

**AGENDA
REGULAR DRAINAGE MEETING
WEDNESDAY, SEPTEMBER 12, 2018
8:30 A.M.**

1. Open Meeting
2. Approve Agenda
3. Approve Minutes
September 5, 2018 Regular Drainage Meeting

Documents:

[9_5_2018 - DRAINAGE MINUTES.PDF](#)

4. DD 55-3 Lat 9 - Discuss, With Possible Action, Landowner Concerns
5. DD 55-3 Lat 12 - Discuss, With Possible Action, Legal Opinion

Documents:

[DD 55-3 LAT 12 LTR 2018-9-7 TO TINA S.PDF](#)

6. DD 25 - Discuss, With Possible Action, Updates With Railroad
7. Approve Drainage Utility Permit #2018-9 With Aureon

Documents:

[2018-9 AUREON PLANS 18-08-22_TFTC_HARDIN COUNTY EAST_FINAL SIGNED.PDF](#)
[2018-9 AUREON UTILITY PERMIT APPLICATION ACROSS DRAINAGE DISTRICT_HARDIN COUNTY EAST.PDF](#)

8. DD H-F 1 - Approve Drainage Utility Permit #2018-10 With Winnebago Coop Telecom Assoc

Documents:

[2018-10 WCTATEL DRAINAGE PERMIT.PDF](#)

9. Discuss, With Possible Action, Outstanding Utility Permits
10. Other Business
11. Adjourn Meeting

REGULAR DRAINAGE MEETING

9/5/2018 - Minutes

1. Open Meeting

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

2. Approve Agenda

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

3. Approve Minutes

Granzow moved, Hoffman seconded to approve the minutes of the August 22, 2018 regular drainage meeting. Ayes: Granzow, Hoffman. Abstain: McClellan. Motion carried.

4. Approve Claims For Payment

McClellan moved, Granzow seconded to approve the claims for payment with pay date of Friday, September 7, 2018. All ayes. Motion carried.

DD 52 WO 215 EXPLORATORY	McDowell & Sons Contractors	\$ 1,140.00
DD 67 RR CROSSING INVESTIGATION	Clapsaddle-Garber Assoc	\$ 712.25
DD 72 WO 71 ENGINEERING 7/13-8/22/18	Clapsaddle-Garber Assoc	\$ 665.20
DD 72 FINAL PAY EST WO 71	M D Construction, Inc	\$36,809.08

5. DD 52 - Discuss, With Possible Action, Claim For Damages

It was discussed that tenant, Tracy Below, would like damages for the alfalfa crop he has lost. It was explained to him that first year damages are not reimbursed, but Below stated with alfalfa there are recurrent year losses he will have. It was also discussed that he could plant a different crop for the next years. Granzow moved, McClellan seconded to reconsider the damages once the project is complete. All ayes. Motion carried.

6. Discuss, With Possible Action, Utility Permits With Central Iowa Water

Gallentine updated the Trustees that Central Iowa Water is not in full compliance with the utility permit process and has not been paying CGA's invoices for work completed. Much discussion was had regarding the current utility permit process. One solution mentioned was to give the utility company the option of hiring CGA or paying someone to locate themselves but to emphasize they are responsible for any damage and crop losses and no new permits will be issued until all invoices are paid in full. McClellan moved, Granzow seconded for Attorney, Mike Richards, to send a letter asking Central Iowa Water to cease any utility work until they speak with the Trustees and become compliant with the procedures. All ayes. Motion carried.

7. Discuss, With Possible Action, Utility Permits With Heart Of Iowa

Gallentine updated the Trustees that Heart of Iowa seems to be one of the better utility companies adhering to the utility permit process. Much discussion was had regarding the current utility permit process. One solution mentioned was to give the utility company the option of hiring CGA or paying someone to locate themselves but to emphasize they are responsible for any damage and crop losses and no new permits will be issued until all invoices are paid in full. Discussion was also had regarding the generic One Call sign that Heart of Iowa has posted for the crossing that is not company or utility type specific. Granzow moved, McClellan seconded to allow the sign that's okay to not specify the company or utility type. All ayes. Motion carried.

8. Discuss, With Possible Action, Utility Permit With Windstream

Gallentine updated the Trustees that Windstream is not in full compliance with the utility permit process and does not contact him at all. Much discussion was had regarding the current utility permit process. One solution mentioned was to give the utility company the option of hiring CGA or paying someone to locate themselves but to emphasize they are responsible for any damage and crop losses and no new permits will be issued until all invoices are paid in full. McClellan moved, Granzow seconded for Attorney, Mike Richards, to send a letter asking Windstream to cease any utility work until they speak with the Trustees and become compliant with the procedures. All ayes. Motion carried.

9. Discuss, With Possible Action, Utility Permit With Radcliffe Telephone Co
 Gallentine updated the Trustees that Radcliffe Telephone Company is not in full compliance with the utility permit. Much discussion was had regarding the current utility permit process. One solution mentioned was to give the utility company the option of hiring CGA or paying someone to locate themselves but to emphasize they are responsible for any damage and crop losses and no new permits will be issued until all invoices are paid in full. McClellan moved, Granzow seconded for Attorney, Mike Richards, to send a letter asking Radcliffe Telephone Company to cease any utility work until they speak with the Trustees and become compliant with the procedures. All ayes. Motion carried.

10. Discuss, With Possible Action, Engineering Rates

Schlemme presented the engineering rates obtained from other Iowa counties for ISG and Bolton & Menk. These 2017 rates were compared to CGA's 2018 rates. Granzow moved, McClellan seconded to acknowledge the rates with CGA showing to be the least expensive per the rate schedules obtained from other counties. All ayes. Motion carried.

	CGA 2018	ISG 2017	Bolton Menk 2017	Bolton Menk Clay County 2018
Licensed Engineer/Sr Design Engineer	\$86	\$ 98-130	\$128-187	
Sr Licensed Engineer/Project Manager	\$110	\$150	\$150-250	\$135
Engineer in Training/Design Engineer	\$76	\$98-130	\$65-190	\$96
Licensed Land Surveyor/Professional Land Surveyor	\$95	\$90-130	\$128-250	\$135
Land Surveyor in Training/Lead Surveyor	\$70	\$90-130	\$95-150	
Survey Party Chief	\$65	\$90-130	\$65-145	
Survey Crew Asst/Survey Tech	\$55	\$90-130	\$65-145	
Survey GPS One Man/Survey Crew (One Person)	\$75	\$90-130	\$65-145	
Construction Observer/Construction Tech	\$55	\$88	\$65-145	
Sr Construction Observer/Sr Construction Tech	\$65	\$88	\$65-145	
CADD/CADD Tech	\$55		\$59-156	
Sr CADD/Sr CADD Tech	\$63		\$59-156	
Technician		\$70-84	\$65-145	
Sr Technician/Design Tech	\$65	\$96	\$92-170	
Clerical/Administrative Assistant	\$55	\$50	\$45-90	
Sr Clerical/Sr Administrative Assistant	\$60	\$50	\$45-90	

11. Other Business

DD 22 - Gallentine relayed a message from Heather Thomas stating that Gehrke's best case scenario would be to do spot repairs in early October and begin the replacement in mid November. If weather does not cooperate, than they will do all the project in the spring. Gallentine added that this message was received before the large amount of rain has occurred.

DD 25 - Gallentine updated the Trustees that landowner, Leland Coburn, had called with questions regarding the current project. No update has been received from the railroad nor the attorney since the letter was sent. Schlemme is to review the letter and ask Attorney, Mike Richards, if the project is okay to proceed because no response has been received from the railroad.

12. Adjourn Meeting

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



Michael C. Richards
MikeRichards@davisbrownlaw.com
phone: 515-246-7986
Des Moines Office

September 7, 2018

Via Email

Ms. Tina Schlemme
Real Estate and Drainage Clerk
Auditor's Office
1215 Edgington Ave., Suite 1
Eldora, Iowa 50627
tschlemme@hardincountyia.gov

Re: Hardin County Drainage District 55

Dear Tina:

You asked me to review and provide advice on the following matter:

"We had a landowner... call in a repair request for district tile plugged in the railroad right-of-way. CGA investigated and determined that tree roots are plugging the tile (see the attached repair summary for details). The Trustees would like to move forward with removing the trees (including inside the RR ROW), root clean and jet the tile and televise to verify its condition. They are seeking legal advice if they're able to do this with or without railroad permission."

You also provided me with all of the railroad agreements and railroad petitions for District 55 that you still had, most of which are from the 1920s. In addition, you provided the work proposal with a description of the proposed maintenance and the estimated cost of the work. I have reviewed them all.

Not surprisingly, the law on this question is somewhat nuanced. The drainage district statutes are over 100 years old, and in circumstances like this there are some gray areas.

Once a drainage district is established, it acquires a permanent easement for purposes of constructing and maintaining the drainage improvement. Iowa Code § 468.27. Moreover, after a drainage improvement has been constructed, drainage districts have "a positive mandate to keep the drainage system in such condition that it will function properly and perform the service for which it was intended." *Chicago Cent. & Pac. R. Co. v. Calhoun Cty. Bd. of Sup'rs*, 816 N.W.2d 367, 371 (Iowa 2012); *see also* Iowa Code § 468.126(1).

#2878974 v.3

DAVIS BROWN KOEHN SHORS & ROBERTS P.C.

Iowa code section 468.138 concerns maintaining the ditches by removing trees and shrubs and states:

The board shall cause to be removed from the ditches, drains, and laterals of any district any obstructions which interfere with the flow of the water, including trees, hedges, or shrubbery and the roots thereof, and may cause any tile drain so obstructed to be relaid in concrete or any other adequate protection, such work to be paid for from the drainage funds of the district.

The nuance in this instance arises due to the interplay between the above law and statutes and Iowa Code section 468.109, which states:

Whenever the board of supervisors shall have established any levee, or drainage district, or change of any natural watercourse and the levee, ditch, drain, or watercourse as surveyed and located crosses the right-of-way of any railroad company, the county auditor shall immediately cause to be served upon such railroad company, in the manner provided for the service of original notices, a notice in writing stating the nature of the improvement to be constructed, the place where it will cross the right-of-way of such company, and the full requirements for its complete construction across such right-of-way as shown by the plans, specifications, plat, and profile of the engineer appointed by the board, and directing such company to construct such improvement according to said plans and specifications at the place designated, across its right-of-way, and to build and construct or rebuild and reconstruct the necessary culvert or bridge where any ditch, drain, or watercourse crosses its right-of-way, so as not to obstruct, impede, or interfere with the free flow of the water therein, within thirty days from the time of the service of such notice upon it.

In essence, section 468.109 provides that when a drainage district is going to construct an improvement which will cross into the right-of-way of the railroad, notice must be served on the railroad which allows them the option to do the work themselves within 30 days.

Technically speaking, what District 55 intends to do in the present circumstance not an “improvement” which is defined as any “project intended to expand, enlarge, or otherwise increase the capacity of any existing ditch, drain, or other facility above that for which it was designed.” Iowa Code § 468.126. Because the District only intends to clean out the tile and replace it, without increasing its capacity, it would be considered merely maintenance.

Bringing all of the above together, I think that *technically* the Drainage District does not need to provide notice to the railroad to remove the trees at issue. However, the less adversarial

Ms. Tina Schlemme
September 7, 2018
Page 3

and perhaps more prudent course of action would be to serve the railroad with notice under section 468.109 and wait 30 days to do the work.

As a final note, I cannot tell from the project proposal documents how close the trees and shrubs are to the tracks, and whether they could arguably result in stability concerns. I am operating under the assumption that Lee Gallentine has assessed this potential and already concluded there is no concern. If that is not correct, or if there is a concern on resulting stability, I would use strongly recommend the notice method under section 468.109.

Please call with questions or concerns.

Very truly yours,

DAVIS, BROWN, KOEHN, SHORS & ROBERTS, P.C.

A handwritten signature in cursive script, appearing to read "mcrich", written in black ink.

Michael C. Richards

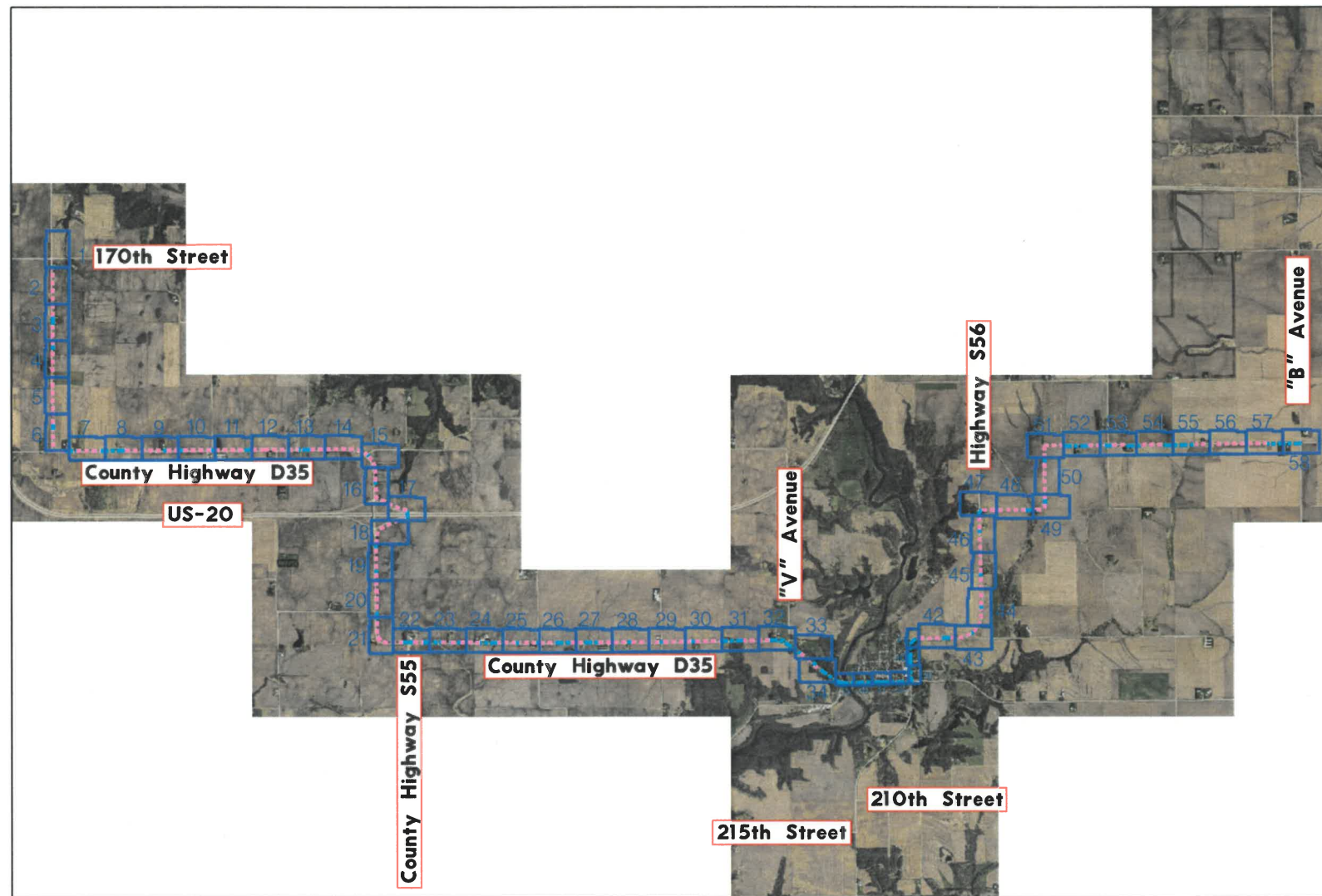
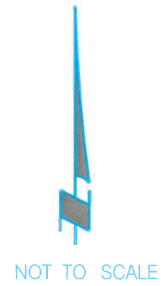
MRIC/mjw

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
GARY MAUER	GRUNDY COUNTY	319-824-6912	GARYM@GCCOURTHOUSE.ORG
KEVIN SCHLESKY	IOWA DOT	515-663-6363	KEVIN.SCHLESKY@IOWADOT.US
MARVIN VELD	STEAMBOAT ROCK	515-689-8154	

HARDIN COUNTY, IOWA

AUREON

HIGHWAY 20 - HARDIN COUNTY EAST



PERMITS REQUIRED	
SHT. NO.	DESCRIPTION
F.1-F.58	HARDIN COUNTY
F.58	GRUNDY COUNTY
F.16-F.18	IOWA DOT UTILITY ACCOMODATION (US-20)
F.24, F.35-F.36, F.49	FLOODPLAIN
F.35-F.41	STEAMBOAT ROCK

SHT. NO.	SHEET INDEX
C.1	COVER SHEET
G.1	GENERAL NOTES & SUMMARY OF QUANTITIES
D.1	DETAILS
F.1-F.58	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.

	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.	
	<i>Gregory T. Seib</i> Signature Gregory T. Seib Printed or Typed Name 23179 License Number	8-22-2018 Date
My license renewal date is December 31, 2018		
Pages or sheets covered by this seal: C.1, G.1, D.1, F.1-F.58		

COVER

USER: jk 02/20/18
 DATE: 8/22/2018
 DGN: P:\2018\1018-1341\Highway 20 - Design\Microstation\018-1341_Highway 20 - Fiber Design - W012 - Sheets\Hardin County East\Cover.dgn

LEGEND OF SYMBOLS

EXISTING CONDUIT	
EXISTING AERIAL FIBER	
CONDUIT PLACEMENT	
BFO 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 SPLICE CASE	
EXISTING MANHOLE	
SIGN	
BARRICADE	
DRUM	
BORE PIT	
ARROW PANEL	
UTILITY EASEMENT	

PROJECT NOTES

- THE LOCATIONS OF ALL AERIAL AND UNDERGROUND UTILITY FACILITIES MAY NOT BE INDICATED ON THESE PLANS. UNDERGROUND UTILITIES, WHETHER SHOWN OR NOT, WILL BE LOCATED AND FLAGGED BY THE UTILITIES UPON THE REQUEST OF THE 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 PROTECTION OF ALL UNDERGROUND AND AERIAL UTILITIES AND CONSTRUCTIONS.
- REQUIREMENTS:
 - DEPTH-THE UTILITY INSPECTOR SHALL MONITOR THE MINIMUM DEPTH OF COVER:

COMMUNICATIONS.....36"	ELECTRIC.....48"
WATER OR SEWER.....60"	GAS.....48"
DRAINAGE TILE.....24"	
 - 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 THE ROAD SURFACING BEFORE AND AFTER CONSTRUCTION. THE APPLICANT SHALL APPLY GRANULAR SURFACING TO RESTORE THE ROAD TO ORIGINAL 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 COMPACTED 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 SIGNING SHALL COMPLY WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL WORK SHALL CONFORM TO THE IOWA DEPARTMENT OF TRANSPORTATION CONSTRUCTION MANUAL, STATEWIDE URBAN DESIGN STANDARDS (SUDAS), AASHTO 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.

UTILITY CONTACTS

NAME	AGENCY	PHONE NUMBER	EMAIL
JEFF KLOCKO	AUREON	515-830-0445	JEFF.KLOCKO@AUREON.COM
KEVIN SCHLESKY	IOWA DOT	515-663-6363	KEVIN.SCHLESKY@IOWADOT.US
MARVIN VELD	STEAMBOAT ROCK	515-689-8154	TBD
MICHAEL YOUNTS	MID-AMERICAN ENERGY	515-979-8294	MYOUNTS@MIDAMERICAN.COM
	MEDIACOM	855-633-4226	
	WINDSTREAM	877-901-4692	
	DISH NETWORK	888-926-5457	
	DIRECT TV	866-667-9485	
	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 THE ICN AND ROW AUTHORITY HAVING JURISDICTION. THE PLAN FOR PARALLEL UTILITIES WOULD BE TO ADJUST THE RUNNING LINE BY AN APPROPRIATE OFFSET (APPROXIMATELY 2') OR CHANGE DEPTH OF THE INSTALLATION DEPENDING ON ROW AVAILABILITY.

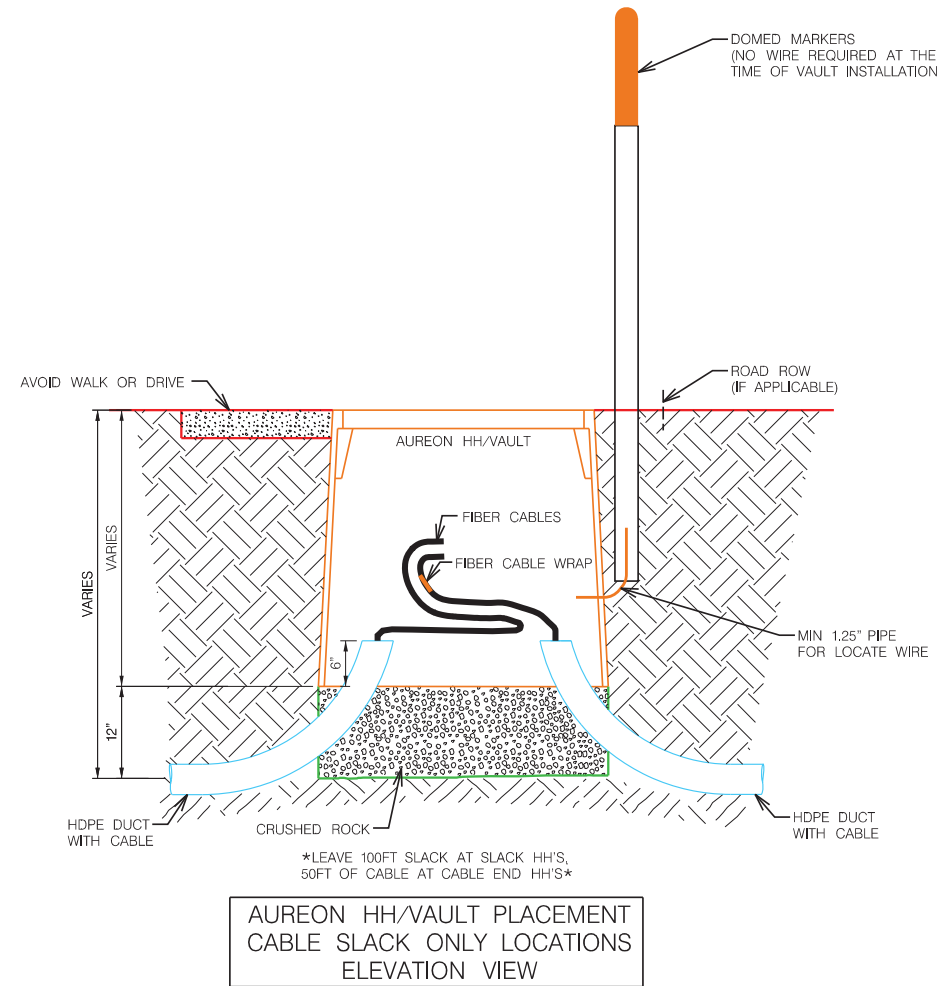
SUMMARY OF QUANTITIES

ITEM	UNIT	QUANTITY
CONDUIT, 1.25" B	LF.	19,349
BURIED FIBER OPTICS, P	LF.	53,412
CONDUIT, 2" B	LF.	4,901
PULL BOX, 24"X36"X36"	EA.	15
FIBER, ARMORED	LF.	77,662
FIBER, ARMORED, UNDERGROUND SLACK STORAGE	LF.	1,600

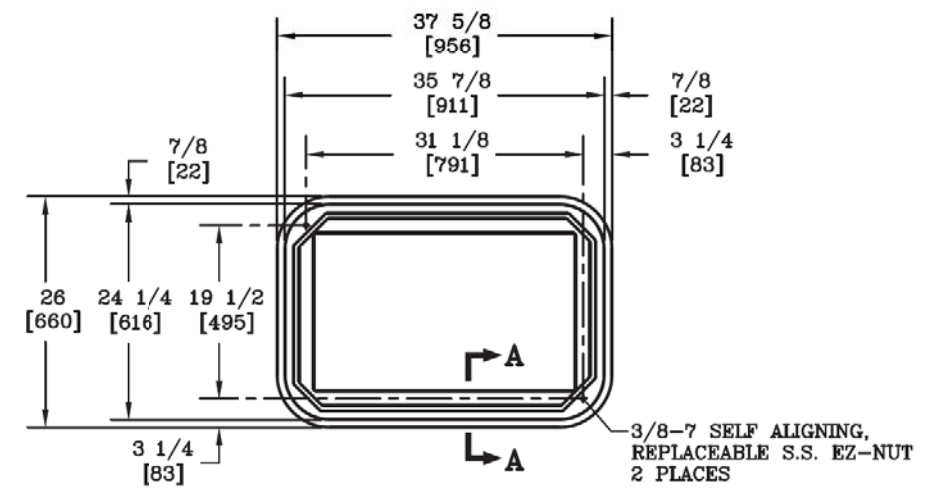
CABLE AND CONDUIT DESIGNATIONS

B is Conduit Bored (ie..3" B)	LC is Lead-In Cable
C is conductor (ie.. 3/C)	M is Conduit Mounted (ie..2" M)
CC is Coaxial Cable	MB is Main Line Conduit Group Bored (6) 1 1/4"
CCC is Camera Control Cable	MM is Multi Mode Fiber Cable
CDC is Camera Detector Cable	MT is Main Line Conduit Group Trenched (6) 1 1/4"
CG is Circuit Ground	NO is Number
CPC is Camera Power Cable	OH is Over Head
DB is Direct Buried	PR is Pair of Communication (ie.. 6 PR)
DMSC is Dynamic Message Sign Cable	REL is Relocate
EDC is Emergency Detector Cable	REM is Remove
ETW is Electric Tracer Wire	RGS is Rigid Galvanized Steel
EX is Existing	SC is Service Cable
FI is Fabric Interduct	SL is Street Light
FLC is Fiber Locate Cable	SM is Single Mode Fiber Cable
FTW is Fiber Tracer Wire	T is Conduit Trenched (ie..3" T)
INS is Install	TW is Tracer Wire (black or green)
INT is Intraduct	

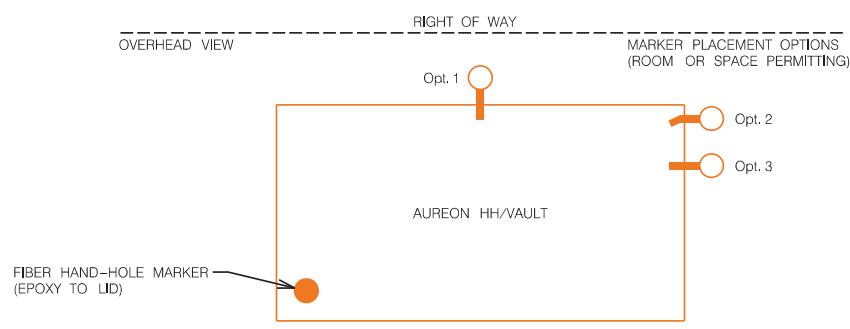
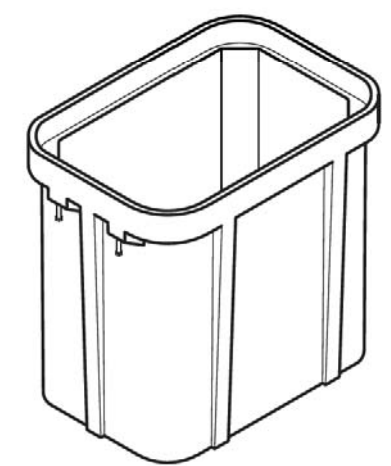
- ALL POTHOLES IN SIDEWALK PANELS WILL REQUIRE FULL PANEL REPLACEMENT.
- ANY CUT OR POTHOLE IN A CONCRETE STREETS PANEL WILL REQUIRE FULL PANEL REPLACEMENT.
- ANY CUT OR POTHOLE IN A ASPHALT STREET LANE WILL REQUIRE SEAM TO SEAM ASPHALT MILLING AND REPLACEMENT.



**AUREON HH/VAULT PLACEMENT
CABLE SLACK ONLY LOCATIONS
ELEVATION VIEW**

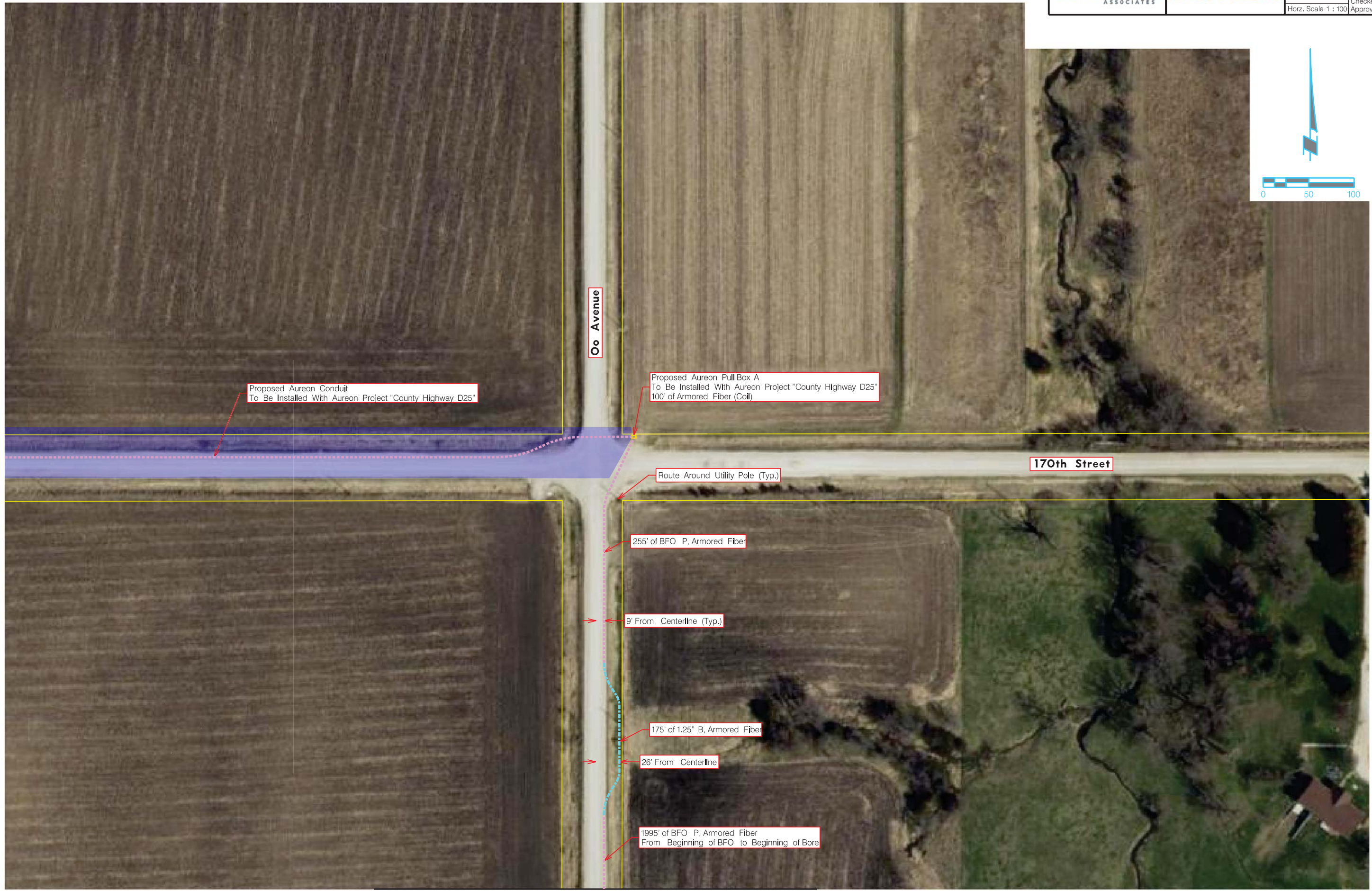
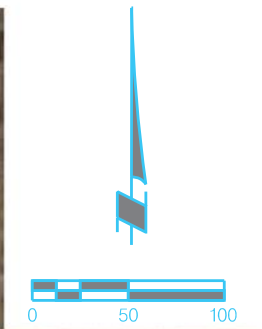


AUREON QUAZITE 24X36X36 DETAIL



AUREON HANDHOLE INSTALLATION

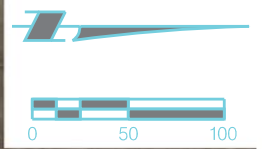
USER: rmehts
 DATE: 08\22\2018
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USER: rmehtis
 DATE: 08\22\2018
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MATCH LINE SHEET F.2

FIBER DESIGN

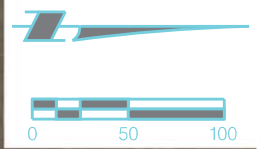


MATCH LINE SHEET F.3

MATCH LINE SHEET F.1



USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East_Hardin_County_East_F.2.dgn



MATCH LINE SHEET F.4

MATCH LINE SHEET F.2



Oo Avenue

9' From Centerline (Typ.)

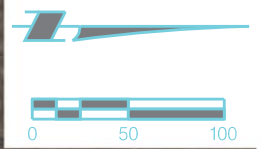
828' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

357' of 1.25" B, Armored Fiber

22' From Centerline

See Sheet F.1
BFO P, Armored Fiber

USER: rmehtis
DATE: 08\22\2018
DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.3.dgn



MATCH LINE SHEET F.5

MATCH LINE SHEET F.3



Oo Avenue

9' From Centerline (Typ.)

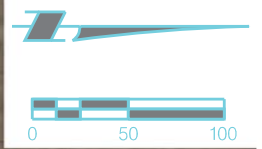
3,043' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

26' From Centerline

191' of 1.25" B, Armored Fiber

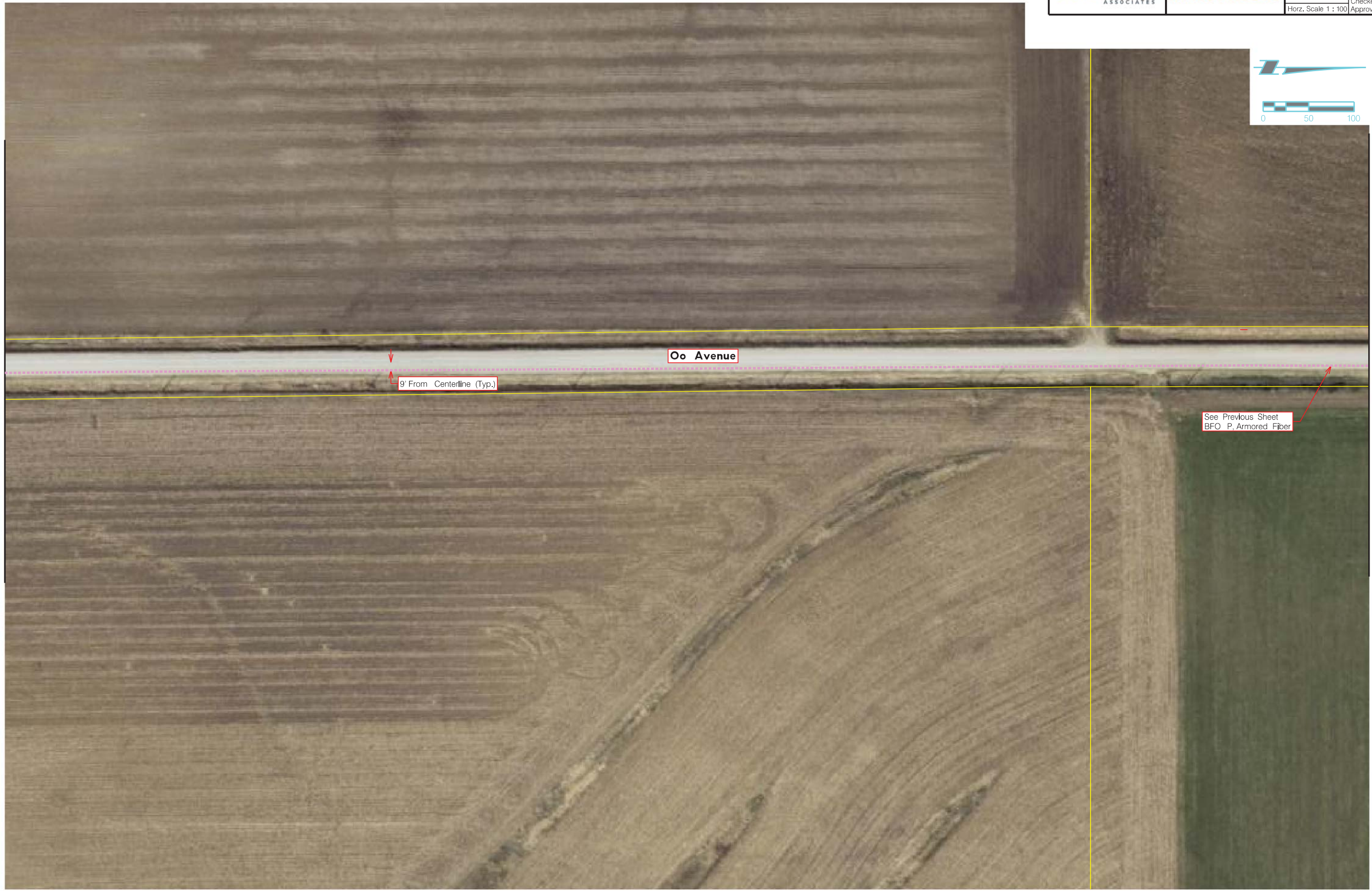
See Previous Sheet
BFO P, Armored Fiber

USER: rmehtis
DATE: 08\22\2018
DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\F.4.dgn



MATCH LINE SHEET F.6

MATCH LINE SHEET F.4

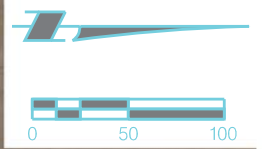


9' From Centerline (Typ.)

Oo Avenue

See Previous Sheet
BFO P, Armored Fiber

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County Highway D35

Oo Avenue

MATCH LINE SHEET F.5

See Sheet F.4
BFO P, Armored Fiber

9' From Centerline

1,328' of BFO P, Armored Fiber

36' From Centerline

262' of 1.25" B, Armored Fiber

Contractor to Install Conduit 3' Off ROW Where Possible.
If Not Possible, Install Conduit on the Edge of the Field.

Route Around Utility Pole (Typ.)

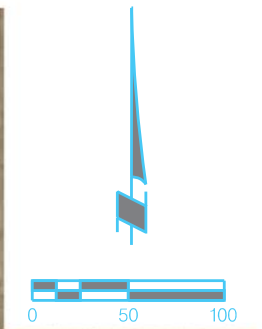
30' From EOP

470' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of BFO

MATCH LINE SHEET F.7

FIBER DESIGN

USER: rmehtis
DATE: 08\22\2018
DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\Microstation\018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.6.dgn



USER: rmehts
 DATE: 08/22/2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin_County_East\Hardin_County_East_F.7.dgn

MATCH LINE SHEET F.6

MATCH LINE SHEET F.8



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

See Previous Sheet
1.25" B, Armored Fiber

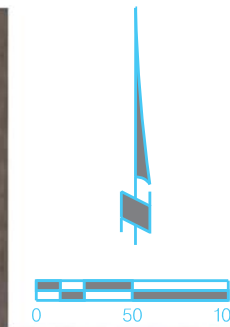
1,010' of BFO P, Armored Fiber

Route Around Utility Pole (Typ.)

30' From EOP

County Highway D35

997' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of BFO



MATCH LINE SHEET F.7

MATCH LINE SHEET F.9

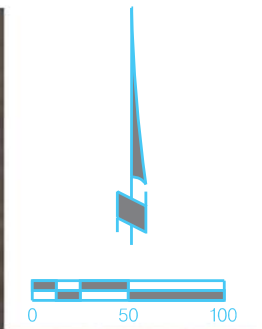


See Previous Sheet
1.25" B, Armored Fiber

30' From EOP (Typ.)

County Highway D35

1,561' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore



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MATCH LINE SHEET F.8

MATCH LINE SHEET F.10



See Previous Sheet
BFO P, Armored Fiber

30' From EOP (Typ.)

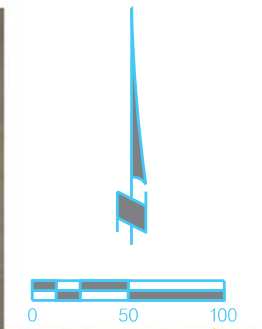
County Highway D35

Route Around Utility Pedestal (Typ.)

3' From Utility Pole Line (Typ.)

150' of 1.25" B, Armored Fiber

524' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore



MATCH LINE SHEET F.9

MATCH LINE SHEET F.11



See Previous Sheet
BFO P, Armored Fiber

150' of 1.25" B, Armored Fiber

1,155' of BFO P, Armored Fiber

Route Around Pedestal

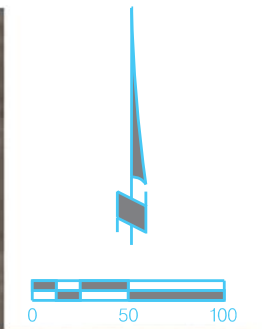
3' From Utility Pole Line (Typ.)

30' From EOP (Typ.)

County Highway D35

150' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of BFO

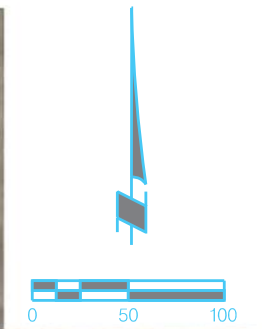
USER: rmehtis
DATE: 08/22/2018
DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.10.dgn



MATCH LINE SHEET F.10

MATCH LINE SHEET F.12

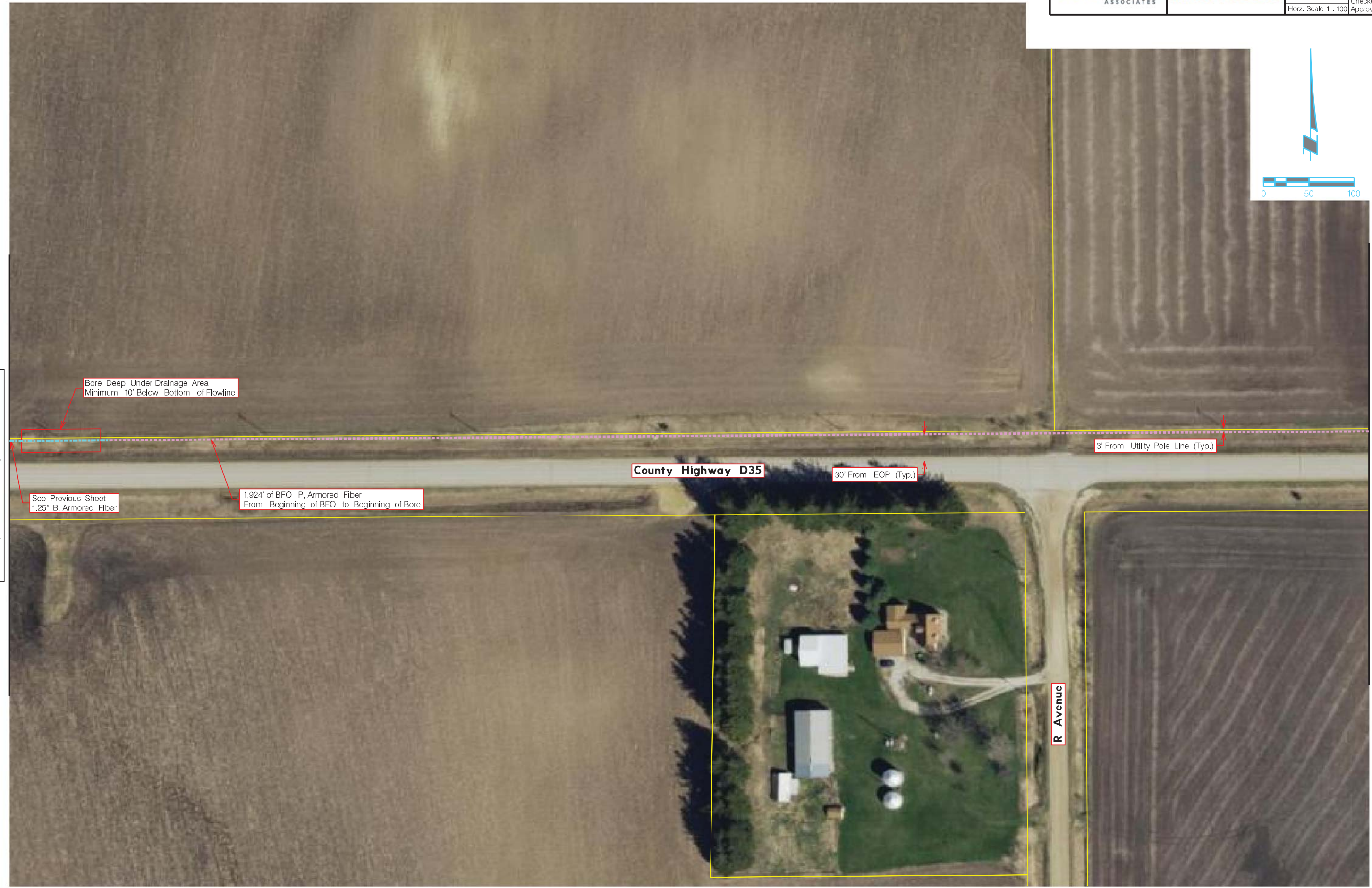
USER: rmehts
 DATE: 08/22/2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East\Hardin_County_East_F.11.dgn



USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East\Hardin_County_East_F.12.dgn

MATCH LINE SHEET F.11

MATCH LINE SHEET F.13



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

See Previous Sheet
1.25" B, Armored Fiber

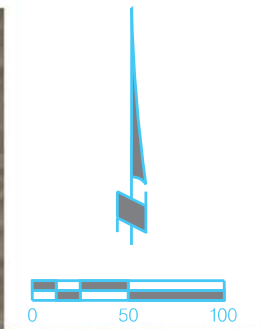
1,924' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

County Highway D35

30' From EOP (Typ.)

3' From Utility Pole Line (Typ.)

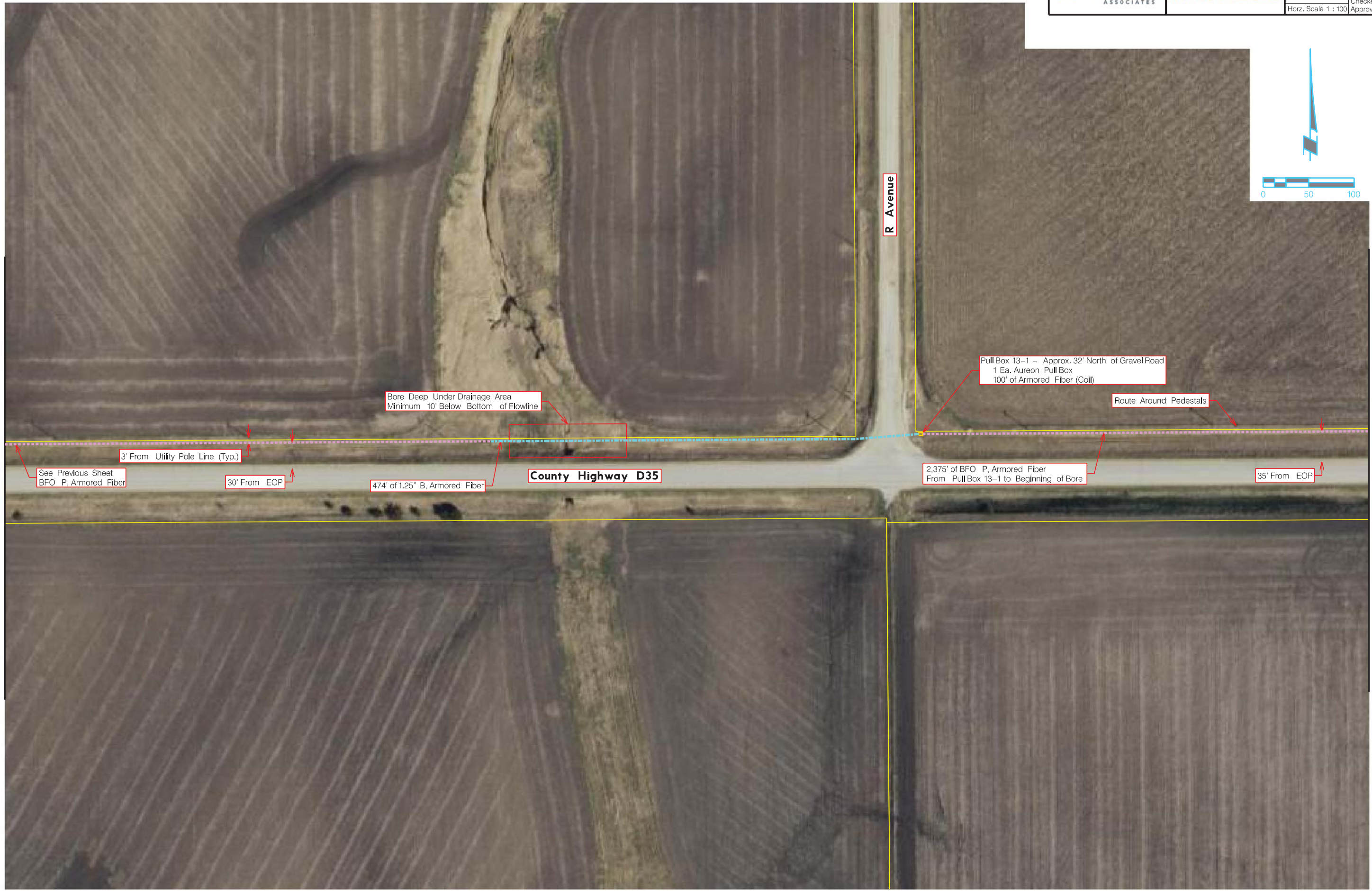
R Avenue



USER: rmehtis
 DATE: 08/22/2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East\Hardin_County_East_F.13.dgn

MATCH LINE SHEET F.12

MATCH LINE SHEET F.14



See Previous Sheet BFO P, Armored Fiber

3' From Utility Pole Line (Typ.)

30' From EOP

474' of 1.25" B, Armored Fiber

County Highway D35

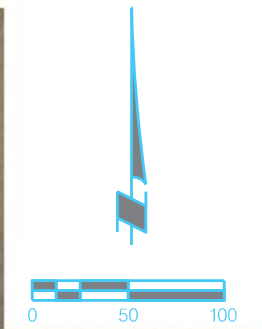
Bore Deep Under Drainage Area
Minimum 10' Below Bottom of Flowline

2,375' of BFO P, Armored Fiber
From Pull Box 13-1 to Beginning of Bore

35' From EOP

Pull Box 13-1 – Approx. 32' North of Gravel Road
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

Route Around Pedestals



MATCH LINE SHEET F.13

MATCH LINE SHEET F.15



See Previous Sheet
BFO P, Armored Fiber

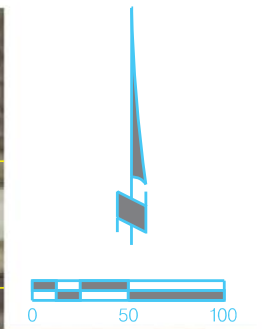
35' From EOP (Typ.)

3' From Utility Pole Line (Typ.)

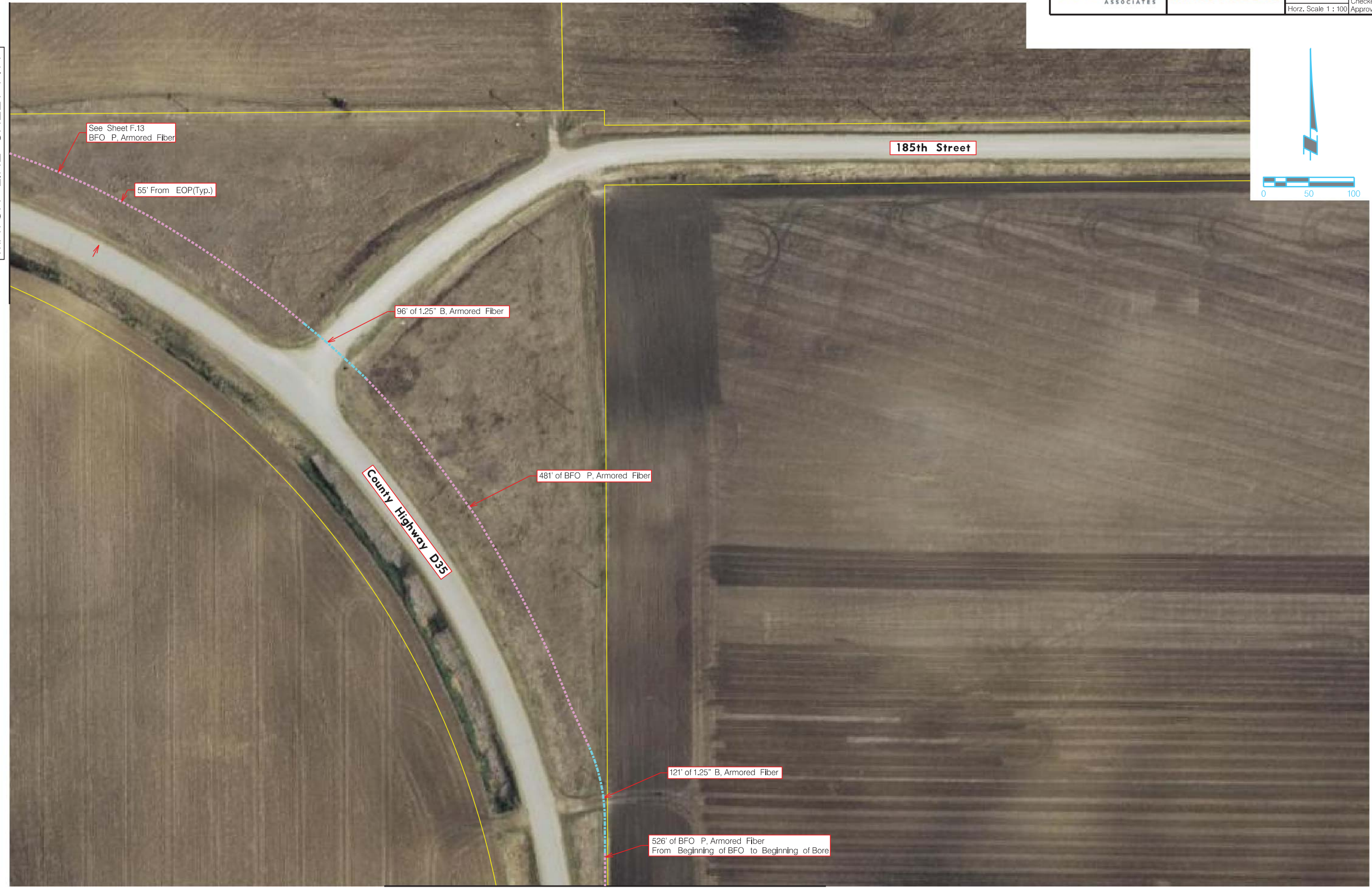
Route Around Pedestal

County Highway D35

USER: rmehts
DATE: 08\22\2018
DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East\Hardin_County_East_F.14.dgn



MATCH LINE SHEET F.14



MATCH LINE SHEET F.16

FIBER DESIGN

USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\Microstation_018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin_County_East_Hardin_County_East_F.15.dgn

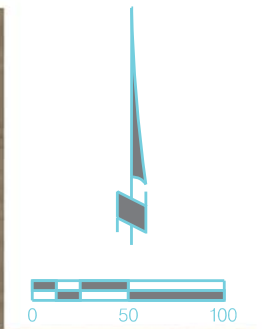


USER: rmehts
 DATE: 08/22/2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin_County_East_Hardin_County_East_F.16.dgn

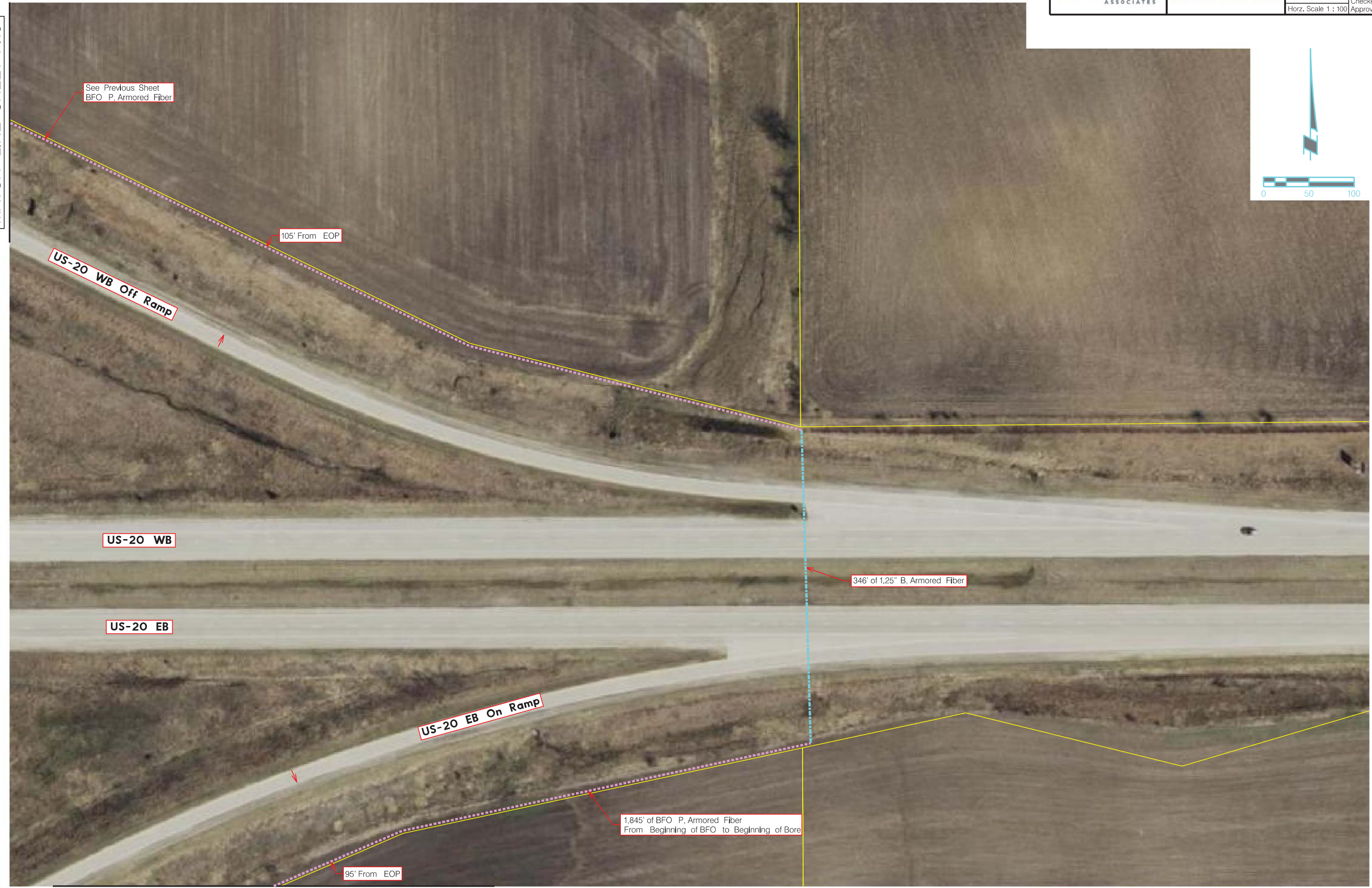
MATCH LINE SHEET F.17

FIBER DESIGN

MATCH LINE SHEET F.15



MATCH LINE SHEET F.16



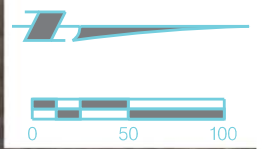
USER: rmehtis
 DATE: 08\22\2018
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MATCH LINE SHEET F.18

FIBER DESIGN



USER: rmehtis
 DATE: 08/22/2018
 DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.18.dgn



MATCH LINE SHEET F.20

MATCH LINE SHEET F.18



1,580' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

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

County Highway D35

872' of BFO P, Armored Fiber

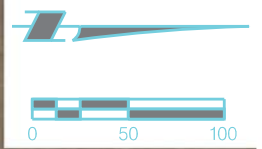
Route Around Utilities

See Previous Sheet
1.25" B, Armored Fiber

150' of 1.25" B, Armored Fiber

25' From EOP (Typ.)

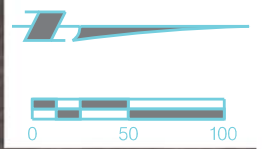
USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\F.19.dgn



MATCH LINE SHEET F.21

MATCH LINE SHEET F.19

USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.20.dgn

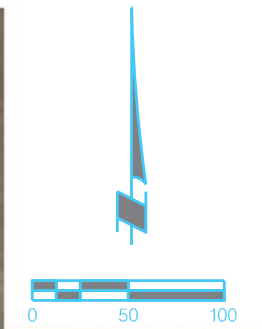


USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.21.dgn

MATCH LINE SHEET F.22

MATCH LINE SHEET F.20

FIBER DESIGN



USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East\Hardin_County_East_F.22.dgn

MATCH LINE SHEET F.21



See Previous Sheet
BFO P, Armored Fiber

30' From EOP (Typ.)

County Highway D35

272' of 1.25" B, Armored Fiber

Route Around Utility Pole

Route Around Utilities

142' of 1.25" B, Armored Fiber

Pull Box 22-1 - Approx. 30' North of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

County Highway S55

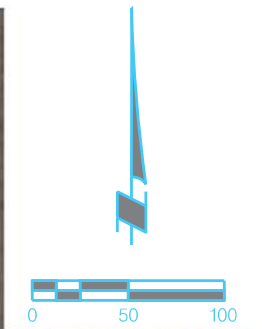
415' of BFO P, Armored Fiber

731' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of BFO

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

Route Around Utilities

MATCH LINE SHEET F.23



USER: rmehts DATE: 08\22\2018 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East\Hardin_County_East_F.23.dgn

MATCH LINE SHEET F.22

MATCH LINE SHEET F.24



See Previous Sheet
1.25" B, Armored Fiber

30' From EOP (Typ.)

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

367' of BFO P, Armored Fiber

Route Around Pedestal

26' of 1.25" B, Armored Fiber

Route Around Pedestal

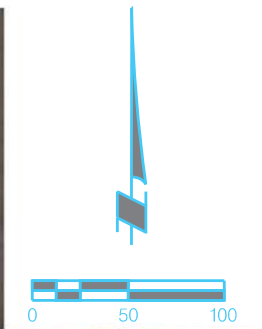
County Highway D35

279' of BFO P, Armored Fiber

129' of 1.25" B, Armored Fiber

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

803' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

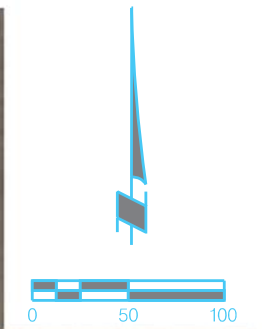


USER: rmehtis
 DATE: 08/22/2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin_County_East\Hardin_County_East_F.24.dgn

MATCH LINE SHEET F.23



MATCH LINE SHEET F.25

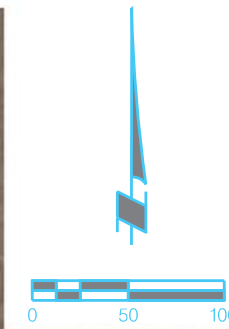


USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East_Hardin_County_East_F.25.dgn

MATCH LINE SHEET F.24

MATCH LINE SHEET F.26





USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East\East_F.26.dgn

MATCH LINE SHEET F.25

MATCH LINE SHEET F.27



"T" Avenue

Route Around Pedestal

See Previous Sheet
1.25" B, Armored Fiber

30' From EOP (Typ.)

664' of BFO P, Armored Fiber

500' of 1.25" B, Armored Fiber

3' From Utility Pole Line (Typ.)

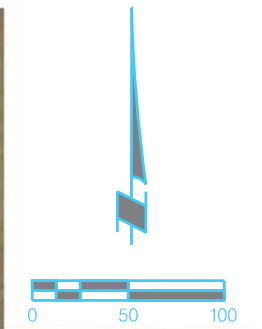
Pull Box 26-1 - Approx. 30' North of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

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

111' of 1.25" B, Armored Fiber

County Highway D35

578' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore



MATCH LINE SHEET F.26

MATCH LINE SHEET F.28



See Previous Sheet
BFO P, Armored Fiber

568' of 1.25" B, Armored Fiber

1,213' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

3' From Utility Pole Line (Typ.)

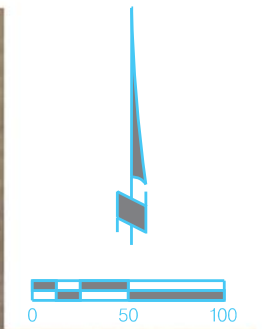
30' From EOP (Typ.)

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

County Highway D35

Route Around Culvert

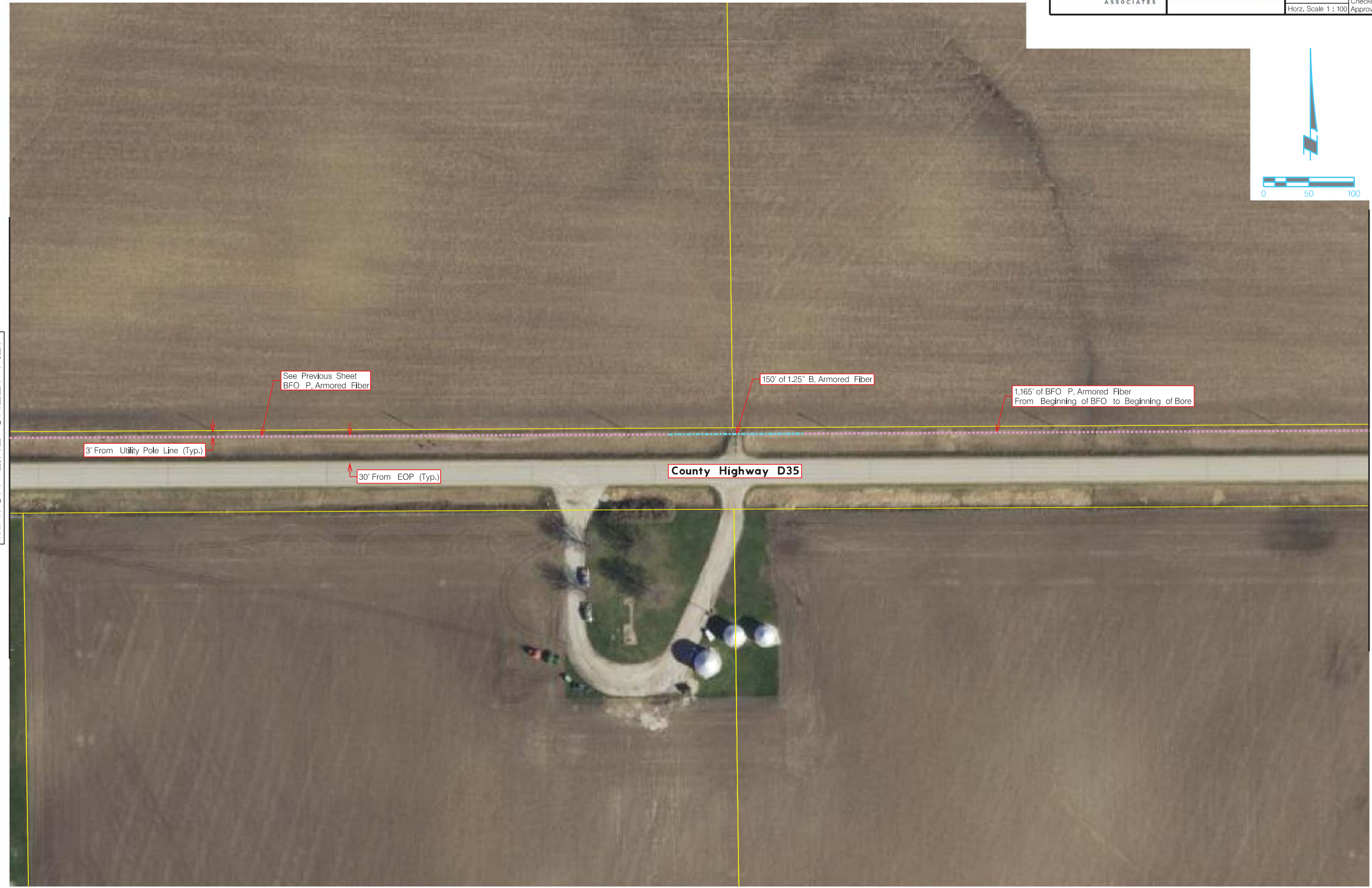
USER: rmehtis
DATE: 08\22\2018
DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin_County_East\Hardin_County_East_F.27.dgn

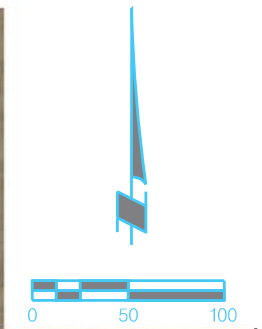


USER: rmehts
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MATCH LINE SHEET F.27

MATCH LINE SHEET F.29

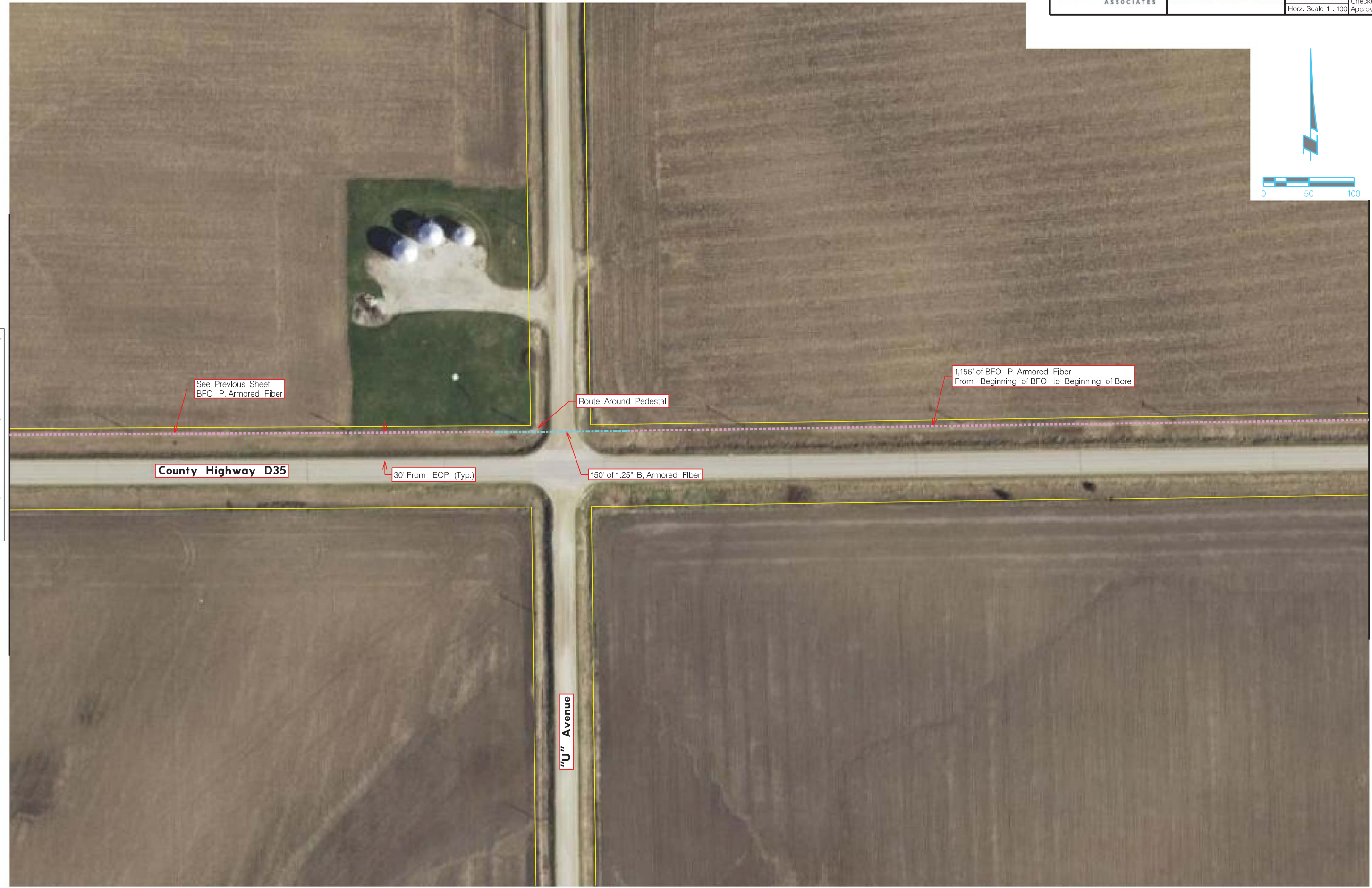


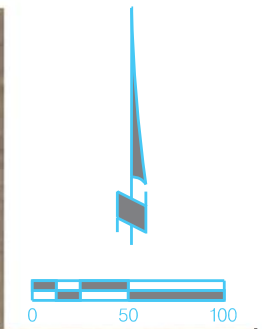


USER: rmehtis
 DATE: 08\22\2018
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MATCH LINE SHEET F.28

MATCH LINE SHEET F.30



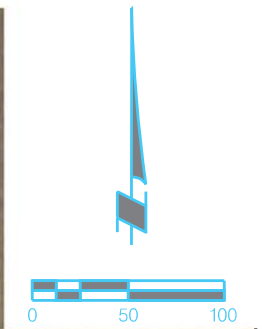


USER: rmehtis DATE: 08\22\2018 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin_County_East_Hardin_County_East_F.30.dgn

MATCH LINE SHEET F.29

MATCH LINE SHEET F.31



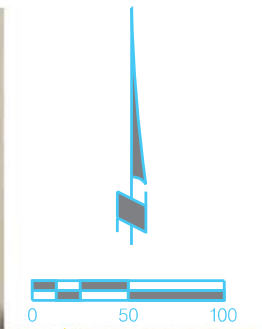


MATCH LINE SHEET F.30

MATCH LINE SHEET F.32



USER: rmehtis
 DATE: 08\22\2018
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MATCH LINE SHEET F.31

MATCH LINE SHEET F.33



See Previous Sheet
BFO P, Armored Fiber

Route Around Pedestal

Route Around Utility Pole/Pedestal

1,427' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of BFO

3' From Utility Pole Line (Typ.)

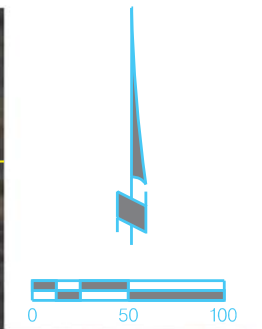
County Highway D35

30' From EOP (Typ.)

V Avenue

USER: rmehts
DATE: 08/22/2018
DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin_County_East\Hardin_County_East_F.32.dgn

FIBER DESIGN



MATCH LINE SHEET F.32

MATCH LINE SHEET F.34

FIBER DESIGN

USER: rmehts
 DATE: 08/22/2018
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See Previous Sheet
1.25" B, Armored Fiber

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

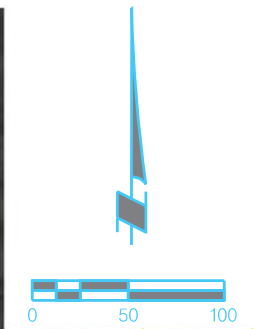
624' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

County Highway D35

30' From EOP (Typ.)

MATCH LINE SHEET F.33

 	PROJECT NO.	SHEET NO.
	018-1341	F.34
Date: 08\22\2018	Drawn: STS	Checked: RAM
Horz. Scale 1 : 100	Approved: GTS	



USER: rmehts
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation\018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin_County_East\Hardin_County_East_F.34.dgn

MATCH LINE SHEET F.35

FIBER DESIGN



MATCH LINE SHEET F.34

MATCH LINE SHEET F.36

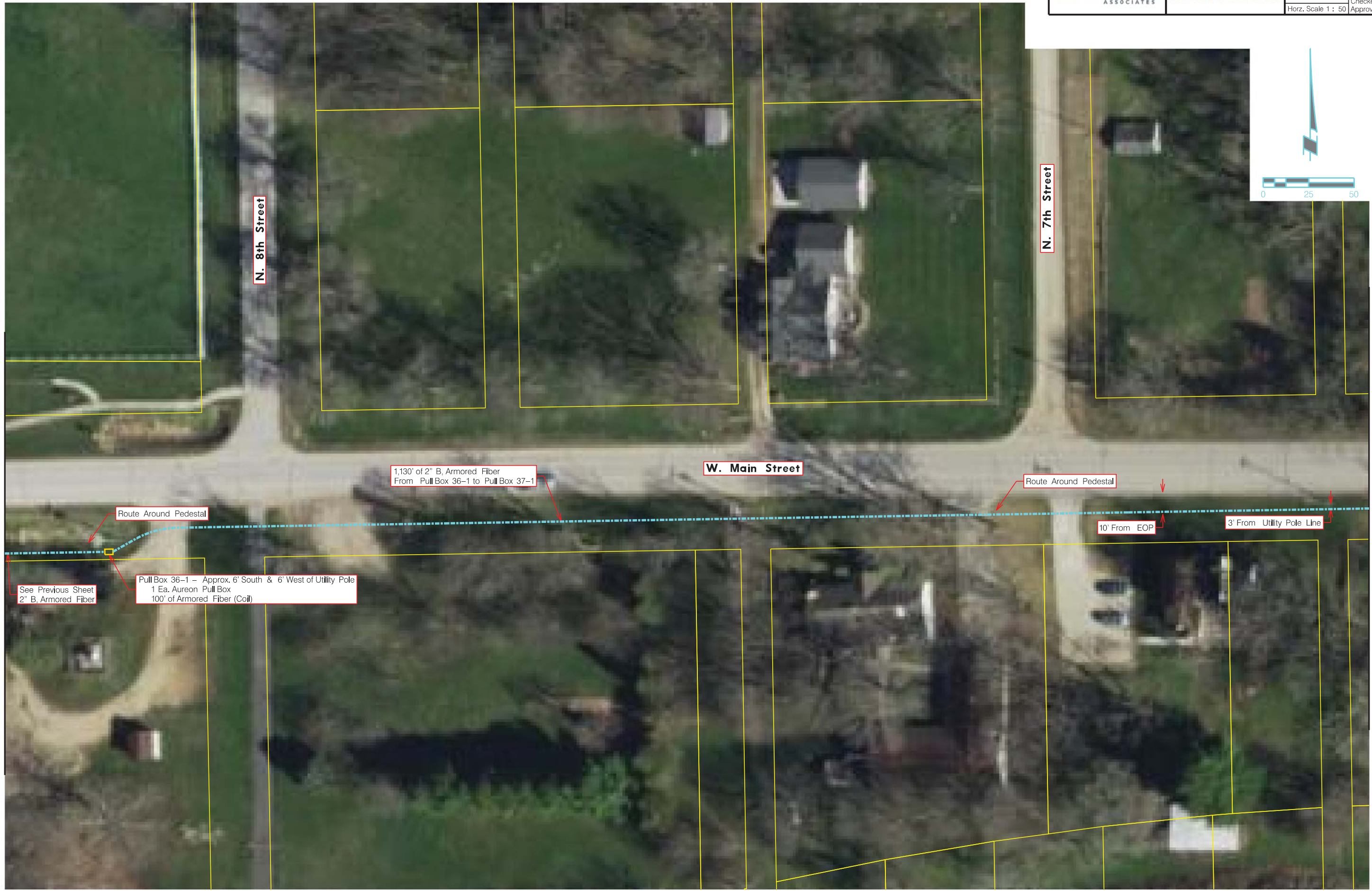


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MATCH LINE SHEET F.35

MATCH LINE SHEET F.37



1,130' of 2" B, Armored Fiber
From Pull Box 36-1 to Pull Box 37-1

Route Around Pedestal

Route Around Pedestal

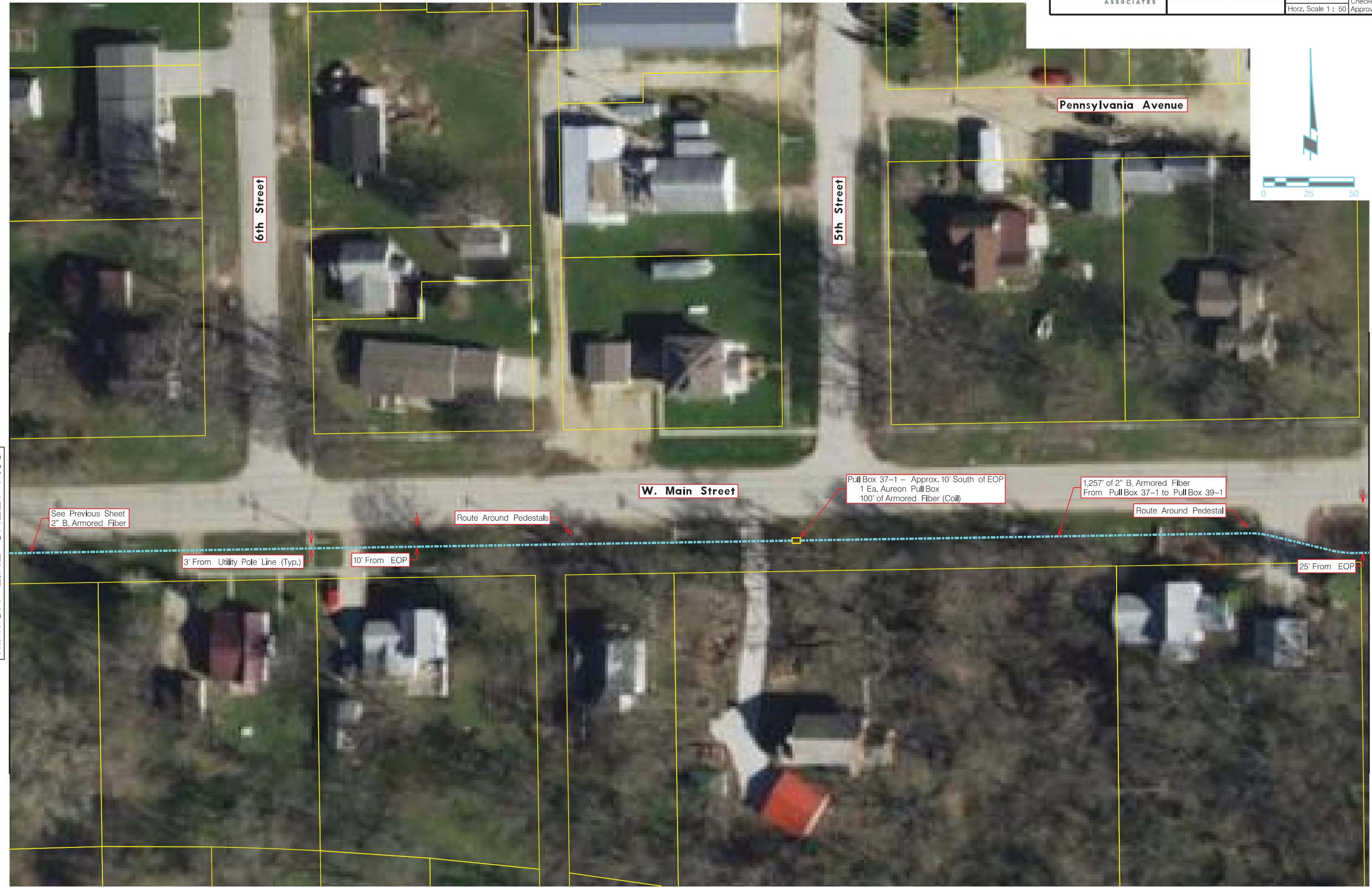
10' From EOP

3' From Utility Pole Line

See Previous Sheet
2" B, Armored Fiber

Pull Box 36-1 - Approx. 6' South & 6' West of Utility Pole
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

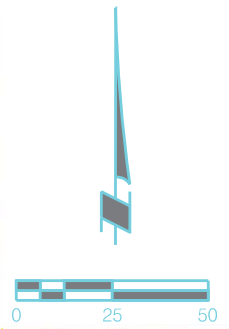
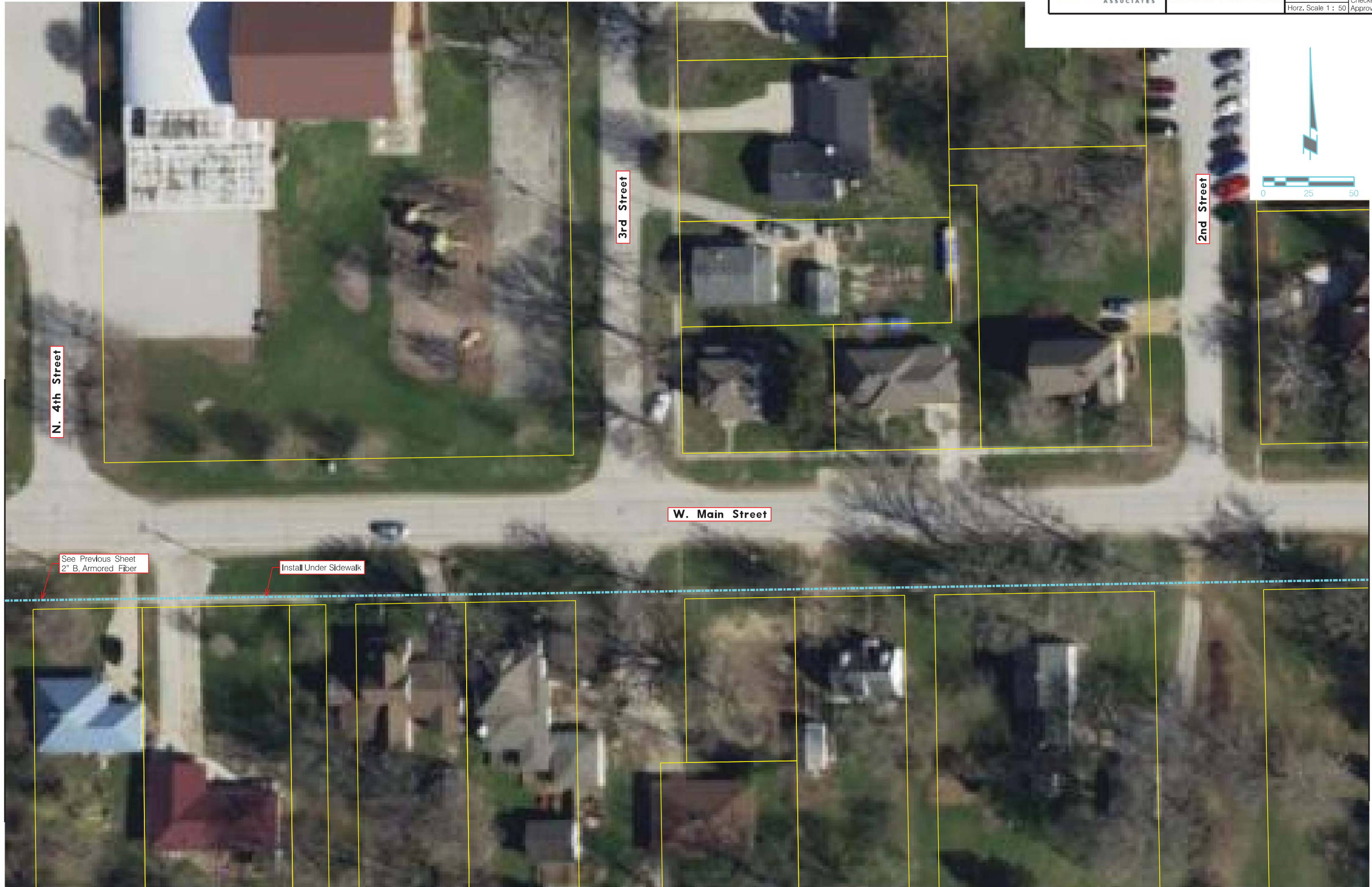
USER: rmehtis
DATE: 08/22/2018
DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.36.dgn



MATCH LINE SHEET F.36

MATCH LINE SHEET F.38

USER: rmehtis
 DATE: 08/22/2018
 DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.37.dgn

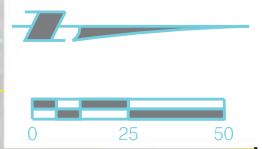


MATCH LINE SHEET F.37

MATCH LINE SHEET F.39

USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East_Hardin_County_East_F.38.dgn

FIBER DESIGN



See Sheet F.37
2" B, Armored Fiber
Install Under Sidewalk

Route Around Utility Pole/Pedestal

883' of 2" B, Armored Fiber
From Pull Box 39-1 to Pull Box 40-1

Route Around Utility Pole

Pull Box 39-1 - Approx. 4' South & 15' East of Utility Pole
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

15' From EOP

1st Street

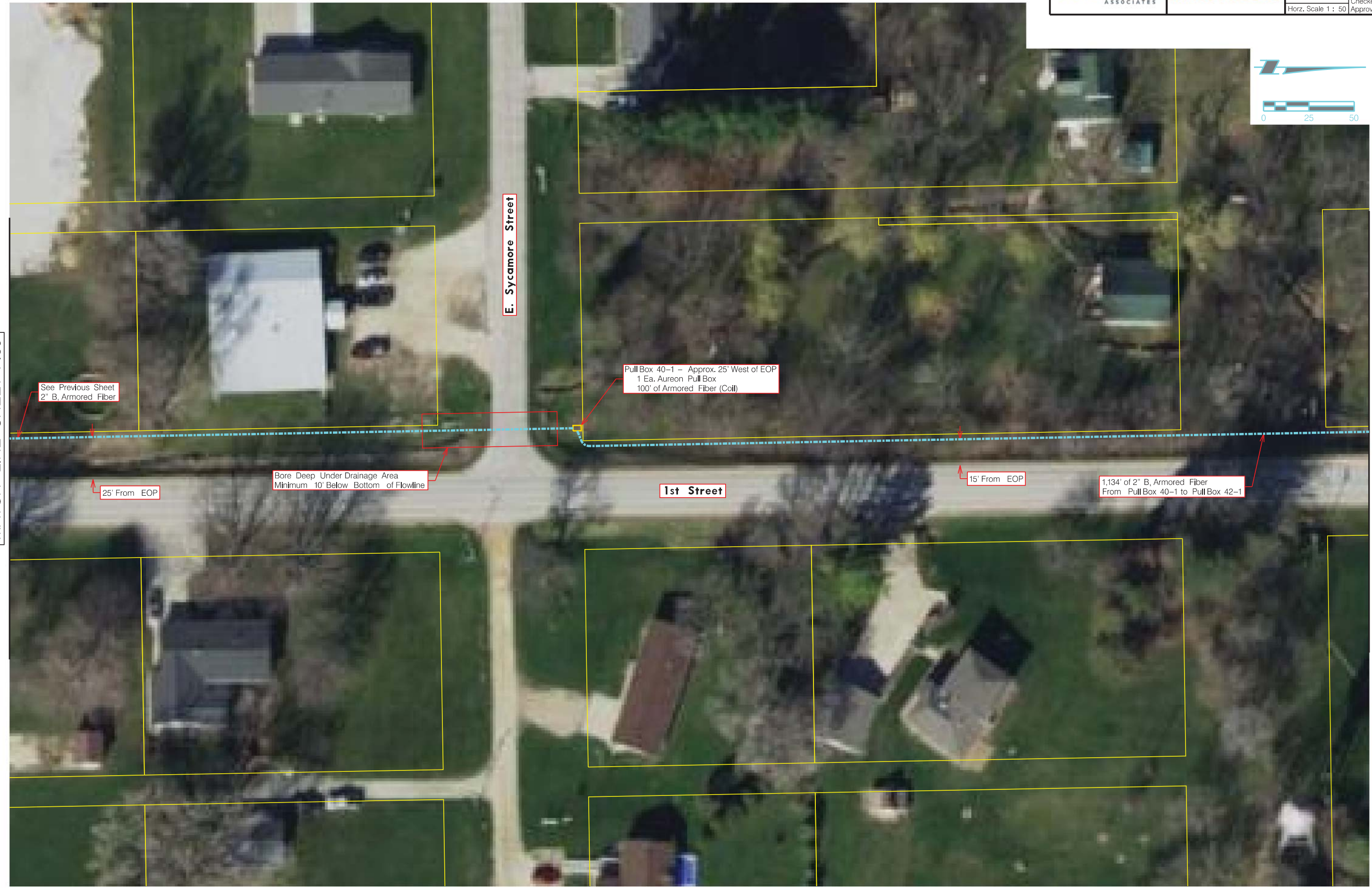
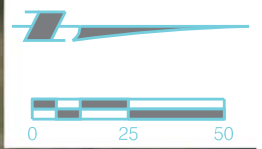
25' From EOP

E. Main Street

W. Market Street

MATCH LINE SHEET F.40

USER: rmehts
DATE: 08/22/2018
DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East_Hardin_County_East_F.38.dgn



MATCH LINE SHEET F.39

MATCH LINE SHEET F.41

USER: rmehts
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 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design_WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East_F.40.dgn

See Previous Sheet
2" B, Armored Fiber

Pull Box 40-1 - Approx. 25' West of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

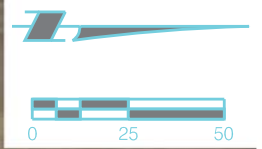
25' From EOP

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

1st Street

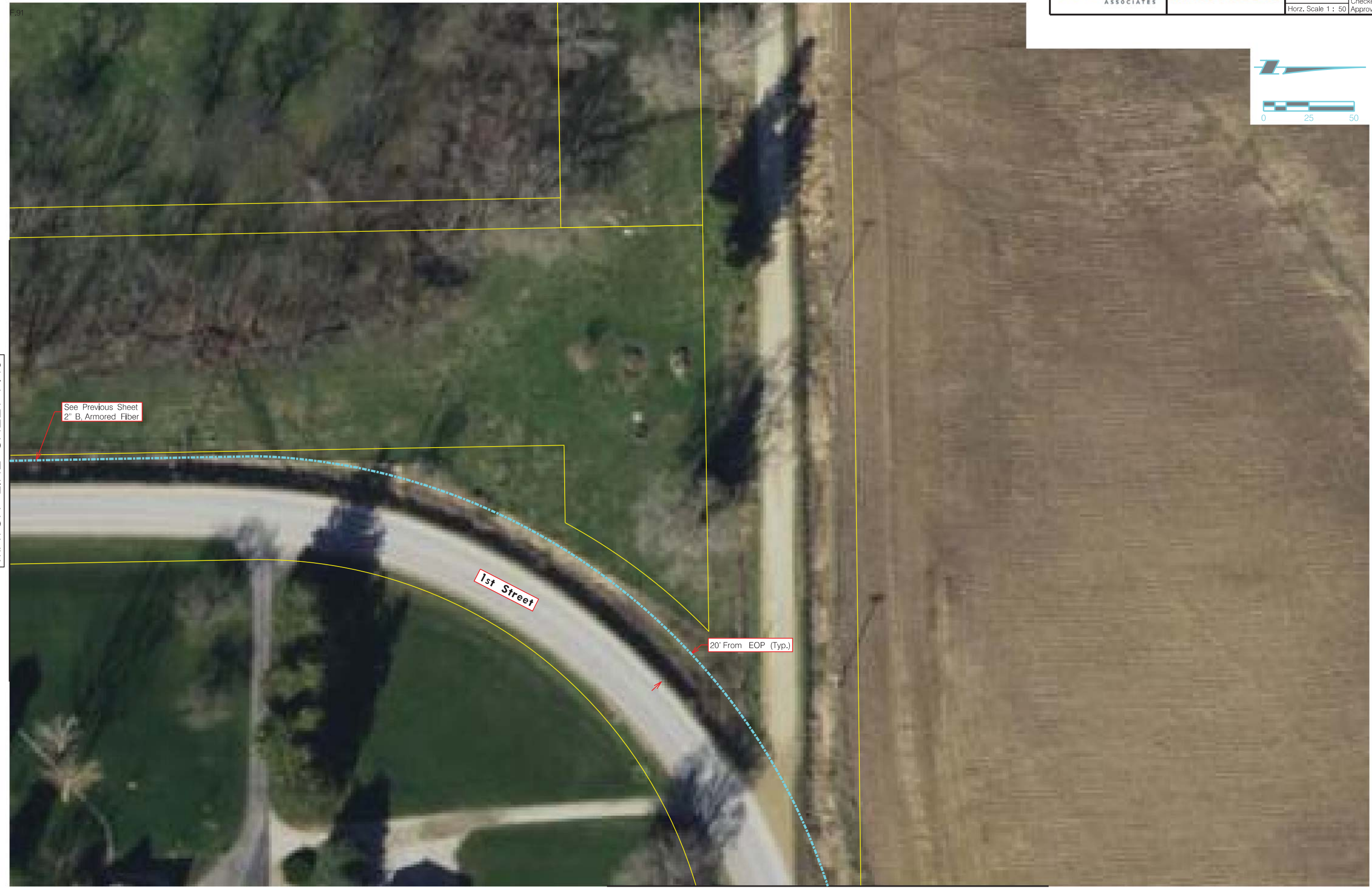
15' From EOP

1,134' of 2" B, Armored Fiber
From Pull Box 40-1 to Pull Box 42-1



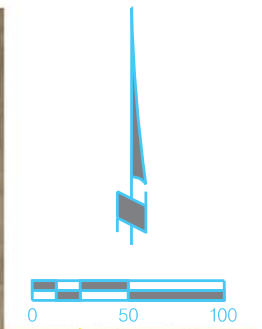
USER: rmehts DATE: 08\22\2018 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin County East\Hardin County East_F.41.dgn

MATCH LINE SHEET F.40



MATCH LINE SHEET F.42

FIBER DESIGN

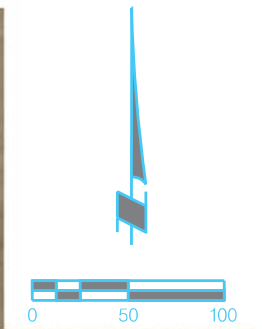


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 DATE: 08/22/2018
 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design_WO12\Sheets\Hardin_County_East\Hardin_County_East_F.42.dgn

MATCH LINE SHEET F.41

MATCH LINE SHEET F.43





MATCH LINE SHEET F.42



1028' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

98' of 1.25" B, Armored Fiber

Pull Box 43-1 - Approx. 30' North of EOP
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

30' From EOP (Typ.)

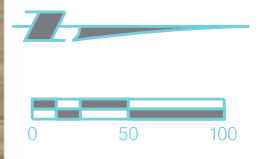
See Previous Sheet
BFO P, Armored Fiber

Route Around Utility Pole (Typ.)

Highway S56

200th Street

USER: rmehtis
DATE: 08/22/2018
DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\Microstation\018-1341_Highway 20 Fiber Design.dgn



USER: rmehts
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 DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin County East\Hardin County East_F.44.dgn

MATCH LINE SHEET F.43

MATCH LINE SHEET F.45



See Previous Sheet
BFO P, Armored Fiber

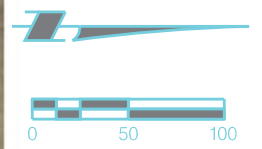
150' of 1.25" B, Armored Fiber

1,087' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

Highway S56

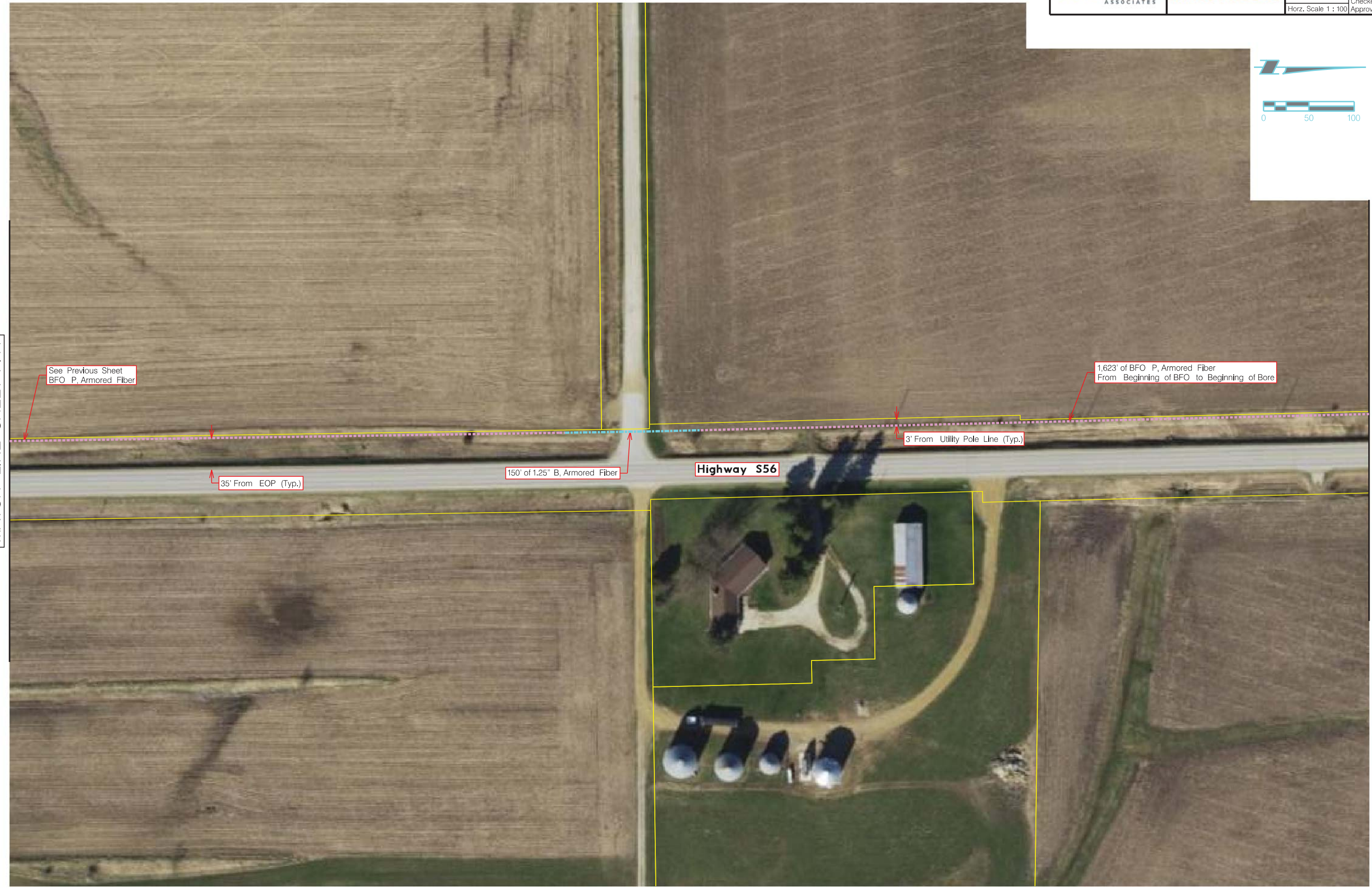
35' From EOP (Typ.)

FIBER DESIGN



MATCH LINE SHEET F.44

MATCH LINE SHEET F.46



See Previous Sheet
BFO P, Armored Fiber

1,623' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

35' From EOP (Typ.)

150' of 1.25" B, Armored Fiber

Highway S56

3' From Utility Pole Line (Typ.)

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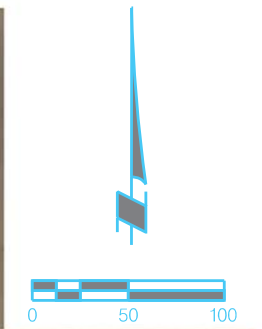


USER: rmehtis
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MATCH LINE SHEET F.45

MATCH LINE SHEET F.47





Pull Box 47-1 – Approx. 30' West of EOP
 1 Ea. Aureon Pull Box
 100' of Armored Fiber (Coil)

1788' of BFO P, Armored Fiber
 From Beginning of BFO to Beginning of Bore

185th Street

10' From Centerline

130' of 1.25" B, Armored Fiber

289' of 1.25" B, Armored Fiber

30' From EOP (Typ.)

See Sheet F.45
 BFO P, Armored Fiber

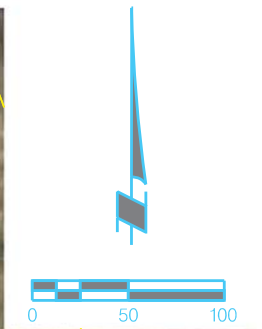
MATCH LINE SHEET F.46

MATCH LINE SHEET F.48

FIBER DESIGN

USER: rmehtis
 DATE: 08\22\2018
 DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.47.dgn

F.97



USER: rmehtis
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MATCH LINE SHEET F.47

MATCH LINE SHEET F.49



See Previous Sheet
BFO P, Armored Fiber

185th Street

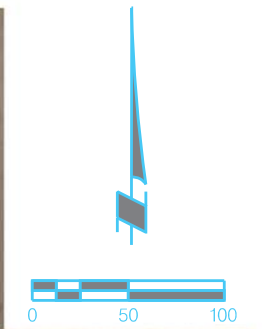
10' From Centerline (Typ.)

25' From Centerline

444' of 1.25" B, Armored Fiber
From Beginning of Bore to Pull Box 49-1

MATCH LINE SHEET F.50

		PROJECT NO. 018-1341	SHEET NO. F.49
		Date: 08\22\2018	Drawn: STS
			Checked: RAM
		Horz. Scale 1 : 100	Approved: GTS



MATCH LINE SHEET F.48



1510' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore

197' of 1.25" B, Armored Fiber

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

25' From Centerline

Contractor to Open-Cut Gravel Road and
Sweep BFO Perpendicular to Road

Pull Box 49-1 - Approx. 25' South of Centerline
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

See Previous Sheet
1.25" B, Armored Fiber

185th Street

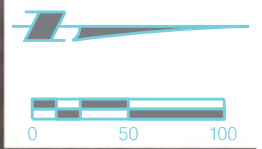
528' of BFO P, Armored Fiber

10' From Centerline

25' From Centerline

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

USER: rmehtis DATE: 08\22\2018 DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.49.dgn



USER: rmehts
 DATE: 08\22\2018
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MATCH LINE SHEET F.49

MATCH LINE SHEET F.51



See Previous Sheet
BFO P, Armored Fiber

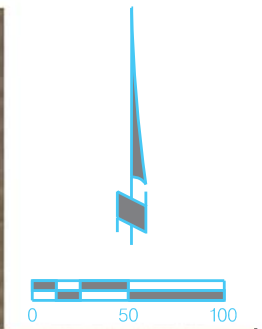
180' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of BFO

185th Street

10' From Centerline (Typ.)

25' From Centerline

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



185th Street

754' of BFO P, Armored Fiber
From Pull Box 51-1 to Beginning of Bore

Contractor to Open-Cut Gravel Road and
Sweep BFO Perpendicular to Road

Pull Box 51-1 - Approx. 25' South From Center of Gravel Road
1 Ea. Aureon Pull Box
100' of Armored Fiber (Coil)

539' of BFO P, Armored Fiber

5' From Centerline (Typ.)

See Previous Sheet
1.25" B, Armored Fiber

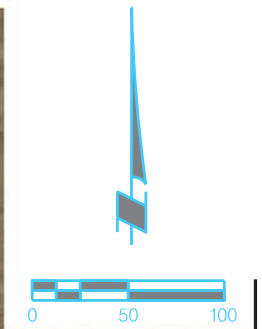
MATCH LINE SHEET F.50

MATCH LINE SHEET F.52

FIBER DESIGN

USER: rmehtis
DATE: 08/22/2018
DGN: F:\2018\001-1500\018-1341\Highway_20_Fiber_Design\WO12\40-Design\Microstation_018-1341_Highway_20_Fiber_Design\WO12\Sheets\Hardin_County_East\Hardin_County_East_F.51.dgn

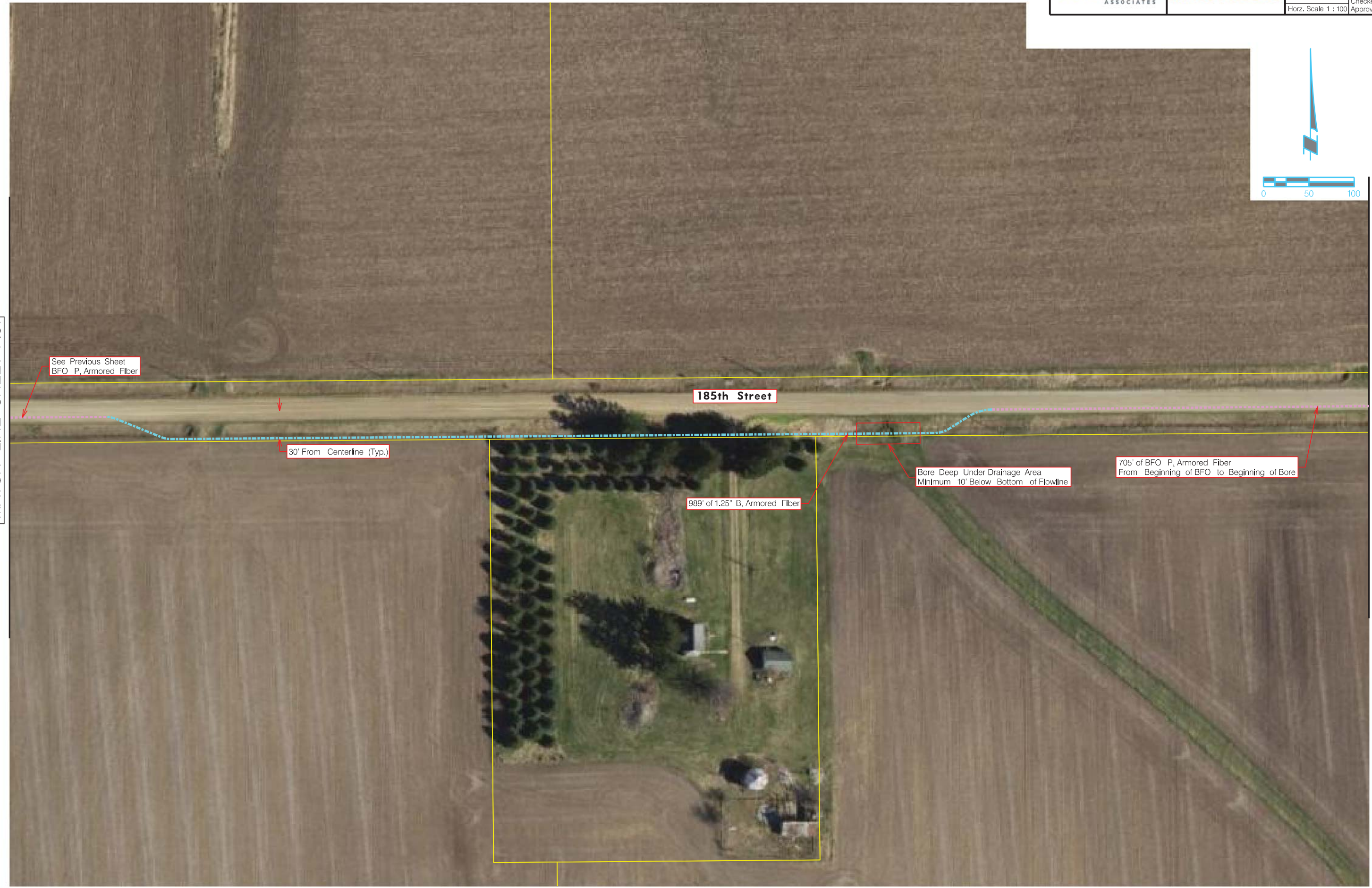
F.101



USER: rmehtis
 DATE: 08/22/2018
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MATCH LINE SHEET F.51

MATCH LINE SHEET F.53



See Previous Sheet
BFO P, Armored Fiber

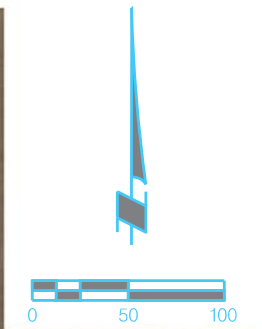
30' From Centerline (Typ.)

185th Street

989' of 1.25" B, Armored Fiber

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

705' of BFO P, Armored Fiber
From Beginning of BFO to Beginning of Bore



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MATCH LINE SHEET F.52

MATCH LINE SHEET F.54



See Previous Sheet
BFO P, Armored Fiber

5' From Centerline (Typ.)

185th Street

33' From Centerline

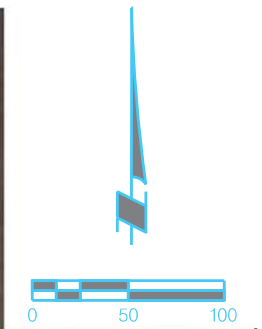
304' of 1.25" B, Armored Fiber

606' of BFO P, Armored Fiber

47' From Centerline

638' of 1.25" B, Armored Fiber
From Beginning of Bore to Beginning of BFO

"Y" Avenue

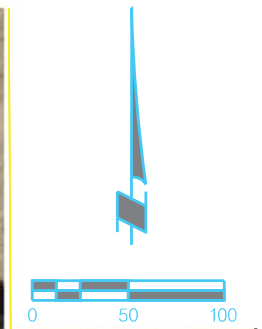


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MATCH LINE SHEET F.53

MATCH LINE SHEET F.55





USER: rmehtis
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 DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.55.dgn

MATCH LINE SHEET F.54

MATCH LINE SHEET F.56



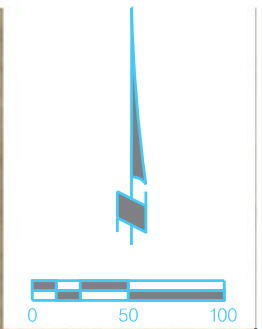
See Previous Sheet
1.25" B, Armored Fiber

43' From Centerline (Typ.)

185th Street

2,989' of BFO P, Armored Fiber
From Beginning of BFO to Pull Box 57-1

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



MATCH LINE SHEET F.55

MATCH LINE SHEET F.57

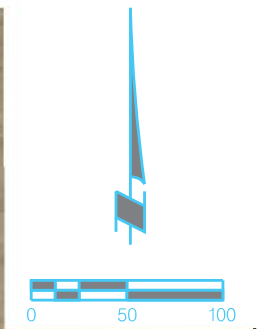


See Previous Sheet
BFO P. Armored Fiber

185th Street

10' From Centerline (Typ.)

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 DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.56.dgn

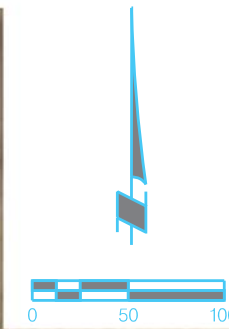


USER: rmetris
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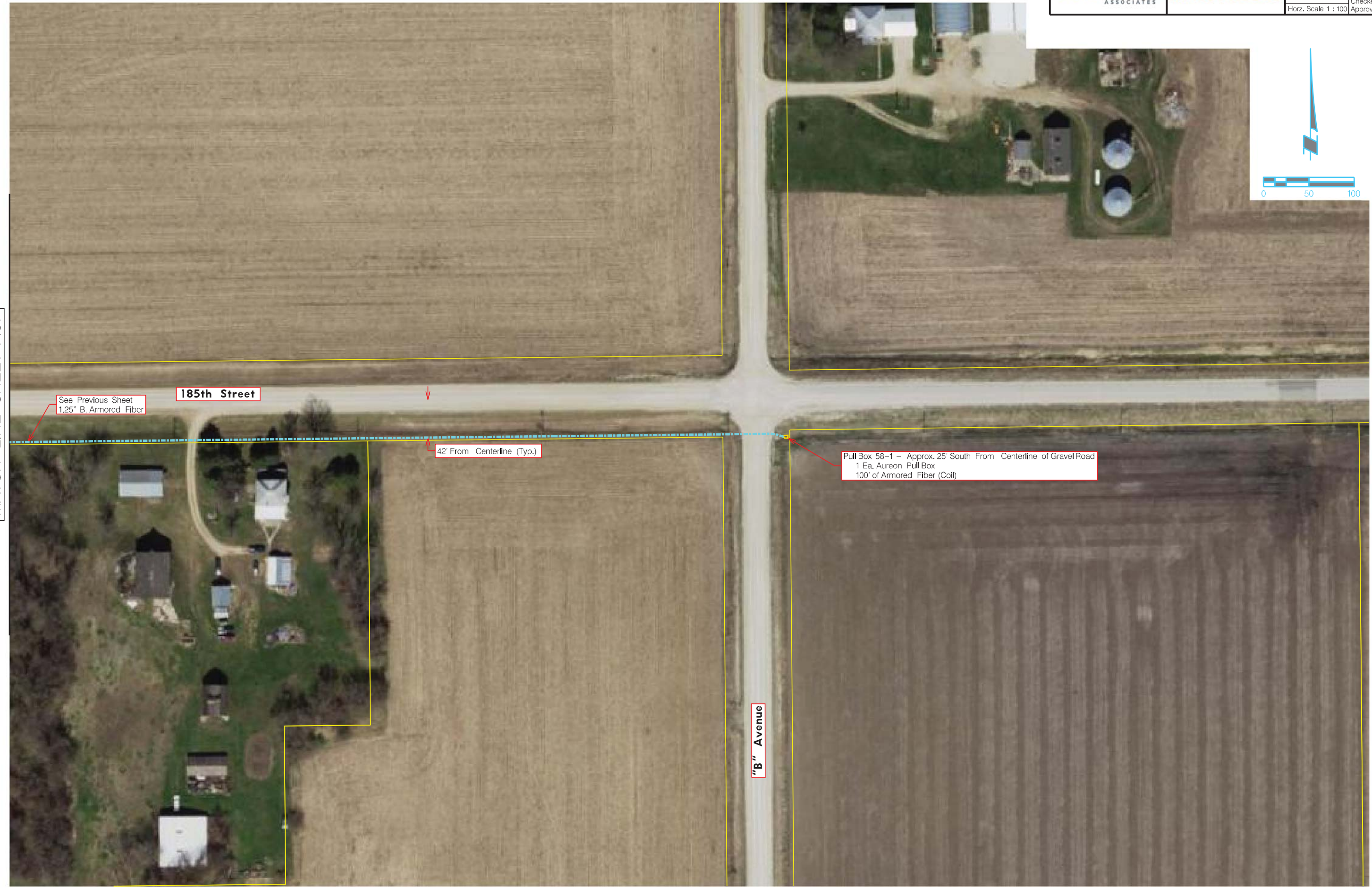
MATCH LINE SHEET F.56

MATCH LINE SHEET F.58





MATCH LINE SHEET F.57



USER: rmehtis
 DATE: 08/22/2018
 DGN: F:\2018\001-1500\018-1341\Highway 20 Fiber Design\WO12\40-Design\Microstation_018-1341_Highway 20 Fiber Design\WO12\Sheets\Hardin County East\Hardin County East_F.58.dgn



HARDIN COUNTY

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

HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant: Aureon (Iowa Network Services)
Company Name

7760 Office Plaza Drive South
Address

West Des Moines IA 50266
City State Zip

Applicant Contact: Ryan Meints (Olsson) for Jeff Klocko (Aureon) (515) 830 - 0112
Name Phone

rmeints@olssonassociates.com jeff.klocko@Aureon.com
Email

Utility Type: Buried fiber optics

Drainage District(s) Crossed: DD H-H 118-232

Facilities Crossed (specific tile, open ditch): DD H-H 118-232, DD 18, DD 13, DD 48, DD 64, DD 111, DD 103, DD 3, DD 74, DD 44, DD 62, DD 28, DD 128, DD 1, and DD 8

Description of Work: _____
(Location plan of proposed utility must be attached.) Directional bore of conduit and direct bury of fiber optic cable per attached plans

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

Applicant Signature

9/5/2018
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: _____ <i>Board of Supervisor Chairman, Acting as Drainage District Trustee</i>	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 forth-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.



HARDIN COUNTY

1215 Edgington Ave., Suite 1
Eldora, IA 50627
(641) 939-8108

HARDIN COUNTY DRAINAGE DISTRICT UTILITY PERMIT APPLICATION

Applicant: Winnebago Cooperative Telecom Association
Company Name
704 E Main St
Address
Lake Mills Iowa 50450
City State Zip

Applicant Contact: David Arneson (641) 592 - 6105
Name Phone
DavidArneson@WCTatel.com
Email

Utility Type: Fiber Optic Cable

Drainage District(s) Crossed: DD F-H1

Facilities Crossed (specific tile, open ditch): Tile

Description of Work: Bury Fiber Optic Cable from Mallard Ave and Hardin Rd going South 1000ft on the
East side of Mallard Ave then East 500ft.
(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.

David Arneson
Applicant Signature

9-5-18
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 _____ Date: _____
Board of Supervisor Chairman, Acting as Drainage District Trustee
APPROVED PERMIT #: _____



Hardin Street

Maillard Avenue

MC-IF/HH43

MC-IF/HH44

IF-HH

IF-CO/HHN

IF-CO/1

Hardin Street

1 Inch = 125 Feet

From	To	PType	Units	Feet	BM	HB	HO	Remarks	As Staked
MC-IF/HH44	IF-CO/HHN		BFO 144(0)	370		FO(144)(144)	1		Name: MC/HH44 MC/HH44 MC/HH44 MC/HH44 MC/HH44
	IF-CO/HHN		UD(3X1.2,00)P	220					State: ILL County: Ford Section: 0 Range: 000 Twp: 000 Range By: 000
(MC-IF/HH42)	MC-IF/HH43	UH(24x36x30)	BFO 144(0)	5584	53				
	MC-IF/HH43		UD(2X1.1,25)P	5434	61(3)			Pavement	
	MC-IF/HH43				61(3)			Driveway	
	MC-IF/HH43				61(3)			Field Drive	
	MC-IF/HH43				61(3)			Road	
	MC-IF/HH43				61(3)			Field Drive	

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