

**AGENDA
REGULAR DRAINAGE MEETING
FEBRUARY 27, 2019
11:30 A.M.**

1. Open Meeting
2. Approve Agenda
3. Approve Minutes
February 13, 2019 Regular Drainage Meeting
February 13, 2019 DD 25 and DD 1 Bid Letting

Documents:

[DD 25 AND DD 1 BID LETTING 2_13_2019 - MINUTES.PDF](#)
[2_13_2019 - DRAINAGE MINUTES.PDF](#)

4. DD 56 - Discuss, With Possible Action, Landowner Concerns
Kevin Sheldahl
5. DD 25 Lat 3 & DD 1 - Award Bid

Documents:

[DD 25 AND DD 1 BID TAB AND POSSIBLE AWARD OPTIONS.PDF](#)

6. DD 143 - Set Rescheduled Landowner Meeting Date And Time
7. Approve Utility Permit #2019-1 With Aureon

Documents:

[HARDIN COUNTY DRAINAGE DISTRICTS PERMIT.PDF](#)
[19-02-26_TFTC_ALDEN TO ACKLEY_REVIEW_FOR PERMITTING.PDF](#)

8. Other Business
9. Adjourn Meeting

DD 25 AND DD 1 BID LETTING

2/13/2019 - Minutes

1. Open Meeting

Hardin County Board of Supervisors Chairman, Renee McClellan, opened the meeting. Also present were Supervisors, Lance Granzow and BJ Hoffman; Jory McDowell with McDowell and Sons; Jeremy Maas with Gehrke Inc; Lee Gallentine and James Sweeney with Clapsaddle-Garber Associates (CGA); Hardin County Conservation Director, Wes Wiese; Drainage Clerk, Tina Schlemme.

2. Approve Agenda

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

3. Introductions/Attendance

Introductions were made and attendance verified.

4. Open Bids

Gallentine opened the bids, in addition to verifying that the bids and bid bonds were all in order.

	Gehrke, Inc	McDowell & Sons
DD 25 Main Bid	\$ 47,700.00	\$ 31,050.00
DD 25 Lat 3 Base Bid	\$221,556.25	\$102,697.30
DD 25 Lat 3 Alt Bid	\$229,356.25	\$108,937.30
DD 25 Lat 3 Add'l Base Bid	\$ 97,225.00	\$ 46,464.00
DD 25 Lat 3 Add'l Alt Bid	\$106,765.00	\$ 54,944.00
DD 1 Main Bid	\$ 99,080.00	\$ 54,005.00

5. Possible Action

Hoffman moved, Granzow seconded for CGA to check the math of each bidder and to award the bid at the next regular drainage meeting. It was discussed that McDowell and Sons appear to be the low bidder before math checks. All ayes. Motion carried.

6. Other Business

None.

7. Adjourn Meeting

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

REGULAR DRAINAGE MEETING

2/13/2019 - Minutes

1. Open Meeting

Hardin County Board of Supervisors Chairperson, Renee McClellan, opened the meeting. Also present were Supervisors, Lance Granzow and BJ Hoffman; Hardin Conservation Director, Wes Wiese; Lee Gallentine and James Sweeney with Clapsaddle-Garber Associates (CGA); Drainage Clerk, Tina Schlemme.

2. Approve Agenda

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

3. Approve Minutes

Hoffman moved, Granzow seconded to approve the minutes of the February 6, 2019 regular drainage meeting. All ayes. Motion carried.

4. DD 52 - Discuss, With Possible Action, Updates To Project

Schlemme updated the Trustees that Attorney, Mike Richards, stated he has spoken with Shawn Piel, on behalf of Piel Manufacturing, and he has agreed to sign a consent to remove trees. There should no longer be a need for the petition to be filed once signed.

5. DD 56 - Acknowledge Receipt Of Engineer's Report And Set Hearing Date

Granzow moved, Hoffman seconded to acknowledge receipt of the Engineer's Report dated February 8, 2019 and to set the hearing date as Wednesday, March 27, 2019 at 1:00 pm in the large conference room of the courthouse. All ayes. Motion carried.

6. DD 86 - Discuss, With Possible Action, Repair Summary For Work Order #172

Gallentine updated the Trustees that all the work was complete for Work Order #172 except that the tree with the picnic table around it is still there. Hoffman moved, Granzow seconded for Schlemme to send a final notice to the landowner, via certified mail, to take the tree down or sign a tree agreement, or the tree will be removed by the district. All ayes. Motion carried.

7. DD 148 - Discuss, With Possible Action, Current Classification

Schlemme presented the current classification with acres to show the range of averages. The Trustees and Gallentine agreed it did not appear to be equitable by the data. Hoffman moved, Granzow seconded for CGA to begin the reclassification process for the main and laterals of the district. All ayes. Motion carried.

8. Other Business

DD 148 - Schlemme updated the Trustees that she found the culvert crossing in Section 8 of Etna Township was paid for during the original project in 1944. Gallentine provided input that his opinion is if the culvert was paid for by the district, then it's always the district's responsibility to repair and maintain. The Trustees agreed that CGA should include the crossing in the project specifications.

DD 143 - Schlemme asked for guidance on dates to reschedule the landowners meeting that was canceled due to inclement weather on Tuesday, February 12, 2019. The Trustees agreed for Schlemme to contact Radcliffe Mayor, Taylor Roll, for suggested in the first couple weeks of March.

It was discussed that the regular drainage meeting for the following week on February 20th, will not be held. Schlemme is to contact IRUA to inform them of the date change to February 27th.

9. Adjourn Meeting

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



PROJECT: REPAIRS TO MAIN TILE AND LATERAL 3 TILE DD#25 & REPAIRS TO MAIN TILE DD#1, HARDIN COUNTY

DATE: FEBRUARY 13, 2019

ENGINEER: CLAPSADDLE-GARBER ASSOCIATES

Engineer's Estimate \$ 330,000

**McDowell and Sons
Contractors, Inc**
10214 Hwy 65
Iowa Falls, IA 50126

Gehrke Inc.
1405 21st Ave
Eldora, Iowa 50627

Item No.	Description	Estimated Quantity	Unit	Unit Price	Bid Price	Unit Price	Bid Price
MAIN 25 DIVISION BID							
1	24" Ø RCP Tile	260	LF	\$ 115.00	\$ 29,900.00	\$ 70.00	\$ 18,200.00
2	Type PC-2 Concrete Collar	14	EA	\$ 750.00	\$ 10,500.00	\$ 500.00	\$ 7,000.00
3	Private Tile Connection	2	EA	\$ 600.00	\$ 1,200.00	\$ 600.00	\$ 1,200.00
4	Tile Removal	260	LF	\$ 10.00	\$ 2,600.00	\$ 10.00	\$ 2,600.00
5	Permanent Seeding	0.3	AC	\$ 5,000.00	\$ 1,500.00	\$ 3,500.00	\$ 1,050.00
6	Seeding Warranty	1	LS	\$ 2,000.00	\$ 2,000.00	\$ 1,000.00	\$ 1,000.00
MAIN DIVISION BID TOTAL (Bid Items 1-6 Inclusive)				\$ 47,700.00			\$ 31,050.00
LATERAL 3 DIVISION BASE BID							
101	12" Ø Polypropylene Tile	780	LF	\$ 70.00	\$ 54,600.00	\$ 30.00	\$ 23,400.00
102	24" Ø Steel Casing (Jack & Bore)	110	LF	\$ 800.00	\$ 88,000.00	\$ 380.00	\$ 41,800.00
103	12" Ø DIP Tile	135	LF	\$ 110.00	\$ 14,850.00	\$ 77.00	\$ 10,395.00
104	Intake Junction Structure	3	EA	\$ 1,350.00	\$ 4,050.00	\$ 1,750.00	\$ 5,250.00
105	CCTV Tile Inspection	1060	LF	\$ 5.50	\$ 5,830.00	\$ 3.25	\$ 3,445.00
106	Type PC-2 Concrete Collar	4	EA	\$ 750.00	\$ 3,000.00	\$ 350.00	\$ 1,400.00
107	Private Tile Connection	4	EA	\$ 600.00	\$ 2,400.00	\$ 600.00	\$ 2,400.00
108	Grading	2	STA	\$ 3,000.00	\$ 6,000.00	\$ 350.00	\$ 700.00
109	Tile Removal	737	LF	\$ 10.00	\$ 7,370.00	\$ 6.00	\$ 4,422.00
110	Tile Abandonment	73	LF	\$ 45.00	\$ 3,285.00	\$ 14.00	\$ 1,022.00
111	12" Ø Hickenbottom Intake	1	EA	\$ 750.00	\$ 750.00	\$ 1,000.00	\$ 1,000.00
112	RR Permitting, Flagging, Insurance, Coordination	1	LS	\$ 30,000.00	\$ 30,000.00	\$ 6,500.00	\$ 6,500.00
113	Locate Existing Lateral Tile	7.37	STA	\$ 125.00	\$ 921.25	\$ 90.00	\$ 663.30
114	Intake Removal	1	EA	\$ 500.00	\$ 500.00	\$ 300.00	\$ 300.00
LATERAL 3 DIVISION BASE BID TOTAL (Bid Items 101-114 Inclusive)				\$ 221,556.25			\$ 102,697.30
LATERAL 3 DIVISION ALTERNATE BID							
101ALT	12" Ø RCP Tile	780	LF	\$ 80.00	\$ 62,400.00	\$ 38.00	\$ 29,640.00
102ALT	24" Ø Steel Casing (Jack & Bore)	110	LF	\$ 800.00	\$ 88,000.00	\$ 380.00	\$ 41,800.00
103ALT	12" Ø DIP Tile	135	LF	\$ 110.00	\$ 14,850.00	\$ 77.00	\$ 10,395.00
104ALT	Intake Junction Structure	3	EA	\$ 1,350.00	\$ 4,050.00	\$ 1,750.00	\$ 5,250.00
105ALT	CCTV Tile Inspection	1060	LF	\$ 5.50	\$ 5,830.00	\$ 3.25	\$ 3,445.00
106ALT	Type PC-2 Concrete Collar	4	EA	\$ 750.00	\$ 3,000.00	\$ 350.00	\$ 1,400.00
107ALT	Private Tile Connection	4	EA	\$ 600.00	\$ 2,400.00	\$ 600.00	\$ 2,400.00
108ALT	Grading	2	STA	\$ 3,000.00	\$ 6,000.00	\$ 350.00	\$ 700.00
109ALT	Tile Removal	737	LF	\$ 10.00	\$ 7,370.00	\$ 6.00	\$ 4,422.00
110ALT	Tile Abandonment	73	LF	\$ 45.00	\$ 3,285.00	\$ 14.00	\$ 1,022.00
111ALT	12" Ø Hickenbottom Intake	1	EA	\$ 750.00	\$ 750.00	\$ 1,000.00	\$ 1,000.00
112ALT	RR Permitting, Flagging, Insurance, Coordination	1	LS	\$ 30,000.00	\$ 30,000.00	\$ 6,500.00	\$ 6,500.00
113ALT	Locate Existing Lateral Tile	7.37	STA	\$ 125.00	\$ 921.25	\$ 90.00	\$ 663.30
114ALT	Intake Removal	1	EA	\$ 500.00	\$ 500.00	\$ 300.00	\$ 300.00
LATERAL 3 DIVISION ALTERNATE BID TOTAL (Bid Items 101ALT-114ALT Inclusive)				\$ 229,356.25			\$ 108,937.30
LATERAL 3 DIVISION ADDITIONAL BASE BID							
201	12" Ø Polypropylene Tile	1060	LF	\$ 70.00	\$ 74,200.00	\$ 30.00	\$ 31,800.00
202	Type PC-2 Concrete Collar	4	EA	\$ 750.00	\$ 3,000.00	\$ 350.00	\$ 1,400.00
203	Private Tile Connection	6	EA	\$ 600.00	\$ 3,600.00	\$ 600.00	\$ 3,600.00
204	Grading	1	STA	\$ 3,000.00	\$ 3,000.00	\$ 350.00	\$ 350.00
205	Tile Removal	1060	LF	\$ 10.00	\$ 10,600.00	\$ 6.00	\$ 6,360.00
206	12" Ø Hickenbottom Intake	2	EA	\$ 750.00	\$ 1,500.00	\$ 1,000.00	\$ 2,000.00
207	Locate Existing Lateral Tile	10.6	STA	\$ 125.00	\$ 1,325.00	\$ 90.00	\$ 954.00
LATERAL 3 DIVISION ADDITIONAL BASE BID TOTAL (Bid Items 201-207 Inclusive)				\$ 97,225.00			\$ 46,464.00
LATERAL 3 DIVISION ADDITIONAL ALTERNATE BID							
201ALT	12" Ø RCP Tile	1060	LF	\$ 79.00	\$ 83,740.00	\$ 38.00	\$ 40,280.00
202ALT	Type PC-2 Concrete Collar	4	EA	\$ 750.00	\$ 3,000.00	\$ 350.00	\$ 1,400.00
203ALT	Private Tile Connection	6	EA	\$ 600.00	\$ 3,600.00	\$ 600.00	\$ 3,600.00
204ALT	Grading	1	STA	\$ 3,000.00	\$ 3,000.00	\$ 350.00	\$ 350.00
205ALT	Tile Removal	1060	LF	\$ 10.00	\$ 10,600.00	\$ 6.00	\$ 6,360.00
206ALT	12" Ø Hickenbottom Intake	2	EA	\$ 750.00	\$ 1,500.00	\$ 1,000.00	\$ 2,000.00
207ALT	Locate Existing Lateral Tile	10.6	STA	\$ 125.00	\$ 1,325.00	\$ 90.00	\$ 954.00
LATERAL 3 DIVISION ADDITIONAL ALTERNATE BID TOTAL (Bid Items 201ALT-207ALT Inclusive)				\$ 106,765.00			\$ 54,944.00
LAT 3 DIVISION ADDITIONAL ALT BID TOTAL (Bid Items 201ALT-207ALT Inclusive)							
MAIN 1 DIVISION BID							
301	24" Ø Polypropylene Tile	123	LF	\$ 100.00	\$ 12,300.00	\$ 55.00	\$ 6,765.00
302	34" Ø Steel Casing (Jack & Bore)	50	LF	\$ 1,400.00	\$ 70,000.00	\$ 707.00	\$ 35,350.00
303	22 1/2" x 24" Ø Polypropylene Bend	3	EA	\$ 700.00	\$ 2,100.00	\$ 450.00	\$ 1,350.00
304	11 1/4" x 24" Ø Polypropylene Bend	1	EA	\$ 700.00	\$ 700.00	\$ 450.00	\$ 450.00
305	Intake Junction Structure	1	EA	\$ 1,600.00	\$ 1,600.00	\$ 1,750.00	\$ 1,750.00
306	Type PC-2 Concrete Collar	1	EA	\$ 750.00	\$ 750.00	\$ 350.00	\$ 350.00
307	Private Tile Connection	1	EA	\$ 600.00	\$ 600.00	\$ 600.00	\$ 600.00
308	Grading	2	STA	\$ 1,000.00	\$ 2,000.00	\$ 350.00	\$ 700.00
309	Tile Removal	49	LF	\$ 20.00	\$ 980.00	\$ 10.00	\$ 490.00
310	Tile Abandonment	60	LF	\$ 45.00	\$ 2,700.00	\$ 25.00	\$ 1,500.00
311	Traffic Control	1	LS	\$ 1,100.00	\$ 1,100.00	\$ 1,650.00	\$ 1,650.00
312	Seeding	0.3	AC	\$ 5,000.00	\$ 1,500.00	\$ 3,500.00	\$ 1,050.00
313	Seeding Warranty	1	LS	\$ 2,000.00	\$ 2,000.00	\$ 1,000.00	\$ 1,000.00
314	12" Ø Hickenbottom Intake	1	EA	\$ 750.00	\$ 750.00	\$ 1,000.00	\$ 1,000.00
MAIN 1 BASE BID TOTAL (Bid Items 301-314 Inclusive)				\$ 99,080.00			\$ 54,005.00
Main 1 and Main 25 Base Bids				\$ 85,055.00			\$ 85,055.00
Lateral 3 Polypropylene Bids				\$ 149,161.30			\$ 163,881.30
Total				\$ 234,216.30			\$ 248,936.30



HARDIN COUNTY

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

HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant: Aureon

Company Name

7760 Office Plaza Drive South

Address

West Des Moines

IA

50266

City

State

Zip

Applicant Contact: Jeff Klocko (515) 830 - 0445
Name Phone

Jeff.klocko@aureon.com

Email

Utility Type: Fiber optics

Drainage District(s) Crossed: 4, 18, 39, 68, 69, 98, 113, 120 Ext 5, F-H 1, F-H 2, F-H 3-47, F-H 4-53

Facilities Crossed (specific tile, open ditch): 4-Lat 1/2/4/6, 18-Main, 39-Main, 69-Main, F-H 1-Main/lateral/US-65(?), F-H 2-Main, F-H 3-47-Lat 5/15
F-H 4-53 Main/Lat 5/Lat 4A/Lat 4/Lat 4B/Lat 4B1/Lat 4B

Description of Work: Directional bore and plow of (1)-HDPE orange conduit w/ 1-armored fiber cable.

**(Location plan of
proposed utility must
be attached.)**

Please see attached plan set.

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.

Jeff Klocko
Applicant Signature

1/25/2019

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.



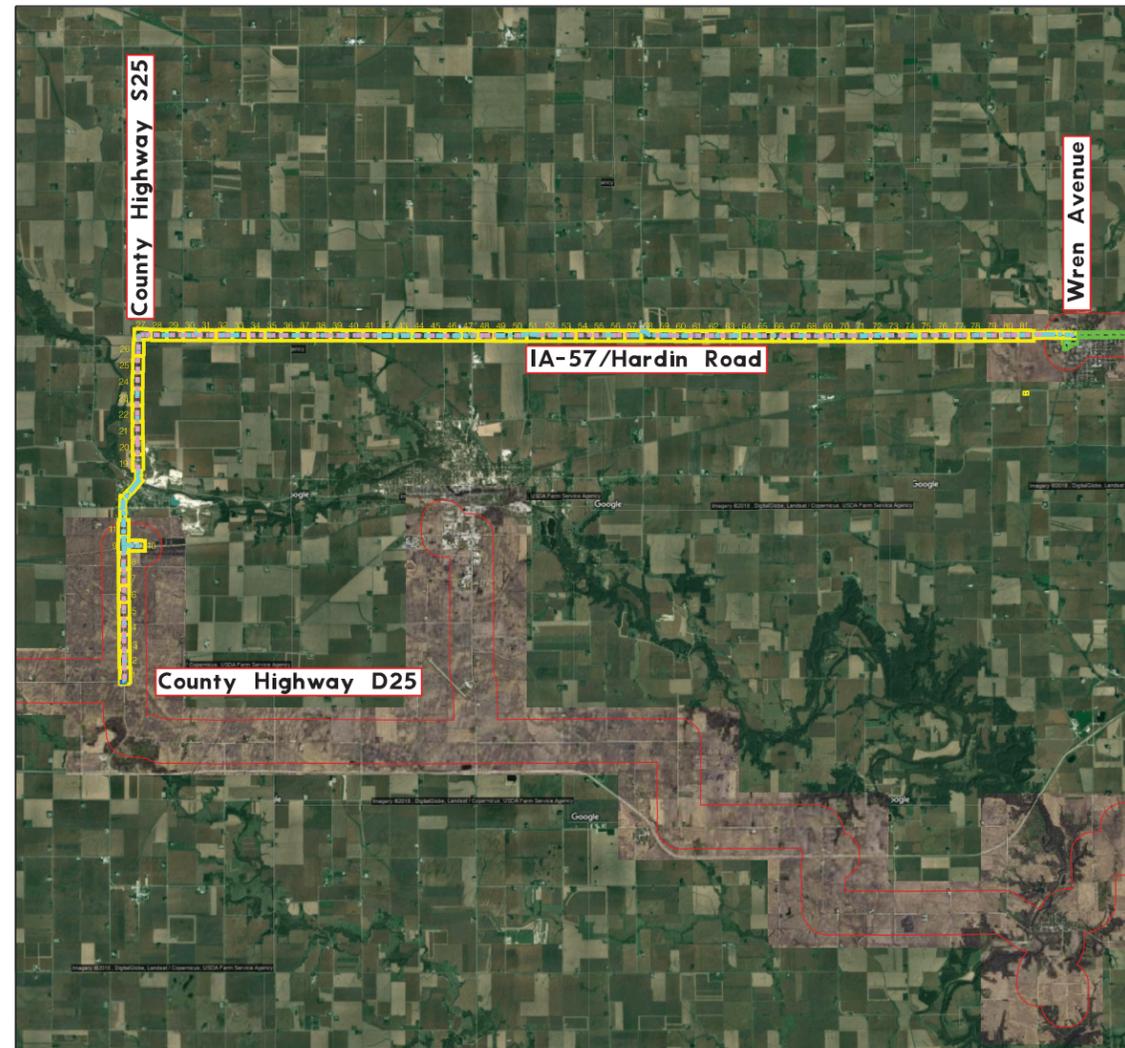
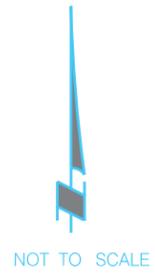
14. CROSSING OF DRAINAGE DISTRICT TILE LINES. Utility crossings shall be constructed as follows, as directed by the designated representative of the Drainage District:
- a. All proposed installations must be placed under the existing Drainage District tile lines. These requirements may be waived only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

PROJECT COORDINATION CONTACTS			
NAME	AGENCY	PHONE NUMBER	EMAIL
JEFF KLOCKO	AUREON	515-830-0445	JEFF.KLOCKO@AUREON.COM
ANGELA SILVEY	HARDIN COUNTY	641-858-3182	ASILVEY@HARDINCOUNTYIA.GOV
J WADDINGHAM	FRANKLIN COUNTY	515-689-7717	JWADDINGHAM@CO.FRANKLIN.IA.US
LORRIE WATTS	CITY OF ALDEN	515-859-3344	CITYCLERK@CITYOFALDENIOWA.COM
LEE GALLETINE	CITY OF ACKLEY	515-689-5339	LGALLETINE@CGACONSULTANTS.COM
KEVIN SCHLESKY	IOWA DOT DISTRICT 1	515-663-6363	KEVIN.SCHLESKY@IOWADOT.US
TINA SCHLEMME	HARDIN COUNTY DRAINAGE DISTRICT	641-939-8111	TSCHLEMME@HARDINCOUNTYIA.GOV

HARDIN COUNTY, IOWA

AUREON

ALDEN TO ACKLEY



PERMITS REQUIRED	
SHT. NO.	DESCRIPTION
F.1-F.86	HARDIN COUNTY
F.27-F.86	FRANKLIN COUNTY
F.12-F.18	CITY OF ALDEN
F.82-F.87	CITY OF ACKLEY
F.9	CHICAGO CENTRAL RAILROAD
F.18, F.51	UNION PACIFIC RAILROAD
F.1-F.4, F.17, F.18, F.26-F.28, F.42, F.46, F.58, F.59, F.72, F.79, F.79	FLOODPLAIN
F.47-F.86	IOWA DOT
F.1-F.2, F.4, F.7, F.23, F.33, F.36, F.37, F.38, F.46, F.47, F.50, F.51, F.62, F.64, F.65	HARDIN COUNTY DRAINAGE DISTRICT

SHT. NO.	SHEET INDEX
C.1	COVER SHEET
G.1	GENERAL NOTES & SUMMARY OF QUANTITIES
D.1	DETAILS
DD.1	DRAINAGE DISTRICT REQUIREMENTS
F.1-F.87	FIBER DESIGN



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.



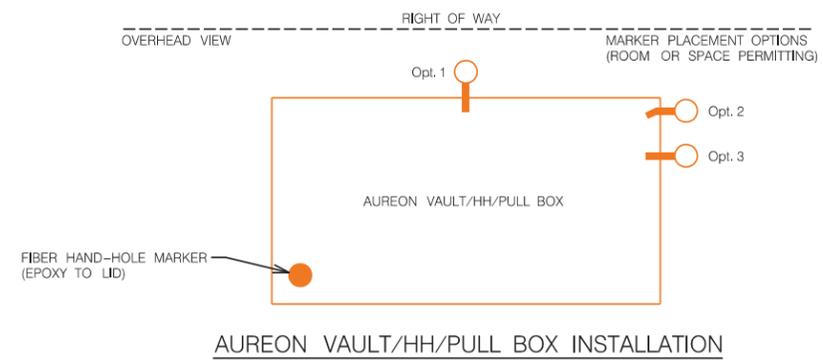
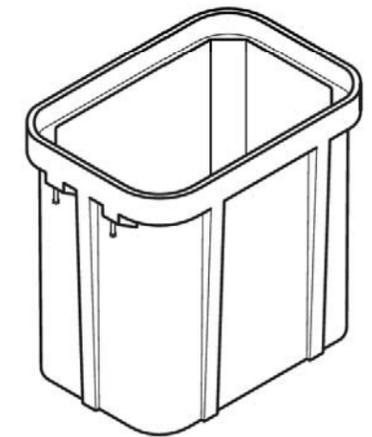
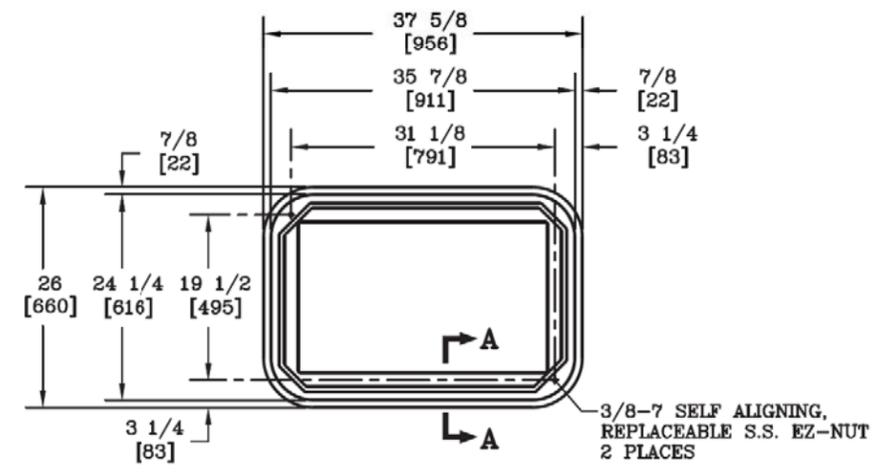
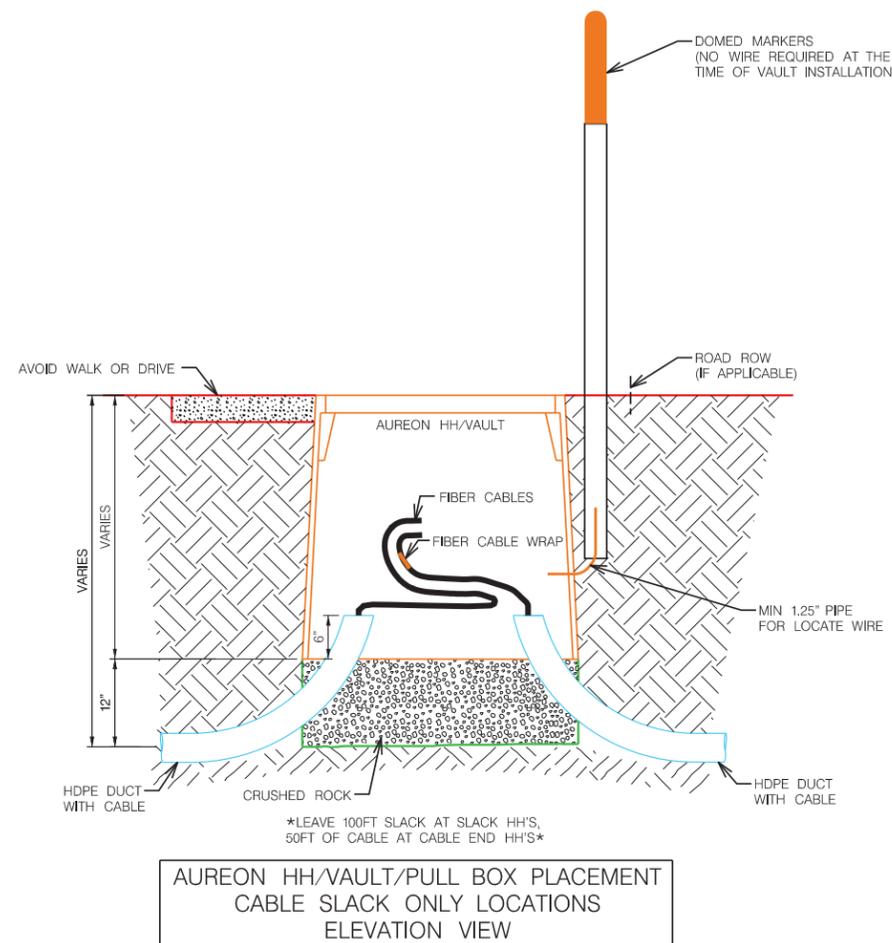
**90 PERCENT
SUBMITTAL**
10/10/2018
NOT FINAL - SUBJECT TO CHANGE

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

Signature _____ Date _____
 Gregory T. Seib
 Printed or Typed Name
 23179
 License Number
 My license renewal date is December 31, 2018

Pages or sheets covered by this seal: C.1, G.1, D.1, F.1-F.87

COVER



DRAINAGE DISTRICT PROJECT NOTES

1. THE DRAINAGE TILES SHOWN WITHIN THESE PLANS ARE ONLY AN APPROX. LOCATION AND SHOULD BE FIELD LOCATED WITH THE HELP OF THE HARDIN COUNTY DRAINAGE DISTRICT REPRESENTATIVE.
2. REFER TO HARDIN COUNTY DRAINAGE DISTRICT OFFICE FOR ANY RELATED QUESTIONS.



HARDIN COUNTY

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



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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.



County Highway D25

County Highway S27

Existing Aureon Fiber See
"County Highway D25" Design

Existing Aureon Fiber See
"County Highway D25" Design

252' of 1.25" B, Armored Fiber

Aureon Pull Box A
100' of Armored Fiber (Coil)

Drainage District Tile
Refer to DD.1 for Installation Requirements

Install Next to Edge
of Shoulder (Typ.)

Route Around Utility Pole (Typ.)

1104' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

MATCH LINE SHEET F.2



MATCH LINE SHEET F.1

MATCH LINE SHEET F.3



County Highway S27

Drainage District Tile
Refer to DD.1 for Installation Requirements

Install Next to Edge
of Shoulder (Typ.)

82' of 1.25" B, Armored Fiber

400' of 1.25" P, Armored Fiber

See Previous Sheet
1.25" P, Armored Fiber

Bore Deep Under Drainage Area
Minimum 10' Below Bottom of Flowline

213' of 1.25" B, Armored Fiber

624' of 1.25" P, Armored Fiber

50' of 1.25" B, Armored Fiber

1318' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore



MATCH LINE SHEET F.2

MATCH LINE SHEET F.4



County Highway S27

See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

107' of 1.25" B, Armored Fiber

1118' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore



MATCH LINE SHEET F.3

MATCH LINE SHEET F.5



Pull Box 4-1 - Approx. 35' East of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

County Highway S27

See Sheet F.3
1.25" P. Armored Fiber

Route Around Utility Pole (Typ.)

Install Next to Edge
of Shoulder (Typ.)

58' of 1.25" B. Armored Fiber

991' of 1.25" P. Armored Fiber
From Beginning of Plow to Beginning of Bore

159' of 1.25" B. Armored Fiber

Drainage District Tile
Refer to DD.1 for Installation Requirements

150th Street



MATCH LINE SHEET F.4

MATCH LINE SHEET F.6

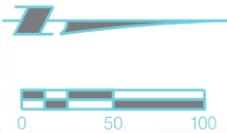


See Previous Sheet
1.25" P, Armored Fiber

108' of 1.25" B, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

3855' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore



MATCH LINE SHEET F.5

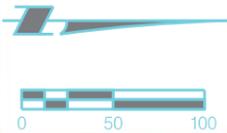
MATCH LINE SHEET F.7

County Highway S27

145th Street

See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)



MATCH LINE SHEET F.6

MATCH LINE SHEET F.8



See Sheet F.5
1.25" P, Armored Fiber

County Highway S27

Install Next to Edge
of Shoulder (Typ.)

107' of 1.25" B, Armored Fiber

Drainage District Tile
Refer to DD.1 for Installation Requirements

459' of 1.25" P, Armored Fiber
From End of Bore to Beginning of Bore



MATCH LINE SHEET F.7

MATCH LINE SHEET F.9



347' of 1.25" B, Armored Fiber

62' of 1.25" B, Armored Fiber

County Highway S27

See Sheet F.5
1.25" P, Armored Fiber

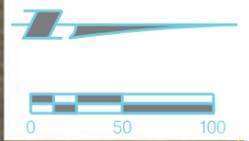
Route Around Utility Pole (Typ.)

1021' of 1.25" P, Armored Fiber

Pull Box 8-1 - Approx. 38' East of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

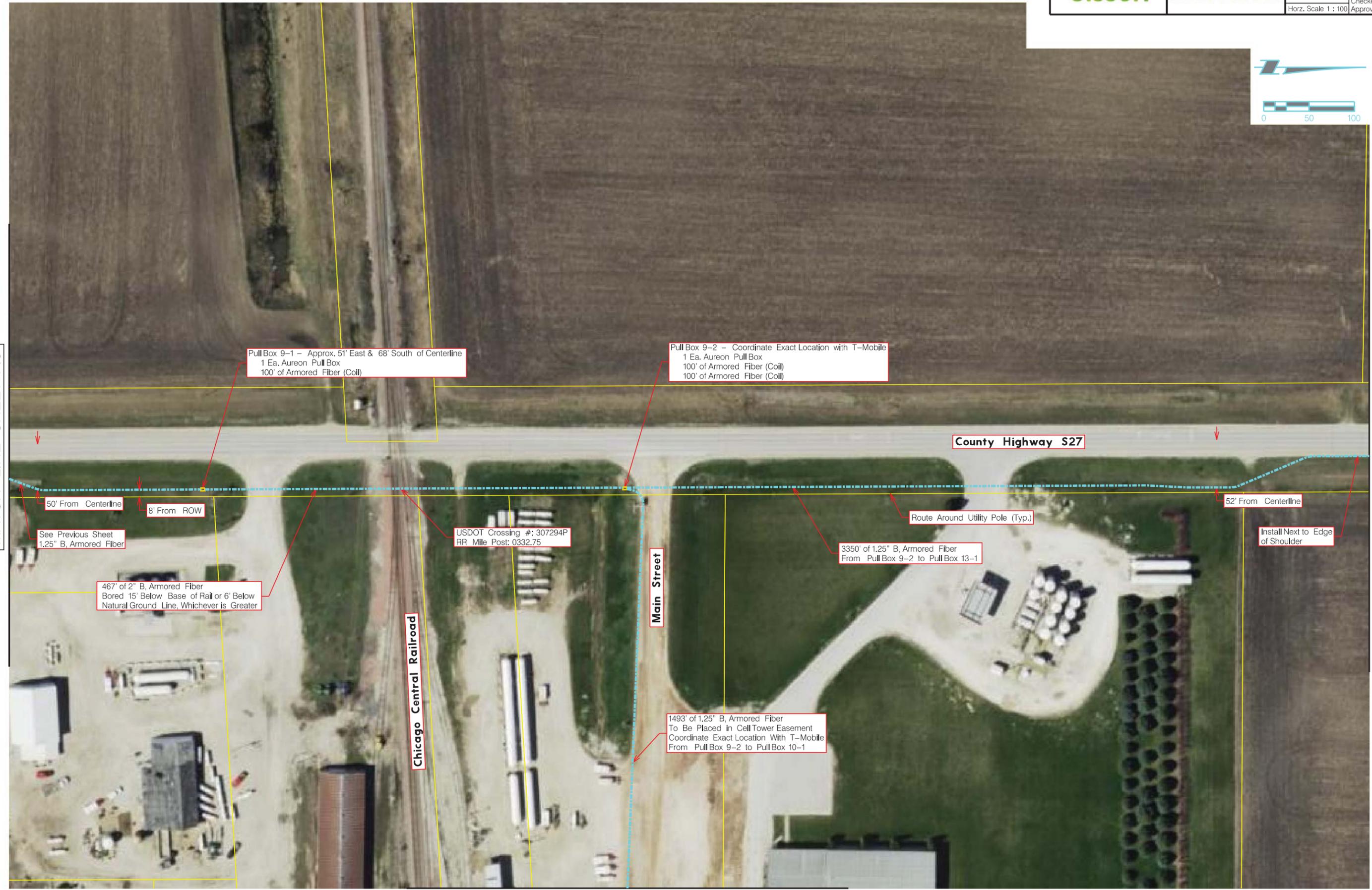
Install Next to Edge
of Shoulder (Typ.)

279' of 1.25" B, Armored Fiber
From Beginning of Bore to Pull Box 9-1



MATCH LINE SHEET F.8

MATCH LINE SHEET F.11



Pull Box 9-1 - Approx. 51' East & 68' South of Centerline
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

Pull Box 9-2 - Coordinate Exact Location with T-Mobile
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)
100' of Armored Fiber (Coil)

County Highway S27

50' From Centerline
8' From ROW

See Previous Sheet
1.25" B. Armored Fiber

467' of 2" B. Armored Fiber
Bored 15' Below Base of Rail or 6' Below
Natural Ground Line, Whichever is Greater

USDOT Crossing #: 307294P
RR Mile Post: 0332.75

Chicago Central Railroad

Main Street

Route Around Utility Pole (Typ.)

3350' of 1.25" B. Armored Fiber
From Pull Box 9-2 to Pull Box 13-1

52' From Centerline

Install Next to Edge
of Shoulder

1493' of 1.25" B. Armored Fiber
To Be Placed in Cell Tower Easement
Coordinate Exact Location With T-Mobile
From Pull Box 9-2 to Pull Box 10-1

MATCH LINE SHEET F.10

FIBER DESIGN



MATCH LINE SHEET F.9



See Previous Sheet
1.25" B. Armored Fiber

Pull Box 10-1 - Coordinate Exact Location with T-Mobile
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

DMO4222A

Chicago Central Railroad



MATCH LINE SHEET F.9

MATCH LINE SHEET F.12



See Sheet F.9
1.25" B, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

County Highway S27



MATCH LINE SHEET F.11

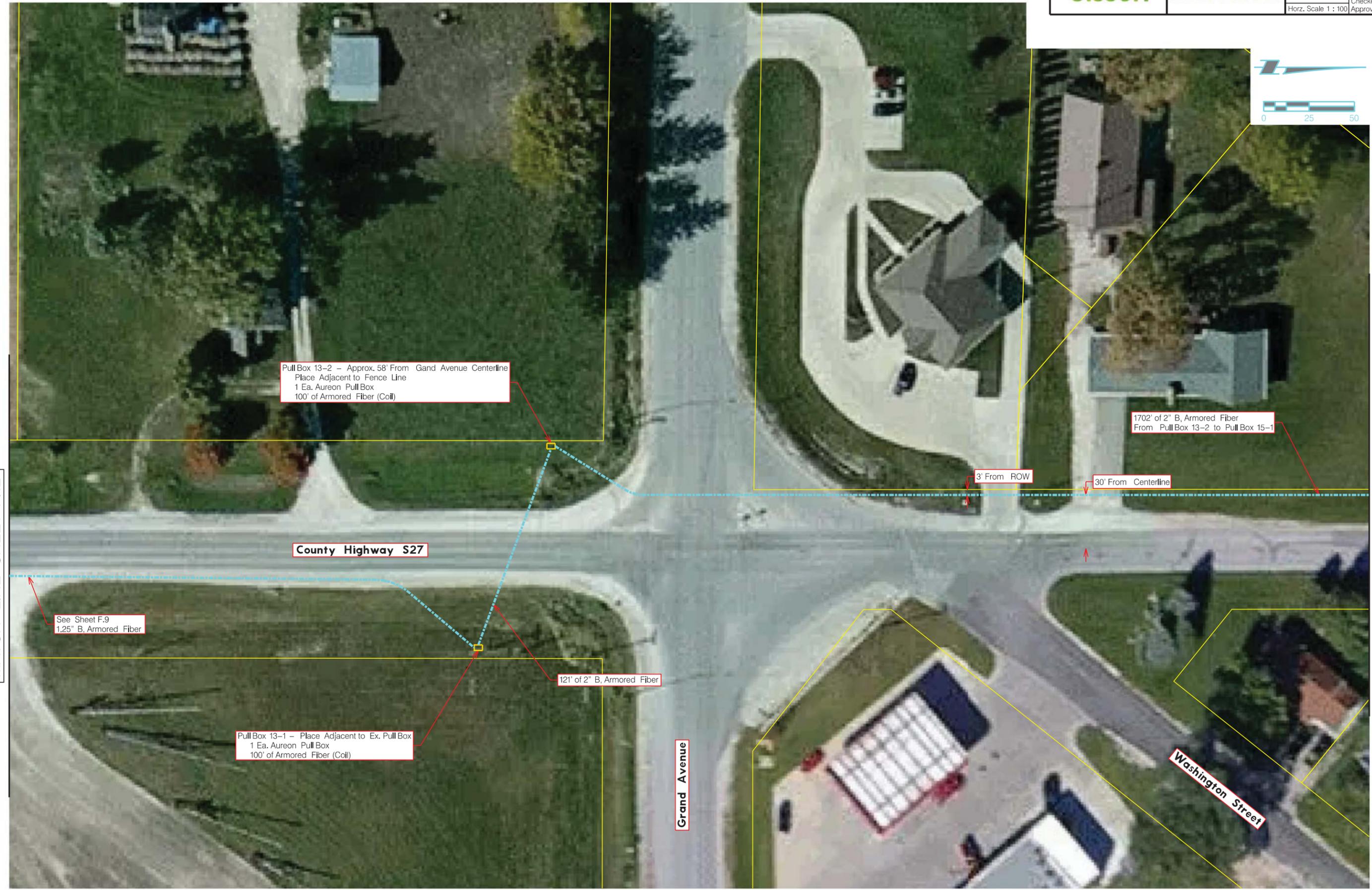
MATCH LINE SHEET F.13



County Highway S27

See Sheet F.9
1.25" B, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)



Pull Box 13-2 - Approx. 58' From Gand Avenue Centerline
Place Adjacent to Fence Line
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

1702' of 2" B, Armored Fiber
From Pull Box 13-2 to Pull Box 15-1

3' From ROW

30' From Centerline

County Highway S27

See Sheet F.9
1.25" B, Armored Fiber

121' of 2" B, Armored Fiber

Pull Box 13-1 - Place Adjacent to Ex. Pull Box
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

Grand Avenue

Washington Street

MATCH LINE SHEET F.12

MATCH LINE SHEET F.14

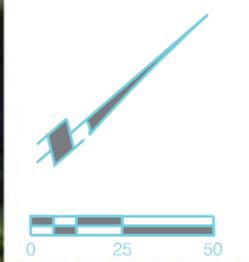


MATCH LINE SHEET F.13



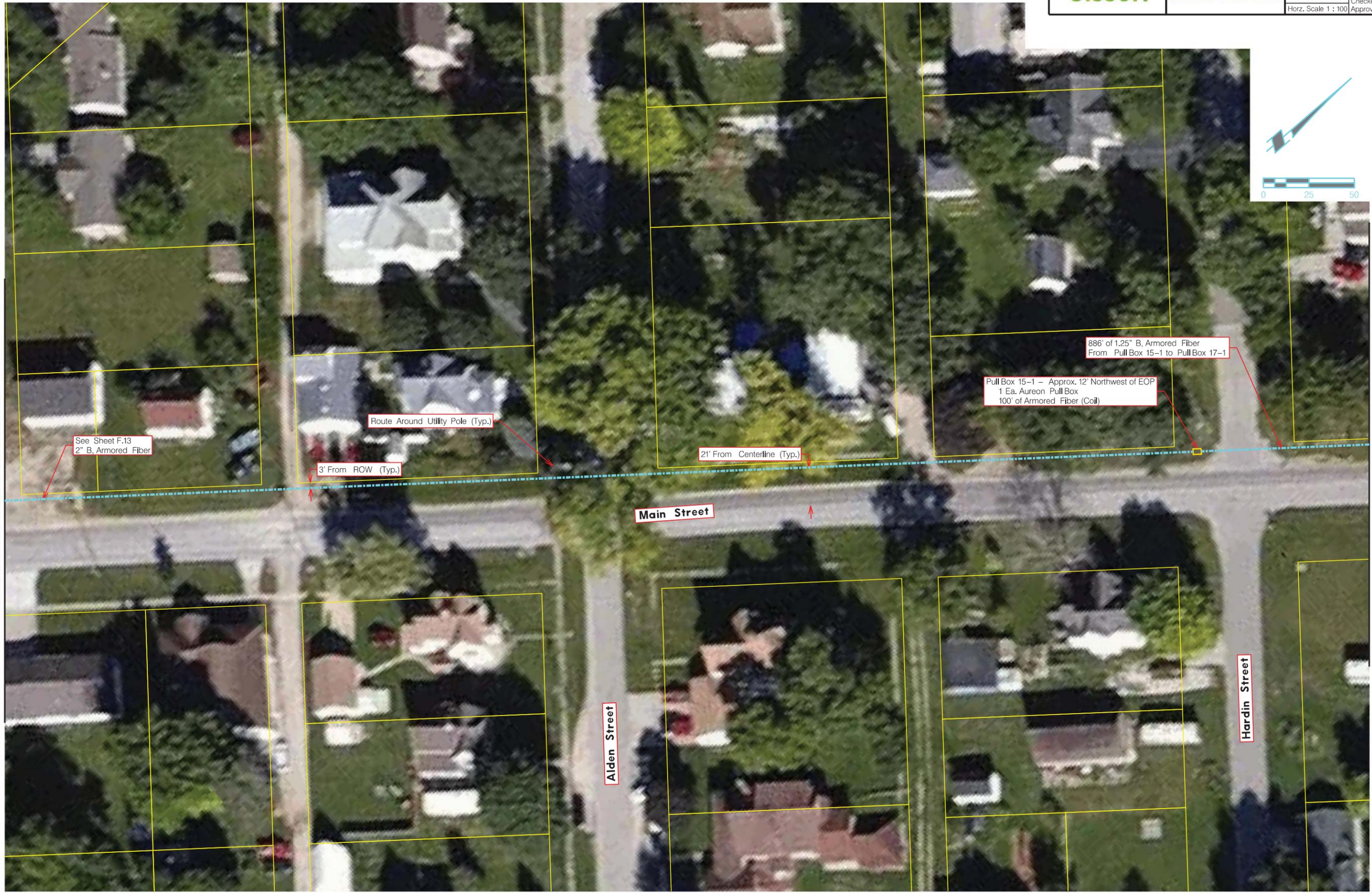
MATCH LINE SHEET F.15

FIBER DESIGN



MATCH LINE SHEET F.14

MATCH LINE SHEET F.16



See Sheet F.13
2" B, Armored Fiber

Route Around Utility Pole (Typ.)

3' From ROW (Typ.)

21' From Centerline (Typ.)

Main Street

Alden Street

Hardin Street

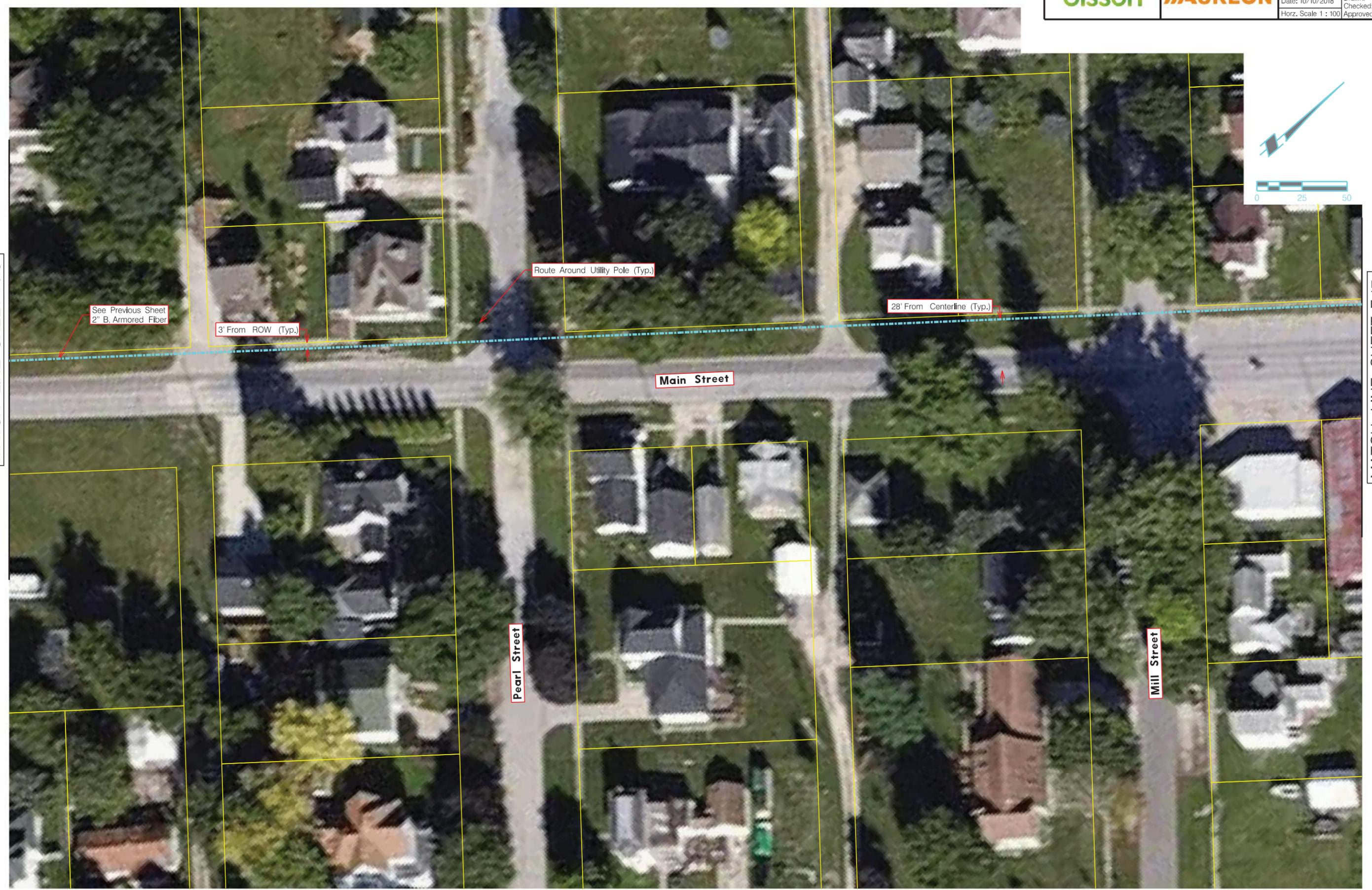
Pull Box 15-1 - Approx. 12' Northwest of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

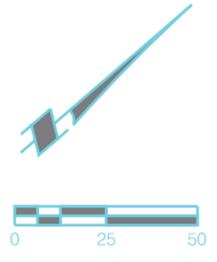
886' of 1.25" B, Armored Fiber
From Pull Box 15-1 to Pull Box 17-1

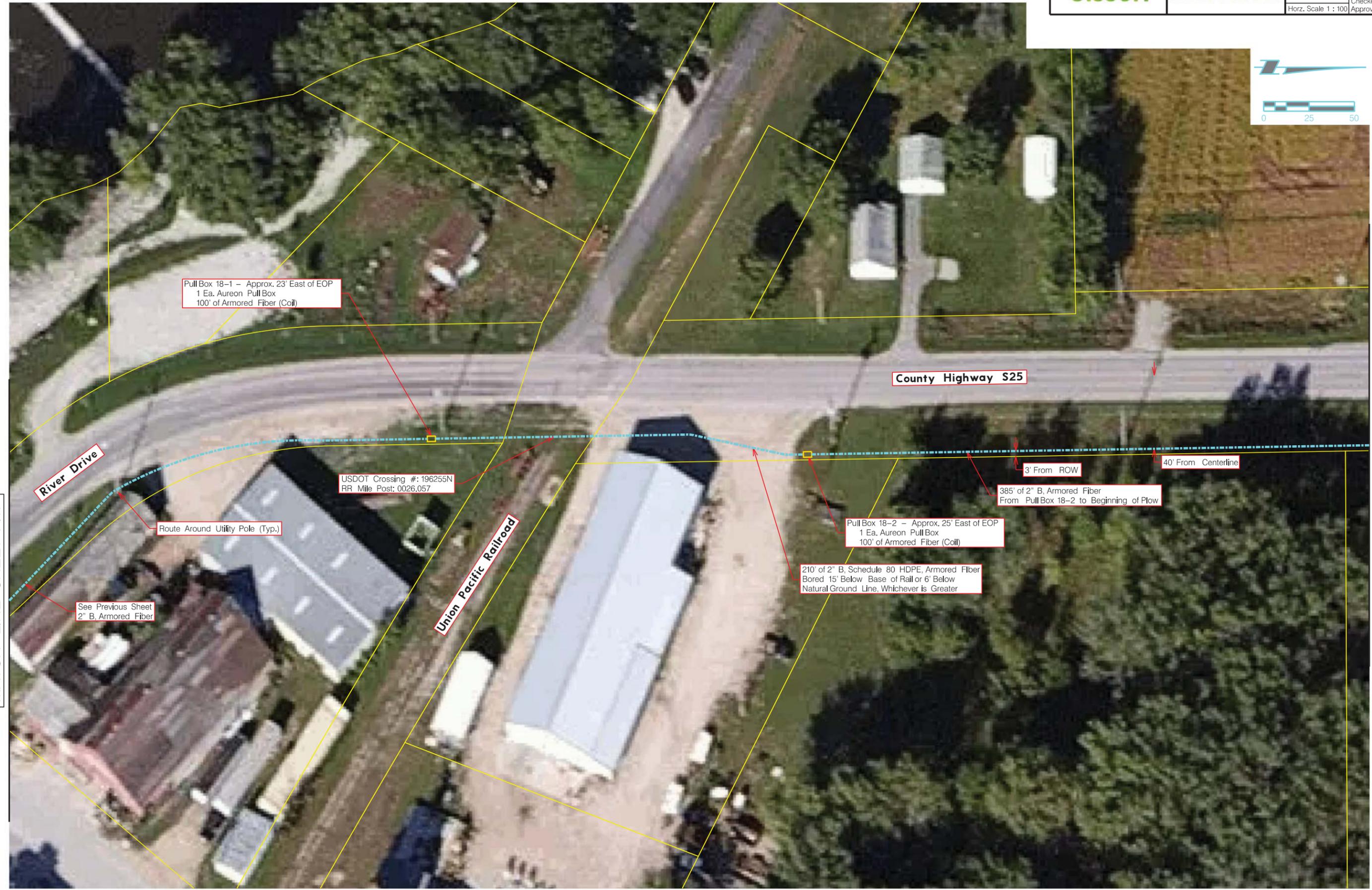
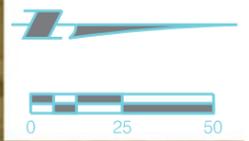


MATCH LINE SHEET F.15

MATCH LINE SHEET F.17







Pull Box 18-1 - Approx. 23' East of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

County Highway S25

River Drive

USDOT Crossing #: 196255N
RR Mile Post: 0026.057

Route Around Utility Pole (Typ.)

3' From ROW

40' From Centerline

385' of 2" B, Armored Fiber
From Pull Box 18-2 to Beginning of Plow

Union Pacific Railroad

Pull Box 18-2 - Approx. 25' East of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

210' of 2" B, Schedule 80 HDPE, Armored Fiber
Bored 15' Below Base of Rail or 6' Below
Natural Ground Line, Whichever is Greater

See Previous Sheet
2" B, Armored Fiber

MATCH LINE SHEET F.17

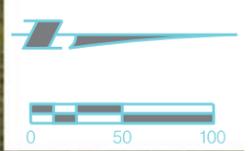
MATCH LINE SHEET F.19



MATCH LINE SHEET F.18

MATCH LINE SHEET F.20





MATCH LINE SHEET F.19

MATCH LINE SHEET F.21



See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

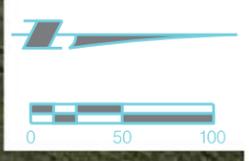
County Highway S25

Pull Box 20-1 – Approx. 35' East of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

30' of 1.25" P, Armored Fiber

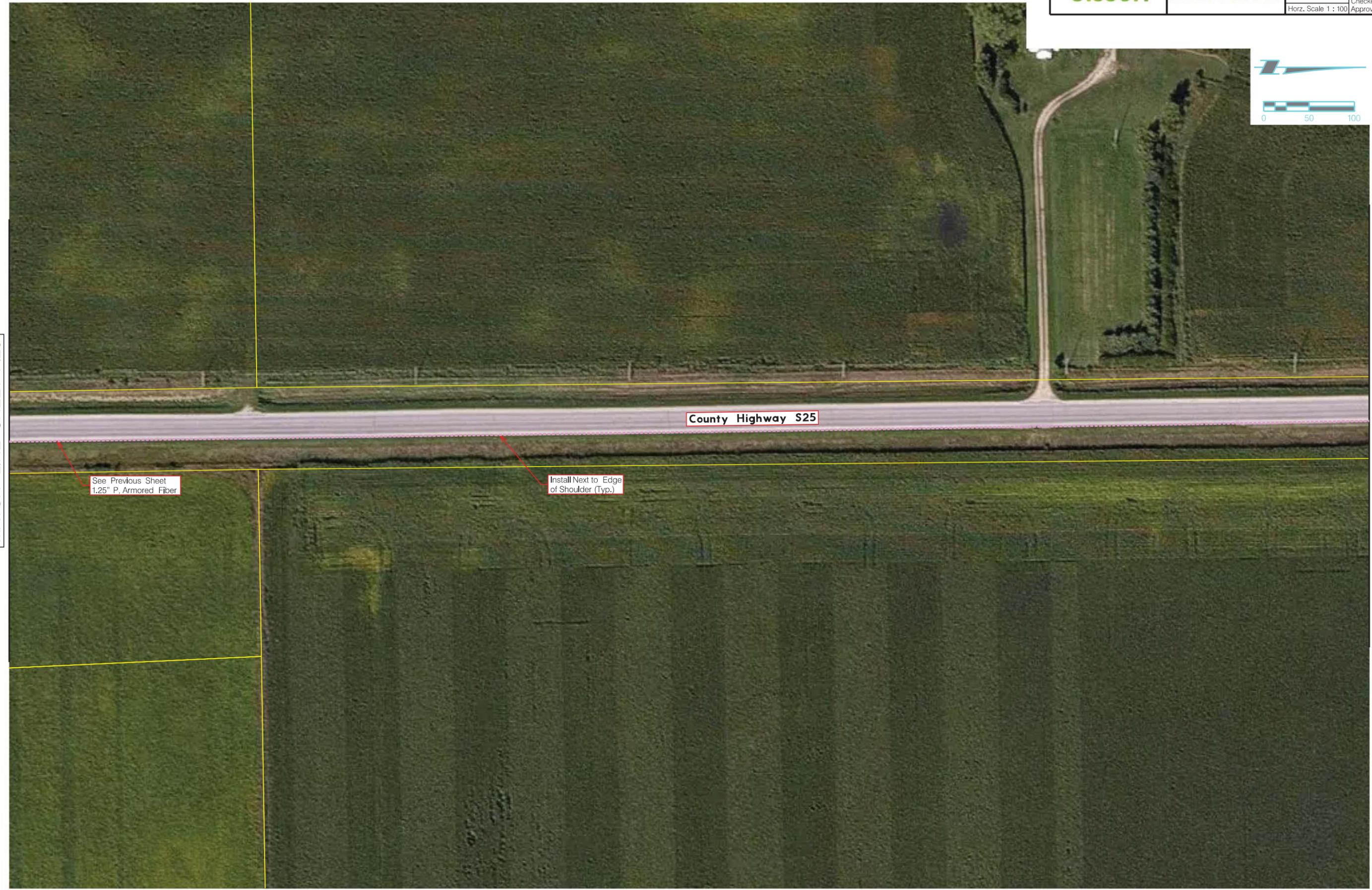
75' of 1.25" B, Armored Fiber

1913' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore



MATCH LINE SHEET F.20

MATCH LINE SHEET F.22



See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

County Highway S25



MATCH LINE SHEET F.21

MATCH LINE SHEET F.23



County Highway S25

See Sheet F.20
1.25" P, Armored Fiber

356' of 1.25" B, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

2129' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore



MATCH LINE SHEET F.22

MATCH LINE SHEET F.24



See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

Drainage District Tile
Refer to DD.1 for Installation Requirements

23' of 1.25" P, Armored Fiber

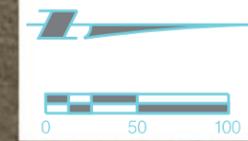
Pull Box 23-1 – Approx. 29' East of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

472' of 1.25" B, Armored Fiber

1716' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

County Highway S25

110th Street



MATCH LINE SHEET F.23

MATCH LINE SHEET F.25



See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

63' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of Plow



MATCH LINE SHEET F.24

MATCH LINE SHEET F.26



See Previous Sheet
1.25" B, Armored Fiber

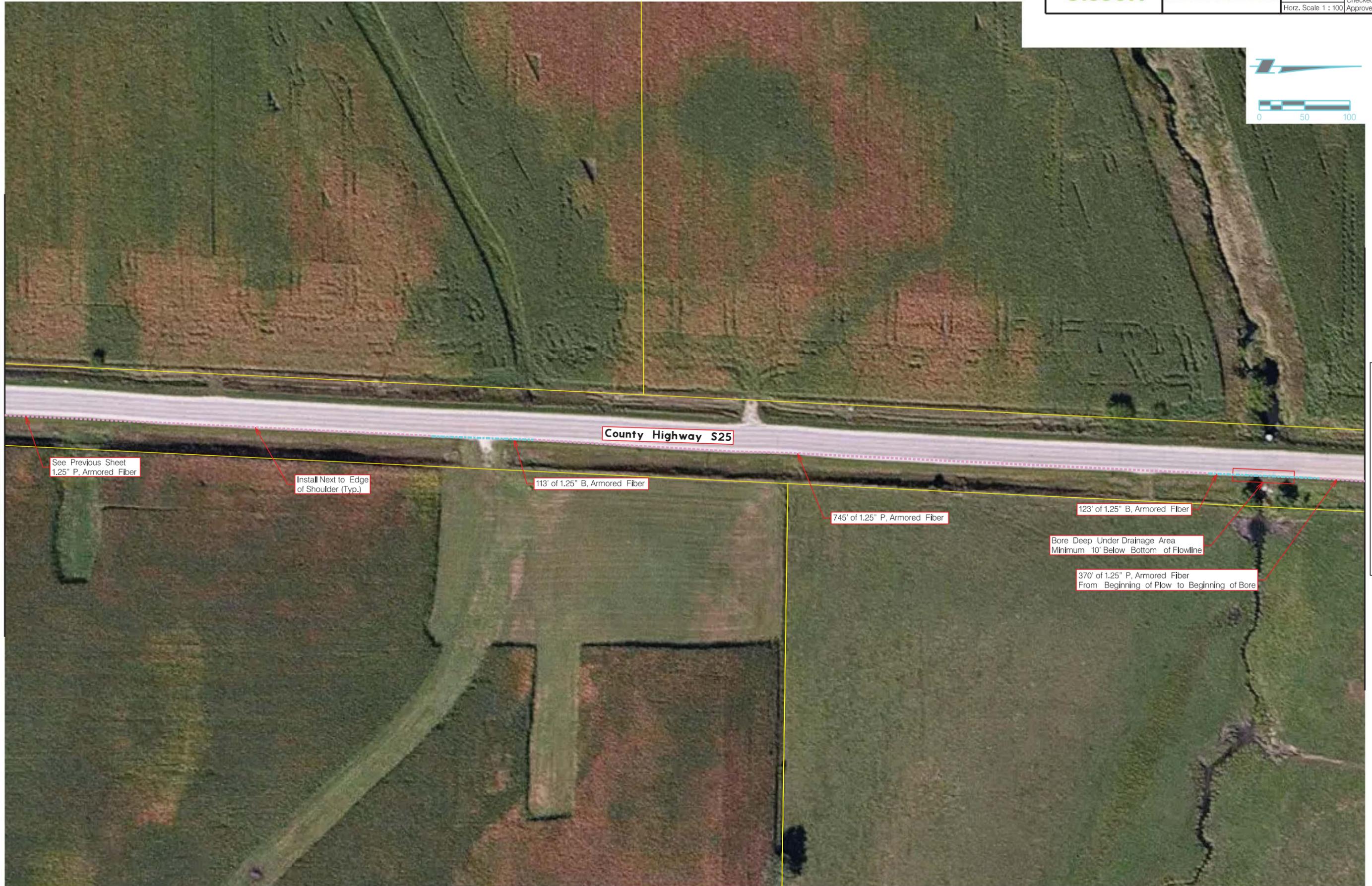
Install Next to Edge
of Shoulder (Typ.)

1942' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore



MATCH LINE SHEET F.25

MATCH LINE SHEET F.27



See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

113' of 1.25" B, Armored Fiber

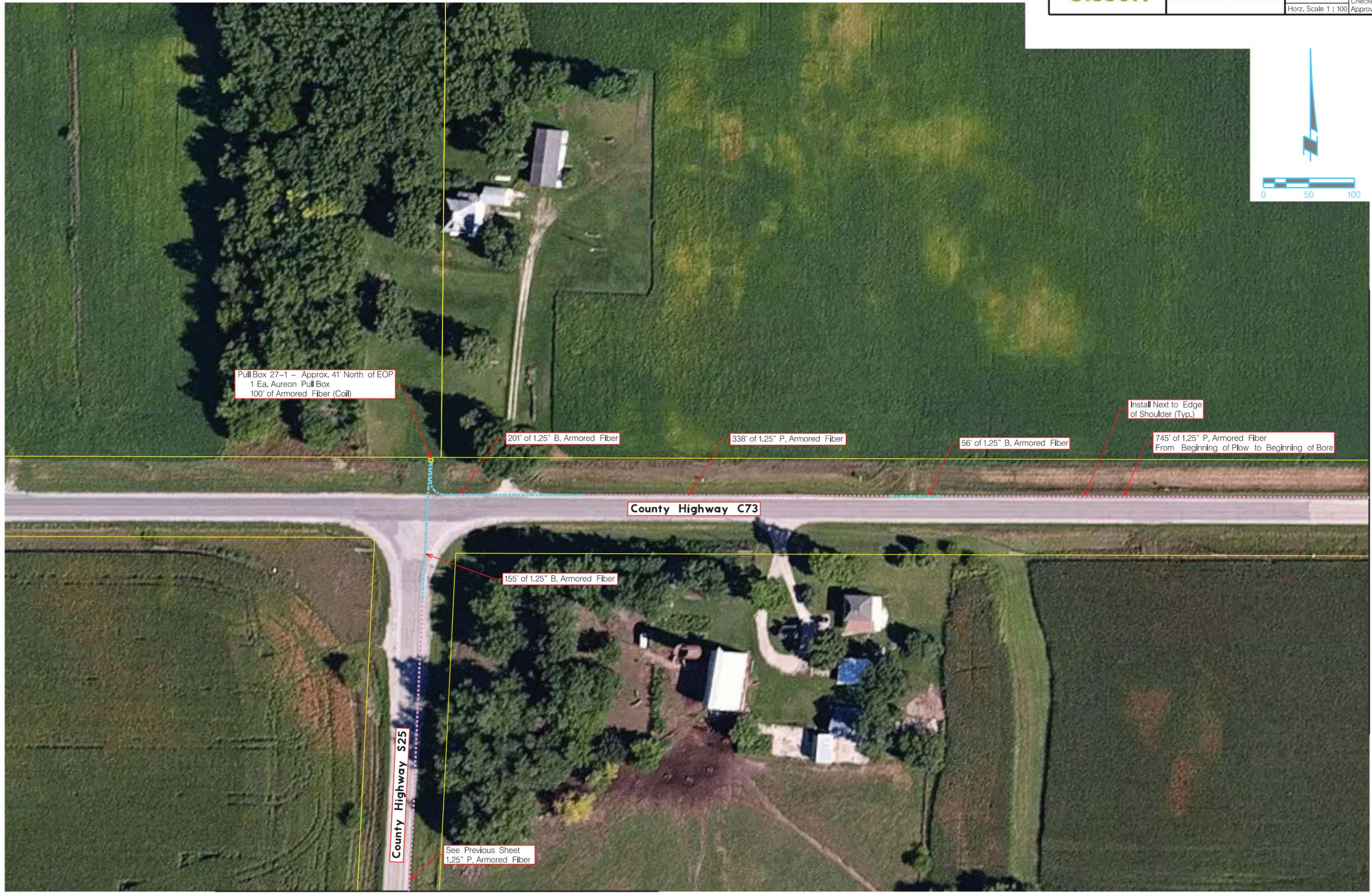
745' of 1.25" P, Armored Fiber

123' of 1.25" B, Armored Fiber

Bore Deep Under Drainage Area
Minimum 10' Below Bottom of Flowline

370' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

County Highway S25



Pull Box 27-1 – Approx. 41' North of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

201' of 1.25" B, Armored Fiber

338' of 1.25" P, Armored Fiber

56' of 1.25" B, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

745' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

County Highway C73

155' of 1.25" B, Armored Fiber

County Highway S25

See Previous Sheet
1.25" P, Armored Fiber

MATCH LINE SHEET F.28

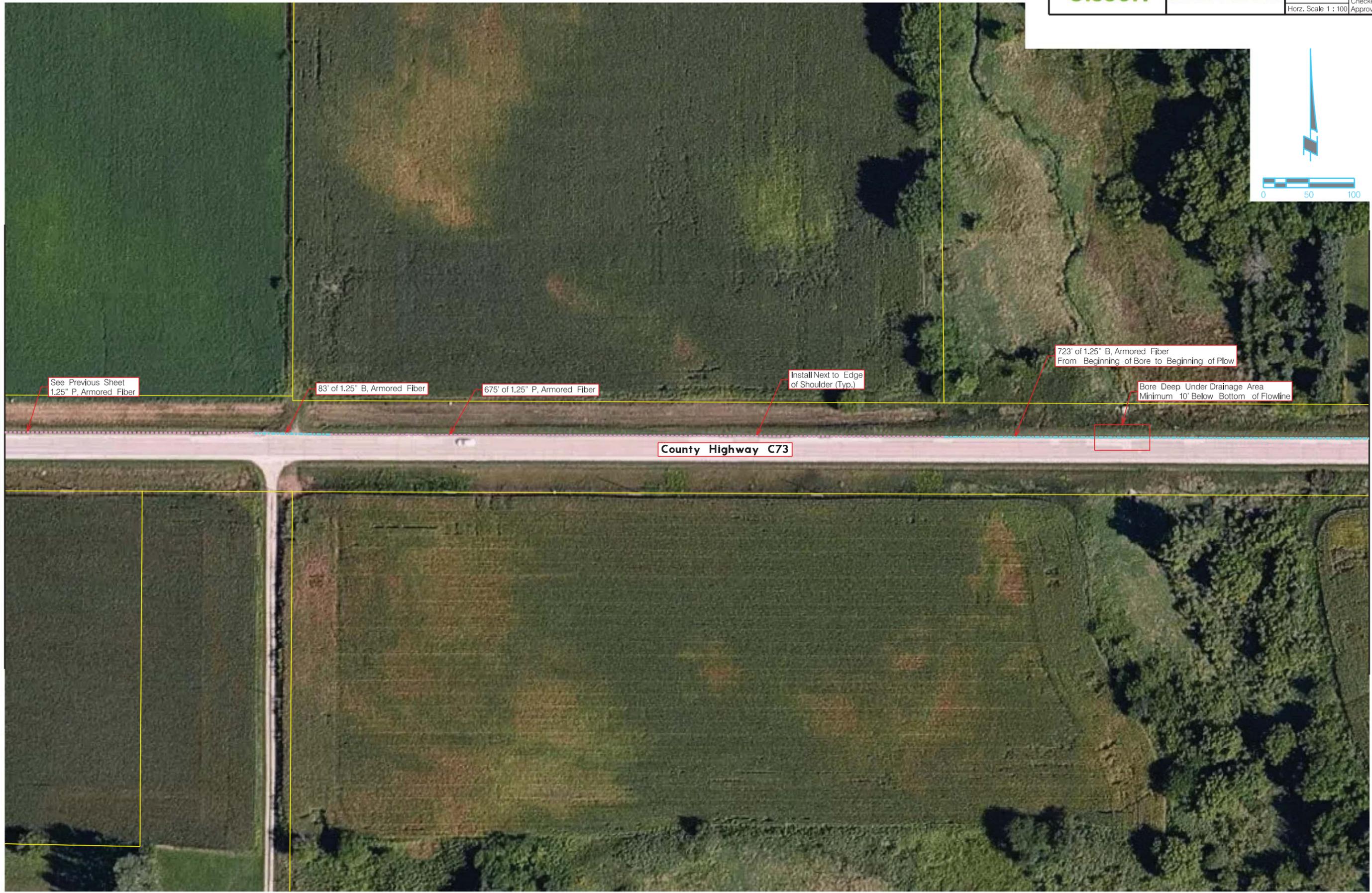
MATCH LINE SHEET F.26

FIBER DESIGN



MATCH LINE SHEET F.27

MATCH LINE SHEET F.29



See Previous Sheet
1.25" P, Armored Fiber

83' of 1.25" B, Armored Fiber

675' of 1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

723' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of Plow

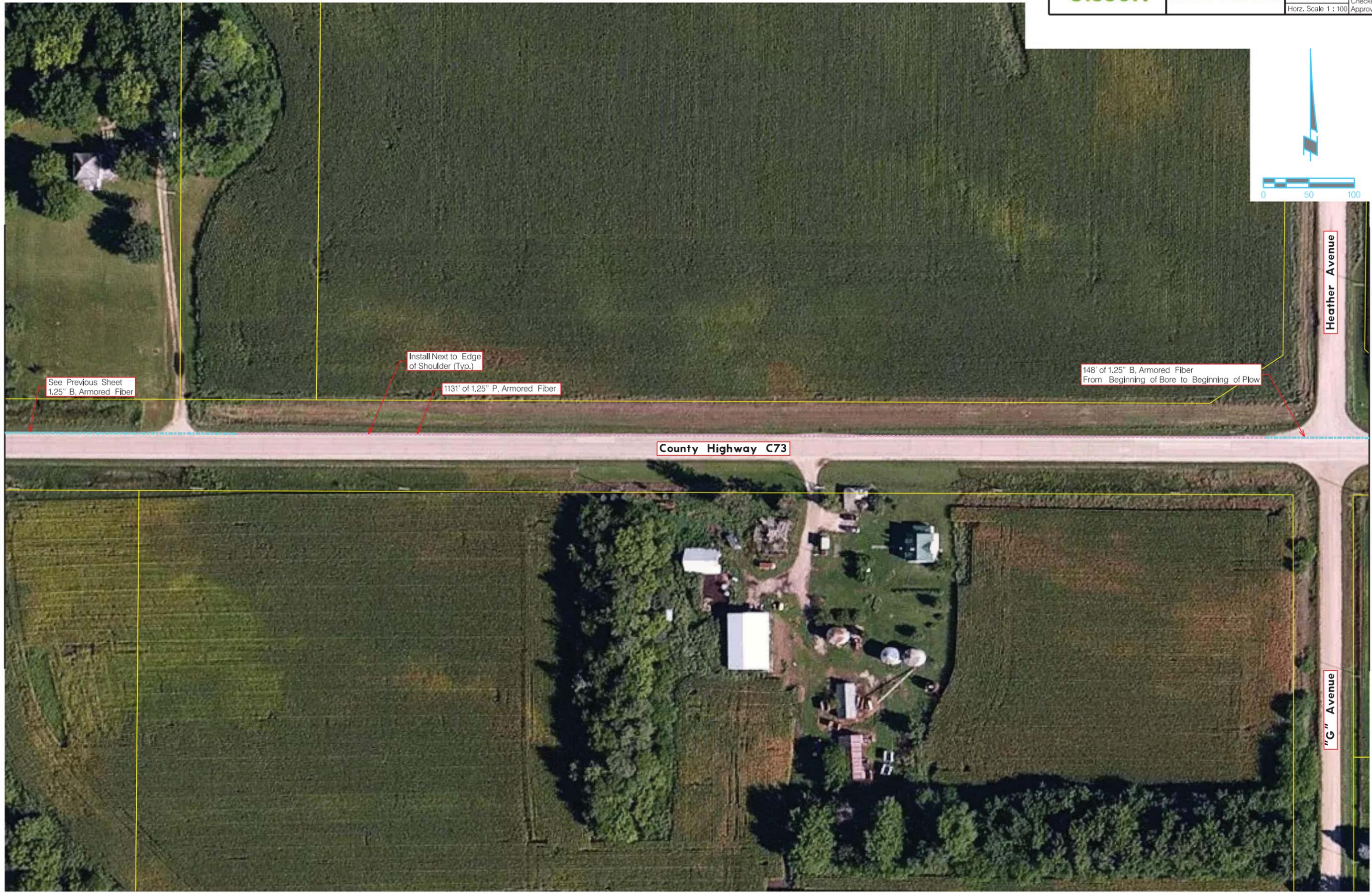
Bore Deep Under Drainage Area
Minimum 10' Below Bottom of Flowline

County Highway C73



MATCH LINE SHEET F.28

MATCH LINE SHEET F.30



See Previous Sheet
1.25" B, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

1131' of 1.25" P, Armored Fiber

148' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of Plow

County Highway C73

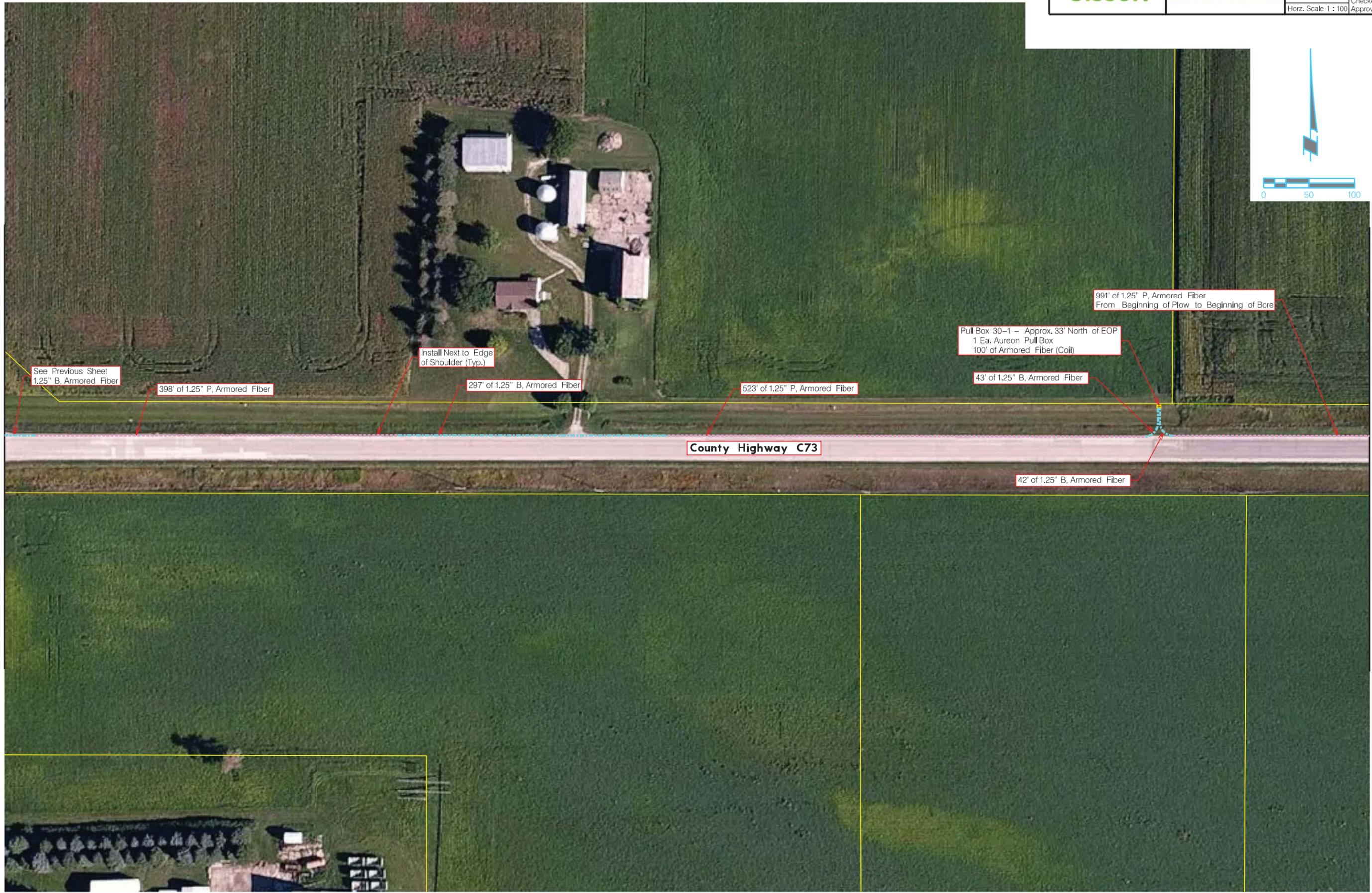
Heather Avenue

"G" Avenue



MATCH LINE SHEET F.29

MATCH LINE SHEET F.31



See Previous Sheet
1.25" B, Armored Fiber

398' of 1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

297' of 1.25" B, Armored Fiber

523' of 1.25" P, Armored Fiber

County Highway C73

Pull Box 30-1 - Approx. 33' North of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

43' of 1.25" B, Armored Fiber

991' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

42' of 1.25" B, Armored Fiber



MATCH LINE SHEET F.30

MATCH LINE SHEET F.32



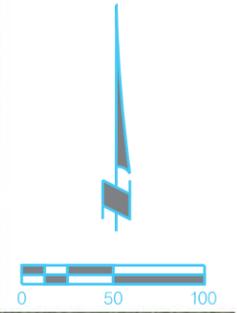
See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

112' of 1.25" B, Armored Fiber

1092' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

County Highway C73



MATCH LINE SHEET F.31

MATCH LINE SHEET F.33





MATCH LINE SHEET F.32

MATCH LINE SHEET F.34



See Previous Sheet
1.25" B. Armored Fiber

Drainage District Tile
Refer to DD.1 for Installation Requirements

Install Next to Edge
of Shoulder (Typ.)

2335' of 1.25" P. Armored Fiber
From Beginning of Plow to Beginning of Bore

County Highway C73

"H" Avenue



MATCH LINE SHEET F.33

MATCH LINE SHEET F.35

See Previous Sheet
1.25" P. Armored Fiber

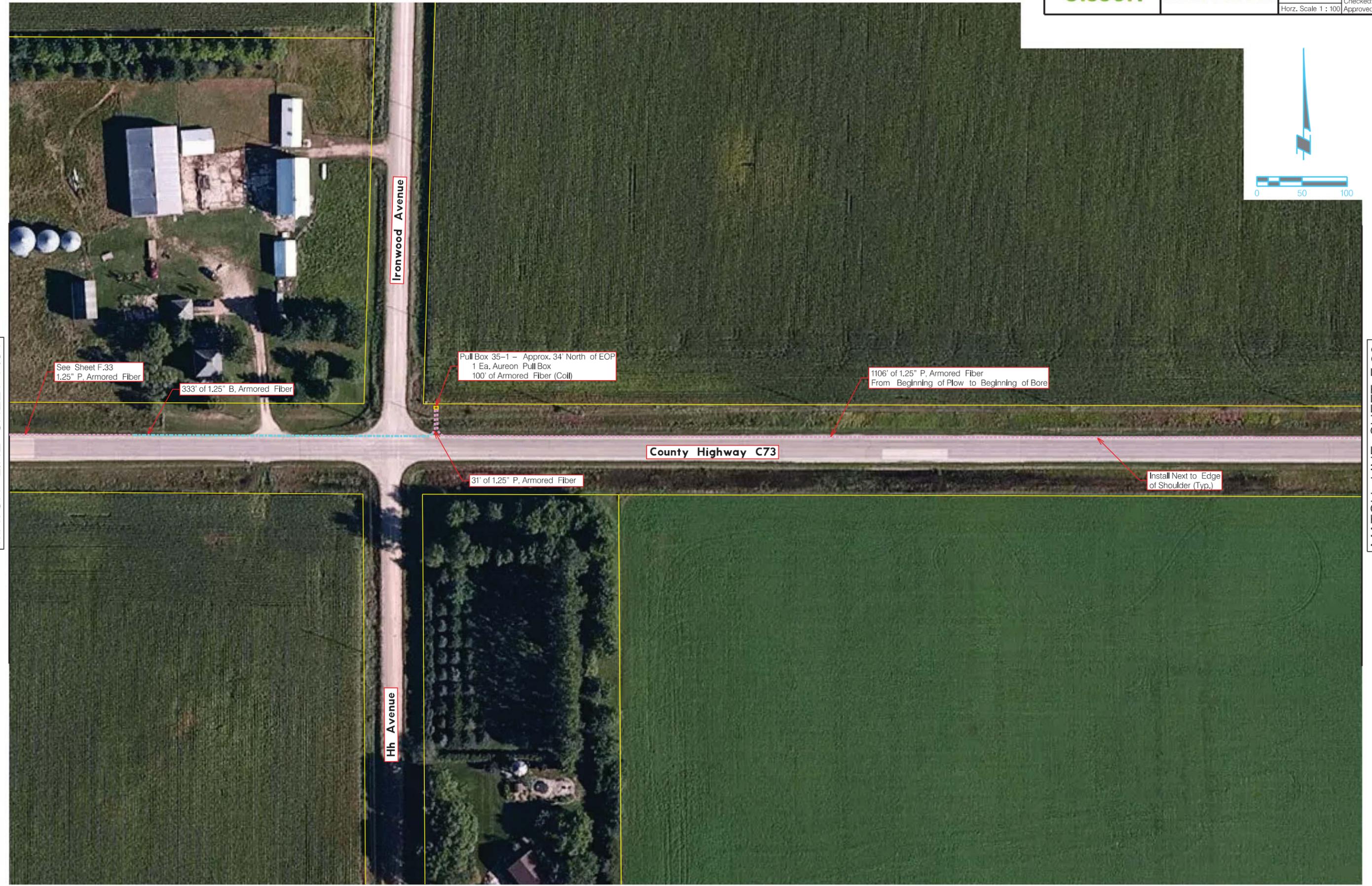
Install Next to Edge
of Shoulder (Typ.)

County Highway C73



MATCH LINE SHEET F.34

MATCH LINE SHEET F.36



See Sheet F.33
1.25" P, Armored Fiber

333' of 1.25" B, Armored Fiber

Pull Box 35-1 - Approx. 34' North of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

1106' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

31' of 1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

Ironwood Avenue

Hh Avenue

County Highway C73



MATCH LINE SHEET F.35

MATCH LINE SHEET F.37



See Previous Sheet
1.25" P, Armored Fiber

95' of 1.25" B, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

832' of 1.25" B, Armored Fiber

716' of 1.25" B, Armored Fiber
From End of Plow to Beginning of Plow

County Highway C73

Drainage District Tile
Refer to DD.1 for Installation Requirements

Drainage District Tile
Refer to DD.1 for Installation Requirements



MATCH LINE SHEET F.36

MATCH LINE SHEET F.38



Drainage District Tile
Refer to DD.1 for Installation Requirements

See Previous Sheet
1.25" B, Armored Fiber

1066' of 1.25" P, Armored Fiber

234' of 1.25" B, Armored Fiber

1181' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

County Highway C73

Drainage District Tile
Refer to DD.1 for Installation Requirements



MATCH LINE SHEET F.37

MATCH LINE SHEET F.39



See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

264' of 1.25" B, Armored Fiber

289' of 1.25" P, Armored Fiber

30' of 1.25" P, Armored Fiber

121' of 1.25" B, Armored Fiber

Pull Box 38-1 - Approx. 37' North of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

County Highway C73

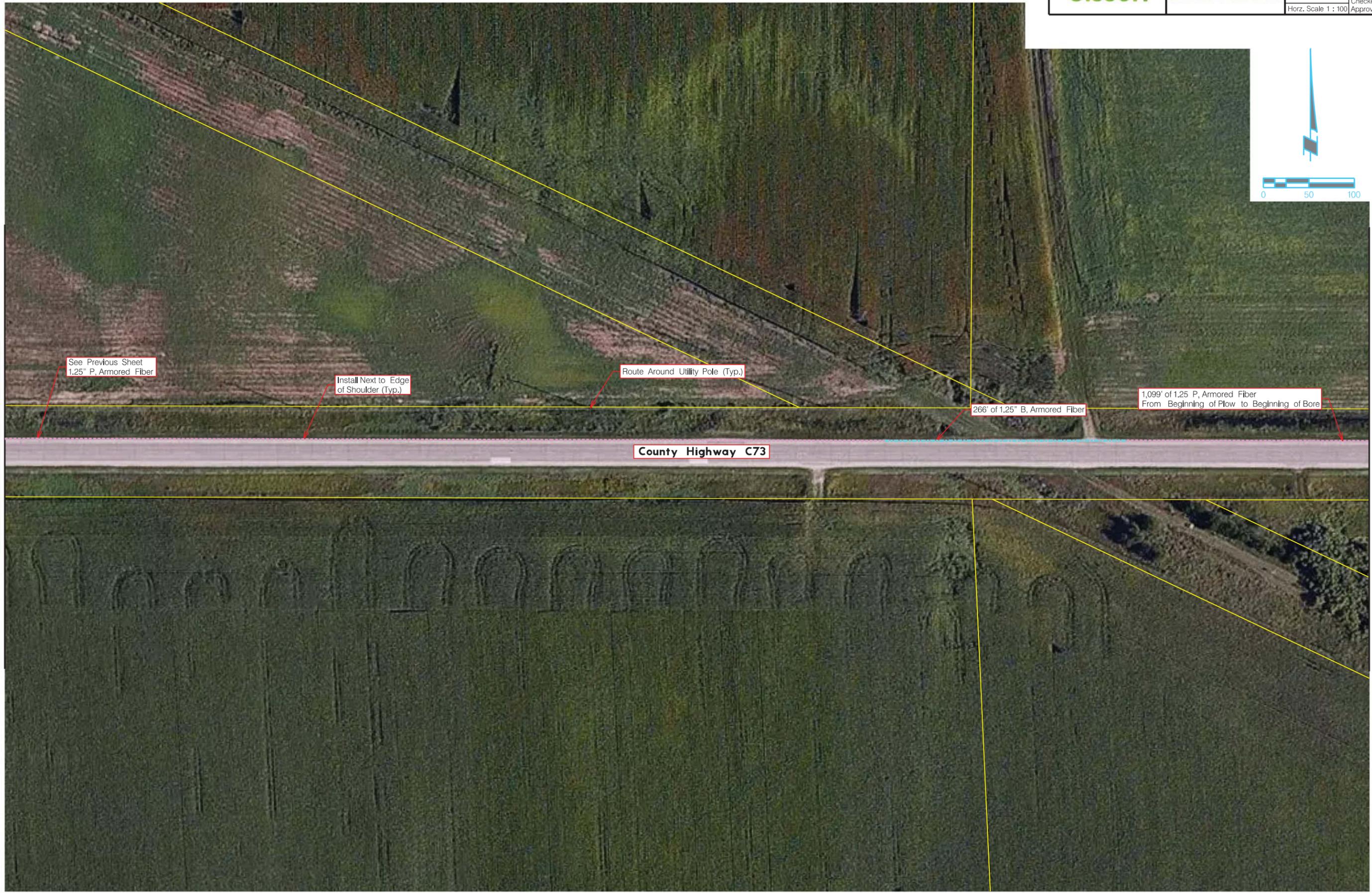
1215' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

Drainage District Tile
Refer to DD.1 for Installation Requirements



MATCH LINE SHEET F.38

MATCH LINE SHEET F.40



See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

Route Around Utility Pole (Typ.)

266' of 1.25" B, Armored Fiber

1,099' of 1.25 P, Armored Fiber
From Beginning of Plow to Beginning of Bore

County Highway C73



MATCH LINE SHEET F.39

MATCH LINE SHEET F.41



See Previous Sheet
1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

County Highway C73

110' of 1.25" B, Armored Fiber

524' of 1.25" P, Armored Fiber

96' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of Plow



MATCH LINE SHEET F.40

MATCH LINE SHEET F.42



See Previous Sheet
1.25" B, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

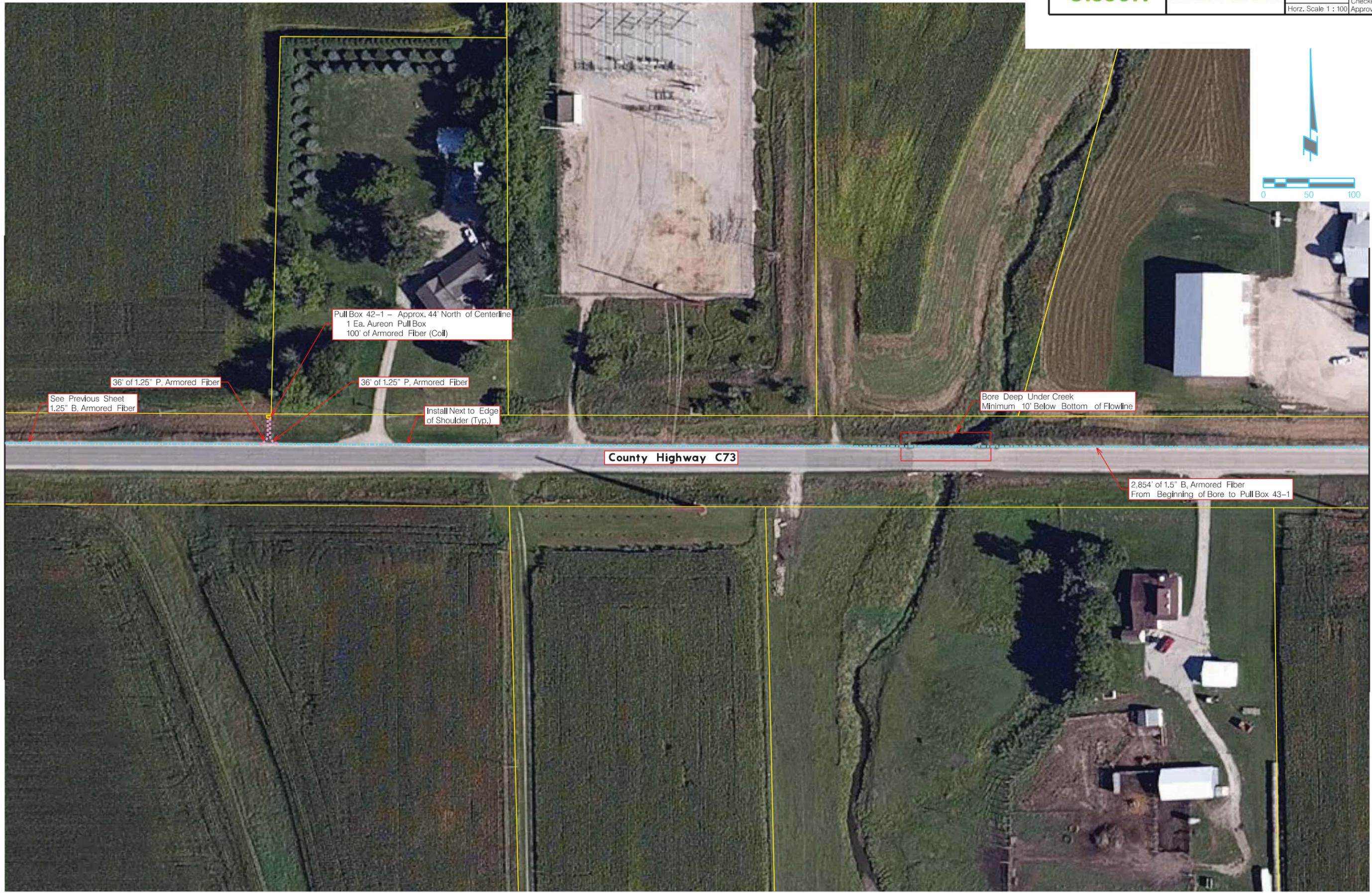
1,191' of 1.25" P, Armored Fiber

526' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of Plow

County Highway C73



MATCH LINE SHEET F.41



MATCH LINE SHEET F.43

See Previous Sheet
1.25" B, Armored Fiber

36' of 1.25" P, Armored Fiber

Pull Box 42-1 - Approx. 44' North of Centerline
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

36' of 1.25" P, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

County Highway C73

Bore Deep Under Creek
Minimum 10' Below Bottom of Flowline

2,854' of 1.5" B, Armored Fiber
From Beginning of Bore to Pull Box 43-1



MATCH LINE SHEET F.42

MATCH LINE SHEET F.44

See Sheet F.41
1.25" B, Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

County Highway C73



MATCH LINE SHEET F.43

MATCH LINE SHEET F.45



Street Name

Pull Box 44-1 - Approx. 47' North of Centerline
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

841' of 1.25" P, Armored Fiber

Install Next to Edge of Shoulder (Typ.)

469' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of Plow

County Highway C73

See Sheet F.41
1.25" B, Armored Fiber

164' of 1.25" B, Armored Fiber



MATCH LINE SHEET F.44

MATCH LINE SHEET F.46



See Previous Sheet
1.25" B, Armored Fiber

611' of 1.25" P, Armored Fiber

718' of 1.25" B, Armored Fiber

775' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

County Highway C73

Install Next to Edge
of Shoulder (Typ.)

County Highway S41



MATCH LINE SHEET F.45

MATCH LINE SHEET F.47



See Previous Sheet
1.25" P. Armored Fiber

Install Next to Edge
of Shoulder (Typ.)

County Highway C73

Bore Deep Under Drainage Area
Minimum 10' Below Bottom of Flowline

3' From ROW

1,827' of 1.25" B. Armored Fiber
From Beginning of Bore to Pull Box 47-1

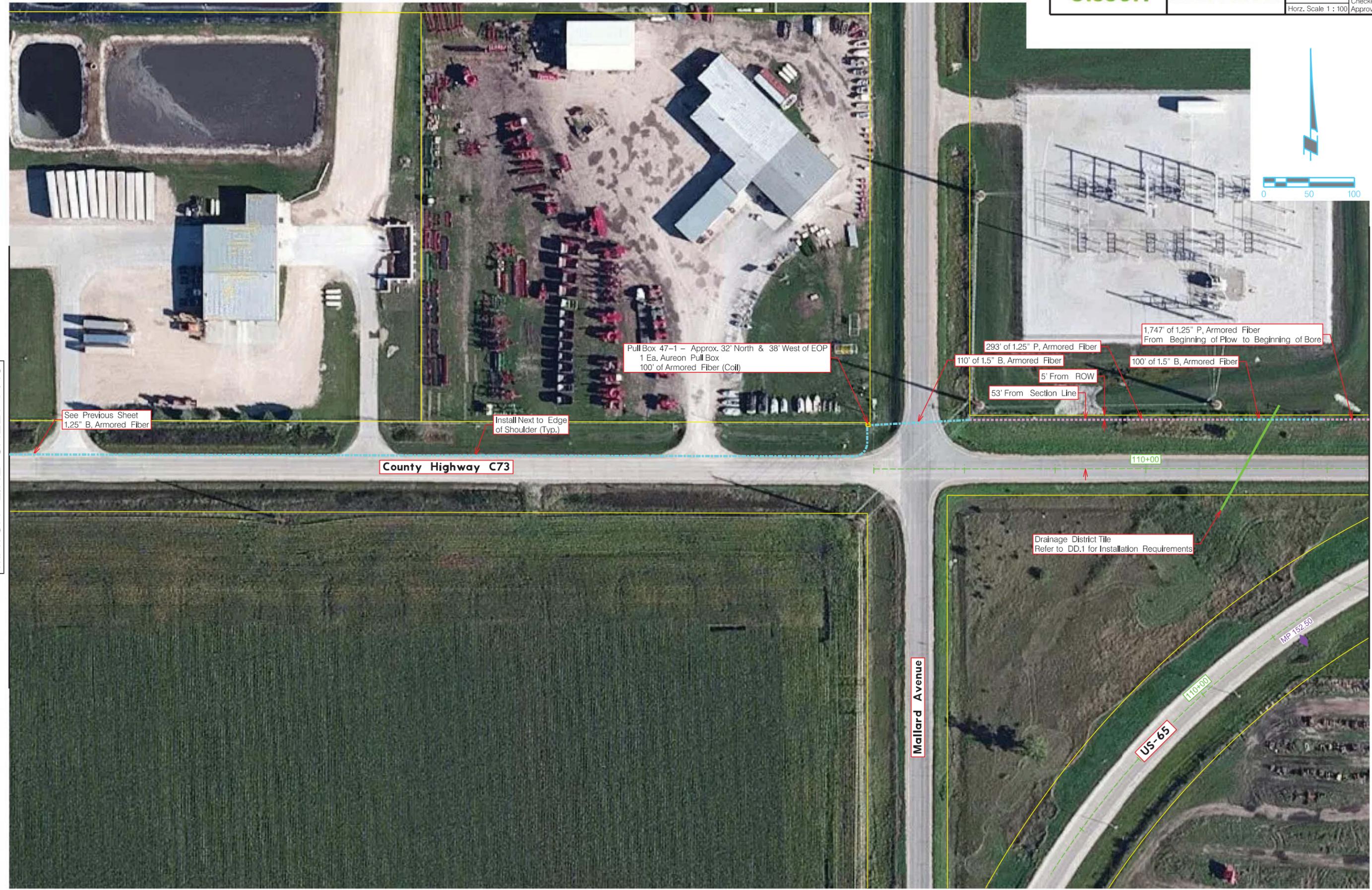
47' From Centerline

Drainage District Tile
Refer to DD.1 for Installation Requirements



MATCH LINE SHEET F.46

MATCH LINE SHEET F.48



See Previous Sheet
1.25" B, Armored Fiber

Pull Box 47-1 - Approx. 32' North & 38' West of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

Install Next to Edge
of Shoulder (Typ.)

County Highway C73

Mallard Avenue

US-65

Drainage District Tile
Refer to DD.1 for Installation Requirements

293' of 1.25" P, Armored Fiber
110' of 1.5" B, Armored Fiber
5' From ROW
53' From Section Line

1,747' of 1.25" P, Armored Fiber
From Beginning of Plow to Beginning of Bore

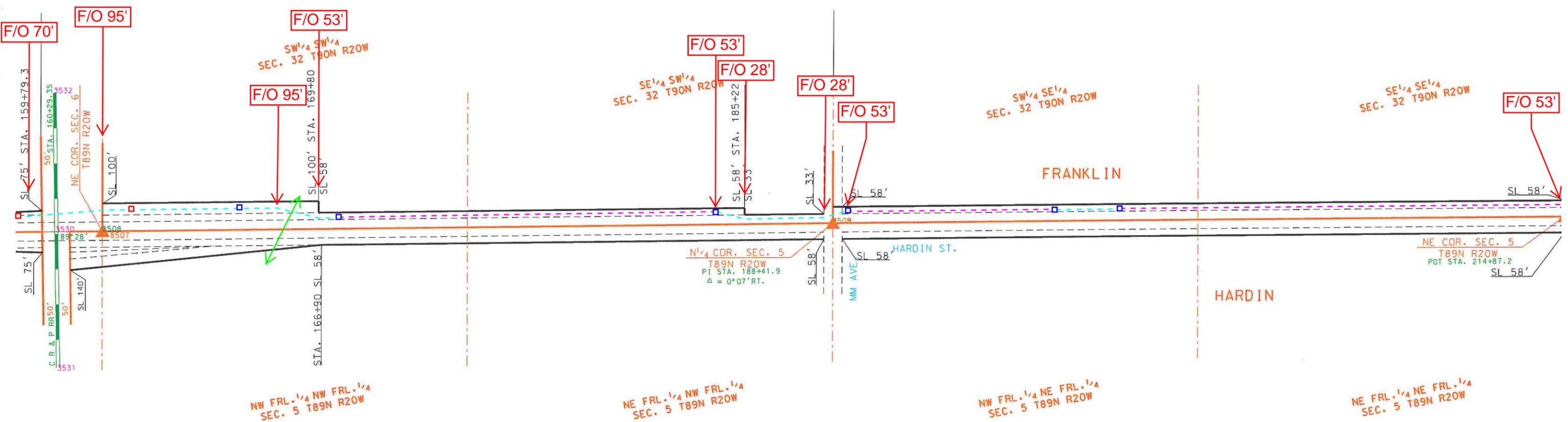
100' of 1.5" B, Armored Fiber

110+00

110+00

MP 152.50

US 65



- Legend of Symbols (DOT Specific Sheets)**
- ▣ Bore Pit
 - Proposed Handhole
 - - - Conduit - Bore
 - - - Conduit - Plow
 - ↔ Drainage District Tile

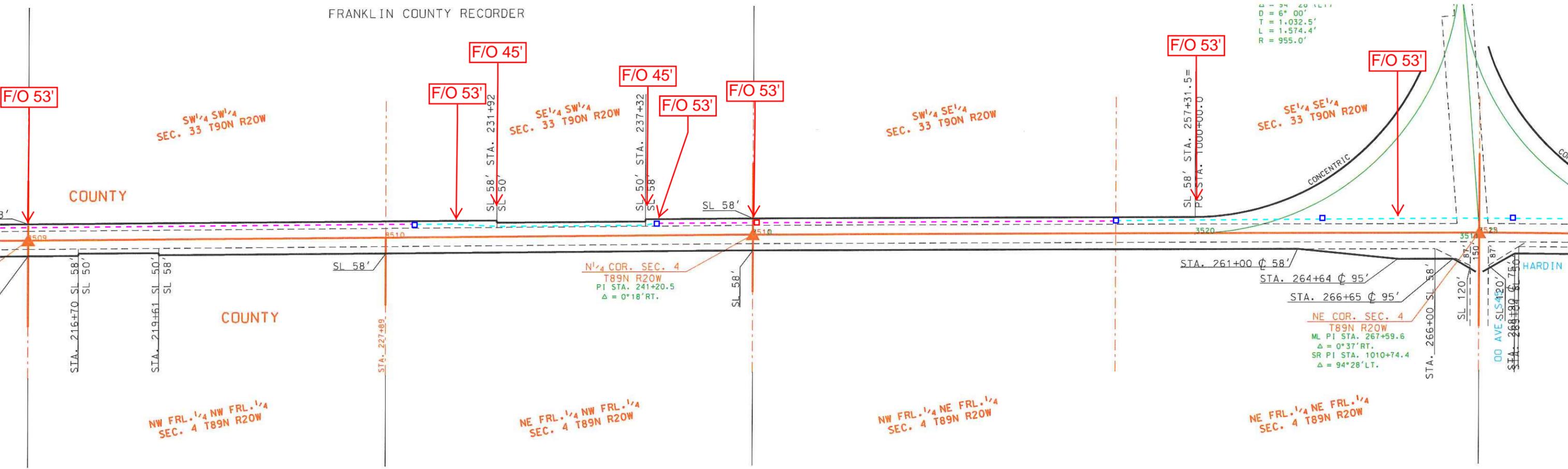
Drainage District(DD) Project Notes:

1. DD tiles are shown as a green arrow.
2. The drainage tiles shown on these plans are only shown as an approx. location and should be field located with the help of the Hardin County DD representative.
3. Any pothole left unattended is to be covered up until it is backfilled.
4. Refer to Hardin County DD office for any related questions.



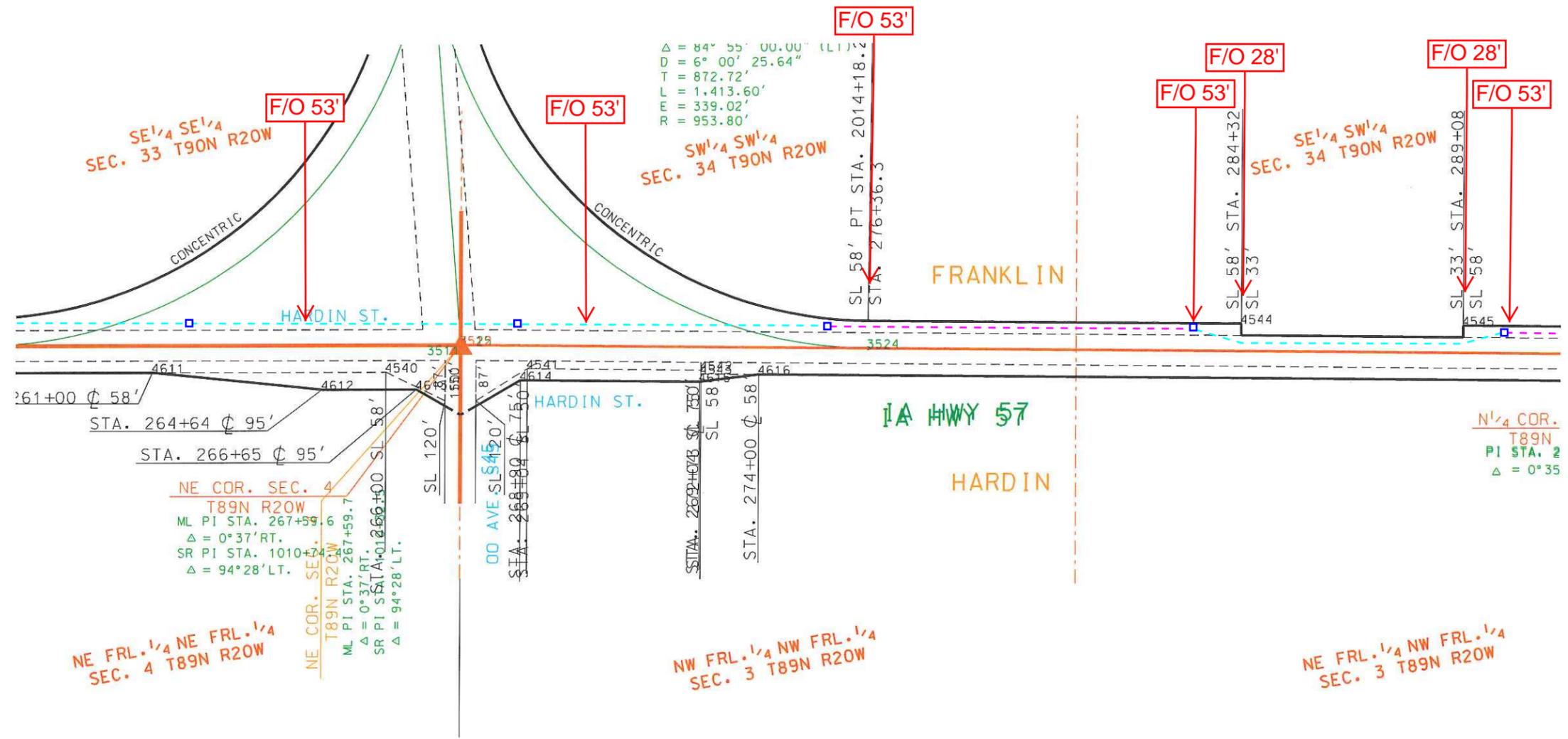
FRANKLIN COUNTY RECORDER

D = 34.20' LT.
 T = 6° 00'
 L = 1.032.5'
 R = 1.574.4'
 R = 955.0'



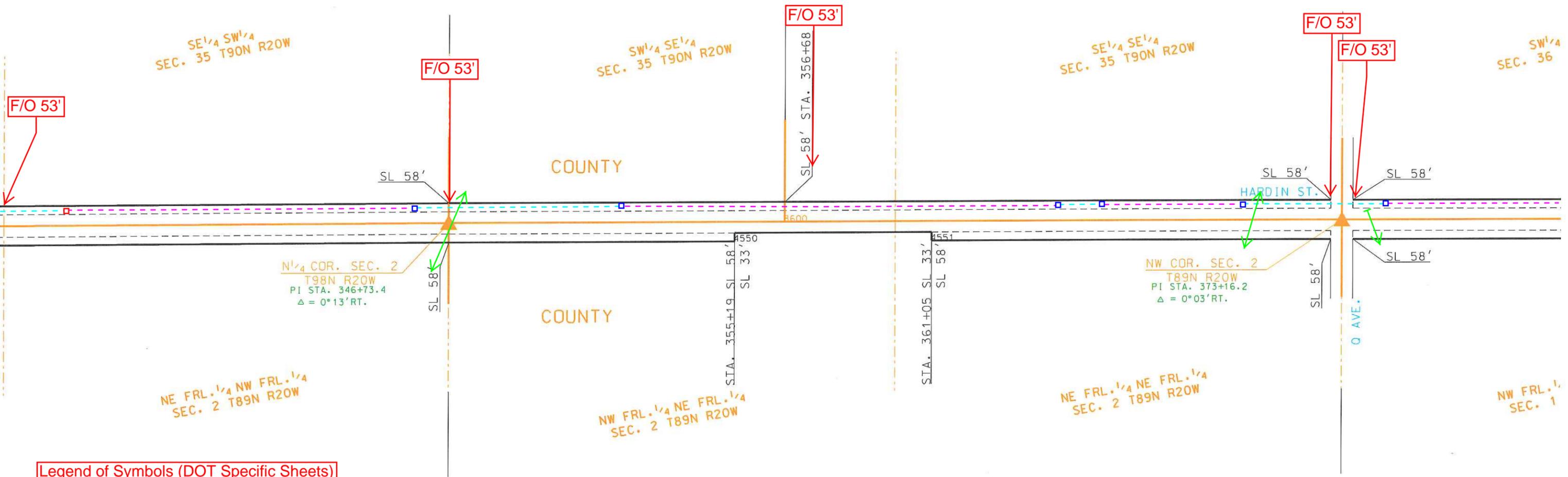
- Legend of Symbols (DOT Specific Sheets)
- Bore Pit
 - Proposed Handhole
 - - - Conduit - Bore
 - - - Conduit - Plow
 - ↔ Drainage District Tile

IA 57



- Legend of Symbols (DOT Specific Sheets)**
- Bore Pit
 - Proposed Handhole
 - - - Conduit - Bore
 - - - Conduit - Plow
 - ↔ Drainage District Tile

IA 57

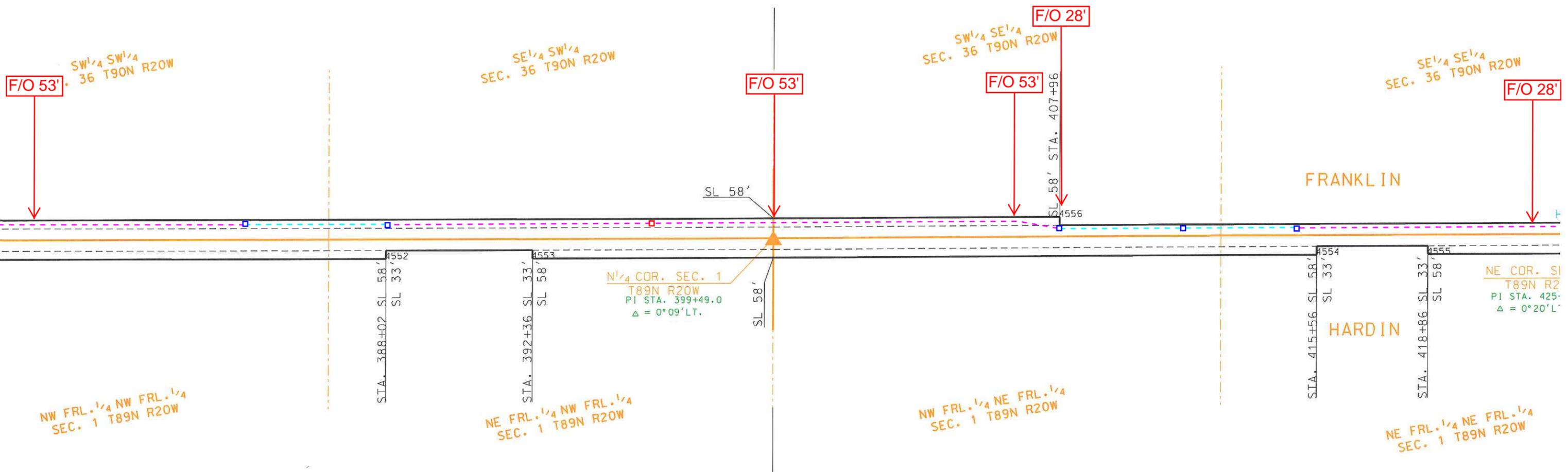


Legend of Symbols (DOT Specific Sheets)

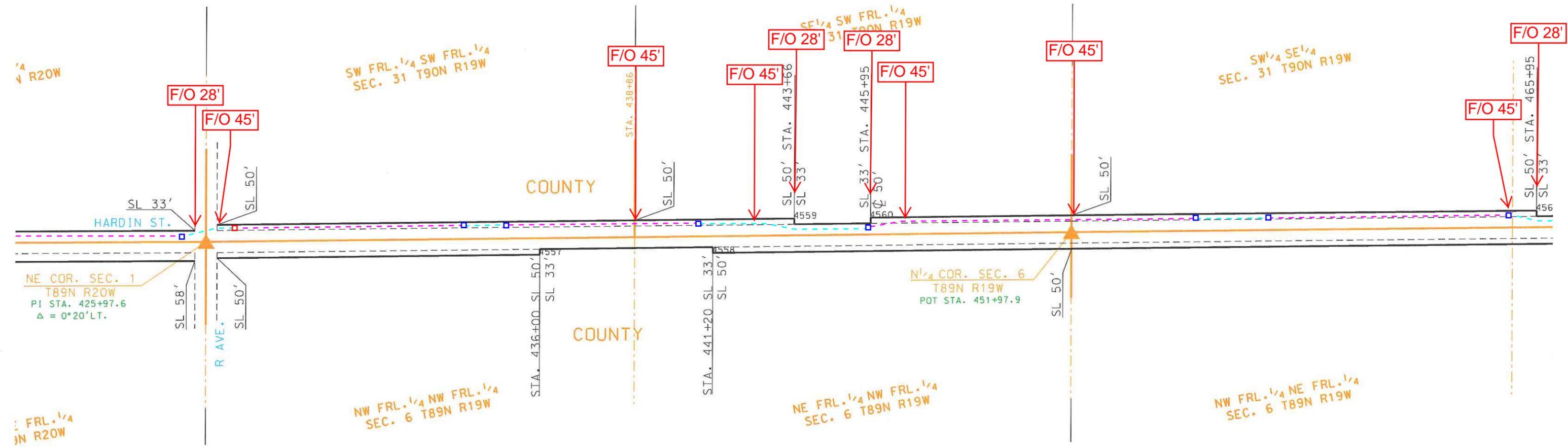
- Bore Pit
- Proposed Handhole
- - - Conduit - Bore
- - - Conduit - Plow
- ↔ Drainage District Tile

Drainage District(DD) Project Notes:

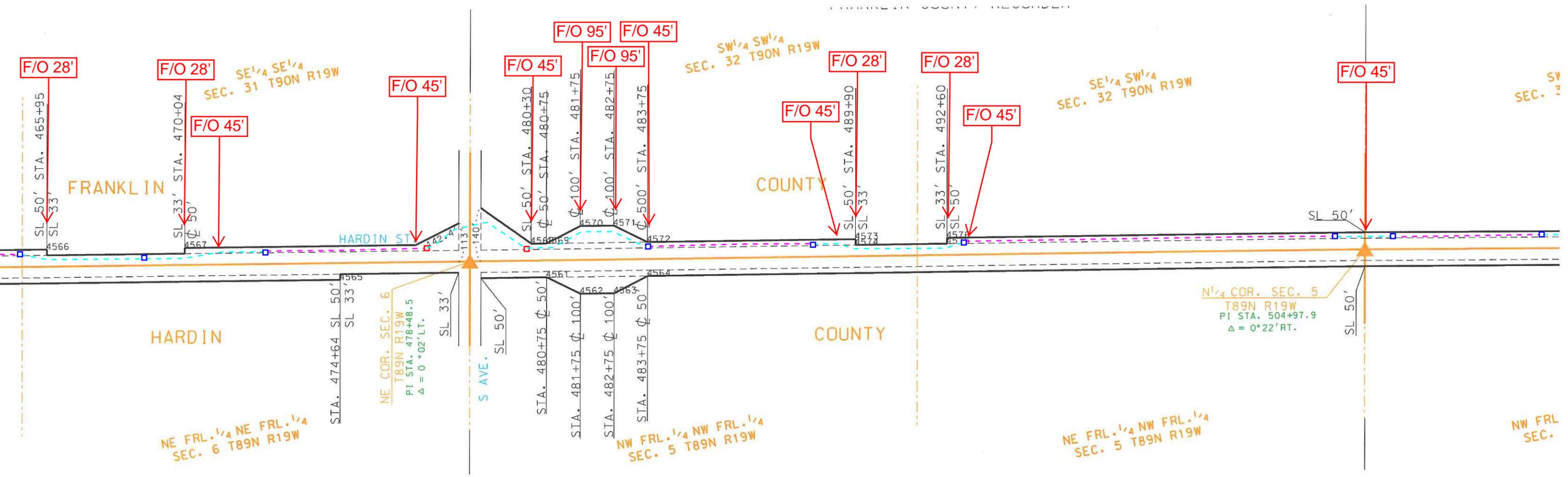
1. DD tiles are shown as a green arrow.
2. The drainage tiles shown on these plans are only shown as an approx. location and should be field located with the help of the Hardin County DD representative.
3. Any pothole left unattended is to be covered up until it is backfilled.
4. Refer to Hardin County DD office for any related questions.



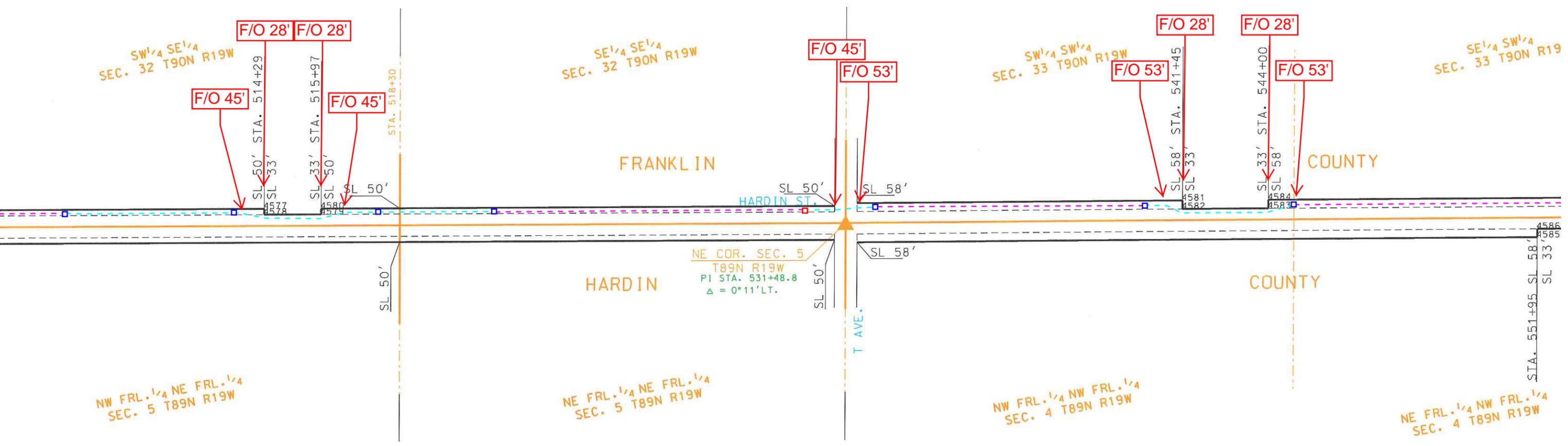
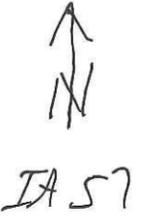
- Legend of Symbols (DOT Specific Sheets)**
- ▣ Bore Pit
 - ▣ Proposed Handhole
 - - - - Conduit - Bore
 - - - - Conduit - Plow
 - ↔ Drainage District Tile



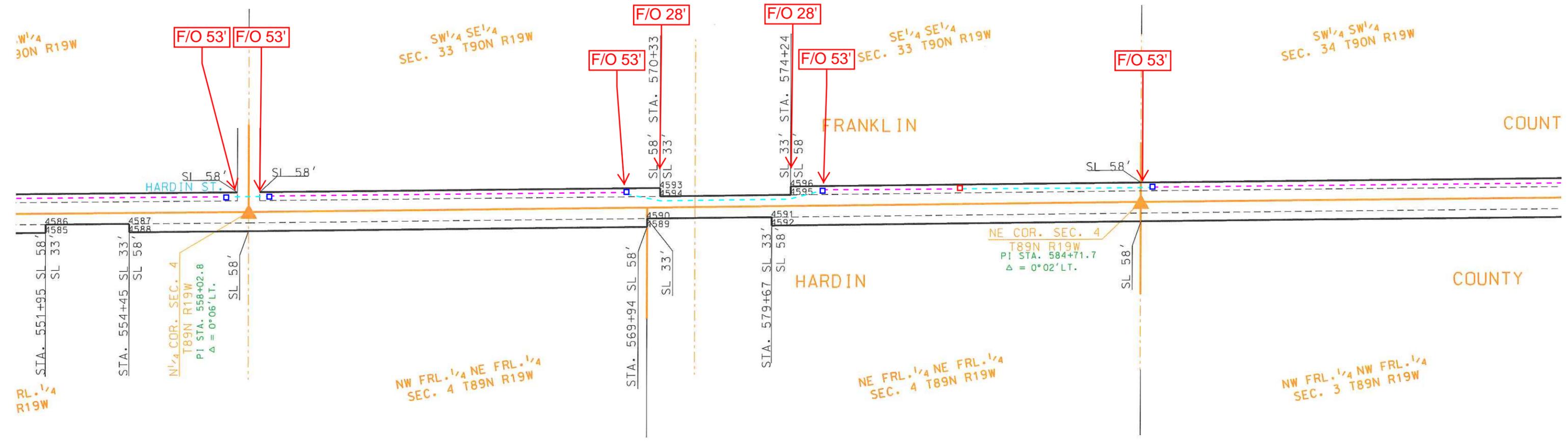
- Legend of Symbols (DOT Specific Sheets)**
- ▣ Bore Pit
 - ▣ Proposed Handhole
 - - - Conduit - Bore
 - - - Conduit - Plow
 - ↔ Drainage District Tile



- Legend of Symbols (DOT Specific Sheets)**
- Bore Pit
 - Proposed Handhole
 - - - Conduit - Bore
 - - - Conduit - Plow
 - ↔ Drainage District Tile

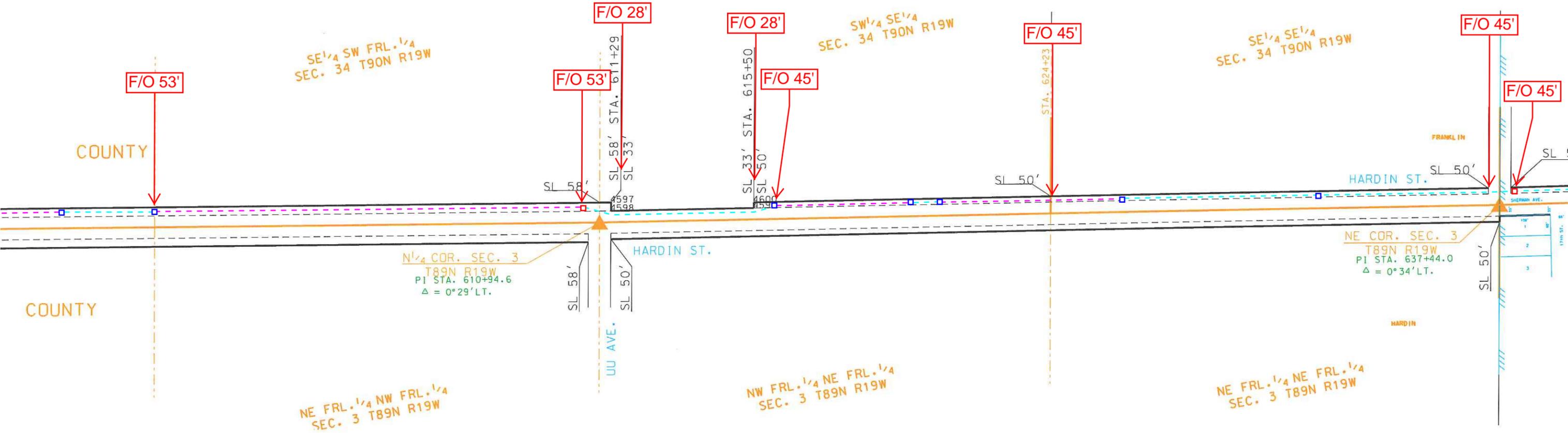


- Legend of Symbols (DOT Specific Sheets)**
- Bore Pit
 - Proposed Handhole
 - - - - Conduit - Bore
 - - - - Conduit - Plow
 - ↔ Drainage District Tile



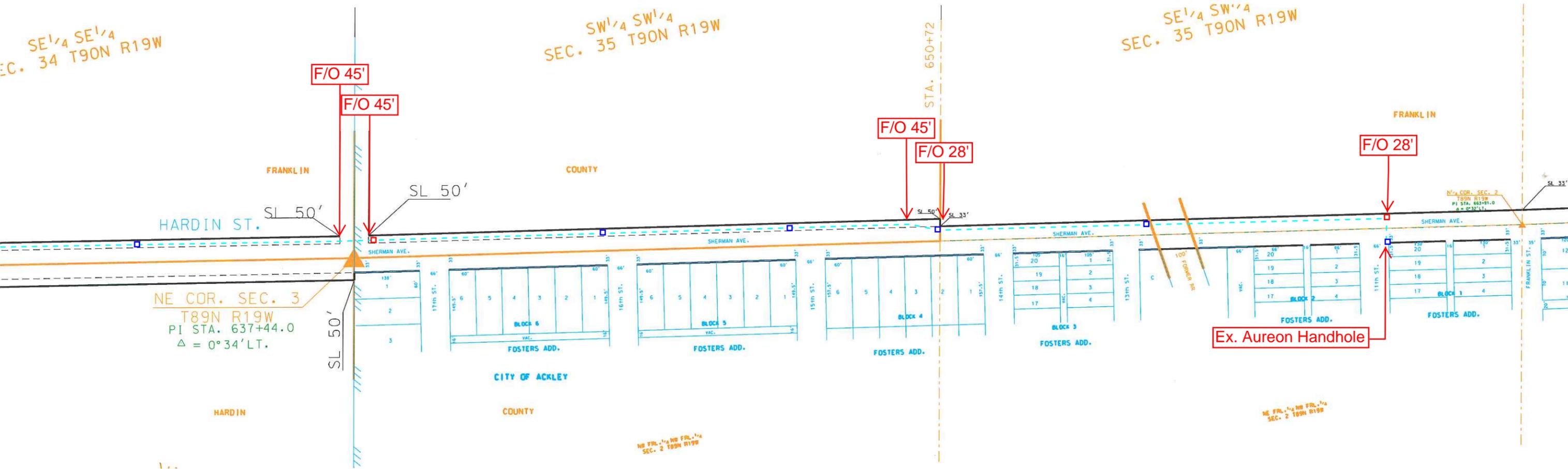
- Legend of Symbols (DOT Specific Sheets)**
- ▣ Bore Pit
 - ▣ Proposed Handhole
 - - - - Conduit - Bore
 - - - - Conduit - Plow
 - ↔ Drainage District Tile

↑
N
DAST



- Legend of Symbols (DOT Specific Sheets)
- Bore Pit
 - Proposed Handhole
 - - - Conduit - Bore
 - - - Conduit - Plow
 - ↔ Drainage District Tile

↑
N
IAS?



SE 1/4 SE 1/4
SEC. 34 T90N R19W

SW 1/4 SW 1/4
SEC. 35 T90N R19W

SE 1/4 SW 1/4
SEC. 35 T90N R19W

NE COR. SEC. 3
T89N R19W
PI STA. 637+44.0
Δ = 0° 34' LT.

- Legend of Symbols (DOT Specific Sheets)
- Bore Pit
 - Proposed Handhole
 - - - Conduit - Bore
 - - - Conduit - Plow
 - ↔ Drainage District Tile