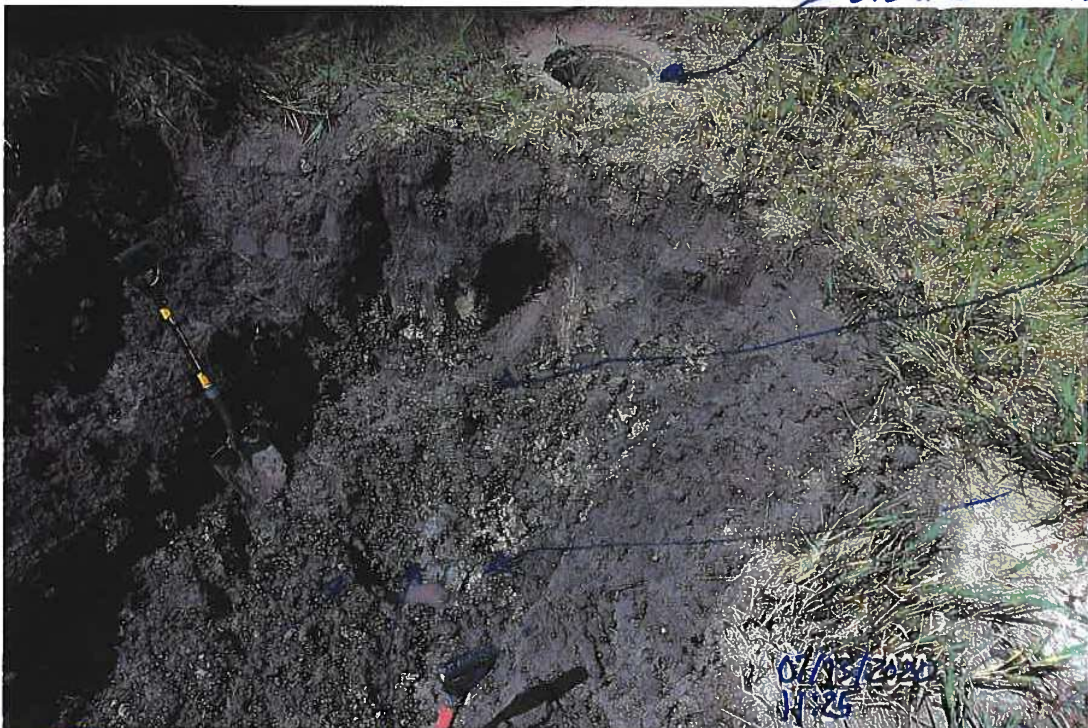


PICTURE# 4141 IS LOOKING EAST ON EAST SIDE OF
 BEEHIVE INTAKE SHOWING 6" HDPE PERF TILE CONNECTION
 TO 6" CLAY TILE OUTLET EAST FROM BEEHIVE INTAKE,

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



GPS# 337 18" BEEHIVE INTAKE
N RIM



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

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

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

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

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

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



GPS # 344 TOP 6" HOPE PERFTILE
GPS # 343 TOP 6"x6"x6" HOPE (0.56' TOP TO FL)
GPS # 342 TOP 6" CLAY (0.57' TOP TO FL)



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

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



07/13/2020
11:46

GPS# 345
TOP 6" CLAY
TILE
(0.57'
TOPTD
FL.)



07/13/2020
13:46

GPS# 346
TOP 6" HDPE
PERF TILE

6" HDPE
INTERNAL
COUPLER

2.4 LF
OF 6" SUPERF
TILE

PICTURE # 4148

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

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



337
NRMS
BEEHIVE
INTAKE



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

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



PICTURE# 4152 IS LOOKING NORTH SHOWING TRENCH
BACKFILLED EAST OF EAST ROW LHWY 327 & SOUTH D41
IN WETLAND DUG BY PREVIOUS CONTRACTOR

Inspection Report

Produced on behalf of – HARDIN CO

Site location – ,

Survey reference –

Date – 080720

WILLIAMS UNDERGROUND SVCS.

102 INDUSTRIAL DRIVE, ACKLEY, IOWA

50601,

641-485-3925

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1.3	Survey Details	Error! Bookmark not defined.
1.4	Drain / Sewer Diagram	Error! Bookmark not defined.
1.5	Observations	Error! Bookmark not defined.
1.6	Photographs.....	Error! Bookmark not defined.
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2.6	Photographs.....	Error! Bookmark not defined.

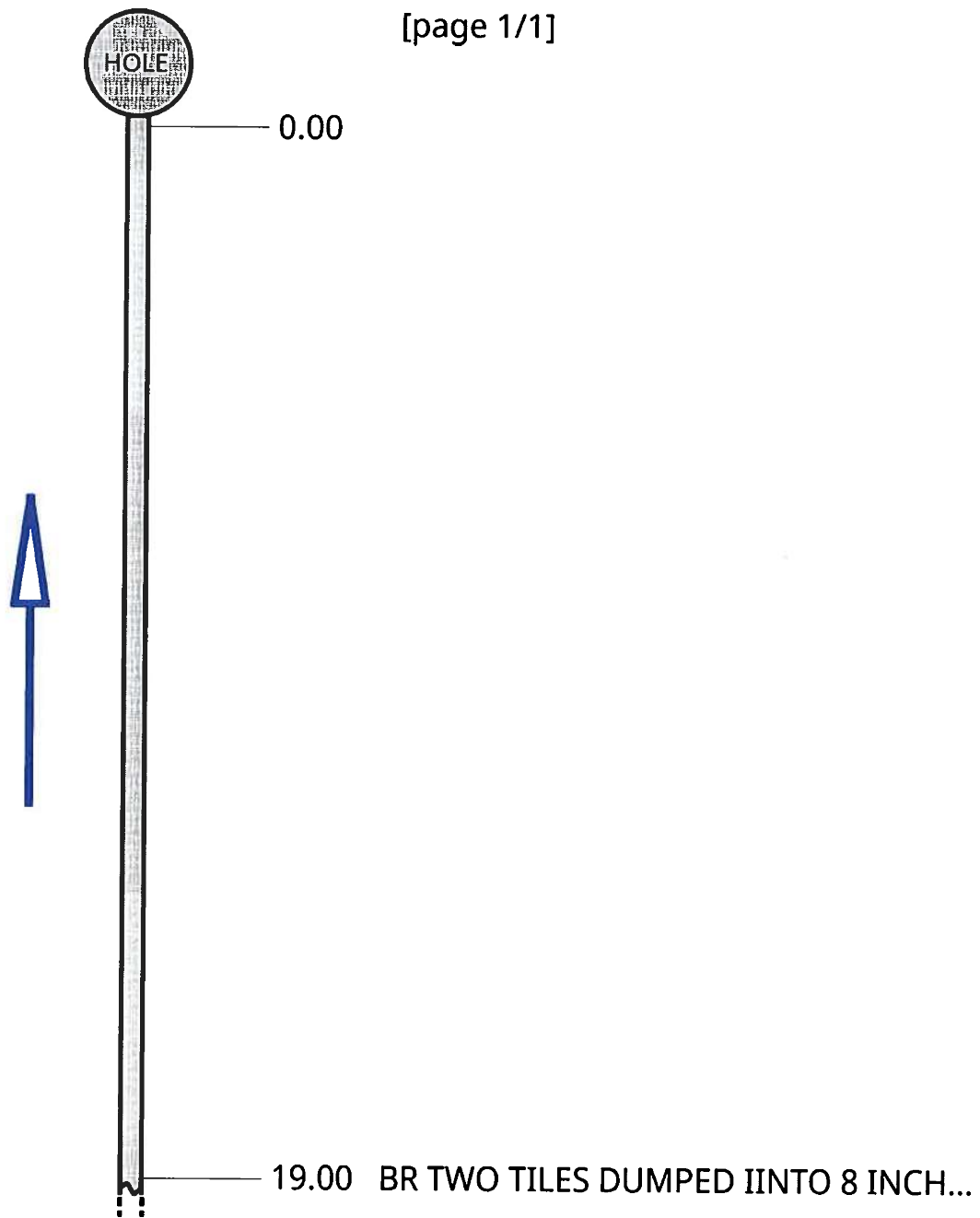
1 Drain / Sewer Survey

1.1 Survey Header


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

1.2 Diagram

[page 1/1]



1.3 Observations

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

1.4 Photographs

BR 2020_07_08-13_30_01_583.jpg



Inspection Report

Produced on behalf of – HARDIN CO

Site location – ,

Survey reference – W/O 292

Date – 080720

WILLIAMS UNDERGROUND SVCS.

102 INDUSTRIAL DRIVE, ACKLEY, IOWA

50601,

641-485-3925

Contents

1 **Drain / Sewer Survey**Error! Bookmark not defined.

 1.1 *Site information***Error! Bookmark not defined.**

 1.2 *Drain / Sewer Details***Error! Bookmark not defined.**

 1.3 *Survey Details***Error! Bookmark not defined.**

 1.4 *Drain / Sewer Diagram***Error! Bookmark not defined.**

 1.5 *Observations***Error! Bookmark not defined.**

 1.6 *Photographs*.....**Error! Bookmark not defined.**

2 **Drain / Sewer Survey**Error! Bookmark not defined.

 2.1 *Site information***Error! Bookmark not defined.**

 2.2 *Drain / Sewer Details***Error! Bookmark not defined.**

 2.3 *Survey Details***Error! Bookmark not defined.**

 2.4 *Drain / Sewer Diagram***Error! Bookmark not defined.**

 2.5 *Observations***Error! Bookmark not defined.**

 2.6 *Photographs*.....**Error! Bookmark not defined.**

1 Drain / Sewer Survey

1.1 Survey Header

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

1.2 Observations

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

Inspection Report

Produced on behalf of – HARDIN CO

Site location – ,

Survey reference – W/O 292

Date – 080720

WILLIAMS UNDERGROUND SVCS.

102 INDUSTRIAL DRIVE, ACKLEY, IOWA

50601,

641-485-3925

Contents

1 Drain / Sewer SurveyError! Bookmark not defined.

 1.1 Site information*Error! Bookmark not defined.*

 1.2 Drain / Sewer Details*Error! Bookmark not defined.*

 1.3 Survey Details*Error! Bookmark not defined.*

 1.4 Drain / Sewer Diagram*Error! Bookmark not defined.*

 1.5 Observations*Error! Bookmark not defined.*

 1.6 Photographs.....*Error! Bookmark not defined.*

2 Drain / Sewer SurveyError! Bookmark not defined.

 2.1 Site information*Error! Bookmark not defined.*

 2.2 Drain / Sewer Details*Error! Bookmark not defined.*

 2.3 Survey Details*Error! Bookmark not defined.*

 2.4 Drain / Sewer Diagram*Error! Bookmark not defined.*

 2.5 Observations*Error! Bookmark not defined.*

 2.6 Photographs.....*Error! Bookmark not defined.*

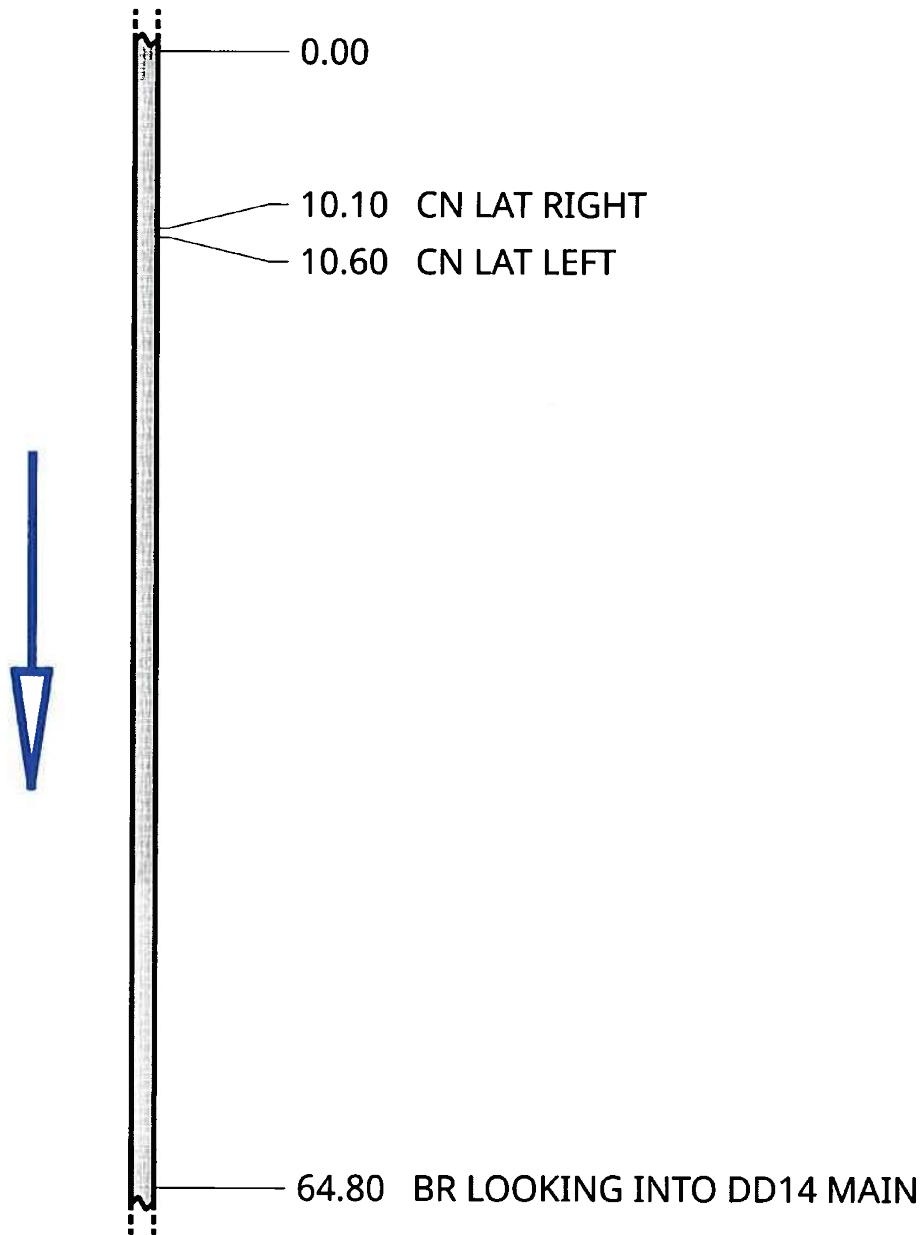
1 Drain / Sewer Survey

1.1 Survey Header




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

1.2 Diagram

[page 1/1]



1.3 Observations

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

1.4 Photographs

CN 2020_07_08-14_04_12_399.jpg



CN 2020_07_08-14_07_01_027.jpg



BR 2020_07_08-14_13_23_027.jpg



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

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

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

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

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

256,3607786.141,4952154.305,1148.855,GS SIGN TILE LINE
 259,3608076.855,4951898.654,1148.210,GS TILE LOCATE
 260,3608067.662,4951905.816,1148.319,GS TILE LOCATE OBSTRUCTION?
 261,3608079.284,4951896.646,1149.016,GS EDGE FIELD
 262,3608143.074,4951852.200,1148.498,GS APPROX TILE MAIN LAT 2 CONNECTION
 263,3608067.743,4951910.457,1145.035,TILE TOP 5" HDPE PERF 0.43'TOPTOFL
 264,3608059.621,4951902.767,1145.428,TILE TOP 4" HDPE PERF 0.34'TOPTOFL
 267,3608069.254,4951904.084,1144.770,TILE TOP 8"CLAY 0.74'TOPTOFL
 268,3608151.043,4952028.550,1147.989,INTAKE BEEHIVE N RIM
 269,3608148.458,4951824.752,1145.486,FL 6" HICKENBOTTOM INTAKE
 270,3608356.513,4951135.356,1147.339,GS CORN DAMAGE 1
 271,3608349.998,4951198.416,1147.156,GS CORN DAMAGE 1
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 289,3608311.870,4951716.945,1149.271,GS CORN DAMAGE 1
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 298,3608357.674,4951281.382,1147.847,GS CORN DAMAGE 1
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 300,3608368.174,4951167.004,1147.332,GS CORN DAMAGE 1
 301,3608385.227,4951136.275,1147.398,GS CORN DAMAGE 1
 302,3608064.858,4951907.140,1144.848,TILE TOP 8"CLAY 0.72'TOPTOFL
 303,3608065.976,4951899.316,1145.016,TILE TOP 5" HDPE PERF 0.43'TOPTOFL
 304,3608066.325,4951906.090,1144.804,TILE TOP 8"*8"*5" HDPE TEE
 305,3608067.955,4951905.120,1144.767,TILE TOP HDPE 8"*8"*5" TEE
 306,3608067.368,4951904.522,1144.650,TILE TOP 5" HDPE PERF @ TEE 0.43'TOPTOFL
 307,3608066.483,4951902.291,1144.813,TILE TOP 5"*5"*4" HDPE TEE
 308,3608066.794,4951906.637,1144.618,TILE TOP 5" HDPE PERF @ TEE 0.43'TOPTOFL

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 310,3607798.155,4952237.894,1149.855,FNL N-S
 311,3607793.814,4952247.403,1145.203,TILE TOP 8" HDPE NONPERF (HOLE)
 312,3607794.478,4952141.899,1147.273,TILE TOP 4" HDPE PERF 0.32'TOPTOFL
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 317,3607786.252,4952141.423,1147.519,TILE TOP 4" HDPE PERF 0.38'TOPTOFL
 318,3607792.952,4952141.702,1147.384,TILE TOP 4" HDPE PERF 0.38'TOPTOFL
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 326,3607748.957,4952180.166,1154.283,EOA
 327,3607777.446,4952152.857,1148.859,INTAKE BEEHIVE N RIM
 328,3607772.871,4952153.571,1149.545,GS SIGN TILE LINE
 329,3607759.653,4952202.415,1154.498,EOA
 330,3607835.381,4952204.204,1154.372,EOA
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 332,3608057.015,4951932.847,1148.177,GS CORN DAMAGE 3
 333,3608039.389,4951920.646,1148.462,GS CORN DAMAGE 3
 334,3608040.271,4951891.508,1148.649,GS CORN DAMAGE 3
 335,3608056.992,4951872.352,1148.722,GS CORN DAMAGE 3
 336,3608078.679,4951872.507,1148.701,GS CORN DAMAGE 3
 337,3608073.676,4952737.840,1148.917,INTAKE 18" BEEHIVE N RIM
 338,3608084.796,4952746.455,1150.538,CMP TOP 18" 1.54'TOPTOFL
 339,3608124.706,4952745.934,1155.472,GS BLOWOUT SHOULDER
 340,3608147.597,4952746.884,1149.178,INTAKE 18" BEEHIVE N RIM
 341,3608136.448,4952746.150,1151.386,RCP TOP 18" 1.71'TOPTOFL
 342,3608073.094,4952744.578,1145.664,CLAY TOP 6" 0.57'TOPTOFL
 343,3608072.372,4952744.584,1145.604,TEE TOP HDPE 6"*6"*4" 0.56'TOPTOFL
 344,3608071.838,4952744.372,1145.598,TILE TOP 6" SW HDPE NONPERF 0.56'TOPTOFL
 345,3608072.542,4952741.735,1146.267,TILE TOP 6" CLAY 0.57'TOPTOFL
 346,3608072.419,4952743.936,1145.716,TILE TOP 4" CLAY 0.38'TOPTOFL



Drainage Utility Permit Application

Hardin County

Applicant: Midland Power Cooperative - Casey Huff

Contact Email: chuff@midlandpower.coop

Contact Phone: (515) 386-4111

Utility Type: N/A - Utility Permits Only

Drainage District: DD 142 (51156)

Description of Work: DD 142 & DD Big 4 Overhead line rebuild 1.5 miles along south side of 120th Map 66 Sec 17 & 18

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

APPROVED PERMIT #: 2020-2

- ☐ 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

1005 E Lincoln Way
Address

Jefferson IA 50129
City State Zip

Applicant Contact:

Casey Huff (515) 386-4111
Name Phone

chuff@midlandpower.coop
Email

Utility Type:

Overhead Electrical Primary Line

Drainage District(s) Crossed:

DD 142 and DD Big Four

Facilities Crossed (specific tile, open ditch):

Description of Work:

Overhead line rebuild 1.5 miles along
South side of 120th Map 66 Sec 17+18

(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.

[Signature]
Applicant Signature

2/28/20
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

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.



Red = A phase
Yellow = B phase
Blue = C phase
Peach = 2 phase
GREEN = 3 PHASE

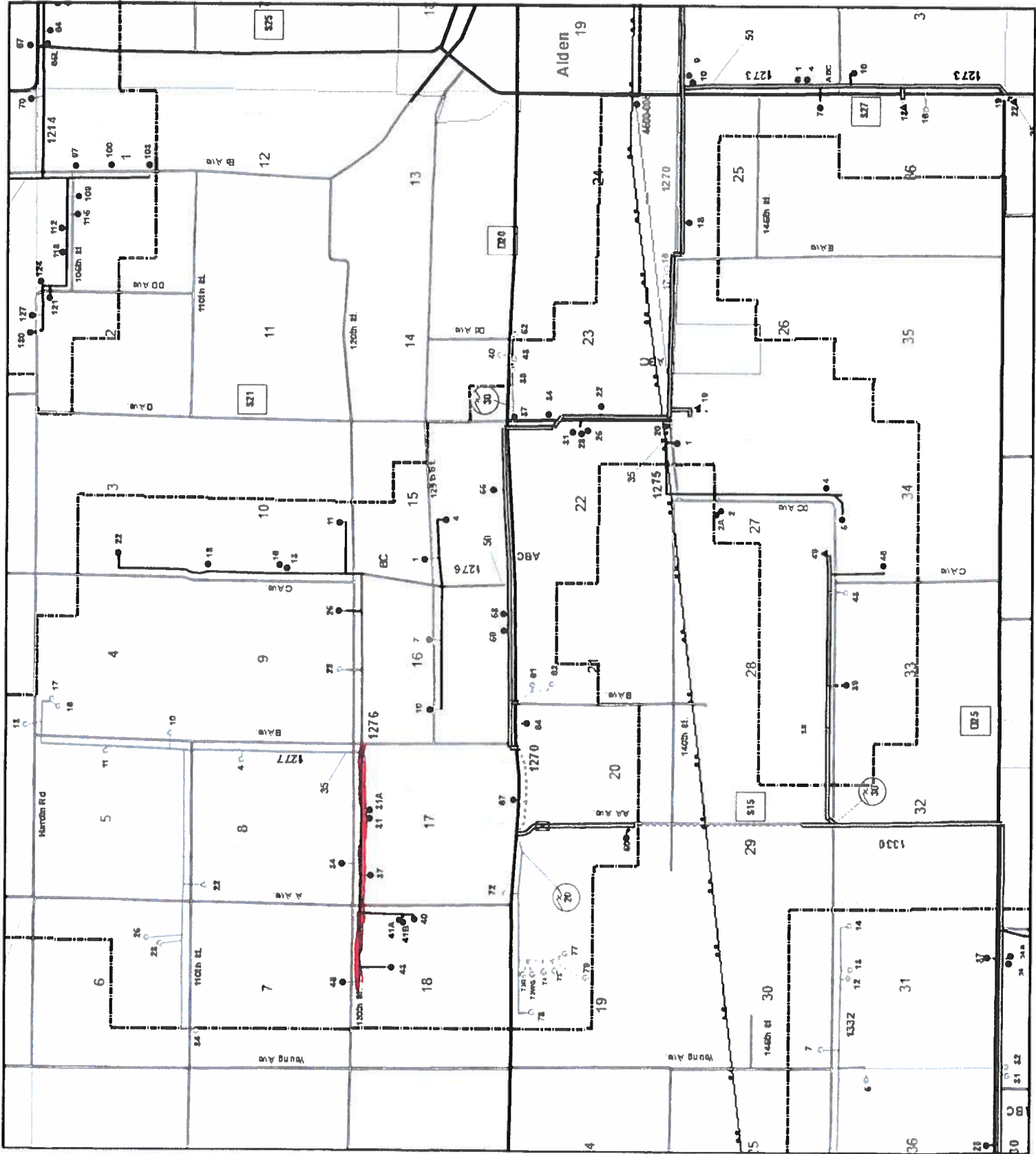
County
HARDIN

Township
ALDEN
T89N R22W

Map No.
66

65	66	73
59		67

Date: 1/3/2017



Red = A phase
Yellow = B phase
Blue = C phase
Peach = 2 phase
GREEN = 3 PHASE

County
HARDIN

Township
ALDEN

T89N	R22W
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Map No.

99

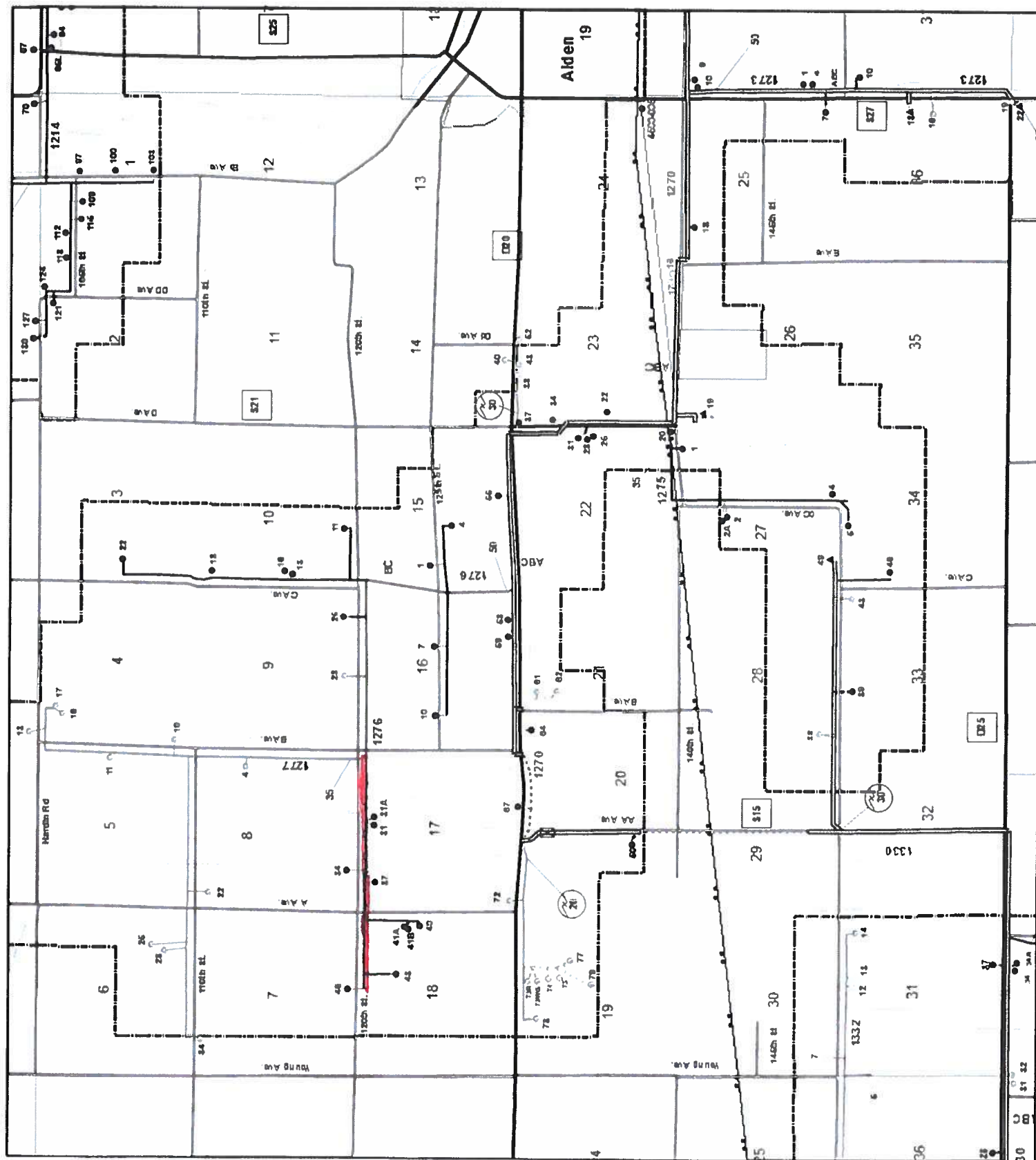
59

73

99

67

Date: 1/3/2017





Red = A phase
Yellow = B phase
Blue = C phase
Peach = 2 phase
GREEN = 3 PHASE

County
HARDIN

Township
ALDEN

T89N R22W

Map No.

66

65

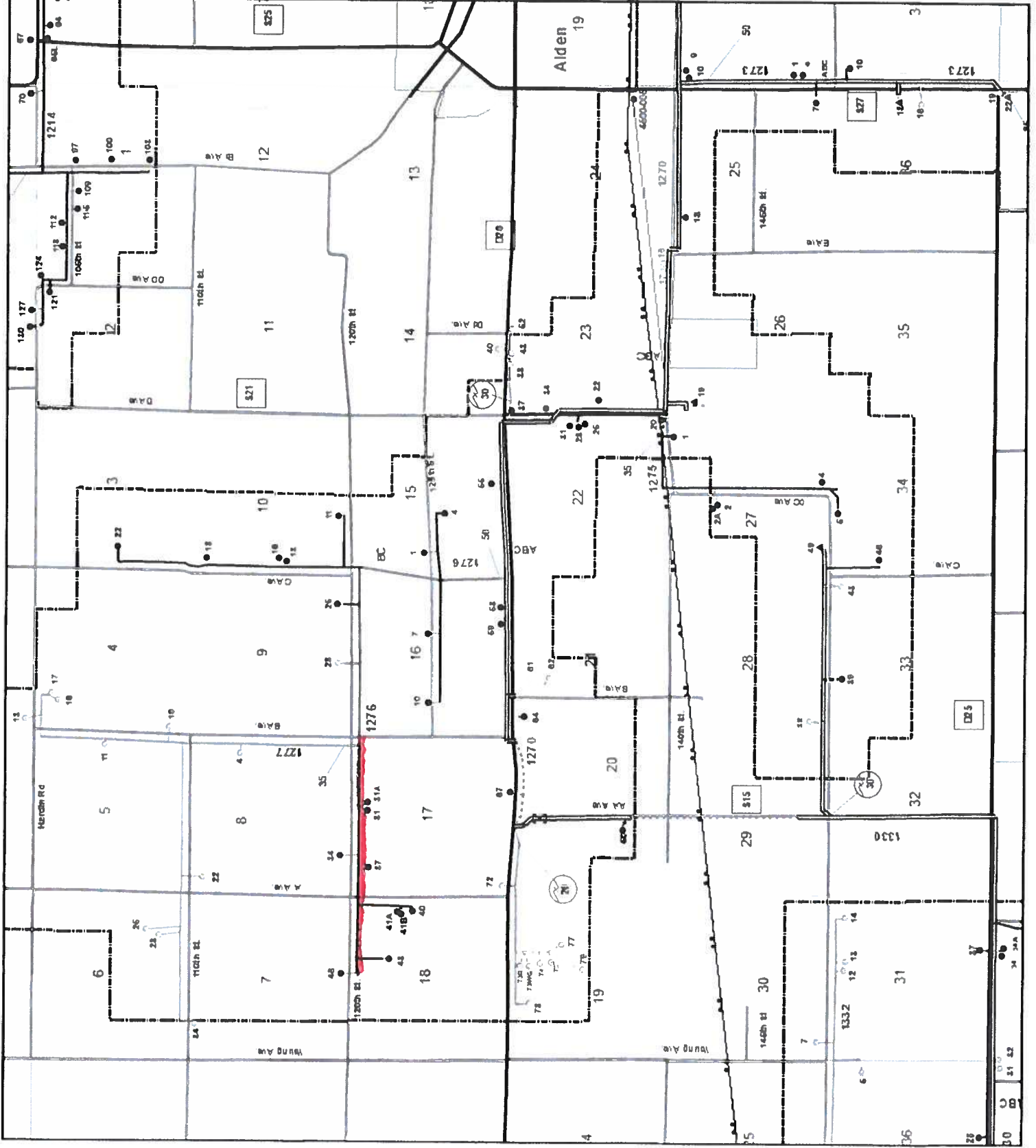
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Date: 1/3/2017

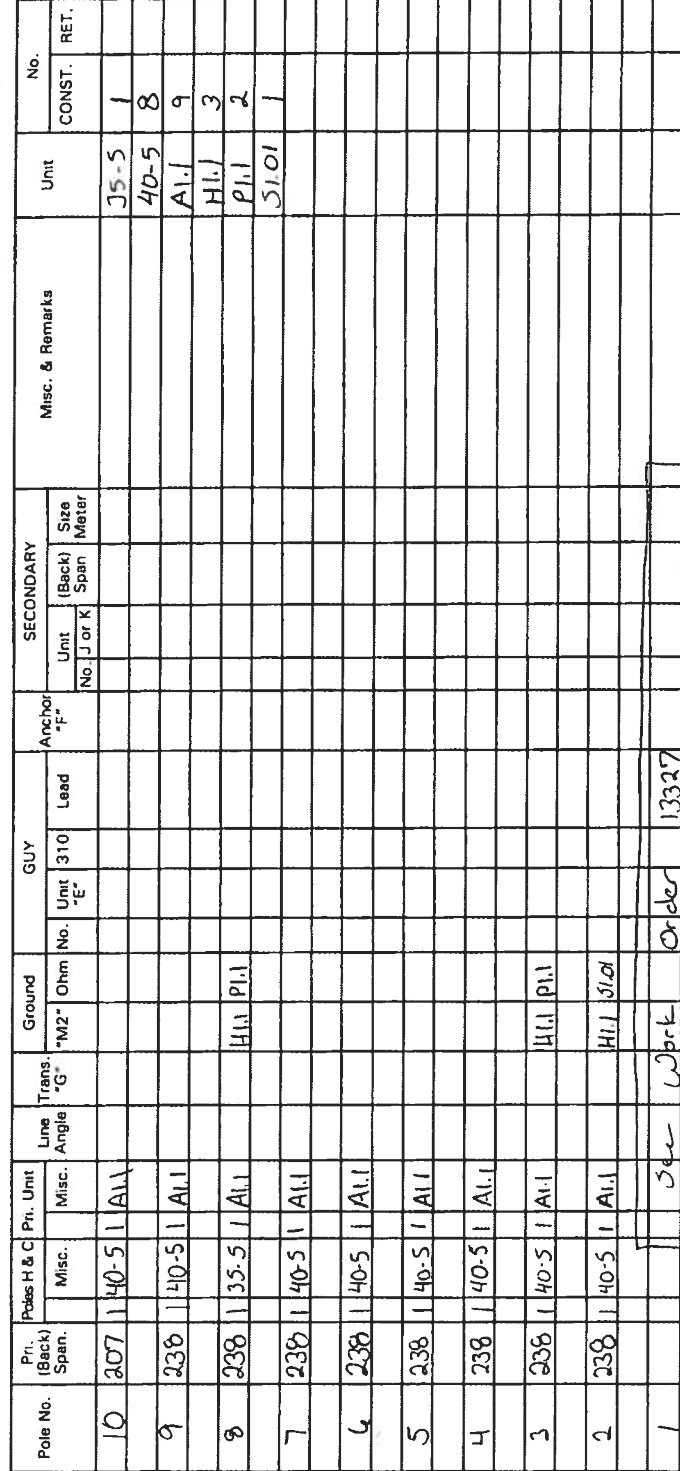


STAKING SHEET

WORK ORDER NO. 13325
740c# 379-1
Staked By CH Date 2/4/20
Sheet No. 1 of 4
Compltd By _____ Date _____

WORK ORDER CODE	
New Construction	✓
System Improvement	
Replacement	
Retire No. Replace	

Map Reference 66 Twp. 89N R 22W Sec. 17 Wire 2 Size 1/0 Kind ACSR



CONSTRUCTION

JOB BRIEFING							
_____	Crew Initials	1	2	3	4	5	6
_____	Nominal Voltage						
_____	Hazardous Conditions Available						
_____	Hazardous Incident Volting						
_____	Presence Practice Grds						
_____	Equipment Grounds						
_____	Pole Condition						
_____	Environmental Condition						
_____	Loc of Line Practice Dvc						
_____	Other Utilities in Area						
_____	Practice Procedure Equip						
_____	Traffic Control						
_____	Job Procedure						
_____	Individual Job Duties						
_____	Other Hazards						

Material Ticket Compl

00-6 MB 005

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
TOTALS	X	X	X	X		X	

Conductor	Phi.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
110 ACSR	X		X		2111	2	4348
TOTALS	X	X	X	X		X	

IOWA 93 MIDLAND POWER COOPERATIVE

STAKING SHEET

Name Line Rebuild 1.5 mi. 107
Location #: 1276-4617
Address: 120th St
Phone#:

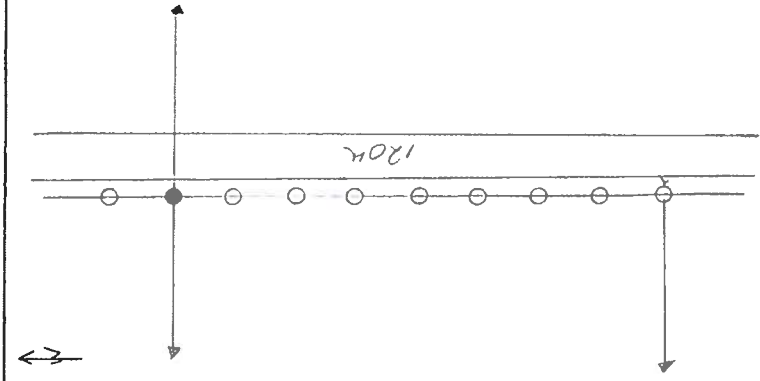
12 Sub
7 Feeder
C Phase
Line Sec.

County: Hardin
Township: Alden
School Dist.:

WORK ORDER NO. 13325
740c# 319-1
Staked By CH Date 2/4/20
Sheet No. 2 of 4
Compltd By _____ Date _____

WORK ORDER CODE	
New Construction	
System Improvement	<input checked="" type="checkbox"/>
Replacement	
Retire No. Replace	

SKETCH OF WORK



Map Reference 46 Twp. 89N R 22W Sec. 17 Wire 2 Size 1/2 Kind ACSR

Pole No.	Pri. (Back) Span.	Poles H & C		Pri. Unit	Line Angle	Trans. "G"	Ground "M2"	Ohm	GUY		Anchor "F"	SECONDARY		Misc. & Remarks	Unit	No.	
		Misc.	Misc.						No.	Unit		No.	Unit			CONST.	RET.
20	225	1	40-5	1	A11										35-5	8	
19	227	1	40-5	1	A11		H11							1276-034/037	40-5	1	
18	227	1	35-5	1	A11		H11	P11							A1.1	9	
17	227	1	35-5	1	A11										A5.1	1	
16	227	1	35-5	1	A11										H1.1	3	
15	227	1	35-5	1	A11										P1.1	2	
14	227	1	35-5	1	A11										E1.1	1	
13	227	1	35-5	1	A11										F1.12	1	
12	227	1	35-5	1	A11												
11	154	1	35-5	1	A11	A51	H11		1	E1.1	12'N F1.12			1276-031/031A			

CONSTRUCTION

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
1/0 ACSR	X		X		2195	2	4521
TOTALS	X	X	X	X			

RETIREMENT

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
TOTALS	X	X	X	X			

JOB BRIEFING

Nominal Voltage	1	2	3	4	5	6
Fault Current Available						
Hazardous Induced Voltg						
Presence Prctive Grds						
Equipment Grounds						
Pole Condition						
Environmental Condition						
Other Hazards						

Crew Initials _____

Const. Complt _____

Retmt. Complt _____

Material Ticket Complt _____

500 BH 9-00

IOWA 93 MIDLAND POWER COOPERATIVE

STAKING SHEET

Name Line Rebuild 1.5 mi. 1st
 Location #: 1276 -- 16418
 Address: 120th St
 Phone#: _____

12 Sub
 7 Feeder
 C Phase
 Line Sec. _____

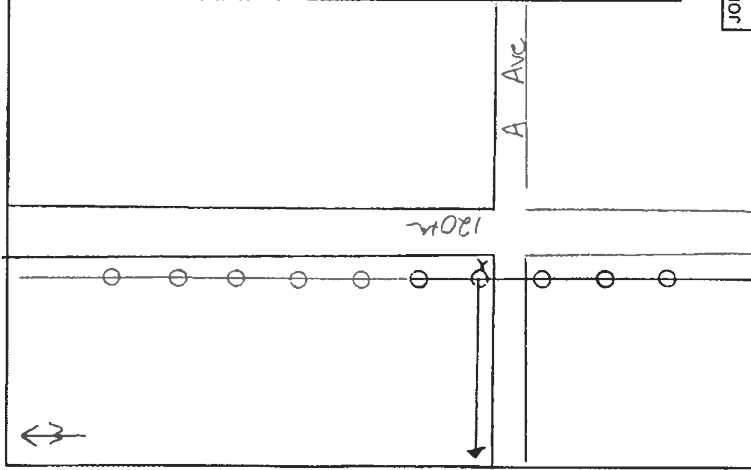
County: Hardin
 Township: Alden
 School Dist.: _____

WORK ORDER NO. 13325

740c# 319-1
 Staked By CH Date 2/4/20
 Sheet No. 3 of 4
 Complt'd By _____ Date _____

WORK ORDER CODE	
New Construction	<input type="checkbox"/>
System Improvement	<input checked="" type="checkbox"/>
Replacement	<input type="checkbox"/>
Retire No. Replace	<input type="checkbox"/>

SKETCH OF WORK



Map Reference 66 Twp. 89N R. 22W Sec. 18 Wire 2 Size 1/0 Kind ACSR

Pole No.	Pri. (Back) Span.	Poles H & C		Line Angle "G"	Trans. "G"	Ground "M2" Ohm	GUY		Anchor "F"	SECONDARY		Misc. & Remarks	Unit	No.	
		Misc.	Pri.				No.	Unit "E"		Unit No. J or K	Size Meter			CONST.	RET.
20	222	135-5	1	ALL									35-5	6	
29	222	135-5	1	ALL									40-5	4	
28	222	135-5	1	ALL									41-1	10	
27	222	135-5	1	ALL									45-1	1	
26	222	135-5	1	ALL									41-1	3	
25	222	135-5	1	ALL									41-1	2	
24	225	140-5	1	ALL	45-1								41-1	1	
23	225	140-5	1	ALL									41-12	1	
22	225	140-5	1	ALL											
21	225	140-5	1	ALL											

CONSTRUCTION

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
1/0 ACSR	X		X		2232	2	4597
TOTALS	X	X	X	X		X	

RETIREMENT

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
TOTALS	X	X	X	X		X	

JOB BRIEFING

☐ Nominal Voltage
☐ Fault Current Available
☐ Hazardous Induced Volt
☐ Presence Pictive Grd's
☐ Equipment Grounds
☐ Pole Condition
☐ Environmental Condition

☐ Loc of Line Pictive Dvc
☐ Other Utilities in Area
☐ Personal Pictive Equip
☐ Traffic Control
☐ Job Procedure
☐ Individual Job Duties
☐ Other Hazards

Crew Initials 1 2 3 4 5 6

Const. Complt _____

Retmt. Complt _____

Material Ticket Complt _____

500 BH 9-00

IOWA 93 MIDLAND POWER COOPERATIVE

STAKING SHEET

Name Line Rebuild 1.5 mi. 10
 Location #: 1276 -- 6618
 Address: 1204 St
 Phone #: _____

Sub _____
 Feeder 7
 Phase C
 Line Sec. _____

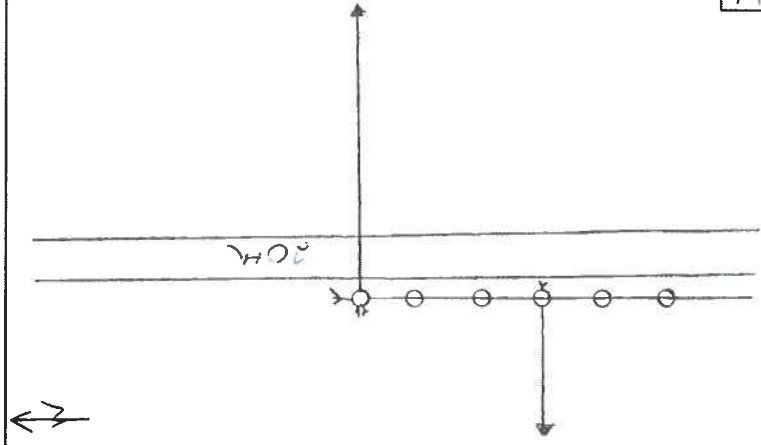
County: Hardin
 Township: Alden
 School Dist.: _____

WORK ORDER NO. 13325
 740c# 319-1
 Staked By CH Date 2/4/20
 Sheet No. 4 of 4
 Complt'd By _____ Date _____

WORK ORDER CODE	
New Construction	
System Improvement	<input checked="" type="checkbox"/>
Replacement	
Retire No. Replace	

SKETCH OF WORK

Map Reference 66 Twp. 89N R. 22W Sec. 18 Wire 2 Size 1/0 Kind ALSR



Pole No.	Pri. (Back) Span.	Poles H & C		Line Angle "G"	Trans. "C"	Ground "M2"	GUY		Anchor "F"	SECONDARY		Misc. & Remarks	Unit	No.	
		Misc.	Pri. Unit				No. "E"	Unit "F"		Unit No. J or K	Size Meter			CONST.	RET.
36	240	140-5	1 A41			H11	3	E11	25' W 6' S	F1.12			35-5	5	
35	240	135-5	1 A11										40-5	1	
34	240	135-5	1 A11			H11 P11							A1.1	5	
33	222	135-5	1 A1.1	AS1		H11	1	E1.1	12' N	F1.12		1276-043	A5.1	1	
32	222	135-5	1 A1.1										H1.1	3	
31	222	135-5	1 A1.1										P1.1	1	
													E1.1	4	
													F1.12	4	

JOB BRIEFING

☐ Nominal Voltage
☐ Fault Current Available
☐ Hazardous Induced Voltg
☐ Presence Pictive Grds
☐ Equipment Grounds
☐ Pole Condition
☐ Environmental Condition

☐ Loc of Line Pictive Dvc
☐ Other Utilities in Area
☐ Personal Pictive Equip
☐ Traffic Control
☐ Job Procedure
☐ Individual Job Duties
☐ Other Hazards

Crew Initials 1 2 3 4 5 6

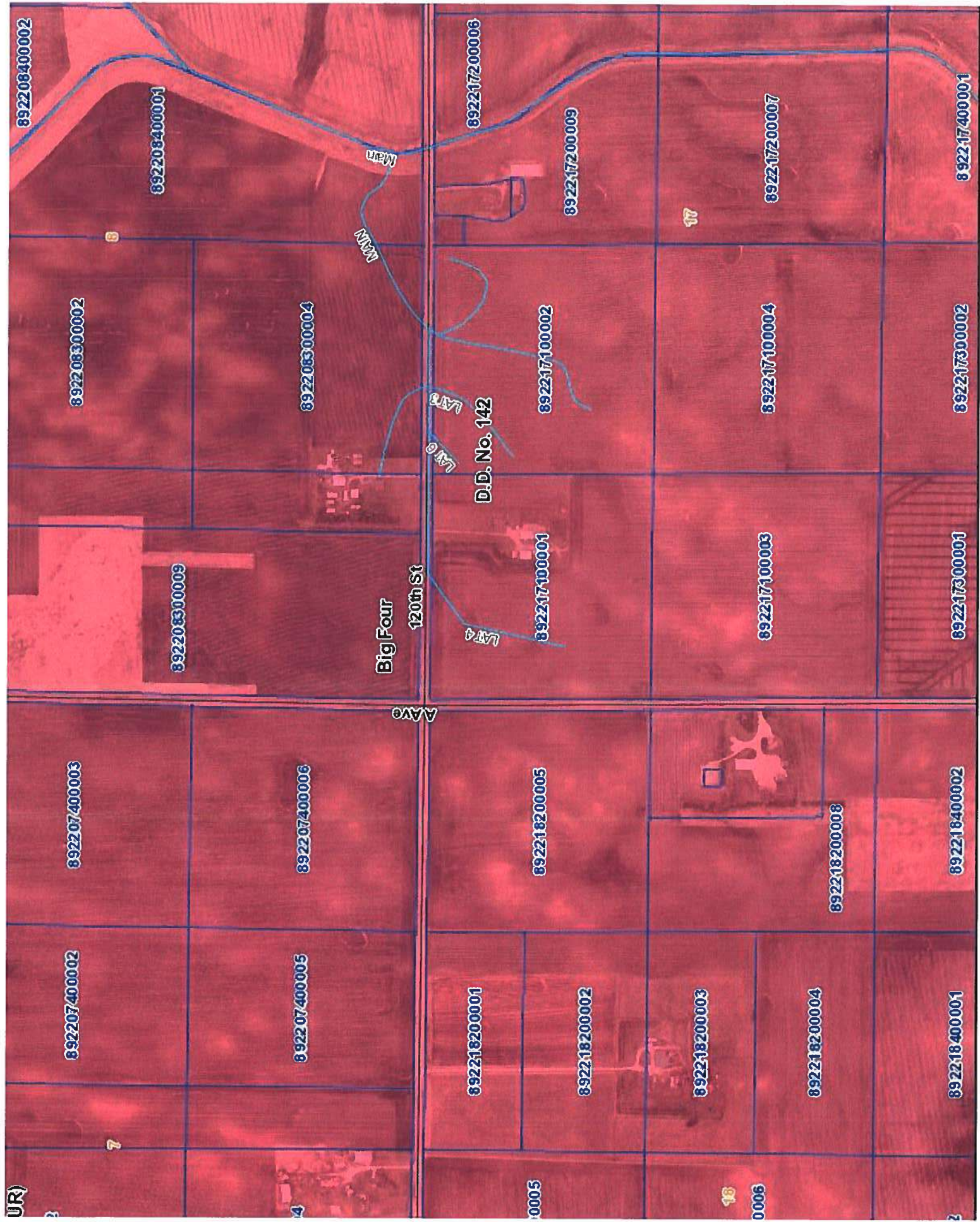
CONSTRUCTION

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
No. 1	X		X		1386	2	2855
TOTALS	X	X	X	X		X	

RETIREMENT

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
TOTALS	X	X	X	X		X	

Const. Complt _____
 Retmt. Complt _____
 Material Ticket Complt _____
 500 BH 9-00





Utility Permit # 2020-2

Utility Observation Report

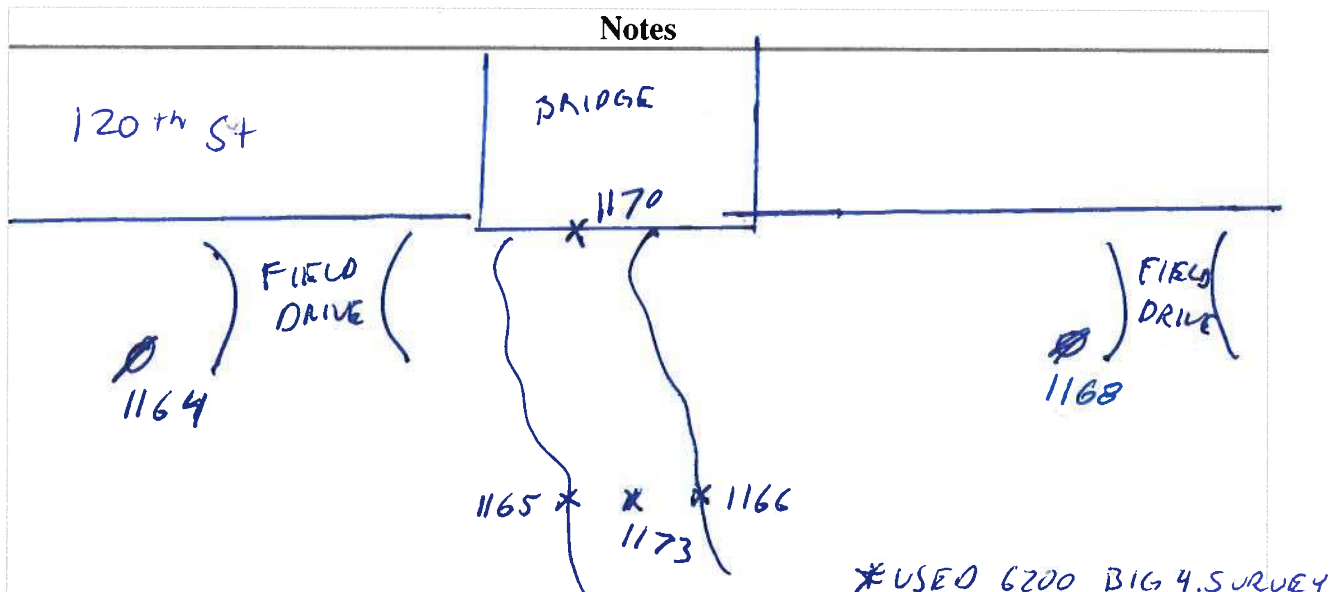
General Information	
Project Name and Number:	5734.3
Drainage District Number:	DD BIG 4
Drainage District Facility ID:	MAIN
Project Location: (1/4, Sec, Twp, Rng and road)	120th St 8-T89N-R22W
Date of Observation:	12-4-2020
Observer Name/Title:	Chris Sweeney / SURVEY TECH

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



Utility Permit # 2020-2

Horizontal clearance from District Tile or Open Ditch centerline:	82.21'
Tile outlets within 25-feet relocated? (If applicable)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Original tile size & material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input type="checkbox"/> VCP Other: OPEN DITCH
Tile replaced by utility?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Tile replacement material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:
Condition of District tile:	OPEN DITCH GOOD
Signage present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A



Inspector's Signature:

Date:

12-4-2020

@ PP 1168 Looking W



@ PP 1164 Looking E

@ W. BANK LOOKING E



@ E. BANK LOOKING W

2020-12-04 CS 5734

1082,3634613.153,4929596.668,1145.454,SCF MAG
1083,3634597.524,4929861.596,1142.763,GS CABLE 36"DEEP
1084,3634600.940,4929861.759,1142.927,EOA S EDGE
1085,3634588.507,4929862.086,1138.281,GS 20" OD CLAY TILE 7.8' TO TOP TILE
1086,3634547.303,4930467.345,1135.194,GS LOCATE
1087,3634553.680,4930471.479,1135.243,GS LOCATE 41" DEEP
1088,3634563.456,4930477.947,1135.250,GS LOCATE
1089,3634566.761,4930480.012,1135.319,GS LOCATE
1090,3634581.986,4930490.823,1133.738,GS 3.94' TO TOP 6" SPIRAL CMP
1091,3634586.276,4930494.904,1134.467,GS 5.27' TO TOP 6" SPIRAL CMP TIE IN 5.80' TO
TOP 2.75'OD CLAY TILE
1092,3634586.058,4930698.716,1134.568,GS 6.86' TO TOP 2.65" OD CLAY TILE
1093,3634595.460,4930241.975,1139.700,GS CABLE BORE LOCATE 6.0'DEEP
1094,3634595.016,4930295.175,1140.002,GS CABLE BORE LOCATE 6.0'DEEP
1095,3634595.158,4930332.286,1138.818,GS CABLE BORE LOCATE 6.0' DEEP
1096,3634596.111,4930362.264,1139.273,GS CABLE BORE LOCATE 6.0'DEEP
1097,3634596.448,4930392.367,1139.273,GS CABLE BORE LOCATE 6.0'DEEP
1098,3634595.628,4930422.028,1138.972,GS CABLE BORE LOCATE 6.0'D
1099,3634595.091,4930462.078,1138.502,GS CABLE BORE LOCATE 6.0'DEEP
1100,3634595.228,4930482.579,1138.642,GS CABLE BORE LOCATE 6.0'DEEP
1101,3634595.259,4930511.712,1138.497,GS CABLE BORE LOCATE 6.5'DEEP
1102,3634599.238,4930502.506,1139.818,GS EOA S SIDE
1103,3634599.011,4930699.272,1139.210,GS EOA S SIDE
1104,3634565.656,4930686.085,1135.516,FNL EAST
1105,3634594.844,4930541.626,1139.058,GS CABLE BORE LOCATE 6.8'DEEP
1106,3634594.699,4930571.954,1139.359,GS CABLE BORE LOCATE 6.8'DEEP
1107,3634595.562,4930592.348,1139.305,GS CABLE BORE LOCATE 6.8'DEEP
1108,3634595.545,4930633.152,1138.669,GS CABLE BORE LOCATE 5.5'DEEP
1109,3634595.096,4930672.307,1138.417,GS CABLE BORE LOCATE 4.5'DEEP
1110,3634595.132,4930672.253,1138.414,GS CABLE BORE LOCATE 4.0'DEEP
1111,3634585.111,4930229.354,1129.379,FL 18" BEEHIVE INTAKE
1112,3634585.420,4930229.285,1133.694,18" BEEHIVE INTAKE N RIM
1113,3634587.892,4930229.463,1134.484,GS 6.0' TO TOP TILE
1114,3634600.476,4930231.515,1140.301,GS EOA S SIDE
1115,3634565.961,4930202.521,1136.598,FNL S&W
1116,3634586.829,4931156.251,1134.753,GS TILE BORE LOCATE
1117,3634588.657,4931196.422,1136.053,GS TILE BORE LOCATE
1118,3634563.933,4931320.238,1134.025,FNL E-W &S
1119,3634597.676,4931241.249,1139.587,EOA 22'
1120,3634595.146,4932954.312,1140.265,GS CONC BRIDGE DECK 34' TO CABLE
1121,3634595.228,4932902.042,1139.236,GS CONC BRIDGE DECK 30'4" TO CABLE
1122,3634595.139,4932852.503,1138.375,GS CONC BRIDGE DECK 29'5" TO CABLE
1123,3634597.918,4932761.810,1137.123,GS EOA S SIDE
1124,3634598.136,4933036.143,1142.264,GS EOA S SIDE
1125,3634597.899,4933070.316,1143.412,GS EOA S SIDE
1126,3634590.718,4932686.110,1136.174,GS PULLED CABLE 36"DEEP
1127,3634591.327,4932714.673,1136.337,GS PULLED CABLE 36"DEEP
1128,3634585.887,4932772.639,1136.369,GS CABLE BORE LOCATE
1129,3634584.222,4932786.137,1135.770,GS CABLE BORE LOCATE

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1130,3634581.886,4932803.033,1133.574,GS CABLE BORE LOCATE
1131,3634579.858,4932816.318,1131.987,GS CABLE BORE LOCATE
1132,3634577.552,4932829.489,1130.499,GS CABLE BORE LOCATE
1133,3634574.217,4932840.938,1128.420,GS CABLE BORE LOCATE
1134,3634572.396,4932852.486,1127.683,GS CABLE BORE LOCATE
1135,3634572.360,4932862.277,1127.405,GS CABLE BORE LOCATE
1136,3634572.205,4932869.941,1126.045,GS CABLE BORE LOCATE
1137,3634572.614,4932877.989,1121.721,GS CABLE BORE LOCATE
1138,3634573.597,4932887.287,1115.203,EDGE WATER
1139,3634573.261,4932889.818,1114.594,FL DD
1140,3634593.489,4932844.215,1138.185,BRIDGE SW COR
1141,3634593.810,4932972.510,1140.664,BRIDGE SE COR
1142,3634574.194,4932912.390,1114.520,FL DD
1143,3634573.648,4932915.346,1114.983,GS EDGB WATER
1144,3634574.719,4932928.488,1123.006,GS CABLE BORE LOCATE
1145,3634573.679,4932937.049,1126.865,GS CABLE BORE LOCATE
1146,3634573.954,4932945.414,1131.206,GS CABLE BORE LOCATE
1147,3634573.072,4932953.554,1135.233,GS CABLE BORE LOCATE
1148,3634572.584,4932964.197,1138.554,GS CABLE BORE LOCATE
1149,3634572.755,4932977.510,1139.677,GS CABLE BORE LOCATE
1150,3634574.694,4933005.615,1140.622,GS CABLE BORE LOCATE
1151,3634578.975,4933030.772,1141.528,GS CABLE BORE LOCATE
1152,3634584.697,4933052.516,1142.271,GS CABLE BORE LOCATE
1153,3634589.770,4933069.794,1142.986,GS CABLE BORE LOCATE
1154,3634594.207,4933111.513,1144.850,GS CABLE PULLED 36" DEEP
1155,3634595.190,4933168.691,1146.624,GS CABLE PULLED 36" DEEP
1156,3634597.628,4933168.956,1146.998,GS EOA S SIDE
1157,3634597.963,4931157.541,1139.149,GS EOA 21'
1158,3634597.823,4931198.605,1139.265,GS EOA 21'6"
1159,3634588.297,4931236.347,1136.424,GS BORE CABLE LOCATE
1160,3634595.277,4931339.490,1140.128,GS PULL CABLE 3.0' DEEP
1161,3634597.639,4931339.409,1140.535,GS EOA S SIDE
1162,3634596.380,4931056.594,1138.746,GS PULLED CABLE 36"DEEP
1163,3653116.628,4934644.558,1147.215,Base Setup
1164,3655675.849,4929847.261,1140.356,928 1.0w
1165,3655632.105,4929940.981,1126.550,321
1166,3655634.564,4929952.475,1126.523,321
1167,3655689.206,4929955.060,1138.240,513 18
1168,3655677.769,4930056.791,1139.666,928 1.0e
1169,3655690.217,4929970.948,1138.706,513 18
1170,3655699.164,4929926.104,1142.528,322
1171,3655688.367,4929898.333,1139.150,513 18
1172,3655688.274,4929848.481,1139.493,513 18
1173,3655633.335,4929946.728,1126.550,322
1174,3657881.789,4932023.421,1142.409,322
1175,3657853.962,4932003.625,1138.530,928 1.0w
1176,3657856.060,4932003.157,1137.946,323
1177,3657860.637,4932003.084,1137.486,301
1178,3658098.451,4932006.320,1139.646,928 1.0w

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1179,3661097.440,4928298.492,1140.634,928 1.0n
1180,3661079.122,4928227.227,1143.385,322
1181,3661097.271,4928120.066,1140.836,928 1.0n
1182,3659757.185,4937384.019,1149.524,928 1.0w
1183,3659960.739,4937386.030,1151.237,928 1.0w
1184,3659844.056,4937361.381,1151.635,322



Drainage Utility Permit Application

Hardin County

Applicant: Casey Huff

Contact Email: chuff@midlandpower.coop

Contact Phone: (515) 386-4111

Utility Type: N/A - Utility Permits Only

Drainage District: DDs\DD 38 (51063)

Description of Work: DD's 38, 46, Big Four & FH 5-75 - Midland Power Coop - Overhead line rebuild, 1.5 miles along east and west side of C ave. Map 66, sections 4 & 10.

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 # _____ **2020-3**

- ☐ 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

1005 E Lincoln Way
Address

Jefferson IA 50129
City State Zip

Applicant Contact:

Casey Huff (515) 386-4111
Name Phone

chuff@midlandpower.coop
Email

Utility Type:

Overhead Electrical Primary Line

Drainage District(s) Crossed:

DD No 38, DD No 46, Big Four, F-H-5-75

Facilities Crossed (specific tile, open ditch):

Description of Work:

(Location plan of
proposed utility must
be attached.)

Overhead line rebuild 1.5 miles, along east
and west side of C Ave. Map 1e6
sections 04 +10

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

2/28/20
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

For Office Use Only

Application Approval:

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

Date: _____

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.

STAKING SHEET

WORK ORDER NO. 13326
 740c# 318-1
 Staked By CH Date 2/1/20
 Sheet No. 1 of 4
 Comptd By _____ Date _____

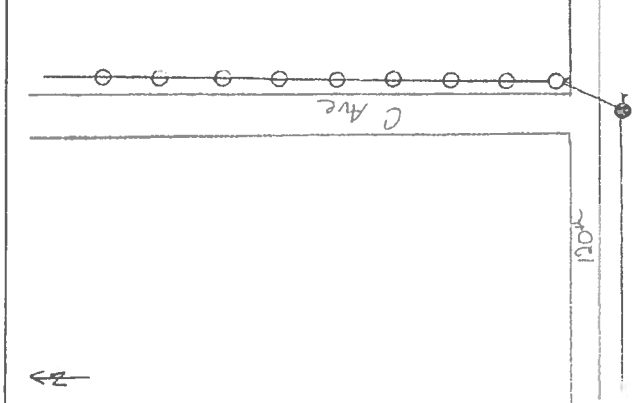
WORK ORDER CODE	
New Construction	
System Improvement	<input checked="" type="checkbox"/>
Replacement	
Retire No. Replace	

County: Hardin
 Township: Alden
 School Dist.: _____

12 Sub
 7 Feeder
 C Phase
 Line Sec. _____

Name Line Rebuild 15m. 10
 Location #: 1276 -- 6610
 Address: C Ave
 Phone#: _____

SKETCH OF WORK



Map Reference 66 Twp. 89N R 23W Sec. 10 Wire 10 Size 1/0 Kind ACSR

Pole No.	Pri. (Back) Span.	Poles H & C		Line Angle "G"	Trans. "M2"	Ground	GUY		Anchor "F"	SECONDARY		Misc. & Remarks	Unit	No. CONST.	RET.
		Misc.	Pri. Unit				Unit "E"	No. 310		Unit No. J or K	Size (Back) Span Meter				
10	235	135-5	1 All										35-5	8	
9	235	135-5	1 All										40-5	1	
8	235	135-5	1 All										Al.1	8	
7	235	135-5	1 All										Pl.1	3	
6	235	135-5	1 All										Pl.1	2	
5	235	135-5	1 All										Sl.01	1	
4	235	135-5	1 All										El.1	1	
3	235	135-5	1 All										Fl.12	1	
2	130	140-5	1 A6.1										Al.1	1	
1			Se. 1327												

JOB BRIEFING

Normal Voltage _____
 Fault Current Available _____
 Hazardous Reduced Volt _____
 Personnel Protective Equip _____
 Equipment Grounds _____
 Pole Condition _____
 Environmental Condition _____

Loc of Line Protective Dev _____
 Other Utilities in Area _____
 Personal Protective Equip _____
 Traffic Control _____
 Job Responsibilities _____
 Other Hazards _____

Crew Initials 1 2 3 4 5 6

CONSTRUCTION

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
110	ALSR	X	X		2001	2	4122
TOTALS							

RETIREMENT

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
TOTALS							

Const. Compt _____
 Retmt. Compt _____
 Material Ticket Compt _____
 500 BH 5-00

Name Line Revised 15mm 10
Location #: 1276 -- 66 03
Address: C Ave
Phone#:

13 Sub
7 Feeder
C Phase
Line Sec.

County: Hard.
Township: Alden
School Dist.:

WORK ORDER CODE
New Construction
System Improvement
Replacement
Retire No. Replace

WORK ORDER NO. 13326
740c# 318-1
Staked By CH Date 2/4/20
Sheet No. 3 of 4
Compltd By Date

STAKING SHEET

SKETCH OF WORK

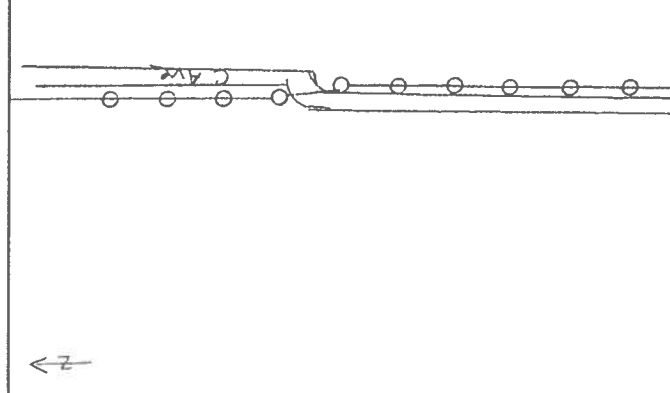
Map Reference 66

Twp. 89N R

Sec. 22

Wire 03

Size 2 Kind ACSR



Pole No.	Pri. Span.	Poles H & C		Line Angle "G"	Ground "M2"	Guy "E"	Anchor "F"	SECONDARY		Misc. & Remarks	Unit	No.	
		Misc.	Pri.					Unit	(Back) Span			CONST.	RET.
30	214	1355	1	11							35-5	4	
29	214	1355	1	11							40-5	5	
28	194	1405	1	11							45-3	1	
27	205	1405	1	11							41-1	8	
26	133	1453	1	11							41-1	1	
25	133	1405	1	11							41-1	2	
24	203	1405	1	11							41-1	1	
23	203	1405	1	11							41-1	2	
22	203	1355	1	11							41-1	1	
21	203	1355	1	11							41-1	1	

CONSTRUCTION

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
1/2	ACS	2	X		1985	2	4089
TOTALS							

RETIREMENT

Conductor	Pri.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
TOTALS							

JOB BRIEFING

- Nominal Voltage
- Other Utilities in Area
- Personal Protective Equip
- Presence of Active Grids
- Equipment Grounds
- Pole Condition
- Environmental Condition
- Loc of Line Pictive Dvc
- Traffic Control
- Job Procedure
- Individual Job Duties
- Other Hazards

Crew Initials 1 2 3 4 5 6

Const. Complt

Retmt. Complt

Material Ticket Complt

500 BH 9-00

WORK ORDER NO. 13326

County: Hardin
Township: Alden
School Dist.: _____

WORK ORDER CODE	
New Construction	
System Improvement	
Replacement	
Retire No. Replace	

Map Reference

Two. 89N B 22W

Wire 2

size	kind	acc
1/2	kind	acc

2 Aug

CONSTRUCTION

Conductor	Ph.	Sec.	O.H.	URD	Pole Line Ft.	No. of Wires	Total Feet
1/0 A.S.C.	X		X		1498	2	3085
TOTALS	X	X	X	X		X	

RETIREMENT

[illegible]

Material Ticket Compl

500 BH 9-00

JOB BRIEFING

Nominal Voltage	Loc of Line	Prtctive Dev
Fault Current Available	Other Utilities in Area	—
Hazardous Induced Voltg	Personal Prtctive Equip	—
Presence Prtctive Grds	Traffic Control	—
Equipment Grounds	Job Procedure	—
Pole Condition	Individual Job Duties	—
Environmental Condition	Other Hazards	—

Crow Index	1	2	3	4	5	6
------------	---	---	---	---	---	---

Midland Power Cooperative



Red = A phase
 Yellow = B phase
 Blue = C phase
 Peach = 2 phase
 GREEN = 3 PHASE

County
 HARDIN

Township
 ALDEN

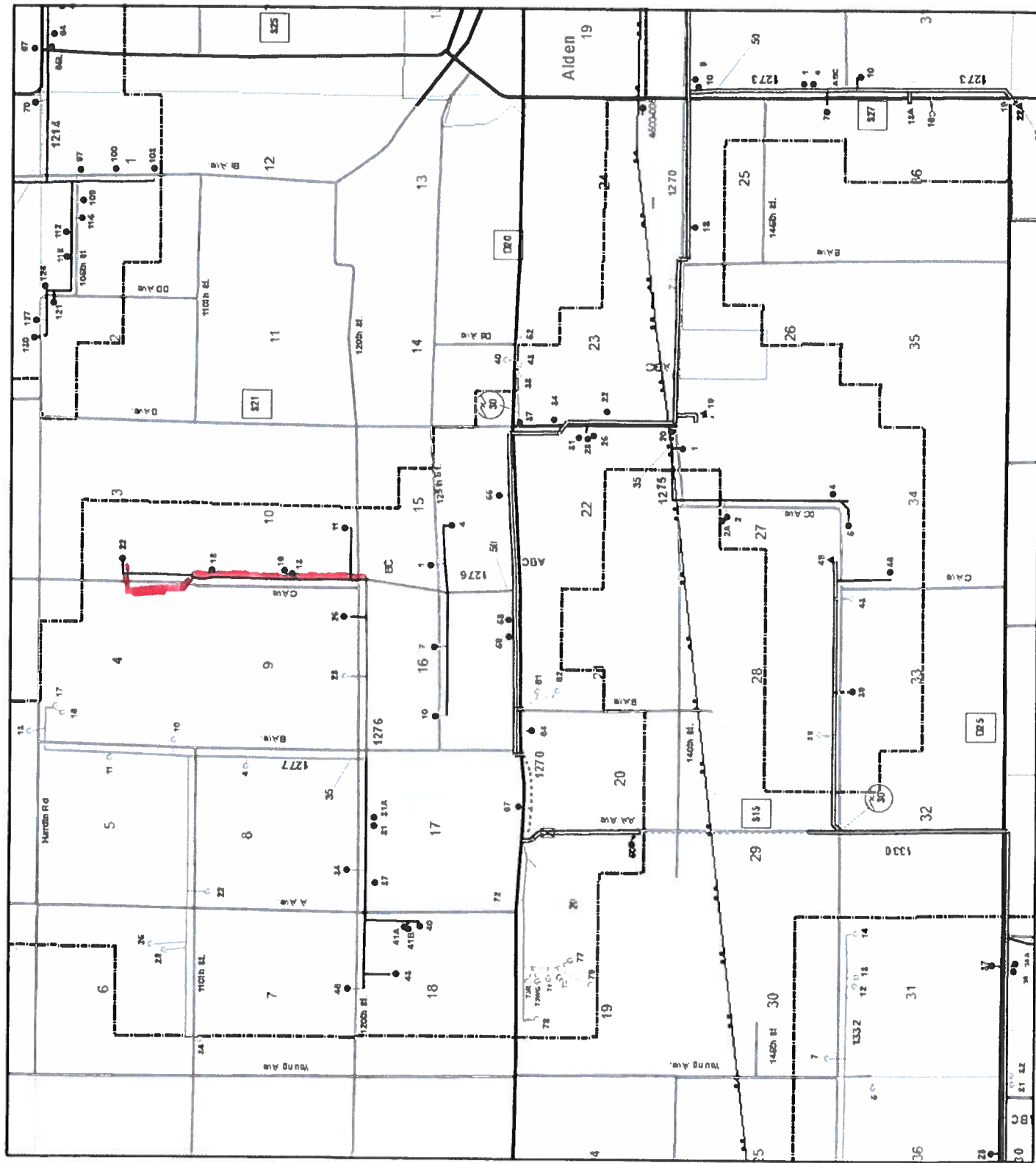
T89N R22W

Map No.

66

65	66	67
59	73	

Date: 1/3/2017





Utility Permit #

Utility Observation Report

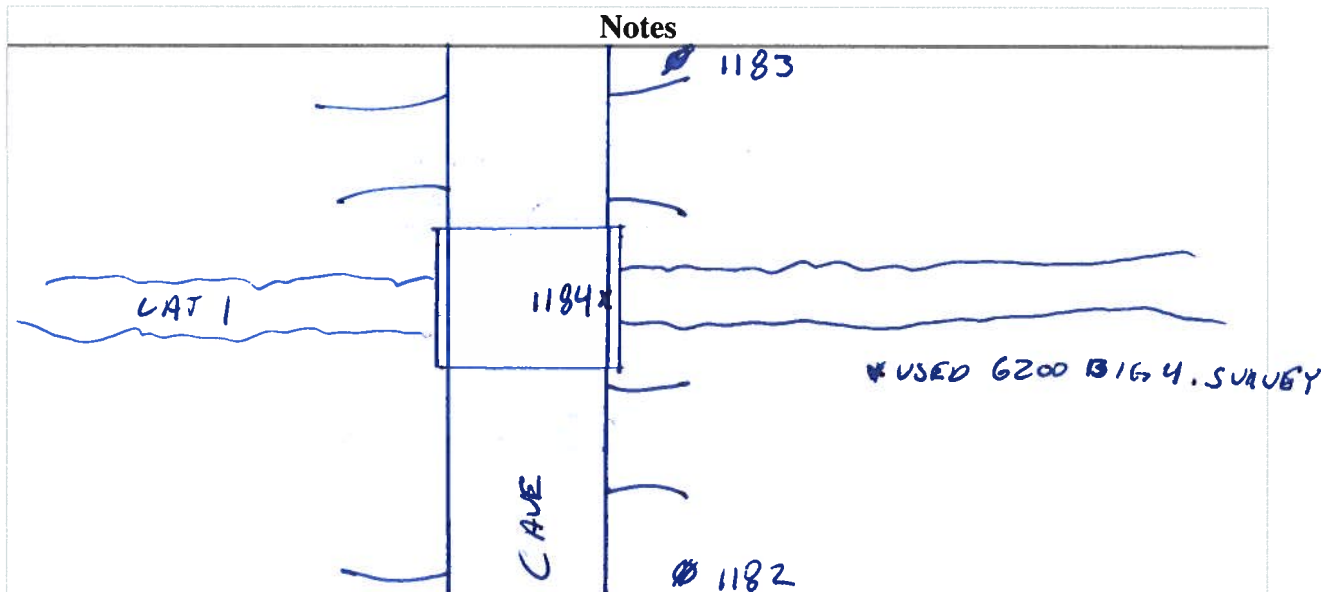
General Information	
Project Name and Number:	5737.1
Drainage District Number:	DD B164
Drainage District Facility ID:	LAT 1
Project Location: (1/4, Sec, Twp, Rng and road)	CAVE / 9-T89N-R22W
Date of Observation:	12-4-2020
Observer Name/Title:	Chris Sweeney / SURVEY TECH

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



Utility Permit #

Horizontal clearance from District Tile or Open Ditch centerline:	86.6'		
Tile outlets within 25-feet relocated? (If applicable)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Original tile size & material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input type="checkbox"/> VCP Other: N/A		
Tile replaced by utility?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Tile replacement material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:		
Condition of District tile:	Good		
Signage present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A



Inspector's Signature:

Chris [Signature]

Date:

12-4-2020

@PP 1182 LOOKING N.



@1184 LOOKING E

@ PP 1183 LOOKING S.



2020/12/04

2020-12-04 CS 5737

1082,3634613.153,4929596.668,1145.454,SCF MAG
1083,3634597.524,4929861.596,1142.763,GS CABLE 36"DEEP
1084,3634600.940,4929861.759,1142.927,EOA S EDGE
1085,3634588.507,4929862.086,1138.281,GS 20" OD CLAY TILE 7.8' TO TOP TILE
1086,3634547.303,4930467.345,1135.194,GS LOCATE
1087,3634553.680,4930471.479,1135.243,GS LOCATE 41" DEEP
1088,3634563.456,4930477.947,1135.250,GS LOCATE
1089,3634566.761,4930480.012,1135.319,GS LOCATE
1090,3634581.986,4930490.823,1133.738,GS 3.94' TO TOP 6" SPIRAL CMP
1091,3634586.276,4930494.904,1134.467,GS 5.27' TO TOP 6" SPIRAL CMP TIE IN 5.80' TO
TOP 2.75'OD CLAY TILE
1092,3634586.058,4930698.716,1134.568,GS 6.86' TO TOP 2.65" OD CLAY TILE
1093,3634595.460,4930241.975,1139.700,GS CABLE BORE LOCATE 6.0'DEEP
1094,3634595.016,4930295.175,1140.002,GS CABLE BORE LOCATE 6.0'DEEP
1095,3634595.158,4930332.286,1138.818,GS CABLE BORE LOCATE 6.0' DEEP
1096,3634596.111,4930362.264,1139.273,GS CABLE BORE LOCATE 6.0'DEEP
1097,3634596.448,4930392.367,1139.273,GS CABLE BORE LOCATE 6.0'DEEP
1098,3634595.628,4930422.028,1138.972,GS CABLE BORE LOCATE 6.0'D
1099,3634595.091,4930462.078,1138.502,GS CABLE BORE LOCATE 6.0'DEEP
1100,3634595.228,4930482.579,1138.642,GS CABLE BORE LOCATE 6.0'DEEP
1101,3634595.259,4930511.712,1138.497,GS CABLE BORE LOCATE 6.5'DEEP
1102,3634599.238,4930502.506,1139.818,GS EOA S SIDE
1103,3634599.011,4930699.272,1139.210,GS EOA S SIDE
1104,3634565.656,4930686.085,1135.516,FNL EAST
1105,3634594.844,4930541.626,1139.058,GS CABLE BORE LOCATE 6.8'DEEP
1106,3634594.699,4930571.954,1139.359,GS CABLE BORE LOCATE 6.8'DEEP
1107,3634595.562,4930592.348,1139.305,GS CABLE BORE LOCATE 6.8'DEEP
1108,3634595.545,4930633.152,1138.669,GS CABLE BORE LOCATE 5.5'DEEP
1109,3634595.096,4930672.307,1138.417,GS CABLE BORE LOCATE 4.5'DEEP
1110,3634595.132,4930672.253,1138.414,GS CABLE BORE LOCATE 4.0'DEEP
1111,3634585.111,4930229.354,1129.379,FL 18" BEEHIVE INTAKE
1112,3634585.420,4930229.285,1133.694,18" BEEHIVE INTAKE N RIM
1113,3634587.892,4930229.463,1134.484,GS 6.0' TO TOP TILE
1114,3634600.476,4930231.515,1140.301,GS EOA S SIDE
1115,3634565.961,4930202.521,1136.598,FNL S&W
1116,3634586.829,4931156.251,1134.753,GS TILE BORE LOCATE
1117,3634588.657,4931196.422,1136.053,GS TILE BORE LOCATE
1118,3634563.933,4931320.238,1134.025,FNL E-W &S
1119,3634597.676,4931241.249,1139.587,EOA 22'
1120,3634595.146,4932954.312,1140.265,GS CONC BRIDGE DECK 34' TO CABLE
1121,3634595.228,4932902.042,1139.236,GS CONC BRIDGE DECK 30'4" TO CABLE
1122,3634595.139,4932852.503,1138.375,GS CONC BRIDGE DECK 29'5" TO CABLE
1123,3634597.918,4932761.810,1137.123,GS EOA S SIDE
1124,3634598.136,4933036.143,1142.264,GS EOA S SIDE
1125,3634597.899,4933070.316,1143.412,GS EOA S SIDE
1126,3634590.718,4932686.110,1136.174,GS PULLED CABLE 36"DEEP
1127,3634591.327,4932714.673,1136.337,GS PULLED CABLE 36"DEEP
1128,3634585.887,4932772.639,1136.369,GS CABLE BORE LOCATE
1129,3634584.222,4932786.137,1135.770,GS CABLE BORE LOCATE

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1130,3634581.886,4932803.033,1133.574,GS CABLE BORE LOCATE
1131,3634579.858,4932816.318,1131.987,GS CABLE BORE LOCATE
1132,3634577.552,4932829.489,1130.499,GS CABLE BORE LOCATE
1133,3634574.217,4932840.938,1128.420,GS CABLE BORE LOCATE
1134,3634572.396,4932852.486,1127.683,GS CABLE BORE LOCATE
1135,3634572.360,4932862.277,1127.405,GS CABLE BORE LOCATE
1136,3634572.205,4932869.941,1126.045,GS CABLE BORE LOCATE
1137,3634572.614,4932877.989,1121.721,GS CABLE BORE LOCATE
1138,3634573.597,4932887.287,1115.203,EDGE WATER
1139,3634573.261,4932889.818,1114.594,FL DD
1140,3634593.489,4932844.215,1138.185,BRIDGE SW COR
1141,3634593.810,4932972.510,1140.664,BRIDGE SE COR
1142,3634574.194,4932912.390,1114.520,FL DD
1143,3634573.648,4932915.346,1114.983,GS EDGB WATER
1144,3634574.719,4932928.488,1123.006,GS CABLE BORE LOCATE
1145,3634573.679,4932937.049,1126.865,GS CABLE BORE LOCATE
1146,3634573.954,4932945.414,1131.206,GS CABLE BORE LOCATE
1147,3634573.072,4932953.554,1135.233,GS CABLE BORE LOCATE
1148,3634572.584,4932964.197,1138.554,GS CABLE BORE LOCATE
1149,3634572.755,4932977.510,1139.677,GS CABLE BORE LOCATE
1150,3634574.694,4933005.615,1140.622,GS CABLE BORE LOCATE
1151,3634578.975,4933030.772,1141.528,GS CABLE BORE LOCATE
1152,3634584.697,4933052.516,1142.271,GS CABLE BORE LOCATE
1153,3634589.770,4933069.794,1142.986,GS CABLE BORE LOCATE
1154,3634594.207,4933111.513,1144.850,GS CABLE PULLED 36" DEEP
1155,3634595.190,4933168.691,1146.624,GS CABLE PULLED 36" DEEP
1156,3634597.628,4933168.956,1146.998,GS EOA S SIDE
1157,3634597.963,4931157.541,1139.149,GS EOA 21'
1158,3634597.823,4931198.605,1139.265,GS EOA 21'6"
1159,3634588.297,4931236.347,1136.424,GS BORE CABLE LOCATE
1160,3634595.277,4931339.490,1140.128,GS PULL CABLE 3.0' DEEP
1161,3634597.639,4931339.409,1140.535,GS EOA S SIDE
1162,3634596.380,4931056.594,1138.746,GS PULLED CABLE 36"DEEP
1163,3653116.628,4934644.558,1147.215,Base Setup
1164,3655675.849,4929847.261,1140.356,928 1.0w
1165,3655632.105,4929940.981,1126.550,321
1166,3655634.564,4929952.475,1126.523,321
1167,3655689.206,4929955.060,1138.240,513 18
1168,3655677.769,4930056.791,1139.666,928 1.0e
1169,3655690.217,4929970.948,1138.706,513 18
1170,3655699.164,4929926.104,1142.528,322
1171,3655688.367,4929898.333,1139.150,513 18
1172,3655688.274,4929848.481,1139.493,513 18
1173,3655633.335,4929946.728,1126.550,322
1174,3657881.789,4932023.421,1142.409,322
1175,3657853.962,4932003.625,1138.530,928 1.0w
1176,3657856.060,4932003.157,1137.946,323
1177,3657860.637,4932003.084,1137.486,301
1178,3658098.451,4932006.320,1139.646,928 1.0w

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1179,3661097.440,4928298.492,1140.634,928 1.0n
1180,3661079.122,4928227.227,1143.385,322
1181,3661097.271,4928120.066,1140.836,928 1.0n
1182,3659757.185,4937384.019,1149.524,928 1.0w
1183,3659960.739,4937386.030,1151.237,928 1.0w
1184,3659844.056,4937361.381,1151.635,322



Drainage Work Order Request For Repair

Hardin County

Date: 3/31/2020

Work Order #: 2020-5

Drainage District: DDs\Big 4 Main (51193)

Sec-Twp-Rge: 04-89-22 **Qtr Sec:** Sect. 04, 05, 06, 08

Location/GIS: _____

Requested By: Midland Power - Casey Huff

Contact Phone: (515) 386-4111

Contact Email: chuff@midlandpower.coop

Landowner (if different): _____

Description: DD Big 4 - Overhead line rebuild, 4 miles, Alden Twp, Sections 04, 05, 06 and 08.

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:

Midland Power Cooperative
Company Name

1005 E Lincolnway
Address

Jefferson IA 50129
City State Zip

Applicant Contact:

Casey Huff (515) 386-5814
Name Phone

chuff@midlandpower.coop
Email

Utility Type:

overhead Electric

Drainage District(s) Crossed:

Big Four

Facilities Crossed (specific tile, open ditch):

Description of Work:

overhead line rebuild 4 miles, Alden township

(Location plan of
proposed utility must
be attached.)

sections 04, 05, 06 and 08.

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

3/25/20
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

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.



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.



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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.

Drainage District:

Big 4

Utility Crossing Summary:

- See attached reports for findings.

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

No time recorded as only observation was conducted.

Additional Actions Recommended:

One of the poles appears to be very close to the Lateral 1 open ditch (i.e. at the top of the ditch bank) and could potentially pose bank stability issues, or could fail in the event of a bank slough.





Utility Permit # 2020-5

Utility Observation Report

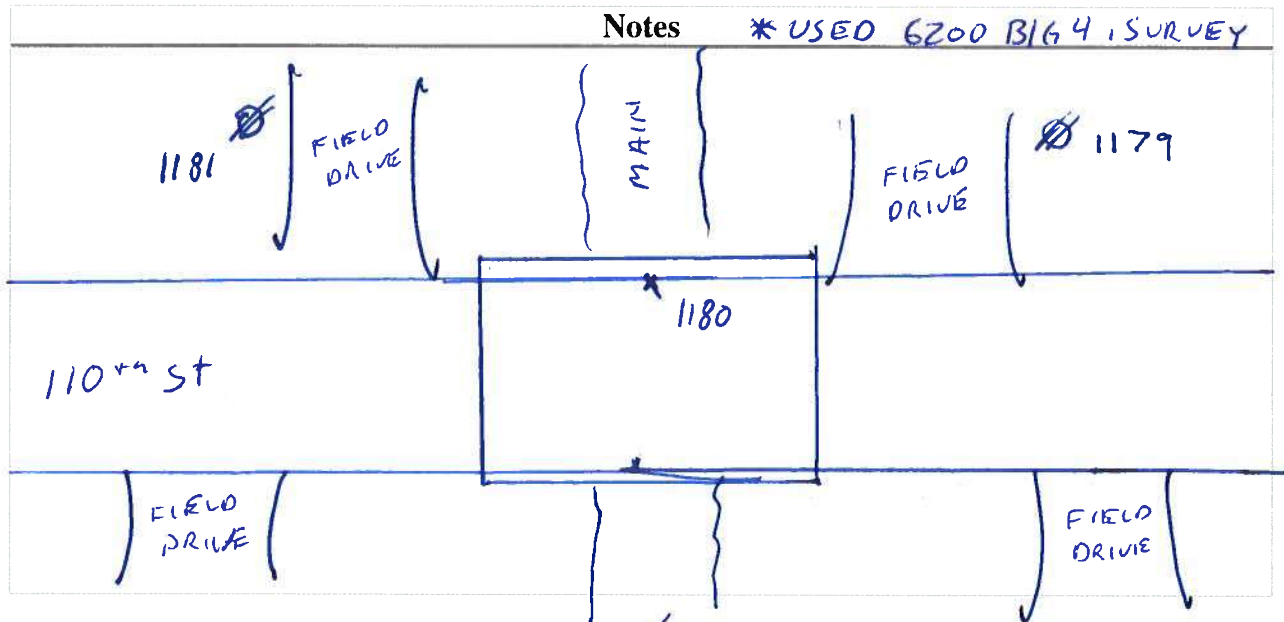
General Information	
Project Name and Number:	5734.4
Drainage District Number:	DD B164
Drainage District Facility ID:	MAIN
Project Location: (1/4, Sec, Twp, Rng and road)	110th St / 8-Town-R22W
Date of Observation:	12-4-2020
Observer Name/Title:	Chris Sweeney / SURVEY TECH

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



Utility Permit #

Horizontal clearance from District Tile or Open Ditch centerline:	71.3'		
Tile outlets within 25-feet relocated? (If applicable)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Original tile size & material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input type="checkbox"/> VCP Other: OPEN DITCH		
Tile replaced by utility?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Tile replacement material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:		
Condition of District tile:	GOOD		
Signage present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> N/A



Inspector's Signature:

Chris [Signature]

Date:

12-4-2020

@ 1180 LOOKING N.



@ PP 1181 LOOKING E

@PP 1179 LOOKING W,





Utility Permit # 2020-5

Utility Observation Report

General Information	
Project Name and Number:	5734.4
Drainage District Number:	DD BIG 4
Drainage District Facility ID:	LAT 1
Project Location: (1/4, Sec, Twp, Rng and road)	DAVE / 8-T89N-R22W
Date of Observation:	12-4-2020
Observer Name/Title:	Chris Sweeney / SURVEY TECH

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



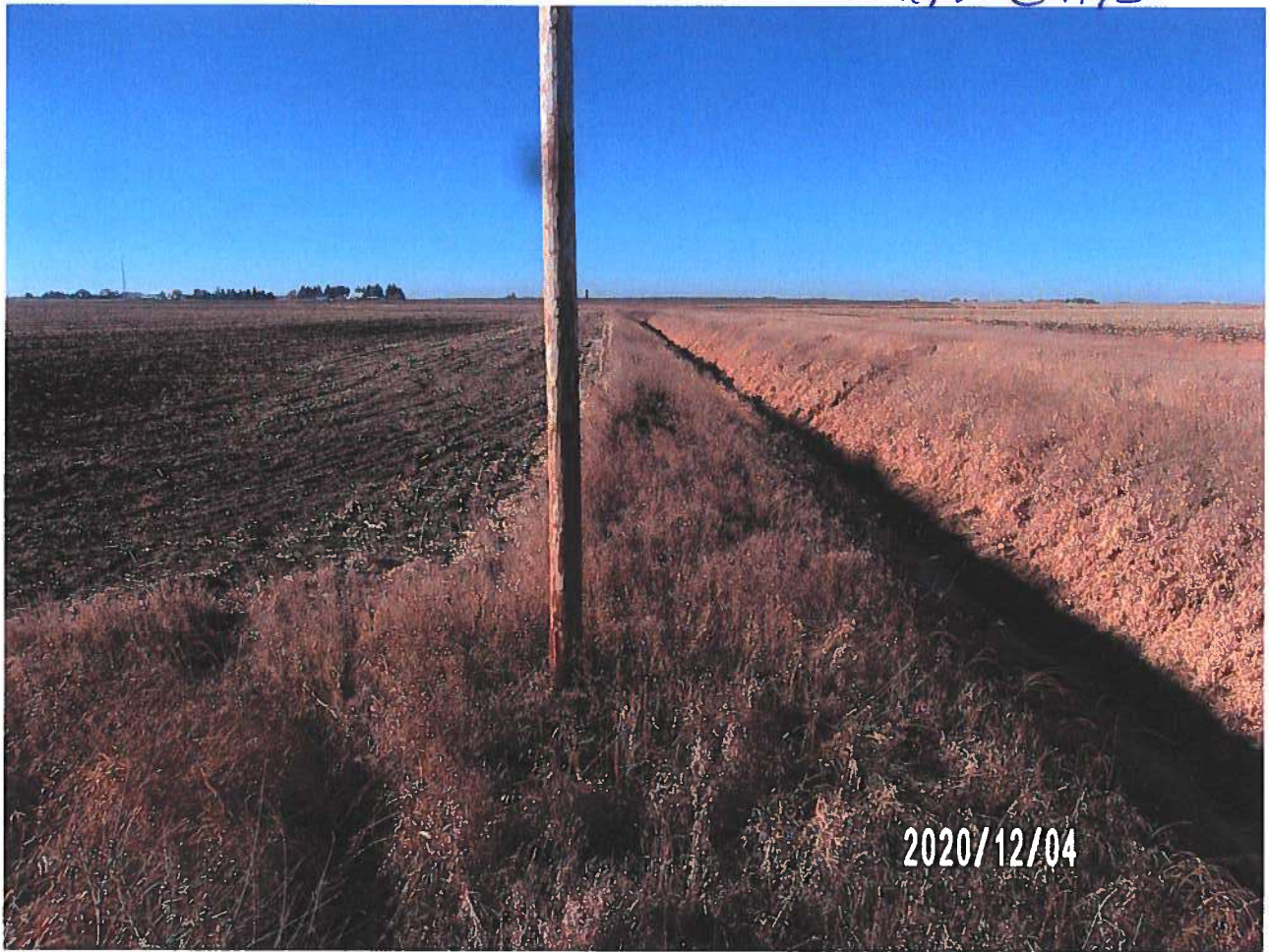
Utility Permit #

Horizontal clearance from District Tile or Open Ditch centerline:	19.49' ±		
Tile outlets within 25-feet relocated? (If applicable)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Original tile size & material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input type="checkbox"/> VCP Other: OPEN DITCH		
Tile replaced by utility?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Tile replacement material:	<input type="checkbox"/> RCP	<input type="checkbox"/> CMP	<input checked="" type="checkbox"/> N/A
Condition of District tile:	GOOD		
Signage present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> N/A

Notes	
<p>S. PP IS 2.2' S. OF STOP 1178</p> <p>S. PP IS 6.7' S. OF S. GRADE DRAIN</p> <p>LAT 1</p> <p>GRADE BREAK 1177</p> <p>TOP OF SLOPE 1176</p> <p>1175</p> <p>* USED 6200 BIG 4. SURVEY</p>	

Inspector's Signature: Chris Hummer Date: 12-4-2020

LOOKING W @ 1175 PP



@ 1174 LOOKING W

@1178 LOOKING S.



@PP 1175 LOOKING N.

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1082,3634613.153,4929596.668,1145.454,SCF MAG
1083,3634597.524,4929861.596,1142.763,GS CABLE 36"DEEP
1084,3634600.940,4929861.759,1142.927,EOA S EDGE
1085,3634588.507,4929862.086,1138.281,GS 20" OD CLAY TILE 7.8' TO TOP TILE
1086,3634547.303,4930467.345,1135.194,GS LOCATE
1087,3634553.680,4930471.479,1135.243,GS LOCATE 41" DEEP
1088,3634563.456,4930477.947,1135.250,GS LOCATE
1089,3634566.761,4930480.012,1135.319,GS LOCATE
1090,3634581.986,4930490.823,1133.738,GS 3.94' TO TOP 6" SPIRAL CMP
1091,3634586.276,4930494.904,1134.467,GS 5.27' TO TOP 6" SPIRAL CMP TIE IN 5.80' TO
TOP 2.75' OD CLAY TILE
1092,3634586.058,4930698.716,1134.568,GS 6.86' TO TOP 2.65" OD CLAY TILE
1093,3634595.460,4930241.975,1139.700,GS CABLE BORE LOCATE 6.0'DEEP
1094,3634595.016,4930295.175,1140.002,GS CABLE BORE LOCATE 6.0'DEEP
1095,3634595.158,4930332.286,1138.818,GS CABLE BORE LOCATE 6.0' DEEP
1096,3634596.111,4930362.264,1139.273,GS CABLE BORE LOCATE 6.0'DEEP
1097,3634596.448,4930392.367,1139.273,GS CABLE BORE LOCATE 6.0'DEEP
1098,3634595.628,4930422.028,1138.972,GS CABLE BORE LOCATE 6.0'D
1099,3634595.091,4930462.078,1138.502,GS CABLE BORE LOCATE 6.0'DEEP
1100,3634595.228,4930482.579,1138.642,GS CABLE BORE LOCATE 6.0'DEEP
1101,3634595.259,4930511.712,1138.497,GS CABLE BORE LOCATE 6.5'DEEP
1102,3634599.238,4930502.506,1139.818,GS EOA S SIDE
1103,3634599.011,4930699.272,1139.210,GS EOA S SIDE
1104,3634565.656,4930686.085,1135.516,FNL EAST
1105,3634594.844,4930541.626,1139.058,GS CABLE BORE LOCATE 6.8'DEEP
1106,3634594.699,4930571.954,1139.359,GS CABLE BORE LOCATE 6.8'DEEP
1107,3634595.562,4930592.348,1139.305,GS CABLE BORE LOCATE 6.8'DEEP
1108,3634595.545,4930633.152,1138.669,GS CABLE BORE LOCATE 5.5'DEEP
1109,3634595.096,4930672.307,1138.417,GS CABLE BORE LOCATE 4.5'DEEP
1110,3634595.132,4930672.253,1138.414,GS CABLE BORE LOCATE 4.0'DEEP
1111,3634585.111,4930229.354,1129.379,FL 18" BEEHIVE INTAKE
1112,3634585.420,4930229.285,1133.694,18" BEEHIVE INTAKE N RIM
1113,3634587.892,4930229.463,1134.484,GS 6.0' TO TOP TILE
1114,3634600.476,4930231.515,1140.301,GS EOA S SIDE
1115,3634565.961,4930202.521,1136.598,FNL S&W
1116,3634586.829,4931156.251,1134.753,GS TILE BORE LOCATE
1117,3634588.657,4931196.422,1136.053,GS TILE BORE LOCATE
1118,3634563.933,4931320.238,1134.025,FNL E-W &S
1119,3634597.676,4931241.249,1139.587,EOA 22'
1120,3634595.146,4932954.312,1140.265,GS CONC BRIDGE DECK 34' TO CABLE
1121,3634595.228,4932902.042,1139.236,GS CONC BRIDGE DECK 30'4" TO CABLE
1122,3634595.139,4932852.503,1138.375,GS CONC BRIDGE DECK 29'5" TO CABLE
1123,3634597.918,4932761.810,1137.123,GS EOA S SIDE
1124,3634598.136,4933036.143,1142.264,GS EOA S SIDE
1125,3634597.899,4933070.316,1143.412,GS EOA S SIDE
1126,3634590.718,4932686.110,1136.174,GS PULLED CABLE 36"DEEP
1127,3634591.327,4932714.673,1136.337,GS PULLED CABLE 36"DEEP
1128,3634585.887,4932772.639,1136.369,GS CABLE BORE LOCATE
1129,3634584.222,4932786.137,1135.770,GS CABLE BORE LOCATE

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1130,3634581.886,4932803.033,1133.574,GS CABLE BORE LOCATE
1131,3634579.858,4932816.318,1131.987,GS CABLE BORE LOCATE
1132,3634577.552,4932829.489,1130.499,GS CABLE BORE LOCATE
1133,3634574.217,4932840.938,1128.420,GS CABLE BORE LOCATE
1134,3634572.396,4932852.486,1127.683,GS CABLE BORE LOCATE
1135,3634572.360,4932862.277,1127.405,GS CABLE BORE LOCATE
1136,3634572.205,4932869.941,1126.045,GS CABLE BORE LOCATE
1137,3634572.614,4932877.989,1121.721,GS CABLE BORE LOCATE
1138,3634573.597,4932887.287,1115.203,EDGE WATER
1139,3634573.261,4932889.818,1114.594,FL DD
1140,3634593.489,4932844.215,1138.185,BRIDGE SW COR
1141,3634593.810,4932972.510,1140.664,BRIDGE SE COR
1142,3634574.194,4932912.390,1114.520,FL DD
1143,3634573.648,4932915.346,1114.983,GS EDGB WATER
1144,3634574.719,4932928.488,1123.006,GS CABLE BORE LOCATE
1145,3634573.679,4932937.049,1126.865,GS CABLE BORE LOCATE
1146,3634573.954,4932945.414,1131.206,GS CABLE BORE LOCATE
1147,3634573.072,4932953.554,1135.233,GS CABLE BORE LOCATE
1148,3634572.584,4932964.197,1138.554,GS CABLE BORE LOCATE
1149,3634572.755,4932977.510,1139.677,GS CABLE BORE LOCATE
1150,3634574.694,4933005.615,1140.622,GS CABLE BORE LOCATE
1151,3634578.975,4933030.772,1141.528,GS CABLE BORE LOCATE
1152,3634584.697,4933052.516,1142.271,GS CABLE BORE LOCATE
1153,3634589.770,4933069.794,1142.986,GS CABLE BORE LOCATE
1154,3634594.207,4933111.513,1144.850,GS CABLE PULLED 36" DEEP
1155,3634595.190,4933168.691,1146.624,GS CABLE PULLED 36" DEEP
1156,3634597.628,4933168.956,1146.998,GS EOA S SIDE
1157,3634597.963,4931157.541,1139.149,GS EOA 21'
1158,3634597.823,4931198.605,1139.265,GS EOA 21'6"
1159,3634588.297,4931236.347,1136.424,GS BORE CABLE LOCATE
1160,3634595.277,4931339.490,1140.128,GS PULL CABLE 3.0' DEEP
1161,3634597.639,4931339.409,1140.535,GS EOA S SIDE
1162,3634596.380,4931056.594,1138.746,GS PULLED CABLE 36"DEEP
1163,3653116.628,4934644.558,1147.215,Base Setup
1164,3655675.849,4929847.261,1140.356,928 1.0w
1165,3655632.105,4929940.981,1126.550,321
1166,3655634.564,4929952.475,1126.523,321
1167,3655689.206,4929955.060,1138.240,513 18
1168,3655677.769,4930056.791,1139.666,928 1.0e
1169,3655690.217,4929970.948,1138.706,513 18
1170,3655699.164,4929926.104,1142.528,322
1171,3655688.367,4929898.333,1139.150,513 18
1172,3655688.274,4929848.481,1139.493,513 18
1173,3655633.335,4929946.728,1126.550,322
1174,3657881.789,4932023.421,1142.409,322
1175,3657853.962,4932003.625,1138.530,928 1.0w
1176,3657856.060,4932003.157,1137.946,323
1177,3657860.637,4932003.084,1137.486,301
1178,3658098.451,4932006.320,1139.646,928 1.0w

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1179,3661097.440,4928298.492,1140.634,928 1.0n
1180,3661079.122,4928227.227,1143.385,322
1181,3661097.271,4928120.066,1140.836,928 1.0n
1182,3659757.185,4937384.019,1149.524,928 1.0w
1183,3659960.739,4937386.030,1151.237,928 1.0w
1184,3659844.056,4937361.381,1151.635,322



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

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.

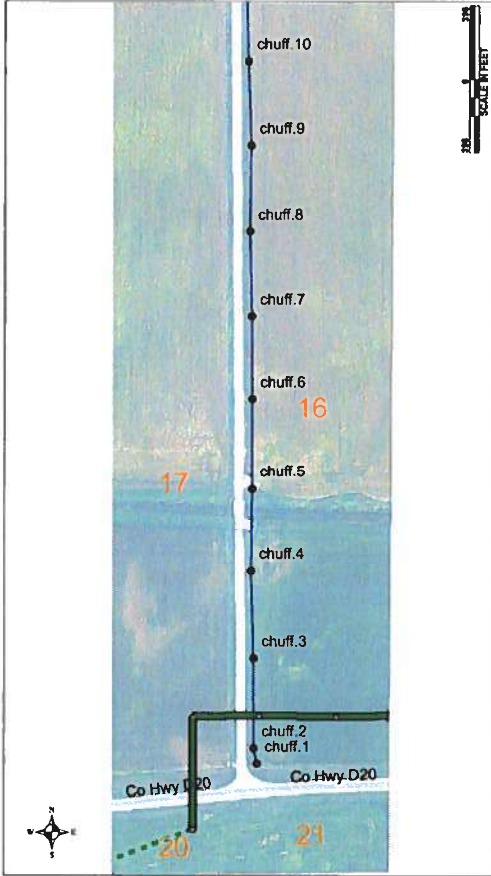


14. CROSSING OF DRAINAGE DISTRICT TILE LINES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only 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.

Name: Srv Map Loc: 1276-6616 Equip Map Loc: 811 Addr: Acct #:		Midland Power Cooperative		W.O. Number: 13327 Job Number:	
		Phone 1: Phone 2: Staked By: CASSANDRA A HUFF		Section(s): 16 Tax Dist:	
Loan Project: 317-1 Budget Code(s): 01		City: County: Hardin		Substation: 12 - Alden Feeder: 1270 Line Sec: Phase: ABC	
		TWP: 89N Range: 22W			

Pole #	BACK * SPAN	POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY	GUY LD	#	ANCHOR	#	TRANS	KVA	#	SECONDARY WIRE SIZE	GRND	#	METER	LAT LONG
chuff.1	E 40-3	C	1	C2.21P-4/0	1/0-ACSR	1	H1.1-1/0	1	E1.1	1	F1.12										42 51432 -93 45979
Remove guy pole				1 C7.1-1/0																	
chuff.2	42 C 35-3	C	1	C6.21-1/0	1/0-ACSR	1	H1.1-42	3	E1.1	3	F1.12										42 51443 -93 45982
chuff.3	244 C (3) P1.1-1/0	C	35-3	1 C1.11-1/0	1/0-ACSR	1	H1.1-42														42 5151 -93 45982
chuff.4	238 C 40-3	C	1	C1.11-1/0	1/0-ACSR	1	H5.1-42														42 51575 -93 45985
chuff.5	225 C 40-3	C	1	C1.11-1/0	1/0-ACSR	1	H5.1-42														42 51637 -93 45984
chuff.6	243 C 35-3	C	1	C1.11-1/0	1/0-ACSR	1	H5.1-42														42 51703 -93 45983
chuff.7	225 C (3) P1.1-1/0	C	35-3	1 C1.11-1/0	2-ACSR	1	H1.1-42														42 51765 -93 45984
chuff.8	230 C 35-3	C	1	C1.11-1/0	1/0-ACSR	1	H5.1-42														42 51828 -93 45986
chuff.9	234 C 35-3	C	1	C1.11-1/0	2-ACSR	1	H5.1-42														42 51893 -93 45984
chuff.10	229 C 35-3	C	1	C1.11-1/0	2-ACSR	1	H5.1-42														42 51956 -93 45987

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Loan Project: 317-1 Budget Codes: 01		City:	County: Hardin	TWP: 69N Range: 22W	Section(s): 16 Tax Dist:	Substation: 12 - Alden Feeder: 1270	Line Sec: Phase: ABC



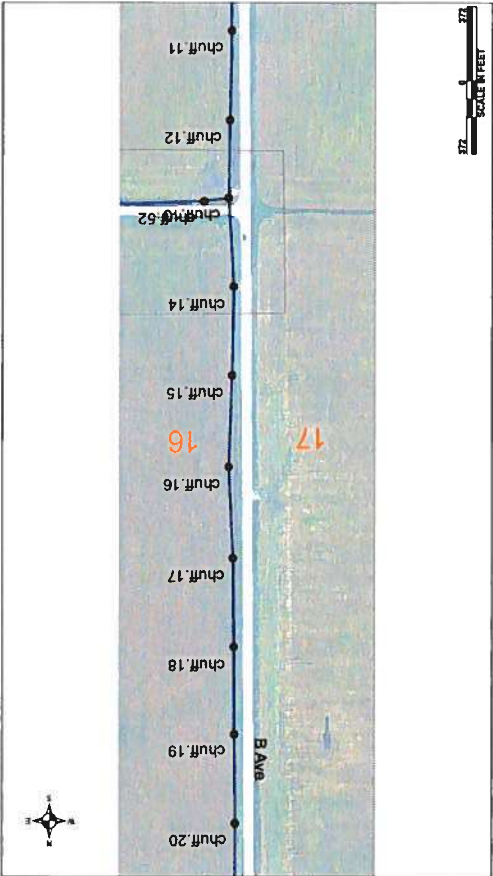
Comments: 2 mile line rebuild to 1/0-acsr
Directions:

UNITS	ADD	REQ.
1/0-ACSR	5738	
2-ACSR	1910	
35-3	7	
40-3	2	
C1,11-1/0	8	
C6,21-1/0	1	
C7,1-1/0	1	
E1,1	3	
F1,12	3	
H1,1-#2	3	
H5,1-#2	6	
P1,1-1/0	6	

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

Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY	GUY LD	#	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE	GRND	#	METER	LAT LONG
chuff.11	230 C	35-3	1	C1.11-1/0	2-ACSR	1	H1.1-#2																42 52019 -93 45989
	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																42 52081 -93 45987
	C				2-ACSR																		
chuff.13	197 C	40-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2																42 52135 -93 45986
	C				2-ACSR																		
chuff.14	227 C	40-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2																42 52197 -93 45991
	C				2-ACSR																		
chuff.15	225 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2																42 52259 -93 45989
	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																42 52322 -93 45986
	C				2-ACSR																		
chuff.17	232 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2																42 52386 -93 4599
	C				2-ACSR																		
chuff.18	226 C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2																42 52448 -93 45991
	C				1/0-ACSR																		
chuff.19	222 C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2																42 52509 -93 45991
	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																42 5257 -93 45992
	C				2-ACSR																		
chuff.52	65 C		1	A6.1-1/0	1/0-ACSR	1	H1.1-1/0		1E1.1														42 52137 -93 45962

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Loan Project: 317-1 Budget Code#: 01		City:	County: Hardin	TWP: 89N Range: 22W	Section(s): 16 Tax Dist:	Substation: 12 - Alden Feeder: 1270	Line Sec: Phase: ABC



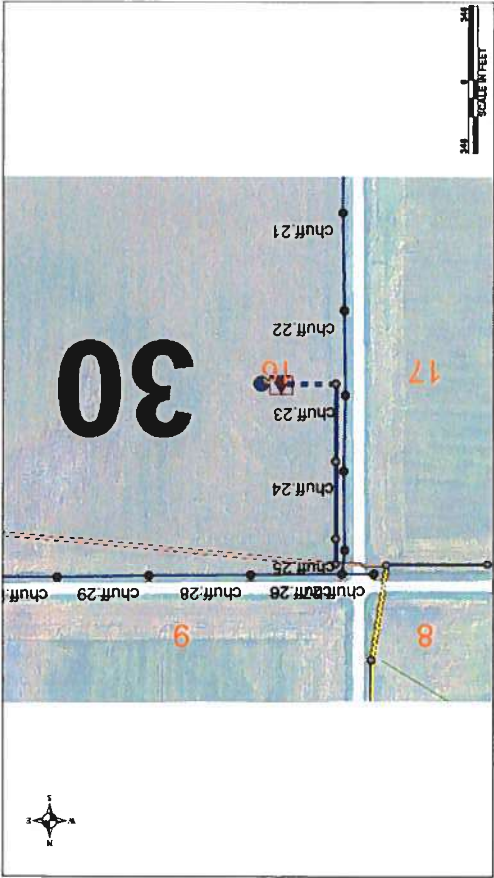
Comments: 2 mile line rebuild to 1/0-acsr	
Directions:	

UNITS	ADD	REQ.
1/0-ACSR	6866	
2-ACSR	2242	
35-3	7	
40-3	3	
A5.1-1/0	1	
A6.1-1/0	1	
C1.1-1/0	10	
E1.1	1	
F1.12	1	
H1.1-#2	4	
H1.1-1/0	1	
H5.1-#2	6	
P1.1-1/0	9	

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

Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY LD	#	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE	GRND	#	METER	LAT LONG
chuff21	221	C	35-3	1 C1.11-1/0	2-ACSR	1	H5.1-#2															42 52631 -93 45992
chuff22	231	C	40-3	1 C1.11-1/0	10-ACSR	1	H1.1-#2															42 52694 -93 45994
chuff23	199	E	1 UA1																			42 52749 -93 45995
1276-030		C	40-3	1 C1.11-1/0	10-ACSR	1	H1.1-#2															
chuff24	179	C	35-3	1 C1.11-1/0	2-ACSR	1	H5.1-#2															42 52798 -93 45993
chuff25	186	C	35-3	1 C6.21-1/0	2-ACSR	1	H1.1-#2															42 52849 -93 45994
chuff26	59	C	40-3	1 C1.11-1/0	2-ACSR	1	H1.1-1/0															42 52865 -93 45992
chuff27	77	C	40-3	1 C7.1-1/0	10-ACSR	1	H1.1-#2															42 52865 -93 4602
chuff28	215	C	35-3	1 C1.11-1/0	2-ACSR	1	H1.1-#2															42 52866 -93 45912
chuff29	242	C	35-3	1 C1.11-1/0	2-ACSR	1	H5.1-#2															42 52866 -93 45823
chuff30	216	C	35-3	1 C1.11-1/0	2-ACSR	1	H5.1-#2															42 52867 -93 45742

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Loan Project: 317-1 Budget Code#: 01		City: County: Hardin		TWP: 89N Range: 22W		Section(s): 16 Tax Dist:	
Substation: 12 - Alden Feeder: 1270		Line Sec: Phase: ABC					



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

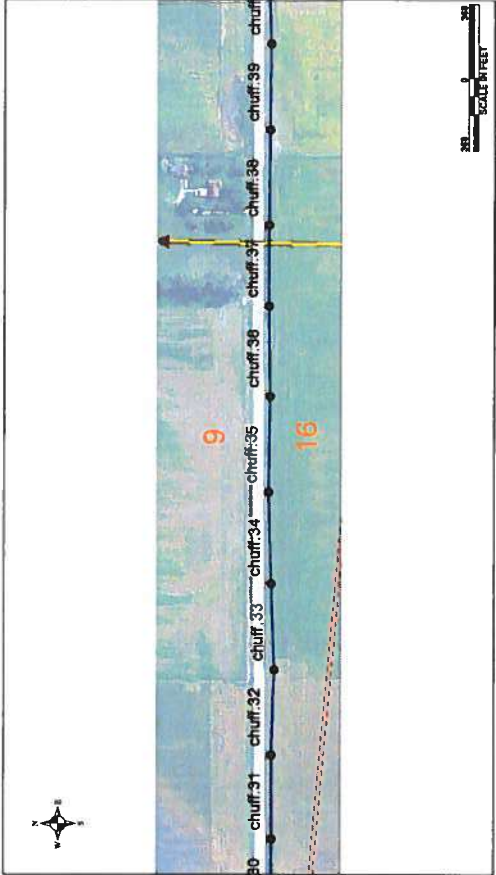
Directions:

UNITS	ADD	REQ.
1/0-ACSR	5471	
2-ACSR	1820	
35-3	6	
40-3	4	
A5.21-1/0	2	
C1.11-1/0	8	
C6.21-1/0	1	
C7.1-1/0	2	
E1.1	7	
F1.12	7	
H1.1-#2	5	
H1.1-1/0	1	
H5.1-#2	4	
P1.1-1/0	6	

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		Loan Project: 317-1 Budget Codes: 01		Substation: 12 - Alden Feeder: 1270	
		City: County: Hardin		Line Sec: Phase: ABC	
		TWP: 89N Range: 22W			

Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY LD	#	GUY	#	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE	GRND	#	METER	LAT LONG
chuff.31	216	C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2																42 52867 -93 45862
		C				2-ACSR																		
chuff.32	211	C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2																42 52867 -93 45584
		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																42 52865 -93 45505
		C				2-ACSR																		
chuff.34	216	C	35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2																42 52867 -93 45425
		C				1/0-ACSR																		
chuff.35	231	C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2																42 52869 -93 45339
		C				2-ACSR																		
chuff.36	240	C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2																42 52868 -93 4525
		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																42 52869 -93 45166
		C				2-ACSR																		
chuff.38	203	C	40-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2																42 52869 -93 45091
1276-028		C				2-ACSR																		
chuff.39	241	C	35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2																42 52868 -93 45002
		C				2-ACSR																		
chuff.40	216	C	35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2																42 52867 -93 44921
		C	(3)			2-ACSR																		
		P1.1-1/0																						

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Loan Project: 317-1 Budget Code#: 01		City:	County: Hardin	TWP: 89N Range: 22W	Section(s): 16 Tax Dist:	Substation: 12 - Alden Feeder: 1270	Line Sec: Phase: ABC



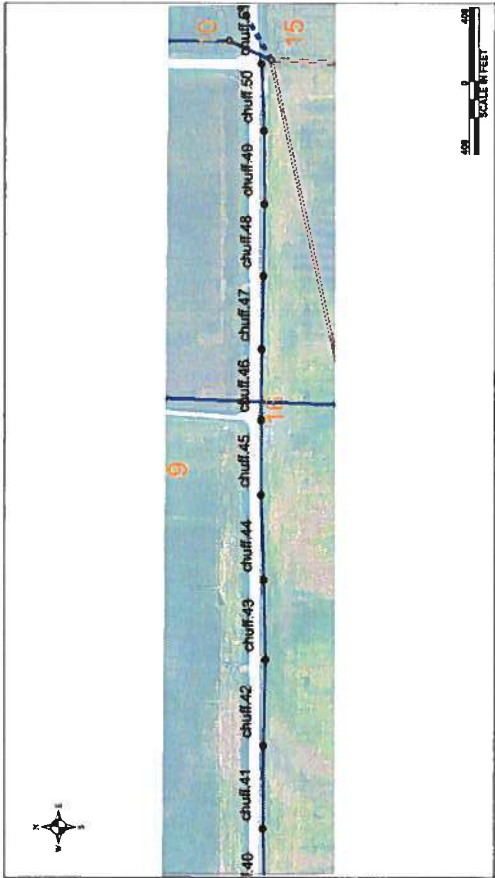
Comments: 2 mile line rebuild to 1/0-acsr
Directions:

UNITS	ADD	REQ.
1/0-ACSR	6627	
2-ACSR	2206	
35-3	8	
40-3	2	
C1.11-1/0	10	
E1.1	1	
F1.12	1	
G1.3-1/0	1	
H1.1-#2	4	
H5.1-#2	6	
J2.1T-1/0	1	
P1.1-1/0	9	

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		Phone 1: Phone 2: Staked By: CASSANDRA A HUFF		Substation: 12 - Alden Feeder: 1270 Line Sec: Phase: ABC	
Loan Project: 317-1 Budget Code: 01		City: Hardin County: Hardin		Section(s): 16 Tax Dist:	
TWP: 89N Range: 22W					

Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY LD	#	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE	GRND	#	METER	LAT LONG
chuff.41	235	C 35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2															42 52869 -93.44834
chuff.42	231	C 35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2															42 52869 -93.44749
chuff.43	239	C 35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2															42 52868 -93.4466
chuff.44	222	C 35-3	1	C1.11-1/0	1/0-ACSR	1	H1.1-#2															42 52869 -93.44578
chuff.45	237	C 35-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2															42 52872 -93.44449
chuff.46	208	C 40-3	1	A5.1-1/0	1/0-ACSR	1	H1.1-#2		2	E1.1		2	F1.12									42 52872 -93.44413
chuff.47	197	C 40-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2															42 52872 -93.4434
chuff.48	203	C 35-3	1	C1.11-1/0	2-ACSR	1	H1.1-#2															42 52871 -93.44264
chuff.49	201	C 35-3	1	C1.11-1/0	1/0-ACSR	1	H5.1-#2															42 5287 -93.4419
chuff.50	204	C 40-3	1	C1.11-1/0	2-ACSR	1	H5.1-#2															42 52871 -93.44114
chuff.51	187	C 40-3	1	C7.1-1/0	2-ACSR	1	H1.1-#2		1	E1.1		1	F1.12									42 52873 -93.44045

Name: Srv Map Loc: 1276--6816 Equip Map Loc: 911 Addr: Acct #:		Phone 1: Phone 2: Staked By: CASSANDRA A HUFF		Midland Power Cooperative		W.O. Number: 13327 Job Number:	
Loan Project: 317-1 Budget Code#: 01		City: County: Hardin		TWP: 89N Range: 22W		Section(s): 16 Tax Dist:	
Substation: 12 - Alden Feeder: 1270		Line Sec: Phase: ABC					

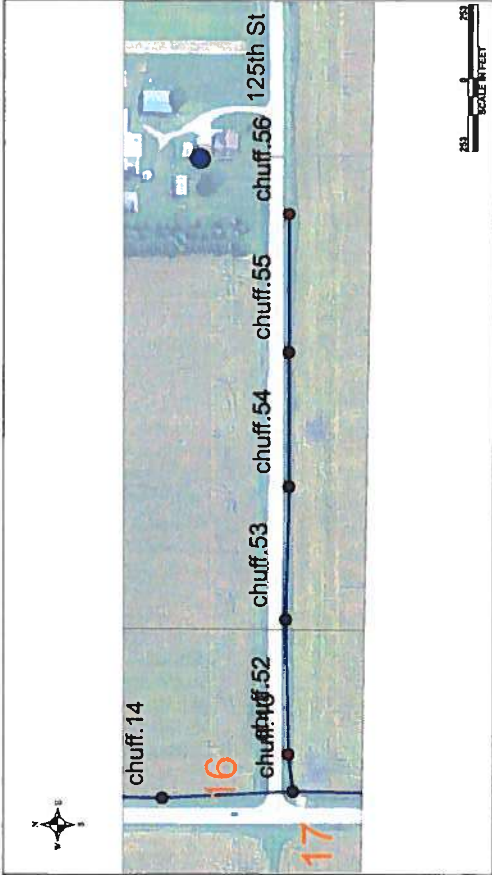


Comments: 2 mile line rebuild to 1/0-acsr	
Directions:	

UNITS	ADD	REQ.
1/0-ACSR	7075	
2-ACSR	2354	
35-3	7	
40-3	4	
A5.1-1/0	2	
C1.1-1/0	10	
C7.1-1/0	1	
E1.1	3	
E1.4	1	
F1.12	3	
H1.1-#2	4	
H5.1-#2	7	
P1.1-1/0	6	
UA1	1	

Name:		Phone 1:		Midland Power Cooperative		W.O. Number: 13327	
Srv Map Loc: 1276-6616		Phone 2:				Job Number:	
Equip Map Loc:		Staked By: CASSANDRA A HUFF				Substation: 12 - Alden	
811 Addr:		City:		TWP: 89N		Line Sec:	
Acct #:		County: Hardin		Range: 22W		Feeder: 1270	
		Loan Project: 317-1		Section(s): 16			
		Budget Code#: 01		Tax Dist:			

Pole #	BACK SPAN	* POLE	#	PRI UNITS	WIRE SIZE	#	MISC UNITS	#	GUY LD	#	ANCHOR	#	TRANS	KVA	#	SEC UNITS	#	SECONDARY WIRE SIZE	GRND	#	METER	LAT LONG
chuff.53	232 C	40-5	1	A1.1-1/0	1/0-ACSR																	42 52139 -93 45876
chuff.54	231 C	40-5	1	A1.1-1/0	1/0-ACSR																	42 52138 -93 45791
chuff.55	232 C	40-5	1	A1.1-1/0	1/0-ACSR																	42 52138 -93 45705
chuff.56	239 R	40-5	1	A4.1-1/0	1/0-ACSR																	42 52139 -93 45616
1276-010	C	40-5	1	A5.1-1/0	1/0-ACSR																	
	C	40-5	1	A6.1-1/0	1/0-ACSR																	



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

UNITS	REQ.
40-5	1
A4 1-1/0	1
E1.1	3
F1.12	3
ADD	
1/0-ACSR	1862
40-5	4
A1.1-1/0	3
A5.1-1/0	1
A6.1-1/0	1
E1.1	3
F1.12	3
H1.1-1/0	2
P1.1-1/0	1

Directions:





Utility Permit #

Utility Observation Report

General Information	
Project Name and Number:	6687.1
Drainage District Number:	DD BIG 4
Drainage District Facility ID:	LAT 3
Project Location: (1/4, Sec, Twp, Rng and road)	B AVE / 16 - T89N - R822W
Date of Observation:	12-4-2020
Observer Name/Title:	Chris Sweeney / SURVEY TECH

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



Utility Permit #

Horizontal clearance from District Tile or Open Ditch centerline:	46.1'		
Tile outlets within 25-feet relocated? (If applicable)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Original tile size & material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input type="checkbox"/> VCP Other: N/A		
Tile replaced by utility?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Tile replacement material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:		
Condition of District tile:	GOOD		
Signage present?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A

Notes	
<p>*PP IS 16.5' N. OF N. BANK OF DITCH</p> <p>* USED 6687 B164 LAT 3</p>	<p>1077</p> <p>X 1078 TOP OF BANK</p> <p>1079 X</p> <p>LAT 3</p> <p>DAVE</p> <p>1080</p>

Inspector's Signature:

[Signature]

Date:

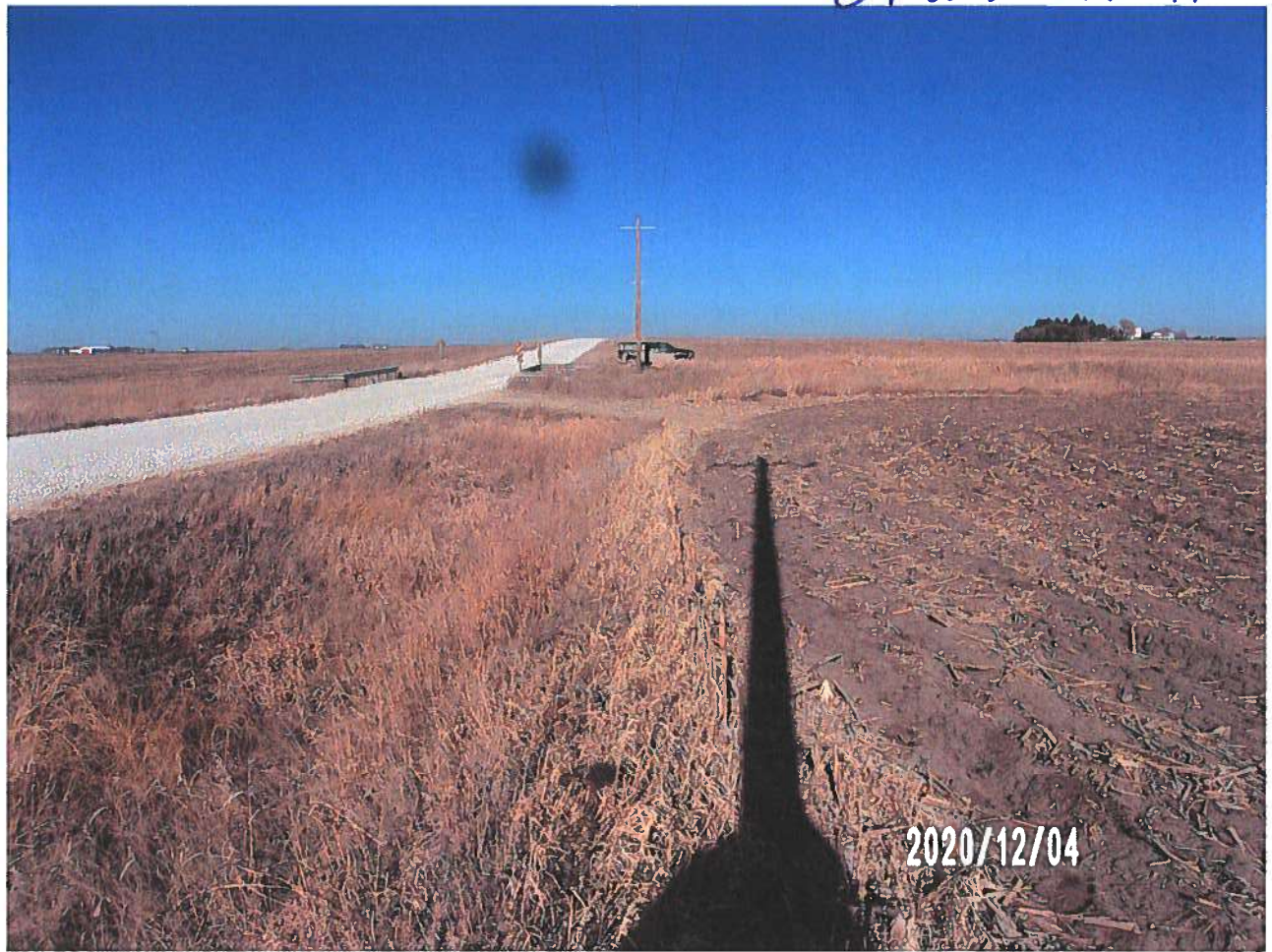
12-4-2020

@ PP 1077 LOOKING E.S.



@ 1079 LOOKING E.

@ 1080 LOOKING N



2020/12/04

6687 BIG4 LAT3 2020-12-04 cs

1076,3653116.628,4934644.558,1147.215,Base Setup

1077,3651220.213,4932081.912,1148.673,928 1.0w

1078,3651203.967,4932084.711,1146.981,323

1079,3651174.007,4932061.324,1147.741,322

1080,3650993.010,4932082.943,1148.489,928 1.0w



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

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.

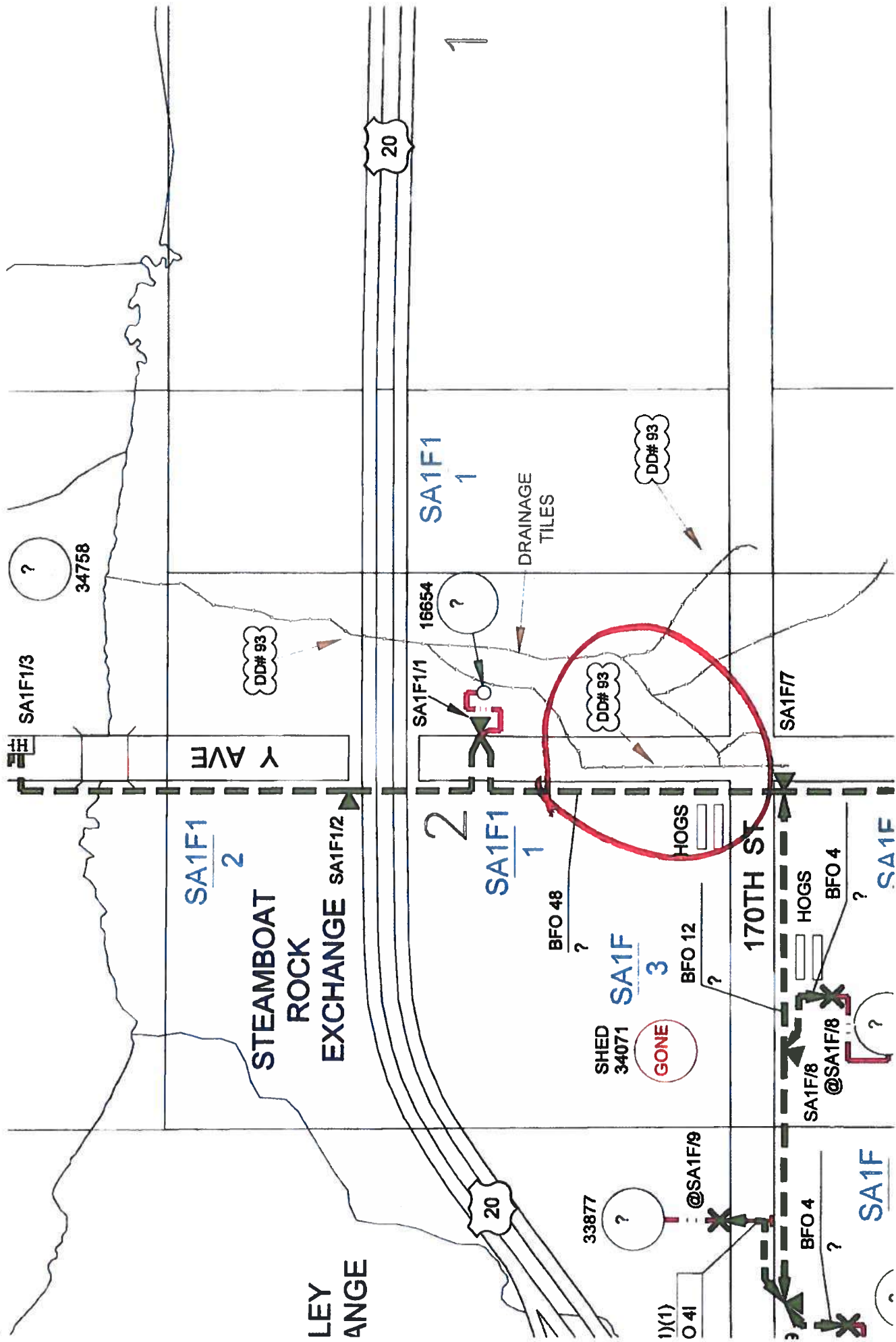


HARDIN COUNTY

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 93
tile





Utility Permit #2020-12

Utility Observation Report

General Information	
Project Name and Number:	Utility Crossing Permit 6824.1
Drainage District Number:	#93
Drainage District Facility ID:	Main and Lat 1
Project Location: (1/4, Sec, Twp, Rng and road)	SE¼ 02-88-19, Lat 1 GPS #4 (Y Ave) SW¼ 02-88-19, Main GPS #18 (Y Ave) SW¼ 02-88-19, Main GPS #12 (170 th & Y Ave)
Date of Observation:	11/09/2020 – Tile 11/16/2020 - Boring
Observer Name/Title:	Chris Sweeney, Observer

Field Observations	
District facility type:	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
Utility Orientation:	<input type="checkbox"/> Parallel <input checked="" type="checkbox"/> Crossing <input type="checkbox"/> Overhead <input type="checkbox"/> Over <input type="checkbox"/> Under <input type="checkbox"/> Same Elevation Other: See “Vertical Difference” cell below
Source of utility elevation and/or location:	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input checked="" type="checkbox"/> Utility Reported Other:
Utility Elevation:	Lat 1 GPS #4: 1079.4’ Main GPS #18: 1088.9’ Main GPS #12: 1081.9’
Source of district facility elevation and/or location:	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
District Facility Elevation: (include where measured)	Lat 1 GPS #4: 1074.7’ (top of tile) Main GPS #18: 1087.4’ (top of tile) Main GPS #12: 1088.0’ (flowline)
Vertical clearance from district facility: (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	Lat 1 GPS #4: 4.8’ Above Main GPS #18: 1.5’ Above Main GPS #12: 6.1’ Below



Utility Permit #2020-12

Horizontal clearance from District Tile or Open Ditch centerline:	NA
Tile outlets within 25-feet relocated? (If applicable)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Original tile size & material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input checked="" type="checkbox"/> VCP Other: Lat 1 = 6", Main = 8"
Tile replaced by utility?	<input checked="" type="checkbox"/> Yes (Lat 1) <input type="checkbox"/> No <input type="checkbox"/> N/A
Tile replacement material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> N/A Other: HDPE, Lat 1 only, 6"
Condition of District tile:	Good
Signage present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

Notes
1. While signage is present, it does not completely meet the permit requirements. 2. Two of the three utility installations are over the district tile, versus under it.

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

11-16-2020

11-9-2020

PROJECT NUMBER:

6824.1

COUNTY, ROUTE, ROAD:

DD 93

LOCATION:

Y AVE

DAYS OF WEEK:

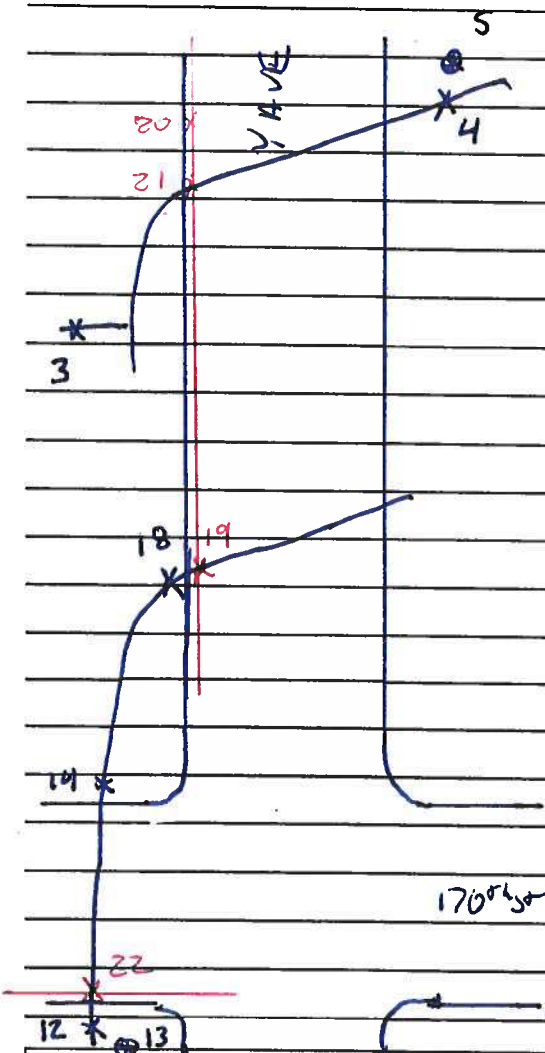
S ☒ M T W T F S

SHEET NO.

1 OF 1

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

K 1 = GPS MON 7003 SET 1/2" x 20' IR CPT #2 IN NE CORNER
SHOT 7004, 8070, 8071 OF FIELD DRIVE ON E. SIDE OF ROAD
ACROSS FROM 17385



#4 FL OF TILE = 1074.15'

DEPTH OF BORE = 1794 1079.41

#4 TOP OF TILE = 1074.65

CLEARANCE = 4.76 ABOVE TILE

FL OF TILE @ 18 = 1086.70'

TOP OF TILE @ 18 = 1087.37'

DEPTH OF BORE @ 19 = 1088.91'

CLEARANCE = 1.54 ABOVE TILE

FL OF TILE @ 12 = 1088.02'

DEPTH OF BORE @ 22 = 1081.93'

CLEARANCE = 6.09'

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



Utility Permit #

Utility Observation Report

General Information

Project Name and Number:

6824.1

Drainage District Number:

00 93

Drainage District Facility ID:

LAT 1

Project Location:

(1/4, Sec, Twp, Rng and road)

SW 1/4 SEC 4 SEC 2 - T88N - R19W

Date of Observation:

11-9-2020 - TILE

11-16-2020 - UTILITY

Observer Name/Title:

Chris Sweeney / OBSERVER

Field Observations

District facility type:

☒ Tile

☐ Open Ditch

Other:

Utility Orientation:

☐ Parallel

☒ Crossing

☐ Overhead

☒ Over

☐ Under

☐ Same Elevation

Other:

Source of utility elevation
and/or location:

☐ Probed

☐ Exposed

☒ Utility Reported

Other:

Utility Elevation:

1079.41'

District Facility Elevation:
(include where measured)

#4 E. OF UTILITY

TOP OF TILE = 1074.65'

Vertical clearance from
district facility:
(must be greater than 1-foot
for tile, and 5-feet for
designed open ditch bottom)

4.76'

Horizontal clearance from
District Tile or

0'

Open Ditch centerline:



Utility Permit #

Tile outlets within 25-feet
relocated? (If applicable)

☐ Yes

☒ No

☒ N/A

Original tile material:

☐ RCP

☐ CMP

☐ SW HDPE

☐ DW HDPE

☒ VCP

Other:

Tile replaced by utility?

☒ Yes

☐ No

☐ N/A

Tile replacement material:

☐ RCP

☐ CMP

☐ N/A

Other:

~~HAGE~~ HDPE

Condition of District tile:

GOOD

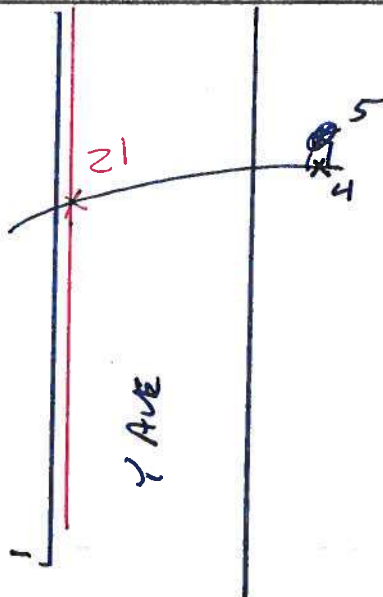
Signage present?

☒ Yes

☐ No

☐ N/A

Notes



Inspector's Signature:

Chris Hunsley

Date:

11-16-2020

2020/11/09









Utility Permit #

Utility Observation Report

General Information

Project Name and Number:

6824.1

Drainage District Number:

0093

Drainage District Facility ID:

MAIN

Project Location:

(1/4, Sec, Twp, Rng and road)

YAVE
SE 1/4 SW 1/4 SEC 2, T88N-R19W

Date of Observation:

11-9-2020 - TILE

11-16-2020 - UTILITY

Observer Name/Title:

Chris Sweeney / observer

Field Observations

District facility type:

☒ Tile

☐ Open Ditch

Other:

Utility Orientation:

☐ Parallel

☒ Crossing

☐ Overhead

☒ Over

☐ Under

☐ Same Elevation

Other:

Source of utility elevation
and/or location:

☐ Probed

☐ Exposed

☒ Utility Reported

Other:

Utility Elevation:

1088.9'

District Facility Elevation:
(include where measured)

18 W. OF UTILITY

TOP OF TILE = 1087.37'

Vertical clearance from
district facility:
(must be greater than 1-foot
for tile, and 5-feet for
designed open ditch bottom)

1.54'

Horizontal clearance from
District Tile or
Open Ditch centerline:

0'



Utility Permit #

Tile outlets within 25-feet relocated? (If applicable)

☐ Yes ☐ No ☒ N/A

Original tile material:

☐ RCP ☐ CMP ☐ SW HDPE
☐ DW HDPE ☒ VCP

Other:

Tile replaced by utility?

☐ Yes ☒ No ☐ N/A

Tile replacement material:

☐ RCP ☐ CMP ☒ N/A

Other:

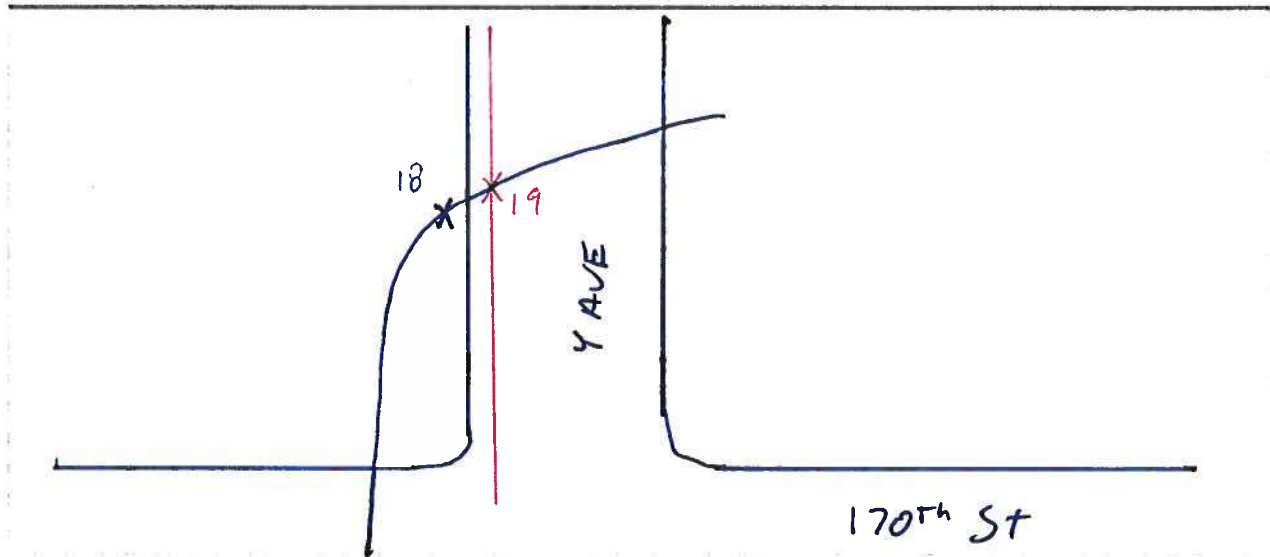
Condition of District tile:

Good

Signage present?

☒ Yes ☐ No ☐ N/A

Notes



Inspector's Signature:

Chris [Signature]

Date:

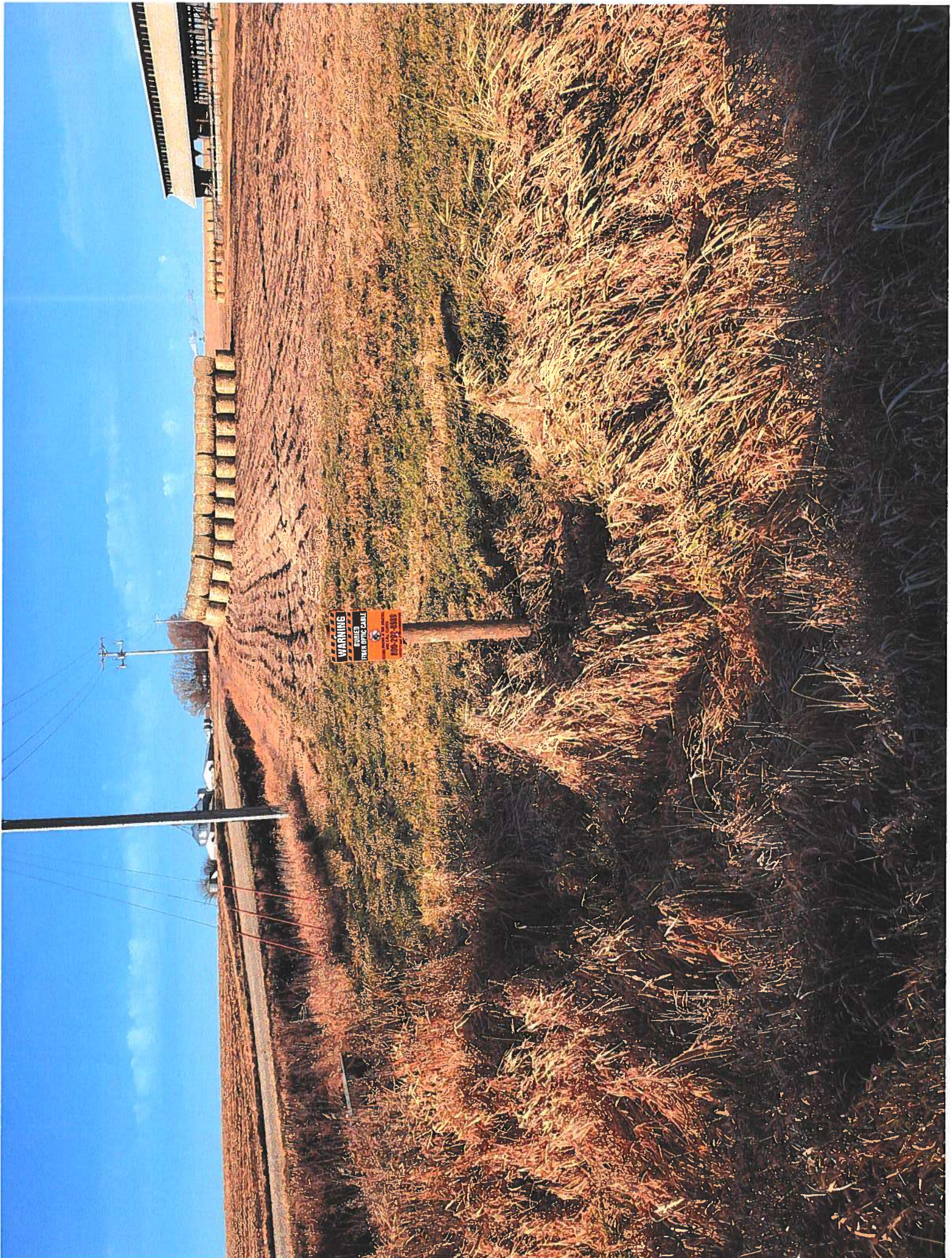
11-16-2020

2020/11/09











Utility Permit #

Utility Observation Report

General Information

Project Name and Number:

6824.1

Drainage District Number:

0093

Drainage District Facility ID:

MAIN

Project Location:

(1/4, Sec, Twp, Rng and road)

170th St

Date of Observation:

SE 1/4 - SW 1/4 SEC 2, T88N, R19W

11-9-2020 - TILE

11-16-2020 - UTILITY

Observer Name/Title:

Chris Sweeney / OBSERVER

Field Observations

District facility type:

☒ Tile

☐ Open Ditch

Other:

Utility Orientation:

☐ Parallel

☒ Crossing

☐ Overhead

Over

☒ Under

☐ Same Elevation

Other:

Source of utility elevation
and/or location:

☐ Probed

☐ Exposed

☒ Utility Reported

Other:

Utility Elevation:

1081.93'

District Facility Elevation:
(include where measured)

@ 12 S. OF BORE

EL = 1088.02'

Vertical clearance from
district facility:

(must be greater than 1-foot
for tile, and 5-feet for
designed open ditch bottom)

6.09'

Horizontal clearance from
District Tile or

Open Ditch centerline:

0'



Utility Permit #

Tile outlets within 25-feet relocated? (If applicable)

☐ Yes

☐ No

☒ N/A

Original tile material:

☐ RCP

☐ CMP

☐ SW HDPE

☐ DW HDPE

☒ VCP

Other:

Tile replaced by utility?

☐ Yes

☒ No

☐ N/A

Tile replacement material:

☐ RCP

☐ CMP

☒ N/A

Other:

Condition of District tile:

GOOD

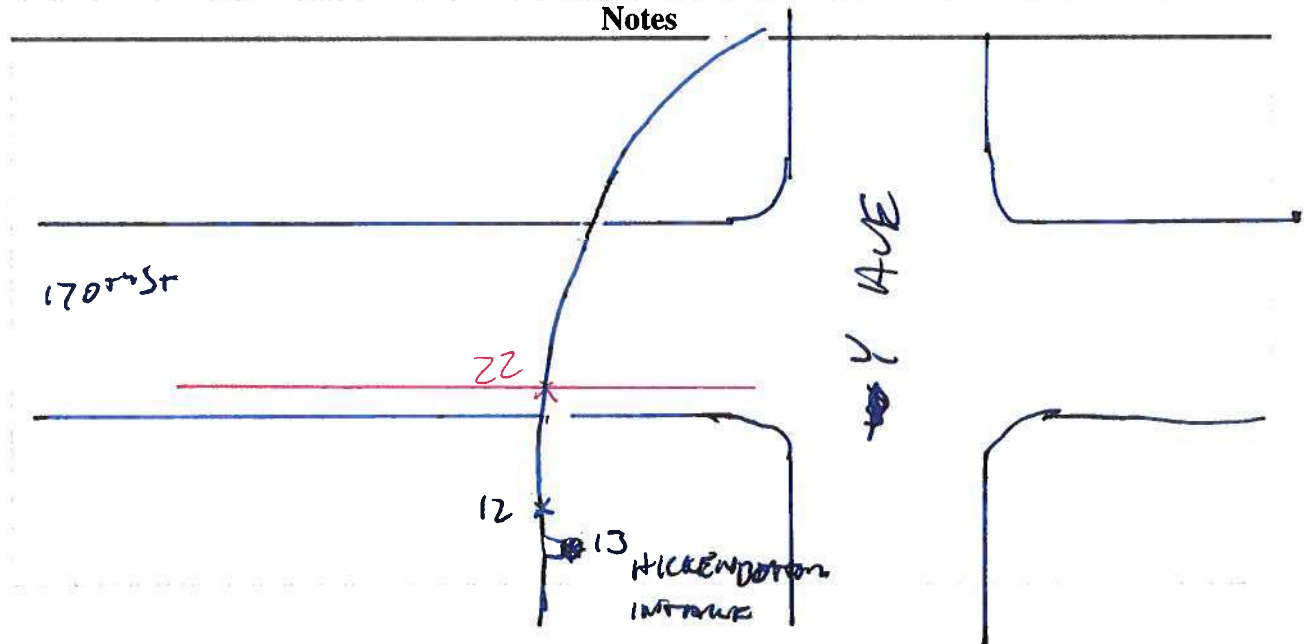
Signage present?

☒ Yes

☐ No

☐ N/A

Notes



Inspector's Signature:

Am Jumpy

Date:

11-16-2020



2020/11/09

2020/11/09

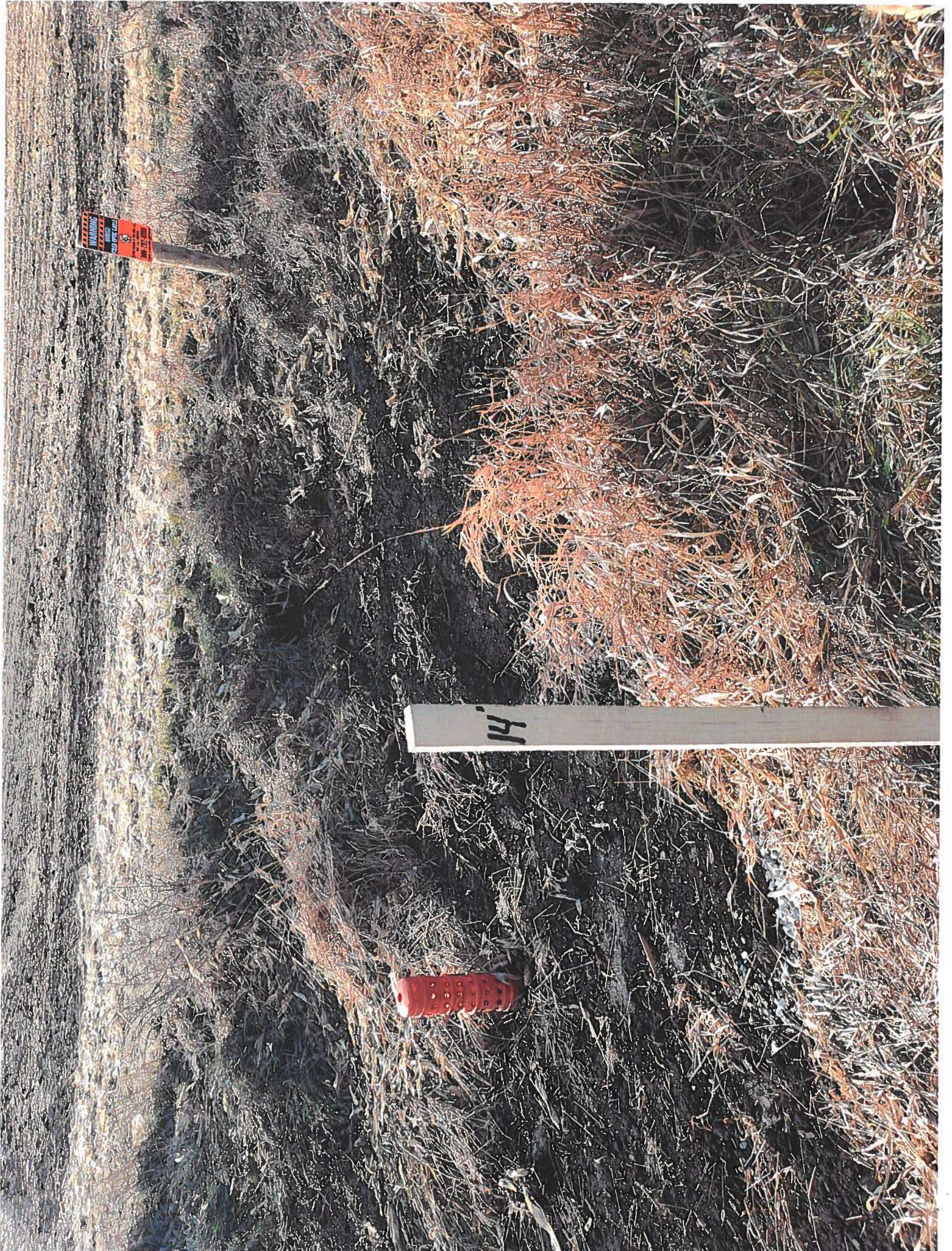


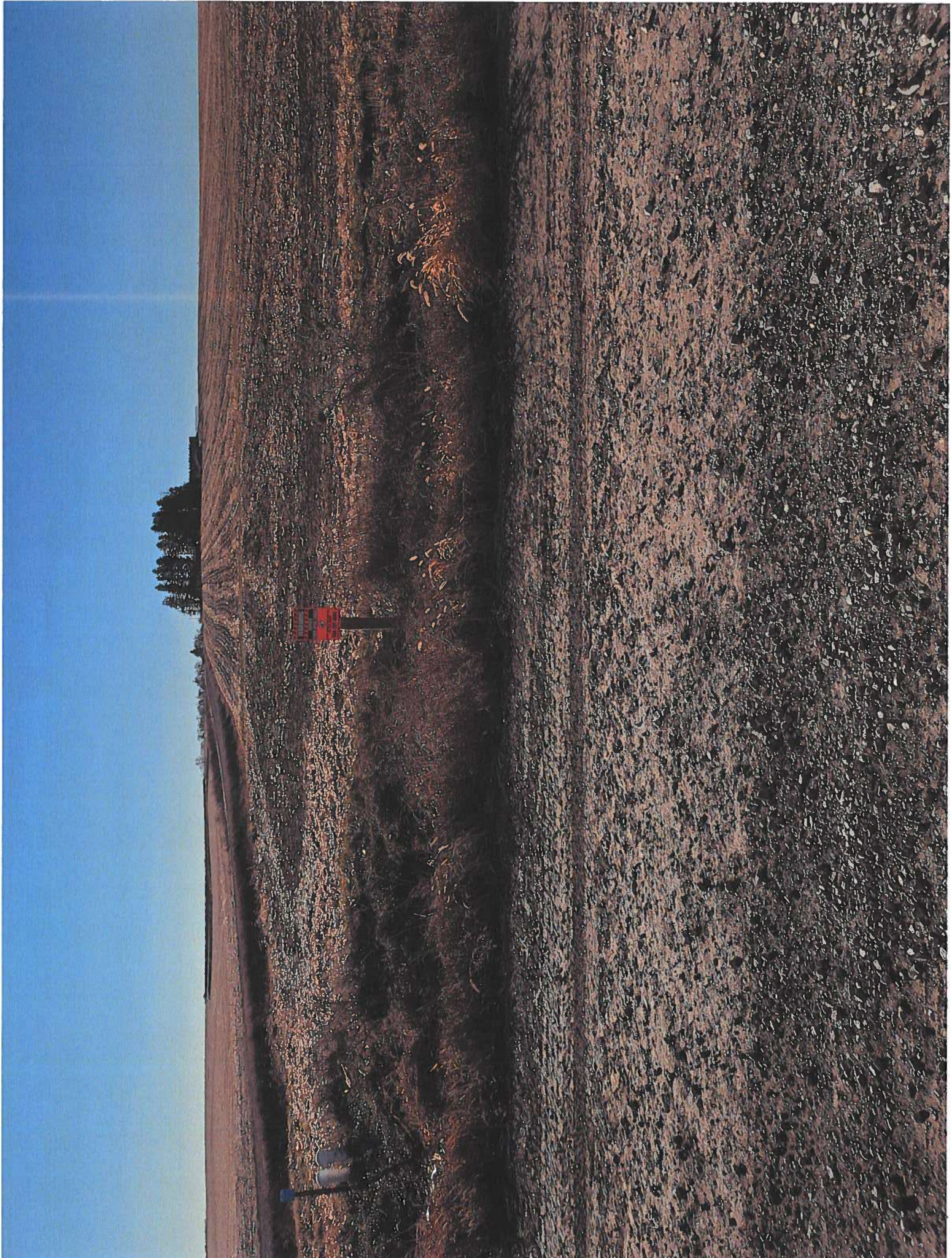
2020/11/09



2020/11/09







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2,8574959.647,14985990.659,1147.523,103 ir 12x2 0.3d
3,8577607.514,14985922.530,1079.960,421 6" ne-sw
4,8578023.519,14985980.959,1074.651,421 6" ne-sw
5,8578027.946,14985980.531,1076.741,922 6" hick
6,8572076.094,14985935.706,1115.153,922 6" hick
7,8572076.659,14985936.425,1110.473,421 10" e-w
8,8572073.869,14985989.907,1110.826,962 8" n-s
9,8573450.322,14985987.500,1115.786,952 fl -3.64
10,8573458.057,14985934.727,1112.731,922 6" hick fl
11,8573458.499,14985952.483,1120.521,700 -15'
12,8576827.296,14985893.217,1088.694,962 8" n-s
13,8576824.496,14985894.513,1092.815,922 6" hick
14,8576872.499,14985898.100,1088.215,421 8"
15,8576890.649,14985901.791,1092.545,300 tile locate
16,8576918.497,14985906.806,1092.309,300 tile locate
17,8576939.887,14985920.108,1091.768,300 tile locate
18,8576955.686,14985931.971,1087.369,962 8" ne-sw
19,8576966.505,14985942.085,1092.907,700 -4'
20,8578019.597,14985937.886,1083.231,700 -4'
21,8577988.612,14985938.641,1083.409,700 -4'
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7003,8582437.547,14988369.066,1070.810,gps mon 7003
7004,8582393.896,14994466.084,1056.698,103 gps mon
8070,8566249.325,14972842.042,1112.385,103 gps mon
8071,8582479.452,14971495.335,1152.590,103 gps mon



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, 02, 1, 120, 70, 03, 0, 99 & 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

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.



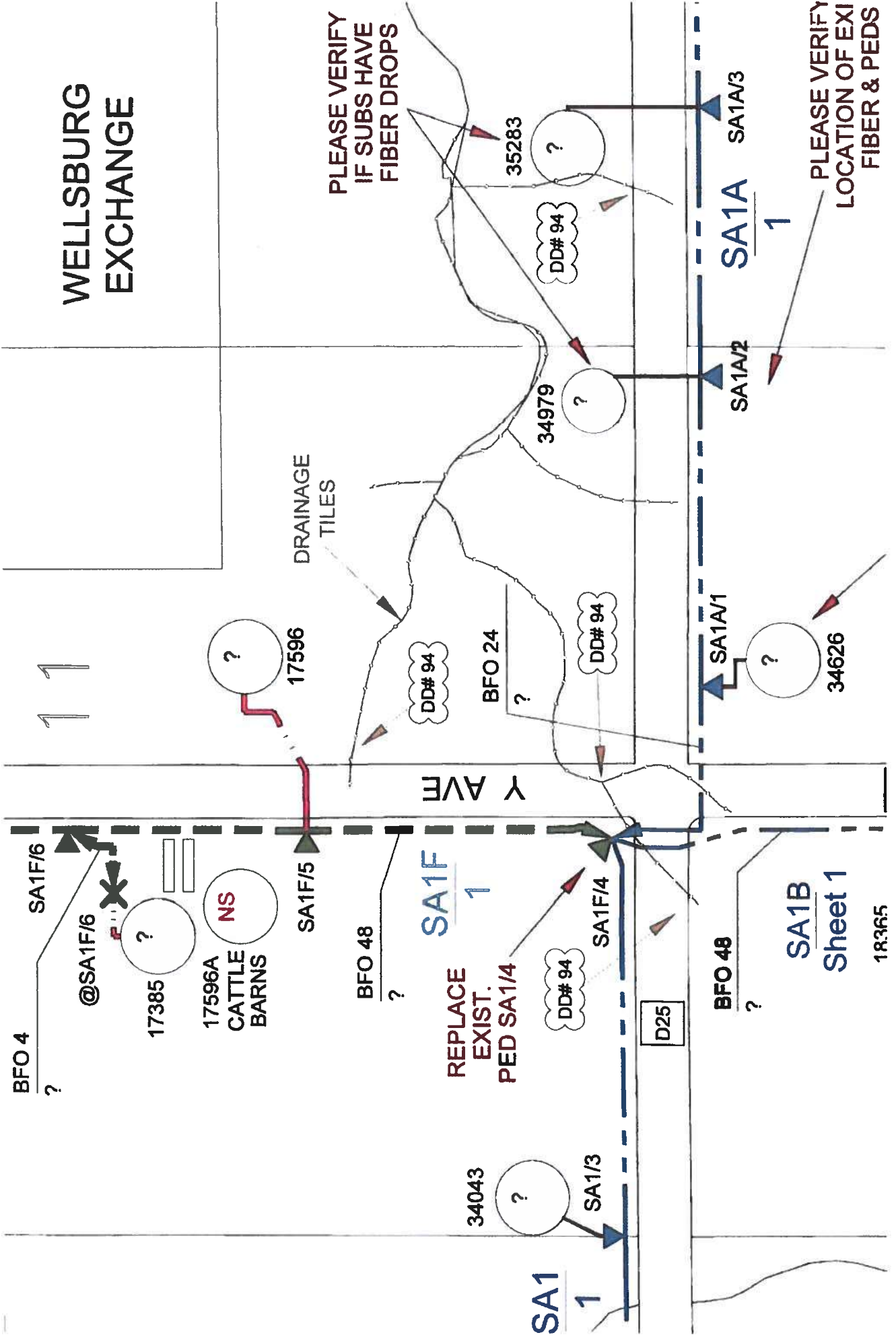
HARDIN COUNTY

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 94
4/12

WELLSBURG EXCHANGE





Utility Permit #2020-12

Utility Observation Report

General Information	
Project Name and Number:	Utility Crossing 6825
Drainage District Number:	#94
Drainage District Facility ID:	Main and Lateral 3
Project Location: (1/4, Sec, Twp, Rng and road)	SW¼ 11-88-19, Y Avenue
Date of Observation:	11/09/2020 – Tile observed 11/16/2020 – Bore observed
Observer Name/Title:	Chris Sweeney, Observer

Field Observations	
District facility type:	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
Utility Orientation:	<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:
Source of utility elevation and/or location:	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input checked="" type="checkbox"/> Utility Reported Other:
Utility Elevation:	Main: 1102.4' Lat #3: 1105.5'
Source of district facility elevation and/or location:	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
District Facility Elevation: (include where measured)	Main: 1109.6' Lat #3: 1112.2'
Vertical clearance from district facility: (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	Main: 7.3' Lat #3: 6.6'



Utility Permit #2020-12

Horizontal clearance from District Tile or Open Ditch centerline:	
Tile outlets within 25-feet relocated? (If applicable)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Original tile size & material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input checked="" type="checkbox"/> DW HDPE (Main 10") <input type="checkbox"/> VCP Other: Lat #3: Unknown due to measurements being taken in intakes.
Tile replaced by utility?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Tile replacement material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:
Condition of District tile:	Main: Intact Lateral #3: Unknown due to measurements being taken in intakes.
Signage present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

Notes
Though signage was present, it does not completely meet the permit requirements.

CONSTRUCTION ENGINEERING
OBSERVATION REPORT

DATE:

11-16-2020

11-9-2020

PROJECT NUMBER:

6825

COUNTY, ROUTE, ROAD:

DD 94

LOCATION:

Y AVE N OF 180th St

DAYS OF WEEK:

S M T W T F S

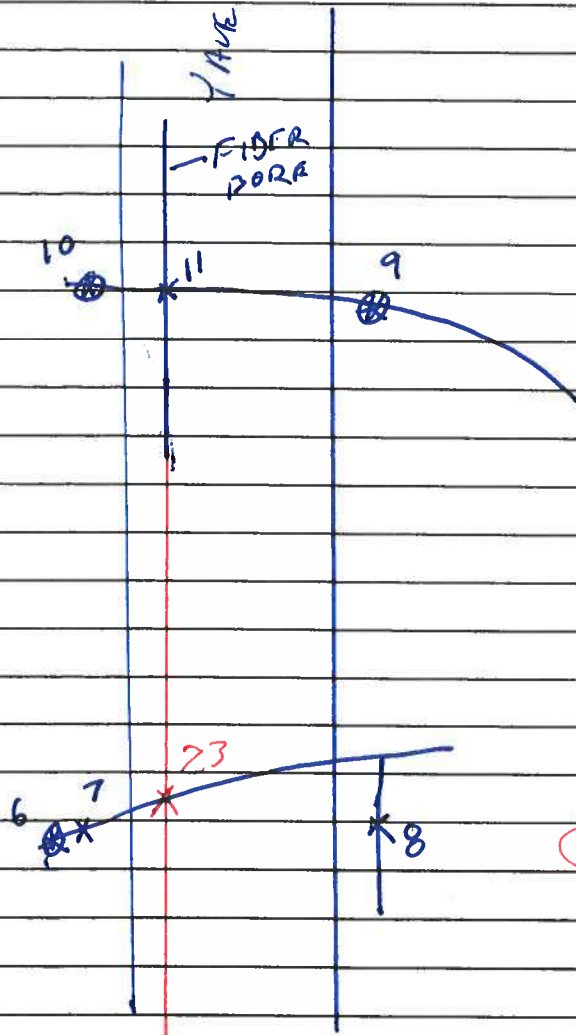
SHEET NO.

1 OF 1

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

TI = GPS MON 7003

#2 SET 1/2" Ø x 2.0' IR IN NE CORNER OF FIELD DRIVE ON E. SIDE
OF ROAD ACROSS FROM #17385
SHOT GPS MONS 7004, 8070, 8071



FL OF TILE @ 9 = 1112.15'
DEPTH OF BORE @ 9 = 1105.52

CLEARANCE = - 6.63

FL OF TILE @ 7 = 1109.64'
DEPTH OF BORE @ 23 = 1102.38'

CLEARANCE = 7.26

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



Utility Permit #

Utility Observation Report

General Information

Project Name and Number:

6825

Drainage District Number:

0094

Drainage District Facility ID:

MAIN

Project Location:

(1/4, Sec, Twp, Rng and road)

SW 1/4 - SE 1/4 SEC 11 - T88N - R19W

Date of Observation:

11-9-2020 - TILE

11-16-2020 - BORE

Observer Name/Title:

Chris Sweeney / Observer

Field Observations

District facility type:

☒ Tile

☐ Open Ditch

Other:

Utility Orientation:

☐ Parallel

☒ Crossing

☐ Overhead

☐ Over

☒ Under

☐ Same Elevation

Other:

Source of utility elevation
and/or location:

☐ Probed

☐ Exposed

☒ Utility Reported

Other:

Utility Elevation:

1102.38'

District Facility Elevation:
(include where measured)

GPS #7 W. OF UTILITY

FL = 1109.64'

Vertical clearance from
district facility:
(must be greater than 1-foot
for tile, and 5-feet for
designed open ditch bottom)

7.26'

Horizontal clearance from
District Tile or
Open Ditch centerline:

0'



Utility Permit #

Tile outlets within 25-feet
relocated? (If applicable)

☐ Yes

☒ No

☐ N/A

Original tile material:

☐ RCP

☐ CMP

☐ SW HDPE

☒ DW HDPE

☐ VCP

Other:

Tile replaced by utility?

☐ Yes

☒ No

☐ N/A

Tile replacement material:

☐ RCP

☐ CMP

☒ N/A

Other:

Condition of District tile:

GOOD?

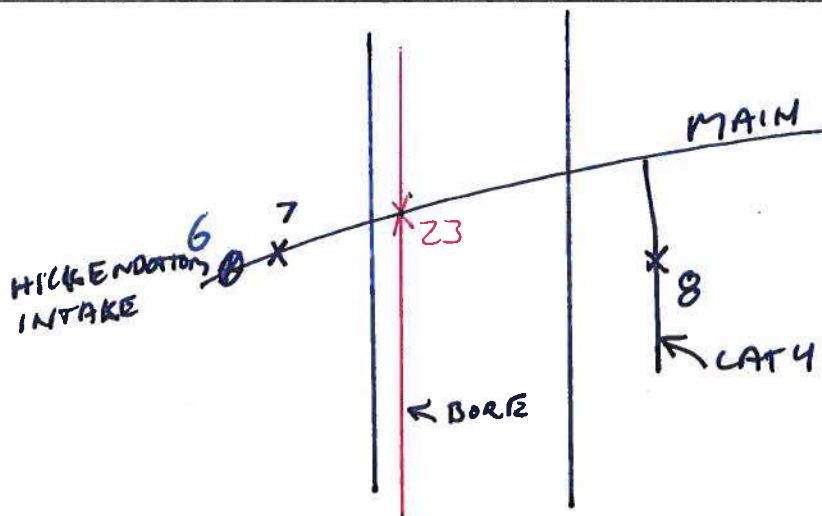
Signage present?

☒ Yes

☐ No

☐ N/A

Notes



Inspector's Signature:

Chris Lunn

Date:

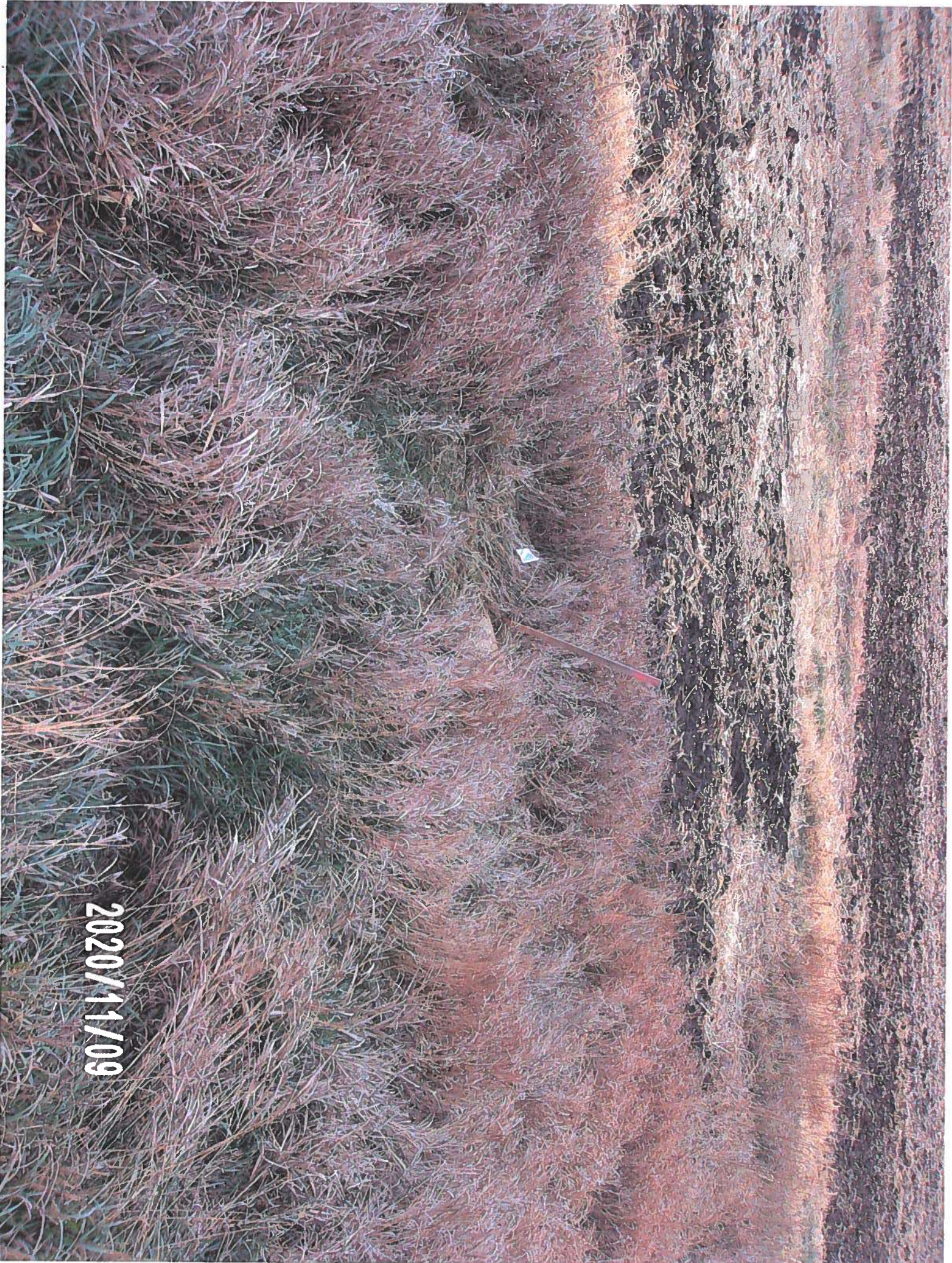
11-16-2020



2020/11/09



2020/11/09



2020/11/09

2020/11/09







Utility Permit #

Utility Observation Report

General Information

Project Name and Number:

6825

Drainage District Number:

DD 94

Drainage District Facility ID:

CAT #3

Project Location:

(1/4, Sec, Twp, Rng and road)

Y AVE NW 1/4 - SE 1/4 SEC 11 - T88N - R19W

Date of Observation:

11-9-2020 - TILE

11-16-2020 - BORE

Observer Name/Title:

Chris Sweeney / OBSERVER

Field Observations

District facility type:

☒ Tile

☐ Open Ditch

Other:

Utility Orientation:

☐ Parallel

☒ Crossing

☐ Overhead

☐ Over

☒ Under

☐ Same Elevation

Other:

Source of utility elevation
and/or location:

☐ Probed

☐ Exposed

☒ Utility Reported

Other:

Utility Elevation:

1105.52'

District Facility Elevation:
(include where measured)

GPS #9 E. OF UTILITY

FL = 1112.15

Vertical clearance from
district facility:
(must be greater than 1-foot
for tile, and 5-feet for
designed open ditch bottom)

6.63'

Horizontal clearance from
District Tile or
Open Ditch centerline:

0'

Utility Permit #

Tile outlets within 25-feet relocated? (If applicable)

☐ Yes ☒ No ☐ N/A

Original tile material:

☐ RCP ☐ CMP ☐ SW HDPE
☐ DW HDPE ☐ VCP

Other: UNKNOWN DEATH WAS OBTAINED @ INTAKES

Tile replaced by utility?

☐ Yes ☒ No ☐ N/A

Tile replacement material:

☐ RCP ☐ CMP ☒ N/A

Other:

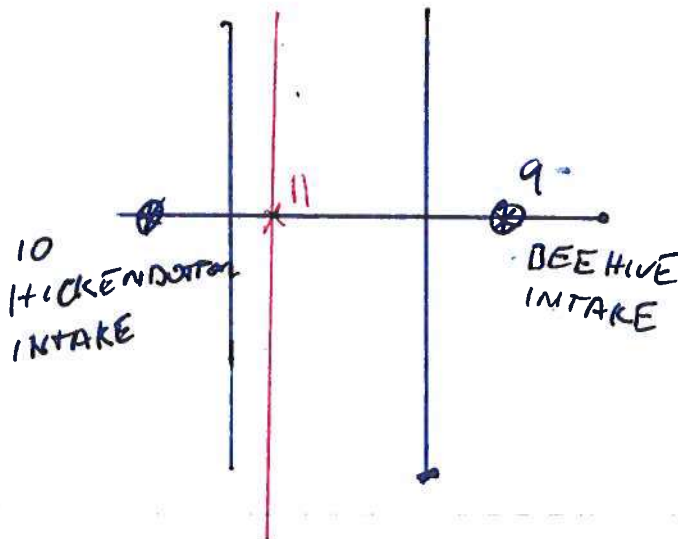
Condition of District tile:

UNKNOWN

Signage present?

☒ Yes ☐ No ☐ N/A

Notes



Inspector's Signature: Chris [Signature] Date: _____



2020/11/09



2020/11/09



2020/11/09



6825 DD94 2020-11-16 cs

1,8582437.547,14988369.066,1070.810,Autonomous Setup
2,8574959.647,14985990.659,1147.523,103 ir 12x2 0.3d
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11,8573458.499,14985952.483,1120.521,700 -15'
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20,8578019.597,14985937.886,1083.231,700 -4'
21,8577988.612,14985938.641,1083.409,700 -4'
22,8576837.715,14985894.979,1095.928,700 -14'
23,8572075.470,14985953.924,1118.382,700 -16'
7003,8582437.547,14988369.066,1070.810,gps mon 7003
7004,8582393.896,14994466.084,1056.698,103 gps mon
8070,8566249.325,14972842.042,1112.385,103 gps mon
8071,8582479.452,14971495.335,1152.590,103 gps mon



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 facility crossings.
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.

[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

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

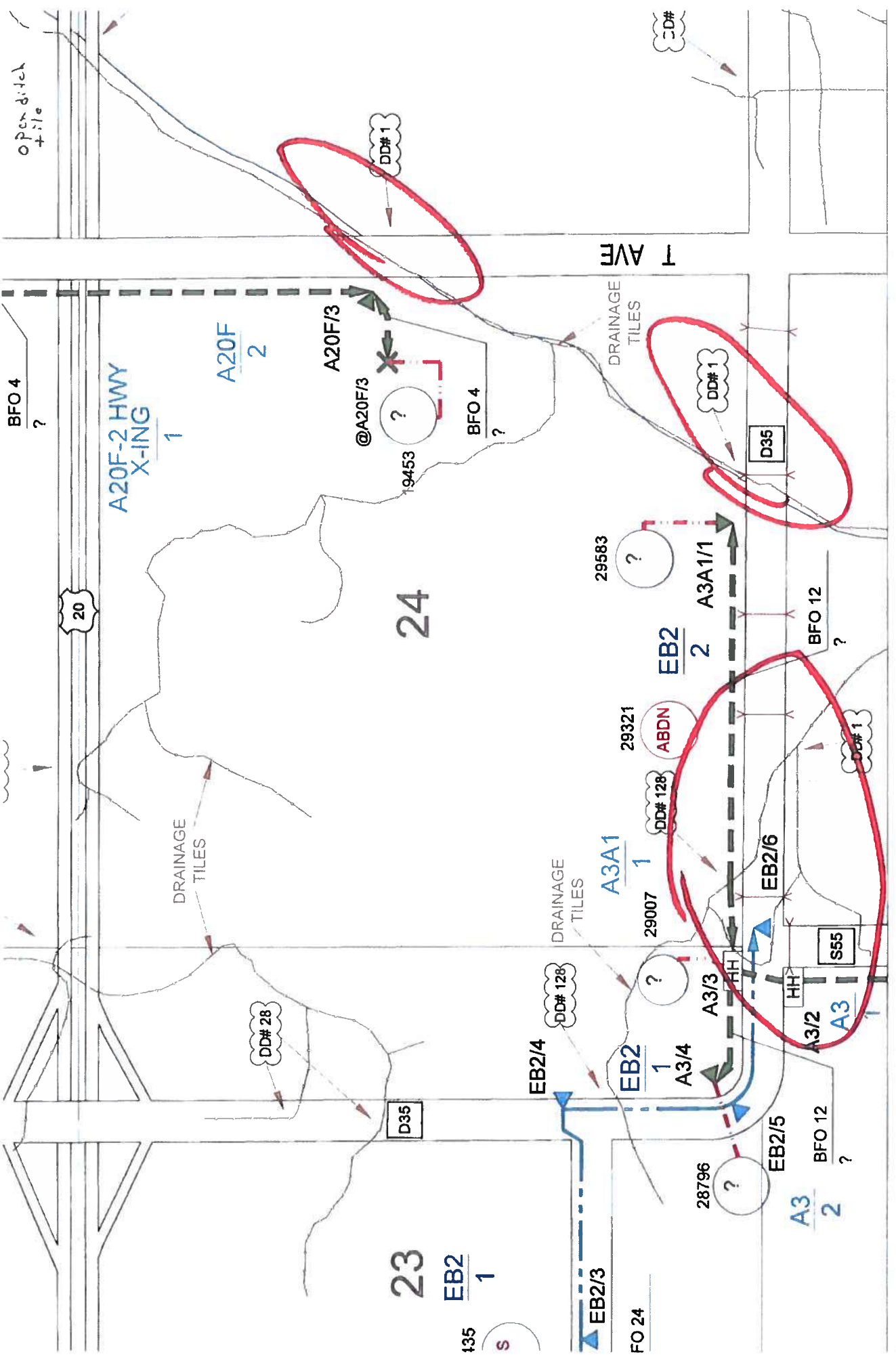
1215 EDGINGTON AVE., SUITE 1
ELDORA, IA 50627
(641) 939-8108

- 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 1

DD 128

open ditch
+ tile





Utility Permit #2020-12

Utility Observation Report

General Information	
Project Name and Number:	Utility Crossing 6935.5
Drainage District Number:	#128
Drainage District Facility ID:	Laterals 1 & 3
Project Location: (1/4, Sec, Twp, Rng and road)	NW 25-88-20
Date of Observation:	10-21 & 10-29-2020
Observer Name/Title:	Chris Sweeney

Field Observations	
District facility type:	<input checked="" type="checkbox"/> Tile <input type="checkbox"/> Open Ditch Other:
Utility Orientation:	<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:
Source of utility elevation and/or location:	<input type="checkbox"/> Probed <input type="checkbox"/> Exposed <input checked="" type="checkbox"/> Utility Reported Other:
Utility Elevation:	Lat 3: 1092.4'
Source of district facility elevation and/or location:	<input type="checkbox"/> Probed <input checked="" type="checkbox"/> Exposed <input type="checkbox"/> Utility Reported Other:
District Facility Elevation: (include where measured)	Lat 3: 1099.1' (Flowline)
Vertical clearance from district facility: (must be greater than 1-foot for tile, and 5-feet for designed open ditch bottom)	Lat 3: 6.7'



Utility Permit #2020-12

Horizontal clearance from District Tile or Open Ditch centerline:	NA		
Tile outlets within 25-feet relocated? (If applicable)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Original tile size & material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> SW HDPE <input type="checkbox"/> DW HDPE <input checked="" type="checkbox"/> VCP Other: Lat 3: 6"		
Tile replaced by utility?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Tile replacement material:	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input checked="" type="checkbox"/> N/A Other:		
Condition of District tile:	Tile was found to be broken in the observation excavation, with the existing Lateral 3 VCP tile in poor condition and possibly collapsed.		
Signage present?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A

Notes
<p>No signage was observed at the time of site visit.</p> <p>The Lateral 1 wasn't found by Heart of Iowa, so there is no information to report on said tile. Further investigation may be conducted if so desired by the District Trustees. However, given the boring was conducted only 1-foot below the ditch bottom elevation, it is highly unlikely that it would conflict with said Lateral 1 tile.</p> <p>The piece of the Lateral 3 tile that was found to be broken prior to the observation excavation, with the VCP material observed in generally poor condition. CGA recommends a repair and possible investigation into the condition of the tile in this area.</p>

10-29-2020
68- 10-21-2020

LOCATION:

6935.5

BOO #128

D-35 + S-55

DAYS OF WEEK:

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

SHEET NO.

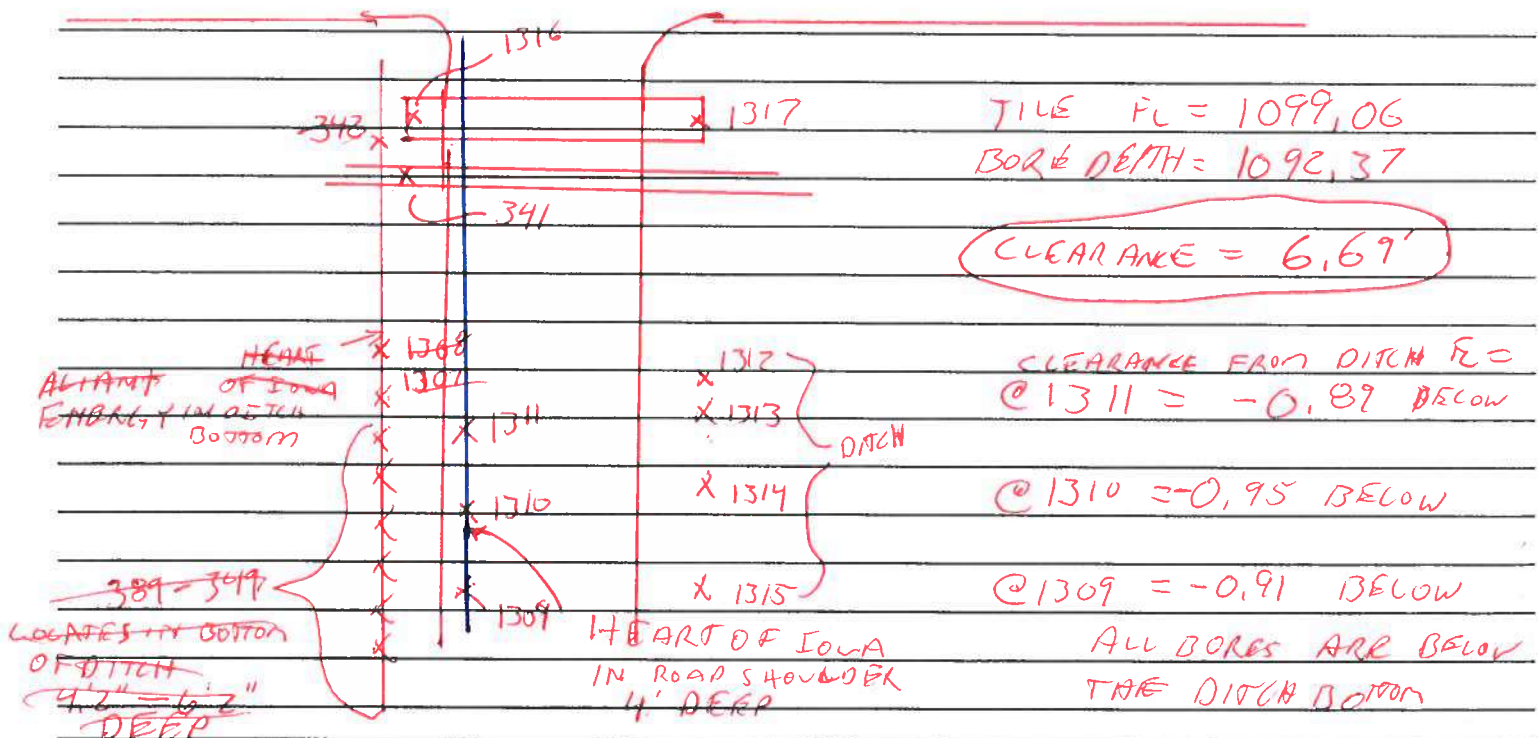
OF

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

~~TOOK SHOT~~ $\pi \approx \sqrt{3}$

POOK SHOT ON TILE (#341) BORE WAS NOT RAN YET.
TILE WAS BROKEN DOWN STREAM END WAS $\frac{1}{4}$ FULL & UP
STREAM END WAS $\frac{3}{4}$ FULL OF DIRT.

CALLER DARRIN AFTER I SAW NO BORING DEPTHS
HE SAID THAT THE BORE IS 8' BELOW THE CULVERT



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

@341 Looking N.



Crossing @ 1310

DEPTH @ 1310



CULVERT @ 1316

GPS #341



upstream @ 341



Downstream @ 341



2020/10/21

Downstream @ 341



2020/10/21

Upstream @ 341



2020/10/21

Downstream @ 341



2020/10/21

GPS #341



6935 dd128 2020-10-29 cs

1,3618716.220,5034450.740,1112.480,GPS 8070
1_GNSS,3618716.220,5034450.740,1112.480,Autonomous Setup
2,3618431.652,5024119.946,1096.825,CPT IRS 3/4 .5DOWN
3,3618541.632,5024119.731,1101.936,SPK TOP6X6 SE GUARDRAILEND
4,3616008.561,5024081.184,1067.548,T PST .2UP
5,3616008.785,5024080.851,1067.040,WCP W S
6,3616030.079,5023952.479,1054.201,FL TILE
7,3616025.718,5023946.227,1058.608,GS FL
8,3616012.070,5023944.425,1058.608,INTK RISER 6"STEEL
9,3616232.193,5024081.348,1059.209,INTK RISER 6"PLASTIC
10,3616262.864,5024094.402,1059.400,FL CMP6'ELIPT
11,3616316.825,5024131.090,1067.362,(O) IN 8/3/06 NE CONC PARA
12,3613379.518,5022353.385,1054.663,FL RCB(8X5.3)DOUBLE
13,3613024.649,5022139.613,1053.096,GS FL
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15,3612371.788,5021990.910,1053.057,GS FL
16,3612064.010,5021950.352,1052.724,GS FL
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20,3611487.914,5021501.370,1051.329,GS FL
21,3611225.628,5021165.745,1050.379,GS FL
22,3611007.524,5020844.512,1050.177,GS FL
23,3610734.176,5020806.234,1049.023,GS FL
24,3610615.852,5020935.412,1047.663,GS FL
25,3610426.190,5021111.354,1047.195,GS FL
26,3610407.436,5021099.635,1043.215,FL+- 24" TILE BLOWOUT
27,3610411.782,5021101.814,1047.723,GS
28,3610102.044,5021521.828,1043.524, TOP CONC HEADWALL
29,3610102.207,5021522.289,1039.293,FL TILE
30,3610119.806,5021455.149,1041.478,FL TILE26"
31,3610129.122,5021521.122,1045.777,FNC
32,3610772.063,5021515.618,1052.609,SCF ALUMNCAP19957
33,3604123.029,5025260.423,1041.397,GPS MON8060
34,3604166.072,5024352.095,1031.310,CLDD1 CLBRIDGE
35,3602869.484,5024249.875,1029.465,TB RR C+CN
36,3602857.888,5024234.131,1029.474,TB RR C+CN
37,3602824.513,5024260.745,1030.270,TB RR C+CN
38,3602837.122,5024273.538,1030.300,TB RR C+CN
39,3603037.456,5024316.434,1021.884,TB
40,3602786.986,5024233.137,1021.786,WCP RR RW
41,3602836.531,5024233.675,1026.252,CMP TOP
42,3602866.997,5024262.455,1027.021,CMP TOP
43,3602877.186,5024270.009,1016.870,FL CMP +-
44,3603033.773,5024323.545,1017.091,WO
45,3603016.509,5024312.423,1021.350,TB
46,3602969.034,5024307.050,1014.990,1+00 FL
47,3603170.097,5024306.158,1016.013,3+00 FL
48,3603175.772,5024311.181,1018.432, TOP PLASTIC TILE

6935 dd128 2020-10-29 cs

49,3603266.305,5024303.820,1022.572,TB
50,3603351.889,5024222.437,1016.730,5+00 FL
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54,3603689.617,5024184.783,1023.851,TB
55,3603741.371,5024148.940,1017.206,9+00 FL
56,3603865.811,5024082.401,1017.735,10+40
57,3603906.609,5024126.531,1017.535,11+00 FL
58,3604046.339,5024281.771,1019.286,13+00 FL
59,3604182.458,5024334.867,1028.926,NW BRDG ABUT
60,3604231.661,5024356.869,1018.003,15+00 fl
61,3604426.761,5024313.330,1019.392,17+00 fl
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66,3605296.917,5023836.072,1021.865,27+00 fl
67,3605462.279,5023723.526,1023.437,29+00 fl
68,3605642.640,5023636.848,1023.002,31+00 fl
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6935 dd128 2020-10-29 cs

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105,3614061.194,5022707.232,1055.845,fl
106,3614146.556,5022759.400,1056.194,fl
107,3614229.577,5022815.155,1055.954,fl
108,3614313.034,5022870.434,1056.390,fl
109,3614397.579,5022924.005,1056.214,fl
110,3614482.166,5022977.426,1056.770,fl
111,3614564.800,5023033.847,1056.791,fl
112,3614606.704,5023124.605,1056.645,fl
113,3614651.686,5023213.982,1056.860,fl
114,3614694.210,5023304.526,1058.227,fl
115,3614761.855,5023378.266,1057.432,fl
116,3614853.484,5023418.452,1058.283,fl
117,3614948.869,5023448.473,1059.187,fl
118,3615045.459,5023474.499,1059.694,fl
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120,3615242.625,5023506.479,1058.022,fl
121,3615337.942,5023536.850,1058.083,fl
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123,3615521.378,5023616.526,1058.278,fl
124,3615604.591,5023672.053,1058.413,fl
125,3615687.025,5023728.518,1058.389,fl
126,3615770.027,5023784.114,1058.367,fl
127,3615854.060,5023838.412,1058.734,fl
128,3615937.492,5023893.406,1058.647,fl
129,3616024.075,5023943.426,1058.557,fl
130,3616110.969,5023992.810,1059.102,fl
131,3616195.054,5024047.085,1060.002,fl
132,3613417.714,5022362.151,1062.143,n headwall rcb
133,3613446.718,5022414.624,1058.447,gs
134,3613456.845,5022398.463,1057.858,gs
135,3613464.293,5022387.091,1056.148,tb
136,3613466.576,5022382.874,1054.239,toe
137,3613467.998,5022380.798,1053.886,fl
138,3613469.517,5022377.887,1054.110,toe
139,3613470.582,5022375.908,1056.542,tb
140,3613474.621,5022370.255,1057.624,gs
141,3613479.706,5022362.306,1058.431,gs
142,3613500.287,5022330.042,1058.502,gs
143,3613583.767,5022385.259,1058.421,gs
144,3613573.179,5022404.493,1057.745,gs
145,3613570.168,5022410.259,1057.412,gs
146,3613565.634,5022418.794,1057.420,tb

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147,3613562.293,5022424.172,1055.761,gs
148,3613560.531,5022427.504,1054.220,toe
149,3613559.524,5022428.933,1054.628,gs fl
150,3613558.500,5022431.059,1054.179,toe
151,3613556.946,5022433.619,1056.284,gs
152,3613550.195,5022445.720,1058.561,tb
153,3613535.431,5022472.857,1060.483,gs
154,3613622.592,5022521.775,1060.263,gs
155,3613632.358,5022502.569,1059.153,gs
156,3613637.461,5022492.232,1059.006,tb
157,3613641.868,5022484.221,1057.154,gs
158,3613644.945,5022477.741,1055.392,toe
159,3613646.738,5022474.690,1055.506,gs cl
160,3613647.842,5022472.456,1055.101,toe
161,3613649.444,5022468.489,1057.203,gs
162,3613653.120,5022461.933,1058.272,tb
163,3613659.750,5022449.392,1057.807,gs
164,3613668.047,5022432.646,1057.979,gs
165,3613755.990,5022480.381,1058.251,gs
166,3613737.866,5022509.078,1058.237,tb
167,3613733.131,5022516.091,1057.035,gs
168,3613730.847,5022519.628,1054.975,toe
169,3613730.333,5022520.533,1054.679,gs cl
170,3613729.727,5022520.963,1055.046,toe
171,3613729.342,5022522.030,1055.745,gs
172,3613727.338,5022525.380,1056.298,gs
173,3613724.567,5022529.538,1058.611,tb
174,3613719.001,5022538.385,1058.617,gs
175,3613702.156,5022564.796,1060.370,gs
176,3613789.341,5022613.707,1059.554,gs
177,3613805.844,5022585.197,1058.923,gs
178,3613806.682,5022583.438,1059.354,tb
179,3613810.915,5022576.092,1058.355,gs
180,3613813.572,5022571.412,1055.495,toe
181,3613815.224,5022568.442,1055.148,gs cl
182,3613816.208,5022567.518,1054.703,toe
183,3613818.162,5022563.359,1056.843,gs
184,3613823.212,5022555.068,1058.520,tb
185,3613831.414,5022540.427,1058.550,gs
186,3613839.375,5022527.053,1058.639,gs
187,3613927.194,5022574.891,1059.060,gs
188,3613915.149,5022594.402,1058.822,gs
189,3613909.717,5022602.863,1058.970,tb
190,3613907.144,5022606.836,1058.132,gs
191,3613904.218,5022611.549,1056.741,gs
192,3613903.077,5022613.341,1055.159,toe
193,3613901.480,5022616.020,1055.641,gs cl
194,3613899.627,5022618.907,1055.523,toe
195,3613898.106,5022621.823,1056.886,gs

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196,3613892.274,5022631.821,1059.093,tb
197,3613888.496,5022637.044,1058.328,gs
198,3613874.333,5022659.762,1059.490,gs
199,3613962.021,5022707.987,1060.092,gs
200,3613973.951,5022684.556,1058.271,gs
201,3613976.387,5022679.846,1058.509,gs
202,3613977.248,5022678.327,1059.056,tb
203,3613981.148,5022670.422,1057.625,gs
204,3613983.178,5022666.460,1055.832,toe
205,3613984.138,5022663.825,1055.616,gs cl
206,3613986.130,5022660.431,1055.436,toe
207,3613987.355,5022657.111,1057.543,gs
208,3613991.987,5022647.685,1059.308,tb
209,3613995.568,5022641.853,1059.005,gs
210,3614007.539,5022618.813,1059.503,gs
211,3614094.368,5022668.662,1059.921,gs
212,3614076.955,5022695.246,1059.930,tb
213,3614071.891,5022703.945,1058.064,gs
214,3614069.716,5022706.984,1055.983,toe
215,3614068.346,5022709.132,1055.829,gs cl
216,3614067.234,5022710.921,1055.301,toe
217,3614065.177,5022714.041,1056.606,gs
218,3614062.405,5022718.516,1058.238,gs
219,3614056.641,5022726.801,1059.344,tb
220,3614055.576,5022728.536,1058.666,gs
221,3614039.913,5022752.677,1059.992,gs
222,3614124.338,5022806.509,1059.470,gs
223,3614134.260,5022789.610,1059.029,gs
224,3614140.430,5022778.681,1059.447,tb
225,3614144.752,5022770.918,1058.370,GS
226,3614146.814,5022767.408,1057.387,gs
227,3614148.513,5022764.793,1056.116,toe
228,3614150.191,5022762.374,1056.149,gs cl
229,3614151.477,5022759.418,1056.047,toe
230,3614153.012,5022755.845,1058.086,gs
231,3614161.297,5022742.410,1060.303,tb
232,3614174.511,5022719.965,1060.452,gs
233,3614261.181,5022770.018,1060.976,gs
234,3614247.616,5022792.747,1060.585,tb
235,3614239.513,5022806.908,1058.881,gs
236,3614235.809,5022812.345,1057.774,gs
237,3614234.830,5022814.786,1055.407,toe
238,3614233.250,5022818.015,1056.505,gs cl
239,3614231.769,5022820.157,1055.582,toe
240,3614229.457,5022823.589,1057.360,gs
241,3614227.505,5022826.668,1058.833,tb
242,3614221.642,5022836.547,1059.109,gs
243,3614209.727,5022855.892,1059.438,gs
244,3614292.616,5022911.935,1060.136,gs

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245,3614304.733,5022895.535,1059.570,gs
246,3614309.090,5022889.730,1059.682,tb
247,3614314.490,5022882.686,1058.806,gs
248,3614317.830,5022878.200,1055.656,toe
249,3614319.200,5022876.024,1056.485,gs cl
250,3614320.327,5022874.223,1056.157,toe
251,3614322.340,5022870.871,1057.512,gs
252,3614340.063,5022847.844,1061.279,tb
253,3614352.190,5022831.428,1061.531,gs
254,3614436.858,5022884.785,1062.200,gs
255,3614424.567,5022901.918,1061.626,tb
256,3614413.327,5022917.061,1059.279,gs
257,3614407.794,5022925.562,1057.999,gs
258,3614406.420,5022926.944,1056.077,toe
259,3614404.618,5022929.327,1057.148,gs cl
260,3614403.683,5022931.087,1057.083,toe
261,3614400.226,5022936.670,1058.476,gs
262,3614397.245,5022941.238,1059.976,gs
263,3614390.880,5022947.339,1060.706,tb
264,3614377.798,5022965.790,1060.975,gs
265,3614460.009,5023022.989,1061.449,gs
266,3614470.041,5023008.993,1060.998,gs
267,3614473.644,5023004.385,1061.263,tb
268,3614480.015,5022994.683,1060.303,gs
269,3614484.158,5022989.920,1058.364,gs
270,3614487.724,5022985.116,1057.554,gs
271,3614489.238,5022983.053,1056.187,toe
272,3614489.883,5022980.299,1056.285,gs cl
273,3614491.199,5022976.672,1057.271,toe
274,3614496.712,5022971.100,1059.672,gs
275,3614506.698,5022957.238,1062.426,tb
276,3614518.076,5022941.268,1063.159,gs
277,3614793.137,5017453.571,1128.882,IRS CPT 3/4X2
278,3614755.640,5017503.159,1130.143,SMN
279,3614777.412,5017543.471,1127.177,IRF 5/8
280,3614486.383,5017534.165,1116.600,FL CMP3.5
281,3614486.584,5017535.769,1117.325,INTK BEEHIVE
282,3614485.144,5017542.985,1117.754,GS
283,3614489.231,5017549.972,1117.028,GS
284,3614500.882,5017550.380,1118.968,FNL
285,3614492.791,5017537.387,1119.079,UGFO
286,3614512.071,5017537.903,1118.918,UGFO
287,3614447.966,5017538.181,1118.710,UGFO
288,3614459.648,5017549.426,1119.268,UGFO
289,3614456.756,5017549.895,1119.370,FNL
290,3614484.327,5017555.147,1116.887,GS INTK
291,3614485.966,5017562.384,1120.967,GS TOP TERRACE
292,3614509.894,5017561.105,1120.524,GS TOP TERRACE
293,3614536.302,5017558.794,1120.205,GS TOP TERRACE

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294,3614462.082,5017560.072,1121.028,GS TOP TERRACE
295,3614426.463,5017557.598,1120.043,GS TOP TERRACE
296,3614520.249,5017575.670,1116.570,GS FL
297,3614533.640,5017617.599,1115.886,GS FL
298,3614543.294,5017646.644,1115.541,GS FL
299,3614580.462,5017675.850,1115.068,GS FL
300,3614612.508,5017727.884,1114.068,GS FL SUCKHOLE
301,3614628.569,5017767.884,1113.968,GS FL
302,3614640.280,5017794.549,1113.792,GS FL ROCK PILE
303,3614641.234,5017842.018,1112.817,GS FL
304,3614642.396,5017910.589,1112.408,GS FL
305,3614602.790,5017982.276,1111.999,GS FL
306,3614557.938,5018047.642,1110.957,GS FL
307,3614504.449,5018110.170,1109.727,GS FL
308,3614492.817,5018162.958,1109.117,GS INTK
309,3614497.599,5018098.934,1109.880,GS
310,3614506.553,5018039.945,1111.156,GS
311,3614517.509,5017941.838,1113.255,GS
312,3614517.570,5017855.638,1115.551,GS
313,3614509.646,5017783.273,1118.531,GS
314,3614494.193,5017717.020,1118.264,GS
315,3614477.850,5017644.339,1117.487,GS
316,3614469.510,5017600.140,1117.120,GS
317,3614484.836,5018385.593,1105.146,GS SUCK HOLE
318,3614475.159,5018419.634,1104.775,GS SUCK HOLE
319,3614234.627,5018801.265,1096.455,OUTLET AREA DD128
320,3614234.717,5018798.718,1095.082,OUTLET 5"CLAY
321,3614236.953,5018799.160,1095.722,OUTLET 6"CLAY
322,3613705.040,5019316.964,1085.078,GS INTKE STEEL
323,3613867.625,5019183.632,1088.217,GS FL
324,3613878.602,5019066.952,1088.414,GS FL
325,3613967.430,5018895.964,1088.501,GS FL
326,3614220.187,5018811.932,1095.639,CMP 15"TOP
327,3614236.184,5018795.561,1096.045,CMP 15"TOP
328,3614248.007,5018783.000,1096.608,CMP 15"TOP
329,3614240.855,5018775.910,1095.827,TOP 5"CLAY
330,3614249.648,5018780.584,1096.897,TOP 6"CLAY
331,3614604.344,5017736.928,1112.157,TOP 6"CONC MAIN
332,3614606.204,5017734.003,1112.860,TOP 6"CONC LAT
333,3614476.244,5018420.001,1102.297,TOP 6"CONC
334,3614476.904,5018417.629,1102.362,TOP 6"CLAY
335,3614245.529,5018833.767,1102.355,CPT 1/2IRS
336,3614437.206,5018503.348,1100.680,CMP TOP 8"
337,3614437.421,5018501.016,1104.109,GS
338,3614441.511,5018530.021,1103.543,FL SWALE
339,3614462.549,5018476.922,1104.027,FL SWALE
340,3614450.011,5018498.877,1103.816,FL SWALE
341,3613340.690,5018791.043,1099.057,963 6
342,3613345.487,5018785.269,1101.922,915 -3'4"

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343,3612491.169,5018802.418,1109.219,915 -4'5"
344,3612464.931,5018802.463,1109.758,915 -4'3"
345,3612424.884,5018803.747,1110.342,915 -4'9"
346,3612386.732,5018804.023,1111.124,915 -5'2"
347,3612386.706,5018804.210,1111.156,915 -5'2"
348,3612340.266,5018804.309,1111.990,915 -4'6"
349,3612279.979,5018804.328,1113.284,915 -4'2"
350,3614220.014,5018811.967,1095.417,cmp 15" top 1.23' to fl
351,3614213.305,5018811.852,1093.724,toe
352,3614216.867,5018809.509,1094.039,toe
353,3614220.698,5018808.924,1094.278,toe
354,3614221.229,5018811.862,1093.924,toe
355,3614221.468,5018816.374,1093.934,toe
356,3614220.324,5018823.641,1094.283,toe
357,3614213.736,5018825.482,1094.044,toe
358,3614208.588,5018814.750,1093.675,toe
359,3614210.258,5018817.890,1093.374,fl ditch
360,3614216.948,5018814.257,1093.291,fl ditch
361,3614215.560,5018814.870,1093.560,fl ditch
362,3614218.096,5018813.634,1093.721,fl ditch
363,3614219.924,5018812.120,1093.524,fl ditch
364,3614209.900,5018802.186,1097.828,gs boulders/dirt
365,3614198.048,5018791.226,1100.862,TB
366,3614175.333,5018770.209,1102.698,gs grass
367,3614167.586,5018757.459,1104.905,gs grass
368,3614161.371,5018748.735,1105.311,shed e side
368_REF1,3614160.939,5018749.637,1105.151,Ref. Pt.
368_REF2,3614162.296,5018749.115,1104.872,Ref. Pt.
369,3614220.970,5018813.416,1093.879,fl ditch
370,3614223.085,5018814.961,1094.157,toe
371,3614224.420,5018816.904,1095.637,gs boulders/dirt
372,3614228.000,5018818.739,1096.310,gs boulders
373,3614233.702,5018821.342,1099.053,gs boulders
374,3614243.132,5018833.163,1101.554,tb
375,3614246.162,5018835.781,1102.236,gs grass/field
376,3614265.142,5018851.528,1102.680,gs field
377,3614302.253,5018877.566,1104.371,gs field
378,3614330.610,5018832.122,1104.358,gs field
379,3614292.704,5018801.730,1102.522,gs field
380,3614255.590,5018772.849,1101.286,gs field
381,3614249.291,5018770.613,1101.332,gs grass/field
382,3614224.746,5018746.015,1101.885,gs grass
383,3614202.845,5018734.767,1104.703,gs grass
384,3614193.417,5018727.133,1105.093,gs grass
385,3614190.939,5018727.463,1104.979,gs grass
386,3614189.947,5018727.596,1105.173,shed n side
387,3612510.895,5018803.999,1108.937,915 -4'10"
388,3612590.727,5018809.455,1109.278,915 -4'9"
389,3612666.330,5018805.331,1107.725,915 -6'2"

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390,3614192.178,5018744.539,1104.869,shed ne cor
390_REF1,3614192.380,5018745.518,1104.897,Ref. Pt.
390_REF2,3614193.175,5018744.468,1104.841,Ref. Pt.
391,3614199.801,5018751.307,1104.465,gs grass
392,3614213.868,5018760.874,1102.454,gs grass
393,3614221.382,5018781.294,1100.979,gs
394,3614220.864,5018797.864,1098.687,gs
395,3614224.861,5018803.931,1098.074,gs
396,3614229.342,5018796.410,1099.432,gs
397,3614227.619,5018806.769,1098.071,gs
398,3614230.982,5018805.919,1098.012,gs
399,3614233.740,5018807.543,1099.111,gs
400,3614233.124,5018812.658,1099.092,gs
401,3614229.172,5018812.645,1097.645,gs
402,3614225.088,5018808.717,1096.414,gs
403,3614223.968,5018809.308,1095.007,gs
404,3614221.748,5018806.335,1095.551,gs
405,3614220.464,5018808.103,1095.053,gs
406,3614243.983,5018814.285,1101.414,tb
407,3614250.215,5018813.824,1101.815,gs grass/field
408,3614251.908,5018792.021,1101.396,gs grass/field
409,3614254.376,5018780.175,1101.182,gs grass/field
410,3614252.419,5018776.561,1100.234,gs
411,3614247.377,5018784.832,1099.280,gs
412,3614242.594,5018794.341,1099.001,gs
413,3614237.899,5018798.182,1098.503,gs
414,3614245.585,5018801.264,1101.164,gs
415,3614247.601,5018788.822,1101.393,gs
416,3614252.943,5018781.032,1101.169,gs
417,3614253.550,5018775.188,1101.136,gs
418,3614247.096,5018773.354,1101.326,gs
419,3614240.492,5018771.574,1100.358,gs
420,3614235.321,5018769.850,1101.546,gs
421,3614240.562,5018767.875,1101.375,gs
422,3614237.385,5018787.277,1100.497,gs
423,3614243.598,5018782.977,1100.264,gs
424,3614244.140,5018781.716,1099.585,gs
425,3614245.209,5018778.198,1100.746,gs
426,3614244.097,5018840.280,1101.823,sfp
427,3614235.150,5018848.834,1101.073,sfp
428,3614211.326,5018862.179,1100.060,sfp
429,3614184.937,5018873.383,1100.127,sfp
430,3614151.920,5018881.641,1100.161,sfp
431,3614122.307,5018881.494,1099.334,sfp
432,3614219.460,5018852.545,1099.652,conc broken se cor
433,3614216.516,5018847.195,1098.386,conc broken sw cor
434,3614228.667,5018833.855,1098.640,conc broken ww cor
435,3614238.279,5018838.148,1100.537,conc broken ne cor
436,3614227.695,5018845.076,1100.006,shrub

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437,3614192.851,5018859.949,1098.101,trd 6
438,3614192.297,5018859.522,1098.101,trd 6
439,3614202.387,5018821.495,1093.433,toe
440,3614203.856,5018822.673,1093.286,fl ditch
441,3614149.342,5018814.331,1100.444,gs dead tree pile
442,3614172.525,5018797.355,1101.338,gs dead tree pile
443,3614196.579,5018785.507,1101.347,gs dead tree pile
444,3614205.529,5018791.776,1100.061,gs dead tree pile
445,3614194.832,5018813.762,1097.337,gs dead tree pile
446,3614185.844,5018829.195,1095.087,gs dead tree pile
447,3614165.016,5018829.127,1097.560,gs dead tree pile
448,3614177.953,5018825.939,1099.185,trd 10"
448_REF1,3614177.365,5018823.509,1099.326,Ref. Pt.
448_REF2,3614175.509,5018825.412,1099.044,Ref. Pt.
449,3614201.381,5018819.366,1095.346,gs
450,3614205.320,5018825.113,1093.686,toe
451,3614205.495,5018826.900,1095.448,gs
452,3614209.038,5018826.794,1095.487,gs
453,3614209.846,5018824.968,1093.607,toe
454,3614219.184,5018836.516,1096.886,gs
455,3614224.600,5018854.973,1100.443,tb
456,3614238.588,5018844.648,1101.108,tb
457,3614241.490,5018848.025,1101.755,gs grass/field
458,3614219.570,5018862.248,1100.759,gs grass/field
459,3614191.861,5018839.415,1095.203,gs
460,3614190.770,5018837.907,1093.103, toe
461,3614189.382,5018835.486,1093.208,toe
462,3614188.402,5018833.235,1094.976,gs
463,3614185.528,5018828.480,1095.192,gs
464,3614175.493,5018838.337,1093.776,gs
465,3614175.554,5018838.939,1092.798,toe
466,3614176.587,5018840.990,1092.657,toe
467,3614177.970,5018844.141,1095.062,gs
468,3614185.314,5018857.109,1096.395,gs
469,3614188.136,5018863.754,1097.966,gs
470,3614191.802,5018867.824,1099.628,tb
471,3614194.740,5018873.613,1100.393,gs grass/field
472,3614175.919,5018840.174,1093.018,fl ditch
473,3614211.571,5018901.999,1102.366,gs field
474,3614236.388,5018933.422,1104.626,gs field
475,3614171.209,5018833.734,1095.554,gs grass
476,3614158.169,5018819.218,1100.231,tb
477,3614151.759,5018806.719,1101.146,gs grass
478,3614132.682,5018781.962,1102.194,gs grass
479,3614123.038,5018771.819,1103.722,gs grass
480,3614110.060,5018760.309,1104.932,gs grass
481,3614108.147,5018755.799,1104.889,shed e side
481_REF1,3614107.107,5018758.613,1104.794,Ref. Pt.
481_REF2,3614109.840,5018758.276,1104.985,Ref. Pt.

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482,3614098.175,5018791.630,1101.480,gs pile branches & stalks
483,3614118.746,5018794.728,1101.270,gs pile branches & stalks
484,3614126.087,5018804.493,1100.493,gs pile branches & stalks
485,3614120.059,5018809.808,1099.867,gs pile branches & stalks
486,3614105.250,5018809.618,1099.736,gs pile branches & stalks
487,3614094.496,5018805.716,1099.992,gs pile branches & stalks
488,3614078.656,5018818.897,1095.527,gs tree area
489,3614104.021,5018836.731,1094.134,gs tree area
490,3614112.849,5018849.981,1092.468,gs tree area
491,3614155.895,5018839.631,1094.987,gs tree area
492,3614154.219,5018832.280,1095.570,gs tree area
493,3614136.229,5018823.100,1098.695,gs tree area
494,3614101.506,5018810.744,1099.113,gs tree area
495,3614046.947,5018848.852,1093.362,gs tree area
496,3614058.668,5018840.907,1093.523,gs tree area
497,3614090.546,5018852.808,1093.709,gs tree area
498,3614149.694,5018865.151,1094.959,gs tree area
499,3614152.435,5018878.655,1099.947,gs tree area
500,3614118.000,5018879.233,1099.166,gs tree area
501,3614071.385,5018865.856,1097.398,gs tree area
502,3614045.967,5018865.054,1096.145,gs tree area
503,3614043.289,5018872.698,1096.516,sfp
504,3614063.659,5018871.770,1097.331,sfp
505,3614084.601,5018873.050,1098.188,sfp
506,3614160.743,5018854.060,1095.008,wfp 10"
507,3614159.149,5018850.325,1094.466,wfp 10"
508,3614156.777,5018849.112,1093.990,wfp 10"
509,3614161.614,5018847.305,1094.020,wfp 6"
510,3614160.310,5018842.165,1093.128,wfp 12"
511,3614161.289,5018842.185,1094.808,wood plank se cor 3" wide
512,3614160.874,5018839.867,1094.751,wood plank s side 3" wide
513,3614160.096,5018836.330,1095.069,wfp 12" nside
514,3614154.979,5018840.130,1094.623,wfp 8" nside
515,3614161.719,5018834.666,1095.371,trd 3"
516,3614163.059,5018837.556,1094.999,gs boulder pile
517,3614163.448,5018831.803,1096.108,gs boulder pile
518,3614155.907,5018831.270,1096.036,gs boulder pile
519,3614155.419,5018837.094,1094.741,gs boulder pile
520,3614167.302,5018842.788,1094.209,gs
521,3614167.931,5018843.473,1092.595,toe / fl
522,3614168.695,5018845.006,1092.963,fl ditch
523,3614169.392,5018846.392,1093.147,toe
524,3614169.610,5018848.280,1094.935,gs
525,3614162.676,5018848.113,1094.066,gs
526,3614161.760,5018846.503,1092.920,toe
527,3614160.595,5018844.481,1092.202,fl ditch
528,3614160.793,5018840.870,1092.402,toe
529,3614160.593,5018839.934,1094.583,gs
530,3614163.478,5018863.481,1094.792,gs

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531,3614164.728,5018870.158,1097.263,gs
532,3614166.137,5018875.712,1099.904,tb
533,3614157.340,5018835.868,1094.928,gs
534,3614156.637,5018828.967,1096.604,gs
535,3614148.425,5018822.065,1099.244,tb
536,3614128.094,5018844.143,1094.148,gs
537,3614128.587,5018846.530,1092.991,toe
538,3614129.081,5018849.097,1092.779,fl ditch
539,3614129.766,5018851.646,1093.128,toe
540,3614130.084,5018853.312,1093.883,gs
541,3614131.692,5018838.397,1094.688,gs
542,3614129.765,5018832.793,1096.673,gs
543,3614131.315,5018822.087,1098.735,tb
544,3614129.454,5018809.615,1100.141,gs
545,3614128.345,5018868.189,1094.865,gs
546,3614126.323,5018878.308,1099.350,tb
547,3614127.878,5018884.895,1099.827,gs grass/field
548,3614128.468,5018911.619,1101.938,gs field
549,3614131.051,5018959.855,1105.321,gs field
550,3614093.482,5018969.602,1104.469,gs field
551,3614086.066,5018929.663,1101.464,gs field
552,3614080.169,5018889.827,1099.073,gs field
553,3614077.517,5018878.049,1098.439,gs field/grass
554,3614080.671,5018862.515,1097.538,tb
555,3614079.677,5018842.651,1092.682,boulder top 2.5'od
556,3614085.707,5018843.612,1092.732,gs
557,3614085.520,5018844.314,1091.186,toe
558,3614084.312,5018845.821,1090.947,fl ditch
559,3614084.604,5018847.815,1091.308,toe
560,3614081.963,5018847.829,1093.005,GS
561,3614081.804,5018824.055,1093.759,GS
562,3614077.839,5018806.512,1099.597,tb
563,3614076.146,5018792.794,1101.290,gs
564,3614070.899,5018764.293,1104.667,gs
565,3614067.082,5018747.445,1104.889,gs
566,3614071.529,5018747.886,1104.910,shed s side
566_REF1,3614068.556,5018747.487,1104.938,Ref. Pt.
566_REF2,3614069.078,5018749.615,1104.883,Ref. Pt.
567,3614073.022,5018760.289,1105.005,shed se cor
567_REF1,3614073.327,5018761.241,1105.084,Ref. Pt.
567_REF2,3614072.038,5018760.469,1104.926,Ref. Pt.
568,3614067.444,5018828.862,1092.943,gs
569,3614066.546,5018830.059,1090.713,toe
570,3614066.395,5018831.291,1090.830,fl ditch
571,3614065.636,5018832.450,1090.854,toe
572,3614064.798,5018834.617,1093.196,tb
573,3614052.099,5018831.484,1091.516,top 1.5' od boulder
574,3614041.473,5018832.306,1092.645,gs
575,3614041.598,5018833.465,1090.263,toe

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576,3614041.852,5018834.174,1090.021,fl ditch
577,3614042.169,5018835.252,1090.391,toe
578,3614042.012,5018837.019,1092.990,gs
579,3614031.002,5018841.631,1092.229,gs
580,3614030.064,5018841.014,1090.280,toe
581,3614027.315,5018839.447,1090.379,toe
582,3614026.546,5018838.908,1092.570,gs
583,3614031.741,5018837.261,1090.260,fl ditch
584,3614028.768,5018840.357,1090.205,fl ditch
585,3614028.727,5018843.031,1090.025,fl ditch
586,3614032.948,5018834.373,1092.245,gs
587,3614034.632,5018834.251,1090.680,gs
588,3614037.757,5018833.244,1092.402,gs
589,3614035.858,5018832.338,1091.897,gs
590,3614039.991,5018828.796,1092.310,gs
591,3614038.213,5018831.219,1092.701,gs
592,3614040.451,5018829.919,1092.638,gs
593,3614039.192,5018825.254,1093.562,gs
594,3614034.486,5018828.390,1093.245,gs
595,3614027.440,5018828.870,1093.311,gs
596,3614035.314,5018807.579,1100.061,tb
597,3614032.245,5018794.630,1100.881,gs
598,3614025.935,5018780.831,1101.966,edge drive
599,3614018.919,5018739.550,1102.615,gs drive
600,3614036.266,5018856.846,1093.142,gs
601,3614042.091,5018856.909,1093.584,gs broken conc
602,3614043.575,5018861.950,1095.085,gs broken conc
603,3614038.683,5018863.357,1095.085,gs broken conc
604,3614034.201,5018859.232,1093.090,gs broken conc
605,3614040.756,5018869.332,1096.398,tb
606,3614040.939,5018883.877,1097.124,gs grass/field
607,3614047.891,5018922.716,1099.181,gs field
608,3614054.026,5018966.729,1101.694,gs field
609,3613952.770,5018900.610,1092.293,sfp
610,3613957.240,5018908.310,1090.936,sfp
611,3613967.709,5018916.819,1091.345,sfp
612,3613981.799,5018924.494,1095.281,sfp
613,3614009.817,5018895.997,1096.335,sfp
614,3614035.090,5018868.421,1095.745,gs tree area
615,3614014.518,5018881.363,1095.198,gs tree area
616,3613987.501,5018909.082,1094.613,gs tree area
617,3613982.130,5018906.100,1092.855,gs tree area
618,3614008.854,5018873.431,1093.469,gs tree area
619,3614028.412,5018862.150,1092.985,gs tree area
620,3614036.741,5018813.137,1099.192,rr tie pile
621,3614022.156,5018812.730,1099.209,rr tie pile
622,3614010.174,5018808.351,1100.281,rr tie pile
623,3614011.452,5018804.684,1100.514,rr tie pile
624,3614020.569,5018802.669,1100.563,rr tie pile

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625,3614027.444,5018803.863,1100.496,rr tie pile
626,3614037.333,5018808.204,1100.022,rr tie pile
627,3614025.824,5018850.011,1092.335,gs
628,3614027.259,5018850.006,1090.350,toe
629,3614028.367,5018850.402,1090.137,fl ditch
630,3614029.951,5018850.593,1090.193,toe
631,3614030.734,5018851.128,1092.427,gs
632,3614025.090,5018859.111,1092.024,gs
633,3614024.617,5018858.535,1090.154,toe
634,3614024.277,5018857.083,1090.095,fl ditch
635,3614022.190,5018855.186,1090.859,toe
636,3614021.695,5018853.555,1092.749,gs
637,3614016.695,5018855.299,1092.349,gs
638,3614016.852,5018856.792,1090.162,toe
639,3614016.741,5018857.812,1090.069,fl ditch
640,3614015.169,5018859.128,1090.230,toe
641,3614013.912,5018860.562,1092.581,gs
642,3614006.527,5018856.829,1091.981,gs
643,3614006.463,5018855.834,1089.891,toe
644,3614006.028,5018854.438,1090.013,fl ditch
645,3614005.603,5018852.539,1090.196,toe
646,3614005.526,5018850.644,1092.450,gs
647,3614007.939,5018854.518,1090.062,fl ditch
648,3614010.247,5018853.043,1091.738,gs
649,3614009.245,5018852.538,1090.370,gs
650,3614008.458,5018851.977,1090.393,gs
651,3614007.021,5018850.505,1092.233,gs
652,3614009.403,5018848.781,1092.145,gs
653,3614010.598,5018849.130,1090.836,gs
654,3614012.471,5018849.888,1092.591,gs
655,3614012.356,5018844.647,1092.568,gs
656,3614014.243,5018844.494,1092.591,gs
657,3614014.333,5018846.399,1092.555,gs
658,3614013.429,5018845.597,1091.711,gs
659,3614026.595,5018829.131,1093.354,gs
660,3614013.034,5018830.247,1094.013,gs
661,3613999.066,5018838.849,1093.929,gs
662,3614004.067,5018830.675,1094.791,gs
663,3614004.414,5018829.176,1094.497,gs
664,3614004.741,5018827.677,1095.454,gs
665,3613995.764,5018831.993,1096.859,trd 4" s side
666,3613991.628,5018833.506,1098.512,trd 16"od cluster
666_REF1,3613988.265,5018831.341,1098.814,Ref. Pt.
666_REF2,3613988.294,5018835.717,1098.210,Ref. Pt.
667,3613984.467,5018836.904,1097.663,junk area
668,3613980.252,5018836.462,1097.653,junk area
669,3613980.630,5018841.627,1096.364,junk area
670,3613983.667,5018841.293,1096.207,junk area
671,3613981.849,5018842.398,1096.634,trd 12" od cluster

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672,3613966.849,5018812.994,1100.092,burn pile area
673,3613974.626,5018810.386,1100.275,burn pile area
674,3613983.589,5018821.128,1099.594,burn pile area
675,3613968.038,5018824.314,1099.522,burn pile area
676,3613963.251,5018812.680,1100.125,edge drive
677,3613988.647,5018799.069,1100.255,edge drive
678,3613992.356,5018817.512,1099.488,trd 6"
679,3613996.075,5018819.319,1098.353,trd 12" stump
680,3614008.781,5018821.591,1096.263,gs
681,3614008.291,5018820.052,1097.333,gs
682,3614007.762,5018817.313,1097.717,gs
683,3614007.021,5018815.427,1098.861,tb
684,3614005.947,5018811.284,1099.904,gs
685,3613997.405,5018810.289,1100.046,gs
686,3613995.189,5018809.984,1099.665,gs
687,3613993.493,5018811.143,1099.852,gs
688,3613994.171,5018813.451,1099.114,gs
689,3613995.095,5018813.475,1098.097,gs
690,3613996.738,5018813.260,1097.907,gs
691,3613997.742,5018813.226,1099.586,gs
692,3613998.792,5018814.538,1099.176,tb
693,3613997.223,5018816.069,1096.765,tb
694,3613996.710,5018814.641,1097.280,gs
695,3613996.063,5018814.744,1097.162,gs
696,3613996.270,5018816.321,1096.660,toe
697,3613993.371,5018815.426,1096.782,toe
698,3613993.196,5018812.792,1099.380,tb
699,3613989.571,5018812.173,1099.682,tb
700,3613988.552,5018817.181,1099.528,tb
701,3613995.540,5018819.977,1098.383,tb
702,3613999.213,5018820.803,1097.553,gs
703,3613999.135,5018822.395,1097.497,gs
704,3613994.158,5018821.076,1098.239,gs
705,3613989.346,5018820.676,1099.062,gs
706,3613991.231,5018827.510,1098.298,tb
707,3613992.500,5018826.864,1096.927,gs
708,3613996.841,5018826.993,1095.677,gs
709,3613990.417,5018814.407,1097.228,rcp 5" top 0.46' to fl
710,3613990.694,5018814.604,1096.575,fl
711,3613990.875,5018814.176,1096.801,toe
712,3613990.164,5018814.799,1096.804,toe
713,3613989.751,5018814.425,1097.484,gs
714,3613990.300,5018813.838,1097.457,gs
715,3613994.444,5018816.328,1096.572,fl
716,3613994.235,5018816.897,1096.946,toe
717,3613994.640,5018815.965,1096.785,toe
718,3613996.931,5018817.337,1097.110,cmp 6" top 0.52' to fl
719,3613996.232,5018816.976,1096.493,fl
720,3613997.316,5018818.486,1096.595,toe

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721,3613998.061,5018816.874,1096.709,toe
722,3614000.081,5018819.156,1096.345,fl
723,3614000.979,5018818.593,1096.634,gs
724,3613999.541,5018819.482,1096.486,gs
725,3614001.257,5018821.689,1097.602,gs
726,3614000.468,5018821.844,1096.287,fl
727,3613999.206,5018822.147,1097.664,gs
728,3614001.712,5018824.947,1095.801,gs
729,3614001.507,5018826.607,1095.198,gs
730,3614001.308,5018828.666,1095.367,gs
731,3613999.403,5018835.058,1094.844,gs
732,3613984.106,5018835.410,1098.275,TB
733,3613993.813,5018847.376,1092.903,gs
734,3614002.449,5018840.717,1093.607,gs
735,3614000.195,5018834.566,1094.900,gs
736,3613996.896,5018827.885,1095.815,gs
737,3613990.669,5018828.137,1098.393,tb
738,3614010.772,5018827.967,1094.541,gs
739,3614011.032,5018830.025,1093.951,gs
740,3614006.934,5018831.877,1093.991,gs
741,3614006.005,5018832.739,1094.726,gs
742,3614024.307,5018830.364,1093.439,gs
743,3614101.979,5018847.355,1093.832,gs
744,3614102.161,5018849.895,1091.692,toe
745,3614102.090,5018851.776,1091.487,fl ditch
746,3613983.742,5018865.580,1091.247,gs
747,3613983.735,5018866.532,1089.682,toe
748,3613984.055,5018867.636,1089.774,fl ditch
749,3613984.462,5018868.851,1089.355,toe
750,3613985.424,5018871.503,1092.427,GS
751,3613988.491,5018888.489,1092.397,GS
752,3613994.466,5018907.372,1095.850,tb
753,3613997.955,5018912.399,1095.946,gs grass/field
754,3614009.859,5018955.188,1098.327,gs field
755,3614019.858,5018994.937,1100.906,gs field
756,3613984.937,5018862.438,1091.677,fmisc metalgate
757,3613982.298,5018853.890,1092.805,gs
758,3613972.795,5018837.385,1099.083,tb
759,3613977.774,5018843.206,1095.987,gs
760,3613975.256,5018829.573,1098.984,fmisc metal gate e&s
761,3613959.502,5018829.215,1099.260,fmisc metal gate n & fnb s
762,3613973.419,5018823.193,1099.568,gs
763,3613969.627,5018809.369,1100.167,edge drive
764,3613961.938,5018790.034,1100.304,edge drive
765,3613956.056,5018769.898,1101.178,gs grass
766,3614104.197,5018854.087,1091.737,toe
767,3614105.547,5018855.653,1093.319,gs
768,3613967.687,5018860.620,1093.437,gs
769,3613974.541,5018852.658,1093.843,gs

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770,3613975.776,5018846.256,1096.119,gs
771,3613971.460,5018840.739,1098.087,gs
772,3613967.030,5018846.928,1094.994,gs
773,3613963.769,5018848.641,1094.742,gs
774,3613962.107,5018845.434,1094.997,gs
775,3613963.949,5018843.739,1097.435,gs
776,3613960.930,5018846.288,1097.465,gs
777,3613959.239,5018840.374,1098.563,tb
778,3613970.802,5018837.807,1099.032,tb
779,3613954.057,5018855.652,1098.072,tb
780,3613961.965,5018858.535,1095.769,gs
781,3613949.875,5018866.162,1096.859,gs tree area
782,3613955.044,5018867.672,1096.151,gs tree area
783,3613955.255,5018883.921,1093.416,gs tree area
784,3613943.465,5018918.517,1093.015,gs tree area
785,3613933.394,5018936.997,1090.776,gs tree area
786,3613911.585,5018959.685,1091.337,gs tree area
787,3613868.565,5019044.401,1090.625,gs tree area
788,3613852.211,5019050.863,1094.423,gs tree area /fnmisc metal gate
789,3613853.535,5019034.918,1095.821,gs tree area fnmisc metal gate
790,3613859.675,5019020.731,1095.425,gs tree area fnmisc metal gate
791,3613876.239,5018964.256,1097.343,gs tree area fnmisc metal gate
792,3613890.580,5018957.893,1096.361,gs tree area fnmisc metal gate
793,3613920.841,5018922.983,1095.778,gs tree area fnmisc metal gate
794,3613943.475,5018881.684,1096.302,fnmisc metal gate end
795,3613968.993,5018880.986,1091.290,gs
796,3613969.551,5018881.159,1089.544,toe
797,3613970.724,5018881.659,1089.393,fl ditch
798,3613971.632,5018882.941,1089.078,toe
799,3613972.801,5018883.778,1091.411,gs
800,3613954.816,5018919.481,1090.689,gs
801,3613956.106,5018919.825,1088.691,toe
802,3613957.007,5018920.019,1088.697,fl ditch
803,3613958.906,5018920.300,1089.189,toe
804,3613959.584,5018920.451,1090.594,gs
805,3613970.374,5018923.566,1091.916,gs
806,3613973.958,5018925.266,1093.934,gs
807,3613979.742,5018928.472,1095.541,tb
808,3613983.523,5018930.978,1095.797,gs grass/field
809,3614018.643,5018952.037,1098.646,gs field
810,3614051.270,5018963.602,1101.398,gs field
811,3613959.659,5018927.288,1090.587,gs
812,3613959.002,5018927.191,1088.595,toe
813,3613958.148,5018927.019,1088.373,fl ditch
814,3613956.868,5018926.895,1088.744,toe
815,3613956.245,5018926.937,1090.771,gs
816,3613948.854,5018918.881,1091.063,gs
817,3613948.932,5018899.867,1093.310,fnb rem to east
818,3613962.952,5018888.027,1091.435,gs rock boulders

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819,3613958.692,5018887.514,1091.845,gs rock boulders
820,3613957.078,5018885.927,1092.501,gs rock boulders
821,3613957.560,5018883.905,1092.833,gs rock boulders
822,3613965.458,5018881.917,1091.597,gs rock boulders
823,3613927.595,5018836.390,1099.761,fnb nw-se
824,3613941.098,5018849.191,1098.905,gs pasture
825,3613920.557,5018827.444,1100.128,gs grass
826,3613897.170,5018822.743,1100.708,eog drive
827,3613896.425,5018809.213,1100.710,eog drive
828,3613934.409,5018802.135,1100.214,eog drive
829,3613888.455,5018845.389,1101.478,fnb nw-se
830,3613870.633,5018849.506,1104.805,fnb nw & elec fence e
831,3613869.368,5018849.174,1104.692,shed nw cor
831_REF1,3613870.215,5018848.641,1104.618,Ref. Pt.
831_REF2,3613869.599,5018848.201,1104.766,Ref. Pt.
832,3613870.022,5018852.629,1105.550,gs
833,3613872.548,5018866.655,1104.224,gs
834,3613872.250,5018886.796,1103.520,gs
835,3613870.097,5018887.635,1104.106,elec fence w&s
836,3613869.402,5018886.263,1104.480,shed ne cor
836_REF1,3613869.268,5018887.254,1104.296,Ref. Pt.
836_REF2,3613870.400,5018886.202,1104.663,Ref. Pt.
837,3613934.402,5018914.542,1095.582,tb
838,3613928.241,5018909.180,1096.302,fmisc metal gate
839,3613895.012,5018896.637,1098.778,gs pasture
840,3613879.374,5018891.216,1101.788,gs pasture
841,3613875.277,5018890.114,1102.413,gs pasture
842,3613862.225,5018889.253,1104.454,gs pasture
843,3613861.728,5018895.209,1103.231,gs pasture
844,3613950.852,5018938.296,1090.969,gs
845,3613951.589,5018938.568,1088.827,toe
846,3613952.589,5018939.255,1088.679,fl ditch
847,3613953.985,5018940.415,1088.889,toe
848,3613954.746,5018940.715,1090.287,gs
849,3613943.171,5018950.650,1090.648,gs
850,3613942.073,5018950.365,1089.008,toe
851,3613941.103,5018949.766,1088.751,fl ditch
852,3613939.340,5018948.655,1089.372,toe
853,3613938.343,5018948.137,1090.984,gs
854,3613926.962,5018961.586,1090.328,gs
855,3613927.520,5018962.323,1088.939,toe
856,3613928.280,5018963.072,1088.797,fl ditch
857,3613929.783,5018964.573,1088.954,toe
858,3613930.375,5018965.339,1090.686,gs
859,3613934.673,5018969.818,1090.704,gs
860,3613940.724,5018974.336,1093.751,tb
861,3613945.223,5018977.703,1094.745,gs grass/field
862,3613978.781,5018998.936,1098.083,gs field
863,3614018.397,5019015.036,1102.237,gs field

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864,3613903.114,5019006.637,1090.391,gs broken conc
865,3613900.991,5019016.361,1090.289,gs broken conc
866,3613902.952,5019016.550,1090.371,gs broken conc
867,3613905.003,5019007.240,1090.359,gs broken conc
868,3613869.961,5019047.513,1090.187,gs
869,3613872.067,5019048.237,1088.917,toe
870,3613873.254,5019048.659,1089.036,fl ditch
871,3613874.834,5019048.978,1089.030,toe
872,3613876.067,5019049.384,1090.479,gs
873,3613880.143,5019050.237,1090.434,gs
874,3613881.868,5019051.091,1089.830,gs
875,3613895.214,5019054.669,1090.171,gs
876,3613903.966,5019055.964,1092.232,gs
877,3613906.868,5019056.664,1093.062,gs field/grass
878,3613943.189,5019058.102,1096.959,gs field
879,3613971.624,5019058.291,1099.554,gs field
880,3613864.750,5019046.035,1091.441,gs
881,3613857.325,5019045.842,1094.163,gs
882,3613849.633,5019045.209,1095.486,tb
883,3613827.036,5019038.847,1100.630,gs pasture
884,3613819.755,5019035.631,1101.467,gs pasture
885,3613801.355,5019030.557,1102.008,gs pasture
886,3613785.597,5019028.276,1102.154,gs pasture
887,3613783.933,5019025.206,1102.282,shed se cor /fmisc metal gate
887_REF1,3613782.936,5019025.118,1102.273,Ref. Pt.
887_REF2,3613783.651,5019026.166,1102.290,Ref. Pt.
888,3613797.215,5019052.938,1099.890,fmisc metal gate
889,3613807.342,5019078.513,1096.394,fmisc metal gate
890,3613817.389,5019090.563,1094.853,fmisc metal gate
891,3613844.775,5019092.911,1092.809,fmisc metal gate
892,3613874.256,5019099.867,1089.981,fmisc metal gate
893,3613803.809,5019027.645,1102.945,gs
894,3613824.465,5019029.233,1101.734,gs
895,3613824.002,5019027.661,1102.040,shed ne cor
895_REF1,3613823.950,5019028.659,1102.020,Ref. Pt.
895_REF2,3613825.000,5019027.718,1102.060,Ref. Pt.
896,3613877.260,5019072.990,1089.776,gs
897,3613877.818,5019073.072,1088.854,toe
898,3613879.949,5019072.867,1088.483,fl ditch
899,3613880.467,5019072.971,1088.210,toe
900,3613881.144,5019073.321,1089.879,gs
901,3613883.378,5019073.357,1089.846,gs
902,3613884.727,5019073.315,1089.605,gs
903,3613875.462,5019082.546,1089.773,gs
904,3613874.479,5019082.943,1088.031,toe
905,3613873.129,5019082.950,1088.064,fl ditch
906,3613871.510,5019083.102,1088.107,toe
907,3613870.887,5019083.523,1089.950,gs
908,3613867.940,5019099.904,1089.604,gs

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909,3613868.994,5019099.985,1088.987,toe
910,3613871.074,5019099.026,1088.738,fl ditch
911,3613872.147,5019098.919,1088.823,toe
912,3613857.895,5019095.943,1090.526,gs
913,3613843.150,5019091.977,1093.190,gs
914,3613814.604,5019086.512,1095.181,gs
915,3613800.616,5019057.842,1099.198,gs
916,3613822.411,5019068.566,1096.610,gs
917,3613838.887,5019063.796,1095.537,gs
918,3613825.962,5019039.825,1100.804,gs
919,3613796.253,5019042.949,1101.166,gs
920,3613783.515,5019045.980,1100.854,gs grass
921,3613786.317,5019093.167,1097.328,gs grass/field
922,3613816.072,5019090.643,1094.912,gs grass/field
923,3613833.682,5019095.102,1093.469,gs grass/field
924,3613846.979,5019121.922,1090.626,gs grass/field
925,3613839.500,5019155.162,1089.435,gs grass/field
926,3613822.167,5019186.138,1088.935,gs grass/field
927,3613802.373,5019203.638,1088.481,gs grass/field
928,3613863.507,5019118.106,1089.688,trd 4"
929,3613863.466,5019113.998,1089.828,trd 6"
930,3613877.813,5019109.243,1089.795,gs
931,3613878.427,5019108.919,1088.509,toe
932,3613879.845,5019107.987,1088.620,fl ditch
933,3613881.280,5019106.840,1088.474,toe
934,3613881.915,5019106.280,1089.690,gs
935,3613899.743,5019117.093,1091.048,trd 20" cluster
936,3613893.409,5019133.484,1089.574,trd 48" cluster
937,3613896.051,5019136.618,1089.792,trd 6"
938,3613890.156,5019155.988,1090.608,trd 12" cluster
939,3613879.041,5019100.457,1089.666,gs
940,3613895.457,5019102.166,1089.606,gs
941,3613902.654,5019103.054,1091.238,gs
942,3613908.416,5019102.936,1093.543,gs grass/field
943,3613949.343,5019103.329,1097.638,gs field
944,3613992.015,5019100.941,1102.854,gs field
945,3613902.444,5019068.304,1091.901,trd 20" cluster
946,3613957.472,5018910.125,1089.635,fl 6" cmp
947,3613957.862,5018909.561,1090.645,gs
948,3613957.261,5018909.378,1090.888,gs
949,3613956.663,5018910.610,1090.849,gs
950,3613957.046,5018911.689,1090.681,gs
951,3613957.870,5018912.730,1089.123,toe
952,3613959.298,5018913.310,1089.136,fl ditch
953,3613906.119,5019132.604,1093.299,gs grass/field
954,3613890.910,5019168.208,1091.131,gs grass/field
955,3613878.636,5019143.881,1089.296,fl ditch
956,3613880.028,5019144.945,1089.097,toe
957,3613879.168,5019144.306,1089.578,gs

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958,3613856.477,5019134.360,1089.308,gs
959,3613845.357,5019132.280,1090.165,gs grass/field
960,3613806.738,5019123.751,1093.721,gs field
961,3613784.592,5019119.362,1095.564,gs field
962,3613889.842,5019146.951,1089.371,toe
963,3613895.657,5019151.835,1091.949,gs grass/field
964,3613940.848,5019161.237,1096.110,gs field
965,3613979.783,5019166.644,1100.753,gs field
966,3613977.015,5019211.416,1098.853,gs field
967,3613973.641,5019230.973,1097.552,gs field
968,3613965.887,5019254.229,1097.721,gs field
969,3613919.833,5019243.823,1093.282,gs field
970,3613927.169,5019225.405,1093.448,gs field
971,3613934.257,5019202.425,1094.703,gs field
972,3613887.577,5019188.361,1090.887,gs field
973,3613875.486,5019209.862,1090.035,gs field
974,3613842.355,5019244.973,1089.140,gs field
975,3613837.957,5019233.030,1088.568,gs grass/field
976,3613870.393,5019197.404,1089.713,gs grass/field
977,3613872.805,5019196.197,1089.844,gs grass/field
978,3613868.486,5019194.031,1088.729,gs
979,3613864.886,5019191.119,1088.581,gs
980,3613864.095,5019190.951,1088.036,toe
981,3613863.037,5019190.348,1087.961,fl ditch
982,3613862.815,5019189.775,1087.915,toe
983,3613860.162,5019188.918,1088.466,toe
984,3613859.053,5019188.212,1088.810,gs
985,3613840.843,5019176.724,1088.272,gs
986,3613837.750,5019174.885,1088.839,gs
987,3613828.036,5019174.807,1089.059,gs grass/field
988,3613788.840,5019162.179,1091.782,gs field
989,3613767.494,5019154.703,1093.346,gs field
990,3613815.623,5019214.726,1087.756,trd 10"
991,3613838.140,5019204.956,1087.782,trd4"
992,3613826.960,5019201.988,1088.057,trd6"
993,3613826.581,5019196.907,1088.423,trd 8"
994,3613845.394,5019194.054,1088.473,trd 6"
995,3613849.717,5019187.115,1088.777,trd 8"
996,3613855.649,5019180.468,1088.966,trd 8"
997,3613855.237,5019181.267,1088.889,trd 6"
998,3613857.046,5019179.716,1088.867,trd 6"
999,3613861.588,5019179.462,1088.941,trd 6"
1000,3613945.789,5019309.474,1098.569,gs field
1001,3613906.553,5019284.169,1094.066,gs field
1002,3613866.447,5019258.499,1090.551,gs field
1003,3613833.788,5019236.167,1088.450,gs field/grass
1004,3613831.006,5019234.765,1088.578,gs
1005,3613824.681,5019231.878,1087.990,gs
1006,3613823.536,5019231.398,1087.633,toe

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1007,3613821.280,5019230.186,1087.439,fl ditch
1008,3613814.065,5019223.097,1087.498,toe
1009,3613802.844,5019215.930,1087.707,gs
1010,3613797.003,5019211.865,1088.314,gs
1011,3613795.146,5019209.646,1088.550,gs grass/field
1012,3613756.545,5019187.521,1091.666,gs field
1013,3613701.864,5019196.270,1093.412,gs field
1014,3613733.023,5019227.333,1089.592,gs field
1015,3613748.788,5019243.158,1088.159,gs field/grass
1016,3613759.480,5019255.729,1086.976,gs
1017,3613760.018,5019256.290,1086.481,toe
1018,3613761.452,5019258.051,1086.300,fl ditch
1019,3613762.858,5019260.256,1086.619,toe
1020,3613763.444,5019261.169,1087.009,gs
1021,3613768.394,5019267.079,1087.095,gs
1022,3613780.237,5019280.335,1087.991,gs grass/field
1023,3613783.096,5019280.359,1088.060,gs field
1024,3613816.659,5019311.100,1090.903,gs field
1025,3613863.579,5019356.692,1094.538,gs field
1026,3613728.289,5019280.811,1086.056,fl ditch
1027,3613726.062,5019275.864,1086.440,toe
1028,3613721.364,5019271.044,1086.977,gs
1029,3613719.916,5019269.738,1087.650,gs
1030,3613715.668,5019265.151,1087.768,gs field
1031,3613695.310,5019222.198,1090.639,gs field
1032,3613677.501,5019184.689,1094.895,gs field
1033,3613726.892,5019295.615,1086.458,gs
1034,3613731.576,5019301.106,1087.360,gs
1035,3613736.425,5019308.174,1088.227,gs
1036,3613739.663,5019313.604,1087.545,gs grass/field
1037,3613764.811,5019351.134,1090.654,gs field
1038,3613787.995,5019395.963,1094.161,gs field
1039,3613797.217,5019412.848,1095.590,gs field
1040,3613728.261,5019437.048,1091.786,gs field
1041,3613708.703,5019391.386,1088.489,gs field
1042,3613691.867,5019348.042,1086.062,gs field
1043,3613689.983,5019343.839,1085.474,gs grass/field
1044,3613688.994,5019341.675,1085.654,gs
1045,3613688.401,5019340.053,1086.324,gs
1046,3613686.320,5019337.226,1086.425,gs
1047,3613669.413,5019310.309,1084.373,fl ditch
1048,3613666.175,5019306.114,1084.737,gs
1049,3613665.385,5019304.497,1085.091,gs
1050,3613659.650,5019295.328,1086.130,gs field
1051,3613627.288,5019203.469,1091.186,gs field
1052,3613716.144,5019331.865,1086.736,gs grass/field
1053,3613714.768,5019328.660,1087.103,gs
1054,3613712.713,5019325.139,1088.209,gs
1055,3613714.415,5019324.090,1087.802,gs

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1056,3613712.190,5019319.457,1086.371,gs
1057,3613707.011,5019314.884,1085.705,gs
1058,3613706.909,5019314.634,1085.127,toe
1059,3613706.025,5019313.939,1084.556,fl ditch
1060,3613704.755,5019313.117,1084.822,toe
1061,3613703.757,5019312.769,1085.911,gs
1062,3613699.002,5019305.595,1086.124,gs
1063,3613698.512,5019303.188,1086.793,gs
1064,3613695.561,5019298.327,1087.682,gs
1065,3613694.563,5019295.117,1087.947,gs
1066,3613687.124,5019281.249,1086.831,gs
1067,3613680.381,5019287.822,1086.566,gs
1068,3613689.172,5019298.392,1087.039,gs
1069,3613685.339,5019298.124,1085.884,gs
1070,3613679.754,5019298.512,1085.589,gs
1071,3613680.773,5019304.006,1085.481,gs
1072,3613688.380,5019306.399,1086.242,gs
1073,3613690.554,5019308.004,1087.791,gs
1074,3613694.272,5019309.228,1086.967,gs
1075,3613699.377,5019308.062,1086.488,gs
1076,3613698.418,5019306.270,1086.022,gs
1077,3613695.300,5019307.137,1085.957,gs boulders
1078,3613694.555,5019305.252,1086.344,gs boulders
1079,3613695.904,5019301.420,1086.928,gs boulders
1080,3613690.608,5019300.287,1086.229,gs boulders
1081,3613690.255,5019303.101,1086.823,gs boulders
1082,3613689.177,5019305.891,1086.623,gs boulders
1083,3613681.888,5019301.763,1085.799,gs boulders
1084,3613682.052,5019299.559,1085.596,gs boulders
1085,3613687.180,5019311.702,1085.544,gs
1086,3613690.274,5019312.633,1087.558,gs
1087,3613694.953,5019314.138,1087.184,gs
1088,3613698.251,5019315.231,1086.056,gs
1089,3613700.592,5019322.608,1086.151,gs
1090,3613695.760,5019328.640,1088.534,gs
1091,3613693.860,5019331.395,1088.206,gs
1092,3613686.564,5019334.281,1086.287,gs
1093,3613688.838,5019340.612,1086.238,gs
1094,3613690.126,5019342.057,1085.510,gs
1095,3613698.322,5019338.895,1085.969,gs
1096,3613698.339,5019334.883,1087.143,gs
1097,3613698.273,5019331.522,1088.124,gs
1098,3613704.962,5019320.334,1085.790,gs
1099,3613705.496,5019322.488,1086.621,gs
1100,3613707.282,5019326.684,1087.599,gs
1101,3613708.228,5019328.542,1088.019,gs
1102,3613710.782,5019333.028,1086.667,gs
1103,3613703.952,5019333.832,1087.117,gs boulders
1104,3613702.533,5019336.658,1088.196,gs boulders

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1105,3613705.326,5019336.654,1086.372,gs boulders
1106,3613706.410,5019339.849,1086.622,gs boulders
1107,3613703.677,5019339.079,1087.475,gs boulders
1108,3613702.685,5019339.129,1087.531,gs boulders
1109,3613701.824,5019340.949,1086.205,gs boulders
1110,3613699.230,5019338.455,1086.038,gs boulders
1111,3613699.674,5019335.066,1087.028,gs boulders
1112,3613700.876,5019335.337,1087.776,gs boulders
1113,3613727.987,5019319.175,1087.450,gs
1114,3613726.300,5019316.424,1088.293,gs
1115,3613717.765,5019313.124,1086.498,gs
1116,3613712.958,5019302.175,1086.117,gs
1117,3613712.244,5019301.760,1085.389,toe
1118,3613711.736,5019301.135,1085.307,fl ditch
1119,3613710.992,5019300.762,1085.553,toe
1120,3613710.336,5019299.859,1086.081,gs
1121,3613706.980,5019296.404,1086.336,gs
1122,3613701.384,5019288.526,1087.776,gs
1123,3613695.720,5019277.759,1087.483,gs
1124,3613702.527,5019314.607,1085.833,gs
1125,3613703.061,5019314.661,1085.186,toe
1126,3613704.336,5019315.380,1082.585,fl ditch
1127,3613705.212,5019316.868,1084.875,toe
1128,3613705.299,5019316.327,1083.188,fl dtch
1129,3613706.329,5019314.791,1084.773,toe
1130,3613705.954,5019315.059,1084.034,fl ditch
1131,3613704.640,5019313.486,1084.635,toe
1132,3613705.077,5019314.537,1082.857,fl ditch
1133,3613719.788,5019285.721,1085.932,fl ditch
1134,3613724.677,5019292.172,1086.274,fl ditch
1135,3613714.030,5019297.767,1085.382,fl ditch
1136,3613714.799,5019298.627,1085.671,toe
1137,3613712.829,5019297.223,1085.667,toe
1138,3613711.570,5019297.024,1086.209,gs
1139,3613714.830,5019300.137,1086.310,gs
1140,3613728.411,5019289.922,1086.341,trd 6"
1141,3613751.136,5019289.747,1087.940,trd 6"
1142,3613754.188,5019270.740,1086.920,trd 6"
1143,3613913.535,5018956.688,1091.189,gs
1144,3613911.621,5018956.192,1091.878,gs end fnb rem from west
1145,3613903.994,5018946.265,1095.784,TB
1146,3613899.271,5018954.809,1096.137,top 2.0' boulder
1147,3613899.050,5018947.261,1096.383,fmisc metal gate
1148,3613877.320,5018934.790,1098.621,gs pasture
1149,3613865.153,5018927.741,1100.548,gs pasture
1150,3613837.537,5018916.972,1102.637,se cor horse shed
1151,3613834.596,5018931.972,1101.319,gs
1152,3613848.058,5018917.625,1102.299,gs
1153,3613854.351,5018917.333,1101.646,shed ne cor horse

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1154,3613854.279,5018900.317,1102.845,shed nw cor horse
1155,3613837.026,5018900.801,1103.308,shed sw cor horse
1156,3613838.977,5018893.969,1103.834,gs
1157,3613838.647,5018890.891,1104.172,gs
1158,3613838.606,5018888.429,1104.773,gs
1159,3613830.397,5018967.343,1101.374,wfp 6"
1160,3613835.163,5018953.226,1100.799,gs
1161,3613848.905,5018962.656,1100.112,gs
1162,3613840.129,5018968.722,1100.908,wfp 6"
1163,3613838.869,5018978.184,1100.862,wfp 6"
1164,3613837.364,5018996.583,1100.730,wfp 6"
1165,3613830.001,5019028.345,1100.248,gs
1166,3613831.016,5018998.096,1101.118,gs
1167,3613863.334,5019004.685,1096.232,fmisc metal gate/ tb
1168,3613901.782,5019000.089,1090.163,gs
1169,3613895.998,5019000.221,1090.425,gs
1170,3613894.338,5019000.705,1089.618,toe
1171,3613891.248,5019001.008,1089.178,fl ditch
1172,3613890.562,5019000.268,1089.306,toe
1173,3613890.018,5018998.814,1090.357,gs
1174,3613883.876,5018997.286,1090.730,gs
1175,3613905.447,5019004.522,1090.266,gs
1176,3613912.766,5019007.594,1091.436,gs
1177,3613922.841,5019011.948,1093.634,gs grass/field
1178,3613963.945,5019028.103,1098.008,gs field
1179,3614009.674,5019041.110,1103.078,gs field
1180,3613825.018,5019026.449,1102.307,gs
1181,3613827.335,5018998.862,1102.394,gs
1182,3613825.911,5018997.376,1102.145,shed nw cor
1182_REF1,3613826.379,5018997.554,1102.141,Ref. Pt.
1182_REF2,3613826.190,5018996.960,1102.148,Ref. Pt.
1183,3613704.967,5019315.529,1091.712,top 8" cmp slotted stndpipe 10.17'to fl
1184,3613660.875,5019321.121,1084.329,trd 6"
1185,3613605.803,5019360.254,1083.065,trd 6"
1186,3613676.347,5019442.001,1086.558,gs field
1187,3613655.010,5019387.646,1085.058,gs field
1188,3613643.246,5019360.841,1084.564,gs grass/field
1189,3613640.894,5019354.116,1084.065,gs
1190,3613639.843,5019352.674,1084.383,gs
1191,3613630.264,5019335.512,1083.250,gs
1192,3613629.360,5019334.749,1082.709,fl ditch
1193,3613628.210,5019332.471,1083.329,gs
1194,3613620.496,5019318.604,1084.525,gs grass/field
1195,3613608.576,5019276.909,1087.134,gs field
1196,3613605.527,5019233.631,1088.718,gs field
1197,3613560.828,5019262.493,1089.417,gs field
1198,3613588.013,5019323.648,1085.707,gs field
1199,3613597.749,5019335.339,1083.601,gs grass/field
1200,3613602.841,5019331.811,1083.650,wet area lateral?

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1201,3613603.010,5019347.749,1082.949,gs
1202,3613596.545,5019337.961,1083.185,gs
1203,3613603.459,5019349.369,1082.661,fl ditch
1204,3613605.112,5019350.504,1082.907,GS
1205,3613607.406,5019352.846,1082.857,GS
1206,3613613.015,5019360.122,1083.820,GS
1207,3613618.309,5019366.879,1084.188,GS
1208,3613623.890,5019374.274,1084.296,GS grass/field
1209,3613646.685,5019414.532,1084.637,GS field
1210,3613664.489,5019457.438,1085.286,GS field
1211,3613628.846,5019480.205,1083.251,GS field
1212,3613603.864,5019439.797,1082.444,GS field
1213,3613582.762,5019410.390,1083.348,GS grass/field
1214,3613579.179,5019406.735,1083.925,GS crossing
1215,3613555.223,5019383.078,1084.836,GS crossing/field
1216,3613524.865,5019348.767,1085.752,GS field
1217,3613497.496,5019318.363,1087.870,GS field
1218,3613563.914,5019367.239,1084.634,GS field
1219,3613565.525,5019370.057,1084.251,GS grass/field
1220,3613563.263,5019381.303,1084.527,GS
1221,3613567.985,5019382.063,1082.595,GS
1222,3613572.852,5019380.924,1081.899,fl ditch
1223,3613570.179,5019383.651,1081.430,fl ditch
1224,3613568.289,5019384.669,1081.345,fl ditch
1225,3613578.052,5019386.644,1081.621,fl ditch
1226,3613574.086,5019386.927,1081.378,fl ditch
1227,3613568.173,5019384.905,1082.451,cmp 12" top 1.08' to fl
1228,3613572.499,5019388.263,1082.415,cmp 12" top 1.12' to fl
1229,3613574.628,5019382.877,1081.902,gs
1230,3613571.306,5019385.690,1081.847,gs
1231,3613569.013,5019387.841,1083.511,gs
1232,3613567.963,5019384.938,1082.598,gs
1233,3613572.058,5019388.799,1082.589,gs
1234,3613574.033,5019388.767,1081.470,gs
1235,3613573.773,5019391.412,1083.717,gs
1236,3613583.795,5019396.086,1083.806,gs
1237,3613582.635,5019391.832,1082.635,gs
1238,3613571.198,5019415.241,1083.273,gs
1239,3613564.859,5019417.470,1081.771,gs
1240,3613560.990,5019406.187,1081.461,gs
1241,3613563.340,5019403.602,1082.879,gs
1242,3613558.585,5019398.555,1082.914,gs
1243,3613556.275,5019401.261,1080.982,gs
1244,3613554.801,5019396.454,1082.878,gs
1245,3613552.644,5019396.666,1080.965,gs
1246,3613551.729,5019395.274,1083.275,gs
1247,3613559.126,5019402.855,1081.510,cmp 12" top 0.94' to fl
1248,3613554.549,5019396.736,1081.419,cmp 12" fl
1249,3613553.943,5019397.463,1080.867,fl ditch

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1250,3613558.781,5019402.874,1080.474,fl ditch
1251,3613482.399,5019379.315,1083.665,gs grass/field
1252,3613489.826,5019387.753,1084.069,gs field
1253,3613521.937,5019438.375,1081.796,gs grass/field
1254,3613528.479,5019443.751,1080.795,gs
1255,3613531.967,5019446.322,1080.530,fl ditch
1256,3613535.210,5019448.905,1080.933,gs
1257,3613540.882,5019454.969,1080.829,gs grass/field
1258,3613550.099,5019464.223,1081.203,gs field
1259,3613583.444,5019499.263,1081.399,gs field
1260,3613611.500,5019530.683,1081.368,gs field
1261,3613570.758,5019562.818,1080.722,gs field
1262,3613538.369,5019525.872,1080.942,gs field
1263,3613510.298,5019498.676,1080.429,gs field
1264,3613505.951,5019495.024,1080.386,gs grass/field
1265,3613494.173,5019481.340,1079.890,fl ditch
1266,3613480.466,5019463.259,1082.014,gs
1267,3613509.202,5019448.636,1081.888,gs grass/field
1268,3613493.001,5019456.178,1082.145,gs grass/field
1269,3613485.945,5019453.316,1082.437,gs grass/field
1270,3613483.314,5019418.302,1082.825,gs grass/field
1271,3613479.317,5019418.308,1082.510,fnb start
1272,3613477.404,5019441.276,1082.410,fnb e-w
1273,3613477.058,5019454.341,1082.293,fnb e-w
1274,3613475.652,5019459.067,1081.663,tped
1275,3613475.700,5019463.047,1081.280,sign tele cable n-s
1276,3613475.551,5019452.352,1082.014,sign tele cable e-w
1277,3613475.756,5019465.513,1081.660,fnb end
1278,3613476.398,5019475.423,1081.041,gs
1279,3613475.394,5019483.836,1079.526,gs
1280,3613474.800,5019494.280,1079.756,gs
1281,3613473.367,5019501.571,1080.305,gs
1282,3613471.923,5019530.891,1080.058,gs
1283,3613473.075,5019537.898,1079.454,gs grass/field
1284,3613468.006,5019566.409,1079.115,gs grass/field
1285,3613479.648,5019566.869,1079.870,gs field
1286,3613506.955,5019523.461,1080.555,gs field
1287,3613499.799,5019515.171,1080.404,gs field
1288,3613494.869,5019511.655,1079.702,gs field
1289,3613493.228,5019510.839,1080.003,gs grass/field
1290,3613490.433,5019508.380,1079.967,gs
1291,3613479.915,5019499.480,1080.449,gs
1292,3613468.004,5019465.071,1079.377,toe
1293,3613460.265,5019466.283,1079.613,fl ditch
1294,3613457.849,5019496.484,1078.992,fl ditch
1295,3613461.411,5019496.133,1079.258,gs
1296,3613472.749,5019491.639,1079.677,gs
1297,3613458.809,5019528.258,1078.391,fl ditch
1298,3613461.599,5019528.633,1078.877,gs

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1299,3613469.930,5019527.856,1079.762,gs
1300,3613451.944,5019526.565,1079.316,toe
1301,3613453.693,5019498.919,1079.271,toe
1302,3613452.945,5019457.063,1079.770,toe
1303,3613531.948,5019422.480,1081.624,gs gass/field
1304,3613526.547,5019415.922,1082.863,gs field
1305,3613545.405,5019391.280,1084.026,gs field
1306,3613547.398,5019396.518,1082.793,gs grass/field
1307,3612764.794,5018801.150,1105.952,915 -5'5"
1308,3612812.220,5018806.143,1106.680,915 -6'2"
1309,3612414.793,5018819.746,1113.654,700 -4'
1310,3612443.454,5018819.382,1113.125,700 -4'
1311,3612473.410,5018818.743,1112.699,700 -4'
1312,3612523.979,5018882.285,1105.783,300 ditch
1313,3612484.796,5018884.515,1106.512,300 ditch
1314,3612440.823,5018881.763,1107.129,300 ditch
1315,3612412.483,5018881.955,1107.802,300 ditch
1316,3613346.475,5018795.561,1100.371,422 36"
1317,3613346.982,5018868.428,1098.227,422 36"
5000,3614261.810,5019730.206,1093.312,GS
5001,3614262.867,5019813.752,1093.046,GS
5002,3614263.452,5019898.063,1092.785,GS
5003,3614263.971,5019983.574,1093.821,GS
5004,3614264.937,5020066.768,1094.528,GS
5005,3614264.297,5020147.224,1094.530,GS
5006,3614183.618,5020144.484,1091.002,GS
5007,3614182.990,5020060.964,1090.873,GS
5008,3614182.412,5019977.330,1091.370,GS
5009,3614182.008,5019897.406,1092.429,GS
5010,3614180.502,5019812.912,1093.462,GS
5011,3614179.442,5019733.819,1094.902,GS
5012,3614109.562,5019737.983,1097.668,GS
5013,3614110.797,5019819.606,1096.620,GS
5014,3614111.328,5019901.060,1098.309,GS
5015,3614112.771,5019980.678,1096.840,GS
5016,3614114.161,5020062.643,1094.420,GS
5017,3614116.567,5020147.352,1092.369,GS
5018,3614051.186,5020145.656,1098.194,GS
5019,3614047.936,5020066.945,1102.791,GS
5020,3614044.422,5019987.808,1104.676,GS
5021,3614043.965,5019909.577,1103.854,GS
5022,3614043.173,5019826.542,1101.541,GS
5023,3614042.337,5019746.105,1100.718,GS
5024,3613994.573,5019746.843,1101.647,GS
5025,3613995.051,5019828.852,1101.989,GS
5026,3613996.155,5019909.847,1103.372,GS
5027,3613996.644,5019991.654,1103.579,GS
5028,3613998.053,5020063.907,1103.129,GS
5029,3613996.883,5020147.085,1101.678,GS

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5030,3613943.591,5020149.260,1102.351,GS
5031,3613940.800,5020070.100,1102.305,GS
5032,3613938.065,5019990.718,1100.481,GS
5033,3613937.403,5019912.996,1100.478,GS
5034,3613937.682,5019834.054,1101.404,GS
5035,3613936.651,5019756.875,1101.061,GS
5036,3613881.337,5019760.681,1098.378,GS
5037,3613882.193,5019824.092,1099.388,GS
5038,3613882.846,5019899.195,1096.841,GS
5039,3613883.221,5019955.762,1095.445,GS
5040,3613883.924,5020036.011,1096.703,GS
5041,3613882.797,5020148.043,1099.961,GS
5042,3613813.041,5020148.817,1095.914,GS
5043,3613812.579,5020097.107,1097.924,GS
5044,3613811.834,5020056.288,1098.214,GS
5045,3613811.060,5019985.210,1094.567,GS
5046,3613810.656,5019937.236,1093.609,GS
5047,3613809.675,5019861.816,1094.941,GS
5048,3613809.384,5019781.882,1094.175,GS
5049,3613991.776,5019864.018,1102.340,GS ROCK+SAND
5050,3613965.708,5019908.137,1102.094,GS ROCK+SAND
5051,3613955.033,5019945.627,1102.019,GS ROCK+SAND
5052,3613952.820,5019995.109,1102.170,GS ROCK+SAND
5053,3613936.631,5020050.549,1101.719,GS ROCK+SAND
5054,3613958.160,5020088.700,1103.047,GS ROCK+SAND
5055,3614011.264,5020103.994,1102.604,GS ROCK+SAND
5056,3614047.998,5020115.465,1099.764,GS ROCK+SAND
5057,3614079.114,5020077.947,1098.220,GS ROCK+SAND
5058,3614097.364,5020026.141,1097.658,GS ROCK+SAND
5059,3614105.084,5019966.763,1098.312,GS ROCK+SAND
5060,3614104.189,5019919.046,1099.413,GS ROCK+SAND
5061,3614070.115,5019882.122,1101.986,GS ROCK+SAND
5062,3614021.639,5019877.894,1103.224,GS ROCK+SAND
5063,3614022.456,5019928.090,1104.240,GS ROCK+SAND
5064,3614022.948,5019987.074,1104.599,GS ROCK+SAND
5065,3614024.613,5020045.260,1103.467,GS ROCK+SAND
5066,3613984.368,5020031.389,1102.800,GS ROCK+SAND
5067,3613975.470,5019985.187,1103.155,GS ROCK+SAND
5068,3614059.203,5019958.840,1104.287,GS ROCK+SAND
5069,3614061.247,5020004.518,1103.732,GS ROCK+SAND
5070,3614055.689,5020044.156,1103.064,GS ROCK+SAND
7000,3613579.865,5019462.547,1078.897,top vcp 8
7001,3613674.655,5019350.617,1081.694,top 8 hdp y
7002,3613675.868,5019350.258,1081.759,top 8 hdp y
7003,3613676.022,5019348.805,1081.738,top 8 hdp y
7004,3614250.041,5018779.988,1096.868,top 8 vcp
7005,3613685.580,5019350.430,1082.064,new tile
7006,3613700.679,5019344.314,1085.688,new tile
7007,3613730.028,5019328.550,1086.808,new tile

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7008,3613752.394,5019311.642,1088.533,new tile
7009,3613773.964,5019293.030,1088.754,new tile
7010,3613789.407,5019280.881,1088.219,new tile
7011,3613808.847,5019263.438,1088.268,new tile
7012,3613832.970,5019242.188,1088.587,new tile
7013,3613860.565,5019215.479,1089.374,new tile
7014,3613882.569,5019190.212,1090.438,new tile
7015,3613898.726,5019165.625,1091.860,new tile
7016,3613909.531,5019138.780,1093.296,new tile
7017,3613917.201,5019106.245,1093.704,new tile
7018,3613921.141,5019070.009,1095.045,new tile
7019,3613927.213,5019034.050,1094.237,new tile
7020,3613942.174,5018999.362,1095.181,new tile
7021,3613961.557,5018969.339,1095.660,new tile
7022,3613988.417,5018936.550,1096.676,new tile
7023,3614013.864,5018912.466,1096.820,new tile
7024,3614047.433,5018889.832,1097.166,new tile
7025,3614087.517,5018877.092,1095.892,new tile
7026,3614125.690,5018876.057,1097.743,new tile
7027,3614161.525,5018873.285,1097.156,new tile
7028,3614196.316,5018860.867,1098.113,new tile
7029,3614255.910,5018771.108,1096.921,top 8 vcp
7030,3614249.764,5018780.178,1096.828,top 8 vcp
7031,3613676.534,5019346.573,1081.843,new tile p
7032,3613676.679,5019324.836,1083.559,new tile p
7033,3613681.161,5019295.957,1085.048,new tile p
7034,3613689.533,5019271.298,1086.807,new tile p
7035,3613709.441,5019247.063,1088.417,new tile p
7036,3613739.804,5019226.340,1089.385,new tile p
7037,3613774.046,5019209.303,1088.773,new tile p
7038,3613801.344,5019192.523,1088.752,new tile p
7039,3613826.404,5019167.836,1089.278,new tile p
7040,3613842.619,5019139.036,1089.929,new tile p
7041,3613849.116,5019110.349,1090.853,new tile p
7042,3613852.137,5019082.239,1090.487,new tile p
7043,3613854.504,5019052.224,1093.210,new tile p
7044,3613860.490,5019018.711,1094.495,new tile p
7045,3613867.880,5018985.902,1095.593,new tile p
7046,3613879.366,5018956.504,1097.143,new tile p
7047,3613896.399,5018927.148,1097.042,new tile p
7048,3613916.208,5018898.530,1096.250,new tile p
7049,3613932.910,5018876.059,1097.326,new tile p
7050,3613958.478,5018843.829,1096.870,new tile p
7051,3613975.811,5018821.215,1098.978,new tile p
7052,3614215.414,5018849.881,1098.880,new tile
7054,3613898.954,5018863.533,1094.111,new tile 6 p
7055,3613925.589,5018885.676,1093.722,new tile p tee
7056,3614250.075,5018779.967,1096.921,top 8"hdpe
7057,3614229.986,5018836.936,1095.529,top 8"hdpe

6935 dd128 2020-10-29 cs

7058,3614241.373,5018820.305,1095.939,top 8"hdpe
7059,3614250.678,5018802.281,1096.271,top 8"hdpe
7060,3614253.030,5018785.078,1096.516,top 8"hdpe
7061,3614252.033,5018777.022,1097.033,top 8"hdpe y
7062,3614216.578,5018848.802,1095.306,top 8"hdpe y
7063,3614224.333,5018829.493,1095.495,top 8"hdpe
7064,3614224.684,5018828.806,1095.282,top 6"hdpe
7065,3614229.193,5018819.740,1095.409,top 6"hdpe
7066,3614230.569,5018816.411,1095.378,top 6"hdpe
7067,3614233.028,5018803.728,1095.543,top 6"hdpe
7068,3614237.005,5018790.298,1095.653,top 6"hdpe
7069,3613983.010,5018807.874,1097.719,top 6"vcp
7070,3613993.671,5018799.214,1097.379,top 6"hdpe
7071,3613975.996,5018820.566,1095.489,top 6"hdpe
7072,3613985.617,5018810.178,1096.722,top 6"tee

PROJECT COORDINATION CONTACTS			
NAME	AGENCY	PHONE NUMBER	EMAIL
JEFF KLOCKO	AUREON	515-530-0445	JEFF.KLOCKO@AUREON.COM
ANGELA SILVEY	HARDIN COUNTY	641-555-3182	ASILVEY@HARDINCOUNTYIA.GOV
TINA SCHLEWME	DRAINAGE DISTRICT	641-539-8111	TSCHLEWME@HARDINCOUNTYIA.GOV

HARDIN COUNTY, IOWA

AUREON

HIGHWAY 20 - COUNTY HIGHWAY D25



1-800-292-8989

www.iowacall.com

PRIOR TO CONSTRUCTION:

CALL 811 FOR LOCATION OF UNDERGROUND TELEPHONE, ELECTRIC, GAS MAINS, CABLE, TELEVISION AND OTHER UTILITIES. EXISTING UNDERGROUND AND OVERHEAD UTILITIES AND DRAINAGE STRUCTURES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE INDIVIDUAL CONTRACTORS TO EXACTLY LOCATE AND PROTECT EACH EXISTING UTILITY BEFORE AND DURING ACTUAL CONSTRUCTION.

I hereby certify that this engineering document was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Gregory T. Seib

7-30-2019

Printed or Typed Name

Signature

Date

License Number

My license renewal date is December 31, 2020

Pages or sheets covered by this set:

C.1, G.1, D.1, E.1, F.1, F.2, F.4

COVER

USER: JRM/18
DATE: 9/6/2018

LEGEND OF SYMBOLS

EXISTING CONDUIT	---
EXISTING AERIAL FIBER	---
BORED CONDUIT PLACEMENT	---
PLOWED CONDUIT PLACEMENT	---
NEW AERIAL FIBER	---
NEW AERIAL FIBER OVERLASH	---
MESSENGER CABLE	---
NO CITY RECIPIENT FIBER	---
EXISTING CONDUIT	---
EXISTING SIGNAL CONDUIT	---
ROW	---
NEW PULL BOX	□
NEW PEDESTAL	⊗
NEW POLE	⊙
NEW DOWN GUY	├
NEW RISER	▼
NEW SLACK SPAN	↗
NEW SLACK LOOP	∞
EXISTING PULL BOX	□
EXISTING PEDESTAL	⊗
EXISTING UTILITY POLE	⊙
EXISTING SLACK LOOP	∞
EXISTING SPICE CASE	⬮
EXISTING MANHOLE	⊙
SIGN	⬮
BARRICADE	⬮
DRUM	⬮
BORE PIT	□
ARROW PANEL	⬮
UTILITY EASEMENT	⬮

CABLE AND CONDUIT DESIGNATIONS

B	Is Conduit Bored (6-3" B)	LC	Is Lead-In Cable
C	Is Camera Control Cable	MB	Is Main Line Conduit Group Bored
CC	Is Camera Control Cable	MT	Is Multi Mode Fiber Cable
CCD	Is Camera Detector Cable	MT	Is Main Line Conduit Group Trenched (6) 11/4"
CG	Is Circuit Ground	NO	Is Number
CCG	Is Camera Power Cable	PR	Is Power Cable
DC	Is Dynamic Tracer Wire	REL	Is Relocate
DWSC	Is Dynamic Message Sign Cable	REL	Is Relocate
ETW	Is Emergency Detector Cable	RGS	Is Rigid Galvanized Steel
EX	Is Existing	SC	Is Service Cable
FLC	Is Fiber Locate Cable	SM	Is Single Mode Fiber Cable
FTW	Is Fiber Tracer Wire	T	Is Conduit Trenched (6-3" T)
INS	Is Install	TW	Is Tracer Wire (Black or green)
INT	Is Infratuct		

PROJECT NOTES

- THE LOCATIONS OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES MAY NOT BE INDICATED ON THESE PLANS. UNDERGROUND UTILITIES SHALL BE LOCATED BY THE UTILITY CONTRACTOR, NO EXCAVATION WILL BE PERMITTED IN THE AREA OF THE UNDERGROUND UTILITIES UNTIL ALL SUCH FACILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND AND AERIAL UTILITIES AND CONSTRUCTIONS.
- REQUIREMENTS:
 - DEPTH-THE UTILITY INSPECTOR SHALL MONITOR THE MINIMUM DEPTH OF COVER:

COMMUNICATIONS.....36"

WATER OR SEWER.....60"

DRAINAGE TILE.....24"

ELECTRIC.....48"

GAS.....48"
 - FORTY-TWO (42) INCHES BELOW A PROJECTED SLOPE FROM THE FLOW LINE OF A DITCH AT A THREE (3) HORIZONTAL AND ONE (1) VERTICAL SLOPE.
 - FORTY-EIGHT (48) INCHES UNDER A ROADWAY MEASURED FROM THE SURFACE OF SAID ROADWAY TO THE TOP OF THE INSTALLATION.
 - FORTY-EIGHT (48) INCHES UNDER A STORM WATER OR CREEK CHANNEL DESIGN FLOW LINE AND
 - MAINTAIN A MINIMUM OF 24" OF VERTICAL & HORIZONTAL SPACING FROM EXISTING UTILITIES.
 - THE APPLICANT SHALL USE REFERENCE MARKERS WITHIN THE RIGHT-OF-WAY TO LOCATE LINE AND CHANGES IN ALIGNMENT AS WELL AS TILE LINE LOCATIONS. A PERMANENT WARNING TAPE SHALL BE PLACED ONE (1) FOOT ABOVE ALL UNDERGROUND UTILITY LINES.
 - RESIDENTS ALONG THE UTILITY ROUTE SHALL HAVE UNINTERRUPTED ACCESS TO THE PUBLIC ROADS.
 - THE APPLICANT AND ROAD DEPARTMENT REPRESENTATIVE SHALL MAKE A JOINT ASSESSMENT OF ROADWAY BEFORE ANY CONSTRUCTION. IF THE ROADWAY IS IN POOR CONDITION, ANY DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE RESTORED TO ORIGINAL CONDITION. RE-CONSTRUCTION WORK THAT IS PERFORMED BY THE COUNTY WILL BE ASSESSED TO THE APPLICANT.
 - UTILITY LINES HAVING AN INSIDE DIAMETER OF MORE THAN 2" WHICH CROSS BENEATH A PAVED ROADWAY SHALL BE PLACED WITHIN APPROVED CASINGS. CABLE CASINGS MAY BE PLACED THROUGH THE SUB-GRADE BY DIRECTIONAL BORING OR OTHER APPROVED METHODS. THE CASINGS SHALL EXTEND TO THE TOE OF THE FORE SLOPE ON EACH SIDE OF THE ROADWAY.
 - PLOWING MAY BE ALLOWED ON UNPAVED ROADS WHERE AN OPEN TRENCH IS REQUESTED OR REQUIRED. BACKFILLING SHALL BE COMPLETED IN LAYERS OF 6" OR LESS TO AVOID SETTLEMENT. PLOWING WILL BE ALLOWED FROM SHOULDER-LINE TO SHOULDER-LINE ONLY. ALL LINES PLACED BETWEEN SHOULDER-LINE AND RIGHT-OF-WAY LINE SHALL BE TRENCHED.
 - ANY EXCAVATION, TRENCHING OR PLOWING WITHIN THE RIGHT-OF-WAY FROM NOVEMBER 15-MARCH 15 MAY CAUSE EXCESSIVE DISTURBANCE TO THE ROADWAY AND THEREFORE WILL BE REVIEWED ON A CASE-BY-CASE BASIS. DEPENDING UPON THE WEATHER, APPROVAL MAY BE SUSPENDED.
 - OVERHEAD UTILITIES SHALL BE LOCATED TWO (2) FEET INSIDE THE R.O.W. LINE. VERTICAL CLEARANCE OVER ROADWAYS SHALL BE A MINIMUM OF EIGHTEEN (18) FEET MEASURED AT THE CENTERLINE OF THE ROADWAY. ANY OVERHANG PROBLEMS WITH CROSS-ARMS MUST BE ADDRESSED BY THE UTILITY.
 - CONSTRUCTION SLOWING SHALL COMPLY WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. WORK SHALL CONFORM TO THE IOWA DEPARTMENT OF TRANSPORTATION CONSTRUCTION MANUAL STATEWIDE URBAN DESIGN STANDARDS (RUDAS), ASHTO ROADSIDE DESIGN GUIDE, AND CRITERIA SET FORTH THEREIN.
 - ALL EQUIPMENT SHALL BE REMOVED FROM THE RIGHT-OF-WAY BETWEEN THE HOURS OF 30 MINUTES BEFORE SUNSET TO 30 MINUTES AFTER SUNRISE.
 - ALL POTHOLES IN SIDEWALK PANELS WILL REQUIRE FULL PANEL REPLACEMENT.
 - ANY CUT OR POT HOLE IN A CONCRETE STREETS PANEL WILL REQUIRE FULL PANEL REPLACEMENT.
 - ANY CUT OR POT HOLE IN A ASPHALT STREET LANE WILL REQUIRE SEAM TO SEAM ASPHALT MILLING AND REPLACEMENT.

olsson



PROJECT NO.	SHEET NO.
018-1341	G-1
Drawn: Date: 7/29/2018	Scale: Approved: Date: 7/29/2018

UTILITY CONTACTS

NAME	AGENCY	PHONE NUMBER	EMAIL
JEFF KLOCKO	AUREON	515-830-0445	JEFF.KLOCKO@AUREON.COM
KEVIN SCHLESKY	IOWA DOT	515-683-6383	KEVIN.SCHLESKY@IOWADOT.IA
ANGELA SILVEY	HARDIN COUNTY	641-688-3182	ASILVEY@HARDINCOUNTY.IA.GOV
MICHAEL JOYNTS	MID-AMERICAN ENERGY	515-979-8294	MYOJNTS@MIDAMERICAN.COM
	MEDIA.COM	855-633-4226	
	WINDSTREAM	877-901-4692	
	DISH NETWORK	866-506-5457	
	DIRECT TV	866-887-9885	
	ALLIANT ENERGY (NATURAL GAS)	800-255-4268	

IDOT PROJECT NOTES

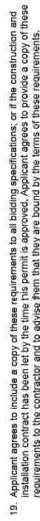
NOTE 1: THIS LIST IS NOT ALL-INCLUSIVE. CONTRACTOR IS RESPONSIBLE TO REQUEST LOCATES OF ALL UTILITIES AND COORDINATE IF NEEDED PRIOR TO COMMENCING WORK 72 HOUR ADVANCE NOTICE IS REQUIRED TO NOTIFY ALL UTILITY COMPANIES.

NOTE 2: EXISTING UTILITY CONFLICTS-ANY CHANGES TO THE PLANNED RUNNING LINE REQUIRE PRE-APPROVAL BY AUREON AND ROW AUTHORITY HAVING JURISDICTION. THE PLAN FOR PARALLEL UTILITIES WOULD BE TO ADJUST THE RUNNING LINE BY AN APPROPRIATE OFFSET (APPROXIMATELY 27 OR CHANGE DEPTH OF THE INSTALLATION DEPENDING ON ROW AVAILABILITY).

SUMMARY OF QUANTITIES

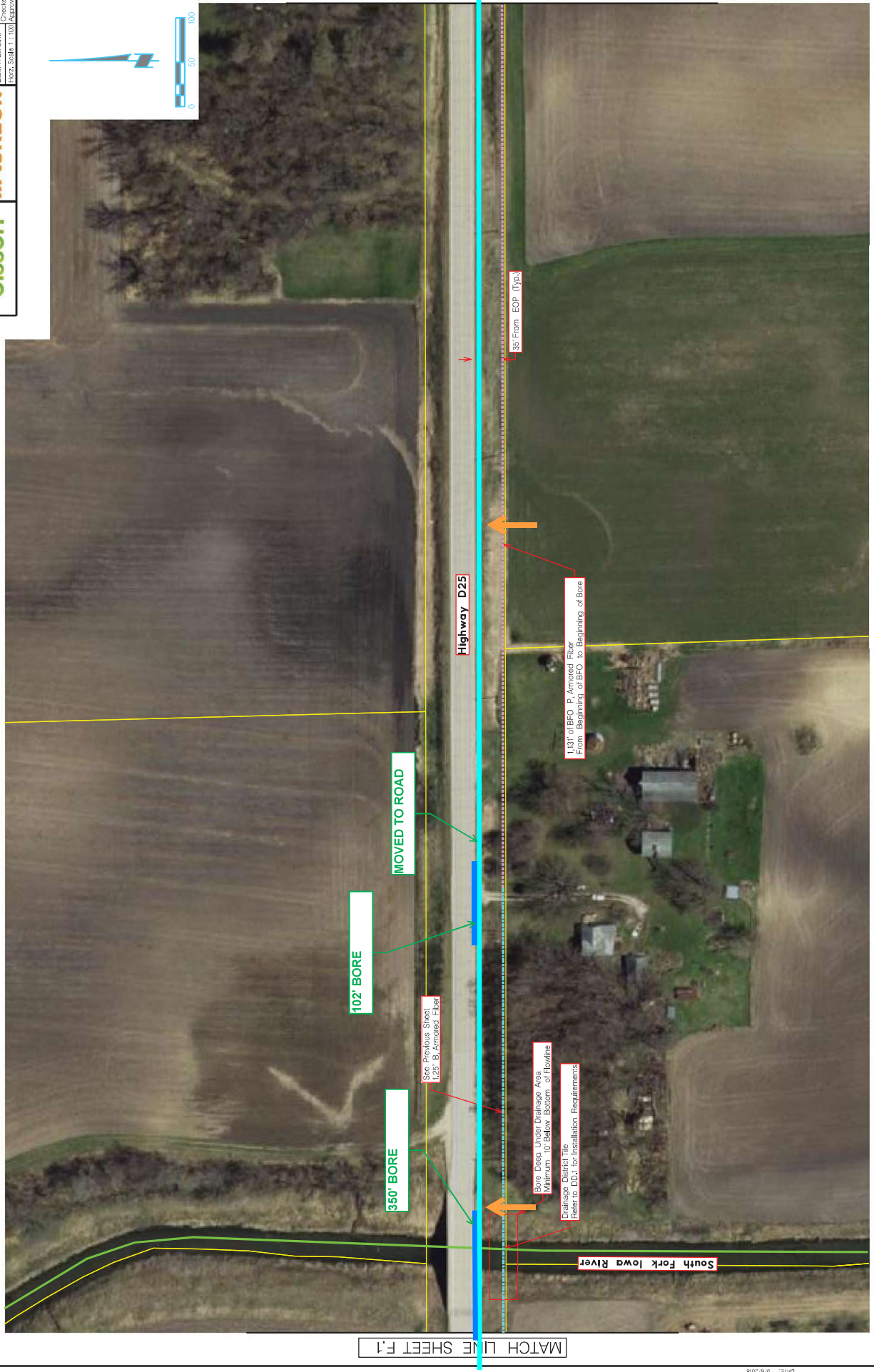
ITEM	DESCRIPTION	UNIT	QUANTITY
150	CONDUIT 1.5" B	LF	11,333
151	CONDUIT 2" B	LF	194
152	PULL BOX 24"X36"X36"	EA	8
153	FIBER ARMORED	LF	37,476
154	FIBER ARMORED UNDERGROUND SLACK STORAGE	LF	900

- 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 Applicant's 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 (used on page 1 within six (6) hours of the verbal order.

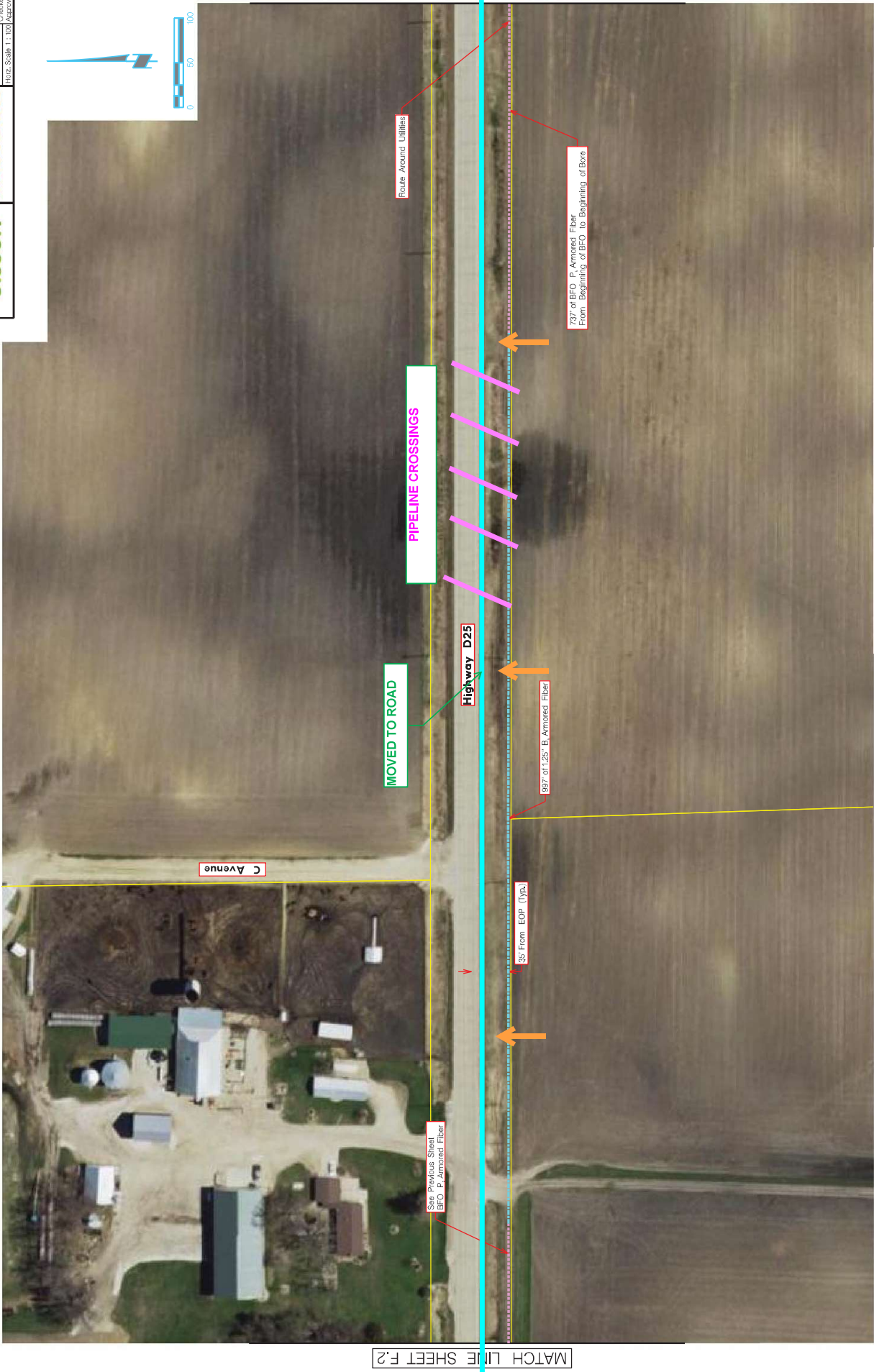


PROJECT NO.	SHEET NO.
018-1341	F-2
Drawn by	SA
Date: 7/25/2018	Checked by
Horizontal Scale 1"=100'	Approved: GJS



FIBER DESIGN



MATCH LINE SHEET F.2

MATCH LINE SHEET F.4

PROJECT NO.	SHEET NO.
018-1341	F-4
DATE: 7/25/2018	DATE: 7/25/2018
DESIGNED BY: [Redacted]	DRAWN BY: [Redacted]
CHECKED BY: [Redacted]	APPROVED BY: [Redacted]
Horizontal Scale: 1" = 100'	

olsson

AUREON



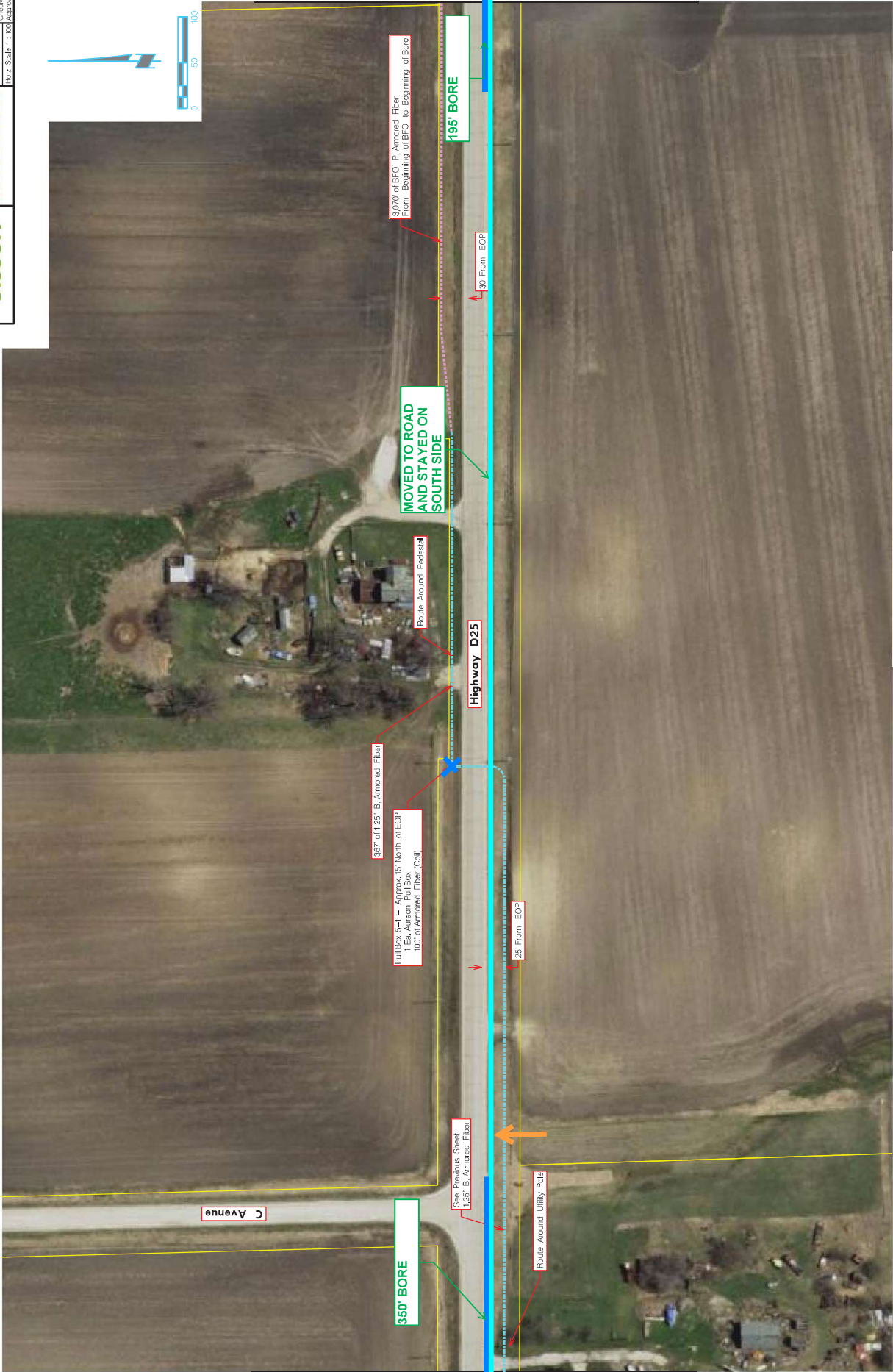
MATCH LINE SHEET F.3

MATCH LINE SHEET F.5

FIBER DESIGN

PROJECT NO.	SHEET NO.
018-1341	F-5
Drawn by	SA
Date: 7/25/2018	Checked by
Horizontal Scale 1"=100'	Approved: GJS



MATCH LINE SHEET F.4

MATCH LINE SHEET F.6

FIBER DESIGN

PROJECT NO.	SHEET NO.
018-1341	F-6
DATE: 7/25/2018	SUB: 615
DESIGNED BY: [Signature]	CHECKED BY: [Signature]
APPROVED BY: [Signature]	DATE: 7/25/2018



MATCH LINE SHEET F.5

MATCH LINE SHEET F.7

FIBER DESIGN

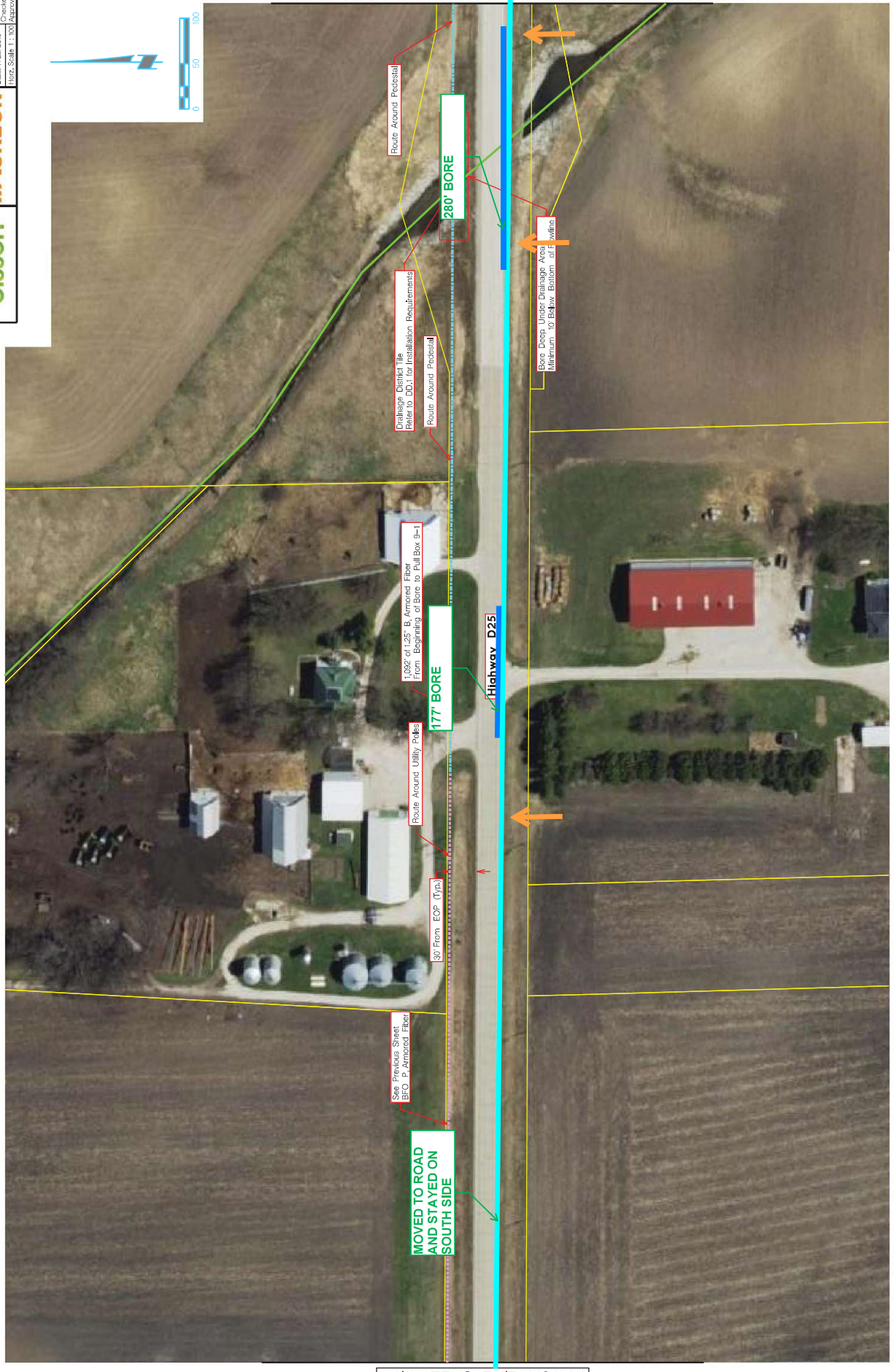
PROJECT NO.	SHEET NO.
018-1341	F-7
Drawn by	SA
Date: 7/25/2018	Checked: GJS
Horizontal Scale: 1"=100'	Approved: GJS



MATCH LINE SHEET F.6

MATCH LINE SHEET F.8

FIBER DESIGN



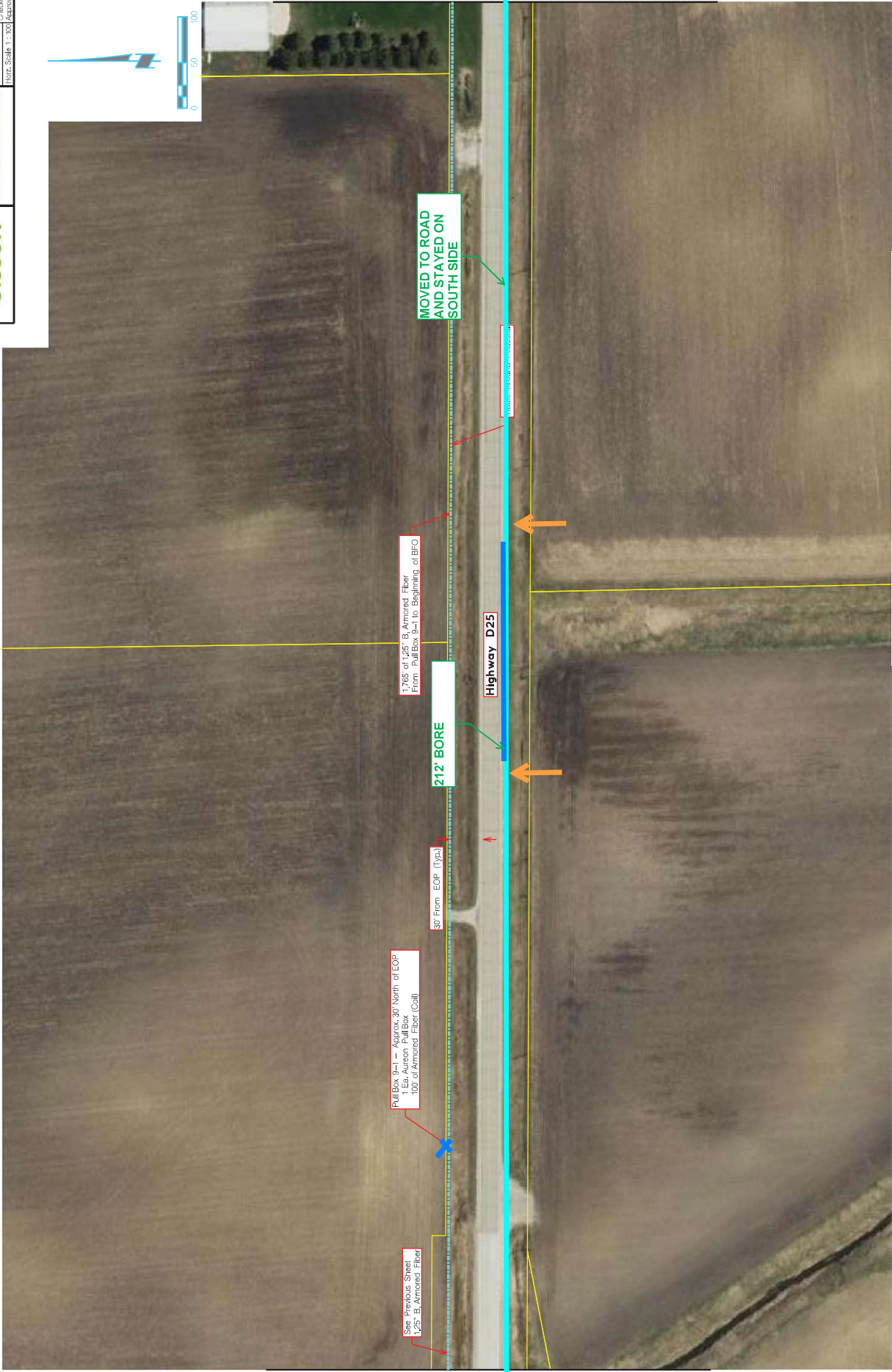
MATCH LINE SHEET F.7

MATCH LINE SHEET F.9

FIBER DESIGN

PROJECT NO.	SHEET NO.
018-1341	F-9
DATE: 7/25/2018	DATE: 7/25/2018
DRAWN BY: J. OLSSON	DESIGNED BY: J. OLSSON
CHECKED BY: J. OLSSON	APPROVED BY: J. OLSSON
HORIZ. SCALE 1"=100'	VERT. SCALE 1"=10'



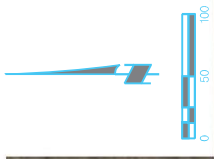
MATCH LINE SHEET F.10

MATCH LINE SHEET F.8

FIBER DESIGN

PROJECT NO.	SHEET NO.
018-1341	F-10
DATE: 7/25/2018	DATE: 7/25/2018
DESIGNED BY: [Redacted]	DRAWN BY: [Redacted]
CHECKED BY: [Redacted]	APPROVED BY: [Redacted]
SCALE: 1"=100'	SCALE: 1"=100'



FIBER DESIGN



PROJECT NO.	SHEET NO.
018-1341	F-13
Drawn by	SA
Date: 7/25/2018	Checked by
Horizontal Scale 1" = 100'	Approved: GJS






MATCH LINE SHEET F.12

MATCH LINE SHEET F.14

FIBER DESIGN





olsson	AUREON	PROJECT NO.	SHEET NO.
		018-1341	F-17
		DATE	SUB
		7/25/2018	125" B, Armored Fiber
		DATE	APPROVED
		7/25/2018	018



MATCH LINE SHEET F.16

MATCH LINE SHEET F.18

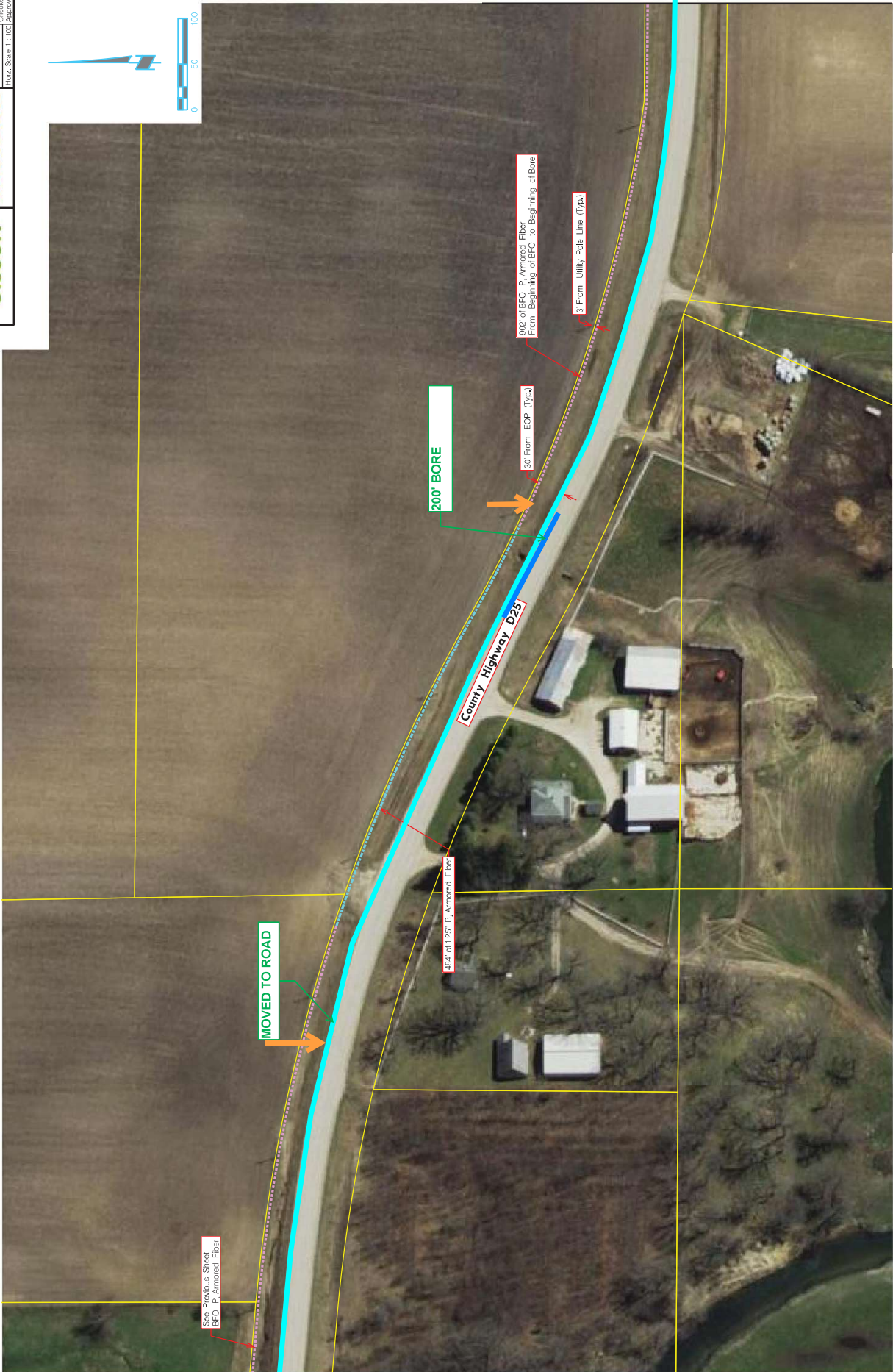
FIBER DESIGN

DATE: 9/6/2018
USER: F74718



PROJECT NO.	SHEET NO.
018-1341	F-20
Drawn by	SA
Date: 7/25/2018	Checked by
Horizontal Scale 1"=100'	Approved: GTS



FIBER DESIGN

PROJECT NO.	SHEET NO.
018-1341	F-21
DATE: 7/25/2018	DATE: 7/25/2018
DESIGNED BY: [Signature]	DRAWN BY: [Signature]
CHECKED BY: [Signature]	APPROVED BY: [Signature]
HORIZ. SCALE 1"=100'	VERT. SCALE 1"=10'





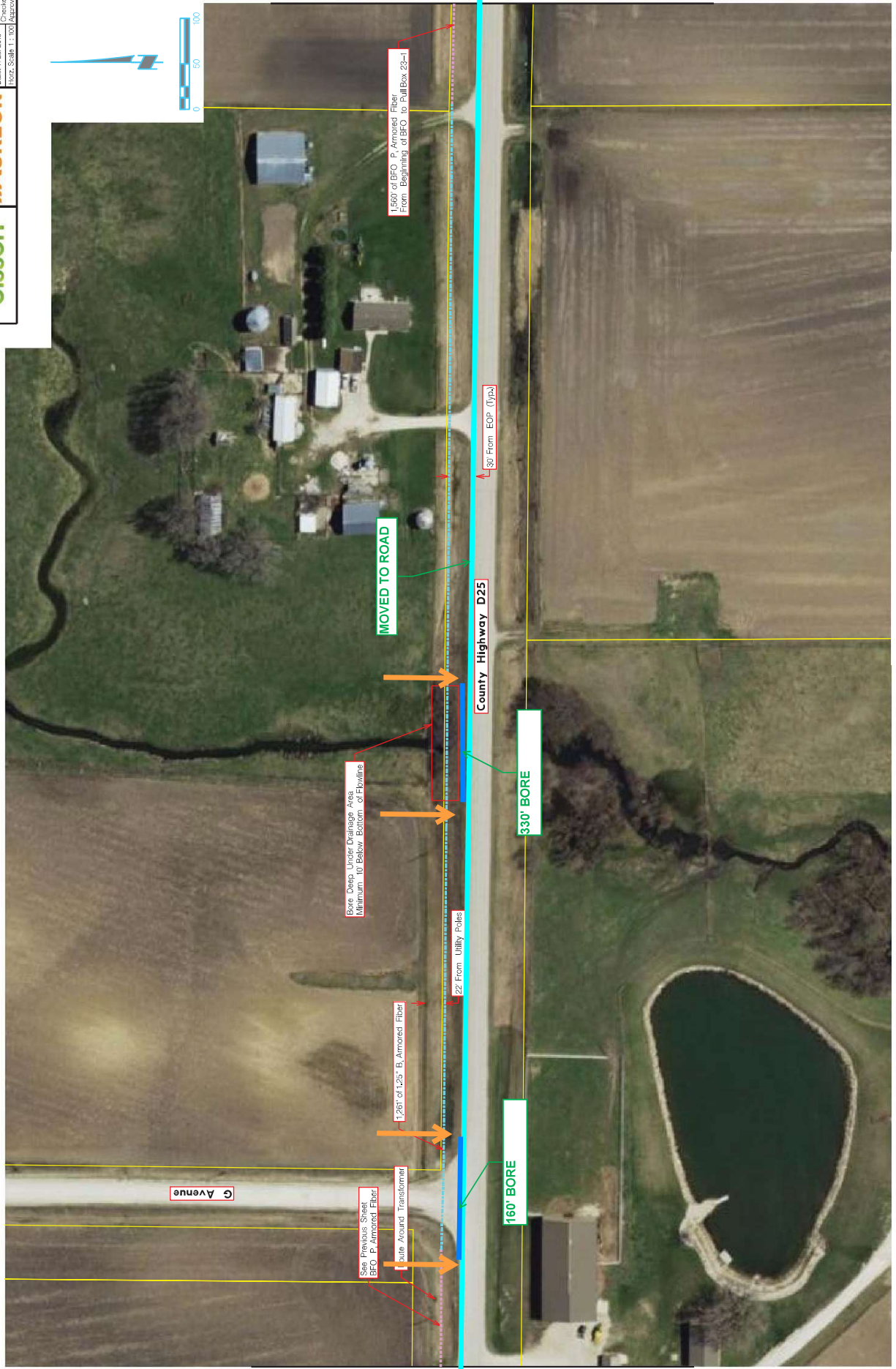

MATCH LINE SHEET F.20

MATCH LINE SHEET F.22

FIBER DESIGN

PROJECT NO.	SHEET NO.
018-1341	F-22
Drawn by	SA
Date: 7/25/2018	Checked by
North Arrow	Approved: GIS
North Scale 1" = 100'	



MATCH LINE SHEET F.21

MATCH LINE SHEET F.23

FIBER DESIGN

