

APPENDIX 1B AERIAL PHOTO BASED ALIGNMENT SHEETS

*WBI ENERGY TRANSMISSION, INC
WAHPETON EXPANSION
PROJECT*



HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093



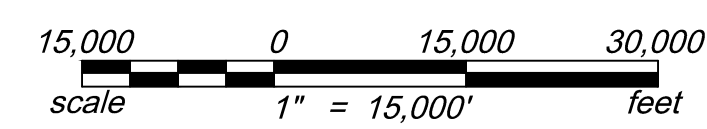
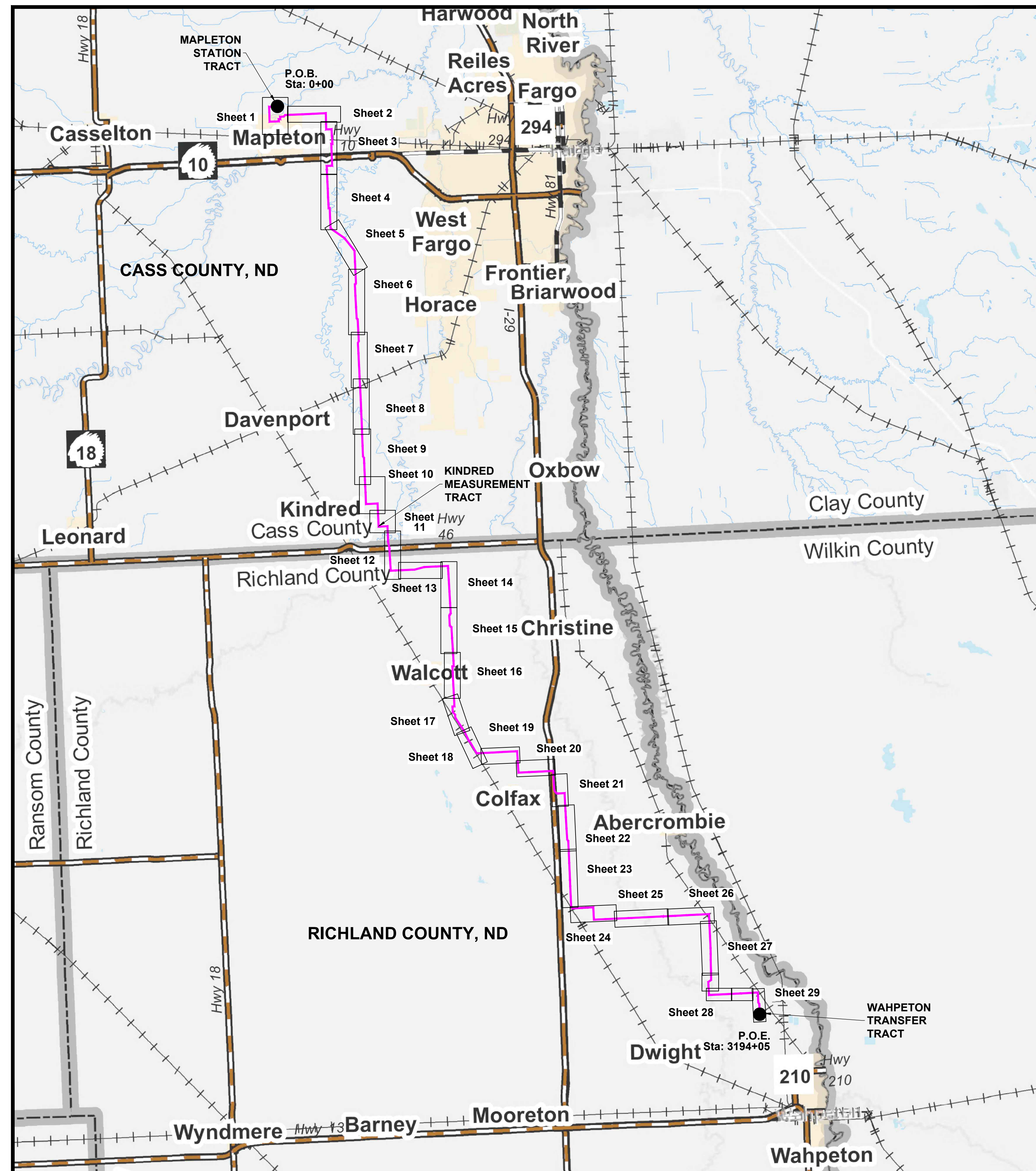
*WAHPETON
EXPANSION PROJECT*

<i>Horizontal Project Length</i>	<i>Revision</i>
<i>319,405' / 60.49 mi</i>	<i>R1</i>
<i>Drawing Date</i>	<i>01/19/22</i>

WAHPETON EXPANSION PROJECT

Cass County, North Dakota
Richland County, North Dakota

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Sheet 3	Sta 220+00 - 360+00
Sheet 4	Sta 360+00 - 500+00
Sheet 5	Sta 500+00 - 630+00
Sheet 6	Sta 630+00 - 760+00
Sheet 7	Sta 760+00 - 870+00
Sheet 8	Sta 870+00 - 980+00
Sheet 9	Sta 980+00 - 1090+00
Sheet 10	Sta 1090+00 - 1200+00
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Sheet 24	Sta 2500+00 - 2640+00
Sheet 25	Sta 2640+00 - 2750+00
Sheet 26	Sta 2750+00 - 2860+00
Sheet 27	Sta 2860+00 - 2980+00
Sheet 28	Sta 2980+00 - 3080+00
Sheet 29	Sta 3080+00 - 3194+05



LEGEND	
	Proposed Pipeline Corridor



WAHPETON EXPANSION PROJECT

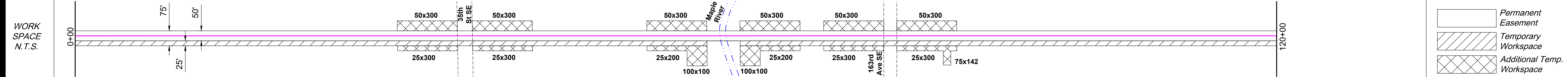
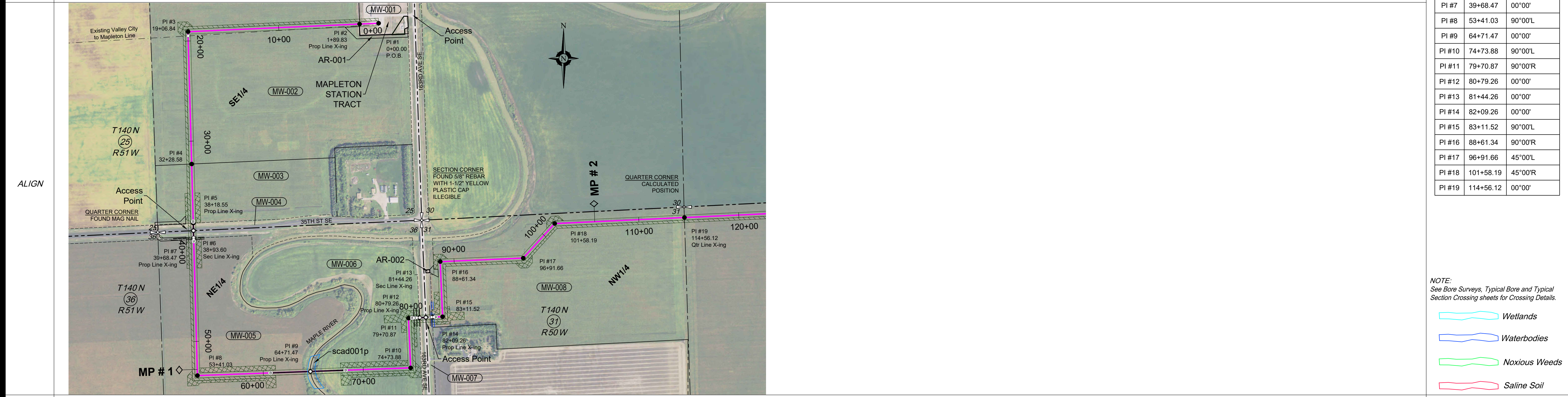
HSE INC.
HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

Date Surveyed:	JULY 2021	HSE Project #	19-21
Surveyed By:	AL		
Drawing Date:	7/12/21		
Drawn By:	D. Smith		
Checked By:	J. Harned	Coversheet	
Revision No.:	R1		
Revision Date:	4-18-22		

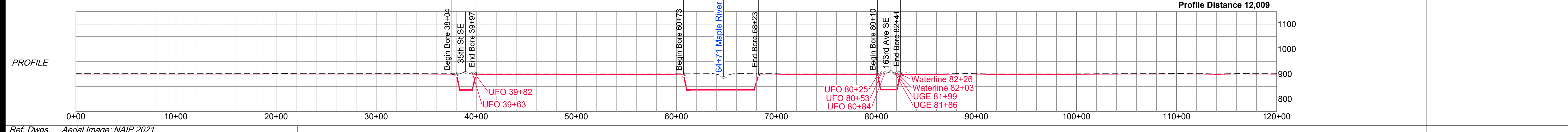


Know what's below
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MT - 1-800-424-5555
ND - 1-800-795-0555

OWNER	MW-001	MW-002	MW-003	MW-004	MW-005	MW006	MW-007	MW-008
LOT 1, BLOCK 1, MINOR SUB SEC. 25, T140N, R51W 190' Uncultivated	PART OF N1/2 OF SE1/4 & N1/2 OF S1/2 OF SE1/4 LESS R/W, SEC. 25, T140N, R51W 3039' Cultivated	PART OF S1/2 OF S1/2 OF SE1/4 LESS R/W, SEC. 25, T140N, R51W 590' Cultivated	SEC. 25, 36, T140N, R51W 150' Uncultivated	GOVT LOT 1 OF NE 1/4 LESS R/W SEC. 36, T140N, R51W 2382' Cultivated - 121' Uncultivated	GOVT LOT 2 OF NE 1/4 LESS R/W SEC. 36, T140N, R51W 1491' Cultivated - 116' Uncultivated	SEC. 36, T140N, R51W SEC. 31, T140N, R50W 130' Uncultivated	N1/2 OF NW1/4 WITH EXCEPTIONS LESS R/W, SEC. 31, T140N, R50W 3219' Cultivated - 28' Uncultivated	
RODDAGE	189.83' / 11.50 Rods	3038.74' / 184.17 Rods	589.98' / 35.76 Rods	149.92' / 9.09 Rods	2503.00' / 151.70 Rods	1607.79' / 97.44 Rods	130.00' / 7.87 Rods	3246.86' / 196.78 Rods



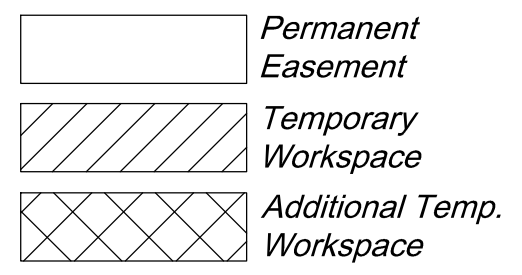
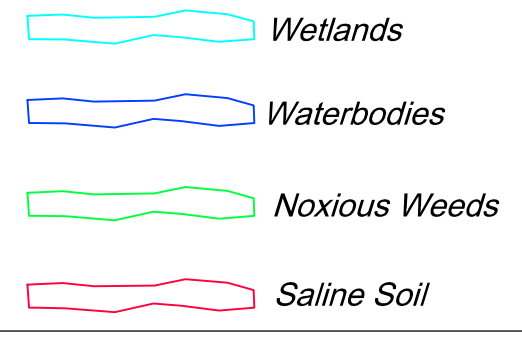
ENVIRO	Water Crossing Name: scad001p Crossing Method: Bore	Wetland Name: 64+71 Intermediate	Miscellaneous/Comments: Approx. 150' ECD, Approx. 100' mats
HUC-12 Watershed Seeding Mix	090202050704		



<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10,636</td> <td>12.75" OD, .250" WT, X65, FBE, TRL</td> </tr> <tr> <td>2</td> <td>1174</td> <td>12.75" OD, .312" WT, X65, FBE w/ARO, TRL</td> </tr> <tr> <td>3</td> <td>190</td> <td>12.75" OD, .375" WT, X65, FBE, TRL</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	10,636	12.75" OD, .250" WT, X65, FBE, TRL	2	1174	12.75" OD, .312" WT, X65, FBE w/ARO, TRL	3	190	12.75" OD, .375" WT, X65, FBE, TRL	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				<p>WHAHPETON EXPANSION PROJECT</p> <p>1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>500 0 500 1000 scale 1" = 500' - 22 x 34 feet 1" = 1000' - 11 x 17</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p>	<p>Sec. 25, 36, T140N, R51W, Sec. 31, T140N, R50W, 5th P.M., Cass Co., North Dakota</p> <p>Sheet 1 R1</p>
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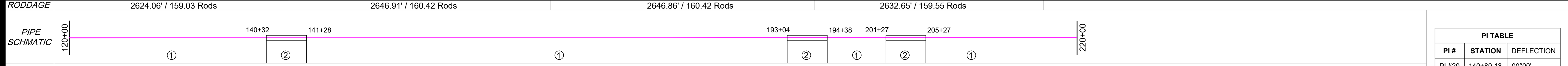
PI #	STATION	DEFLECTION
PI #1	0+00.00	00°00'
PI #2	1+89.83	00°00'
PI #3	19+06.84	89°00'L
PI #4	32+28.58	00°00'
PI #5	38+18.55	00°00'
PI #6	38+93.60	00°00'
PI #7	39+68.47	00°00'
PI #8	53+41.03	90°00'L
PI #9	64+71.47	00°00'
PI #10	74+73.88	90°00'L
PI #11	79+70.87	90°00'R
PI #12	80+79.26	00°00'
PI #13	81+44.26	00°00'
PI #14	82+09.26	00°00'
PI #15	83+11.52	90°00'L
PI #16	88+61.34	90°00'R
PI #17	96+91.66	45°00'L
PI #18	101+58.19	45°00'R
PI #19	114+56.12	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.



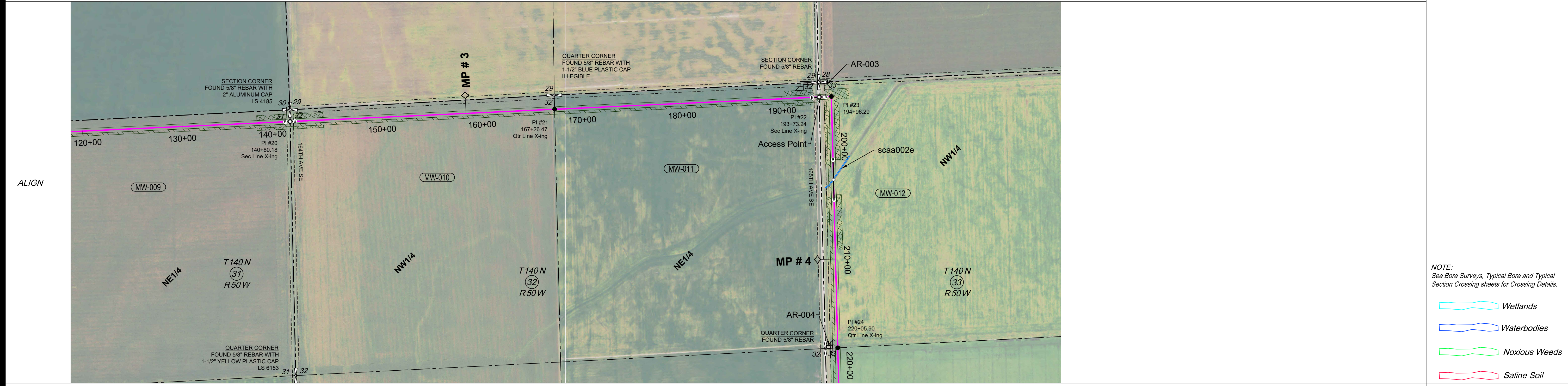
ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

Co, State: MW-009 MW-010 MW-011 MW-012
 OWNER: NE1/4 SEC. 31, T140N, R50W 2591' Cultivated - 33' Uncultivated 2624.06' / 159.03 Rods
 NW1/4 SEC. 32, T140N, R50W 2613' Cultivated - 34' Uncultivated 2646.91' / 160.42 Rods
 NE1/4 SEC. 32, T140N, R50W 2597' Cultivated - 50' Uncultivated 2646.86' / 160.42 Rods
 NW1/4 SEC. 33, T140N, R50W 2558' Cultivated - 75' Uncultivated 2632.65' / 159.55 Rods



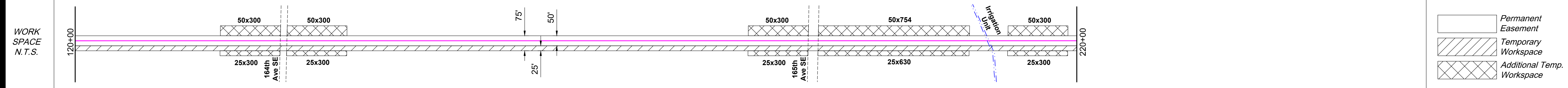
FEATURES: 140+32 Begin Bore, 140+80 164th Ave SE, 141+28 End Bore, 193+04 Begin Bore, 193+73 165th Ave SE, 194+21 Cenex Line, 194+38 End Bore, 201+27 Begin Bore, 203+27 Irr Unit, 205+27 End Bore

PI TABLE		
PI #	STATION	DEFLECTION
PI #20	140+80.18	00°00'
PI #21	167+26.47	00°00'
PI #22	193+73.24	00°00'
PI #23	194+96.29	91°00'R
PI #24	220+05.90	00°00'



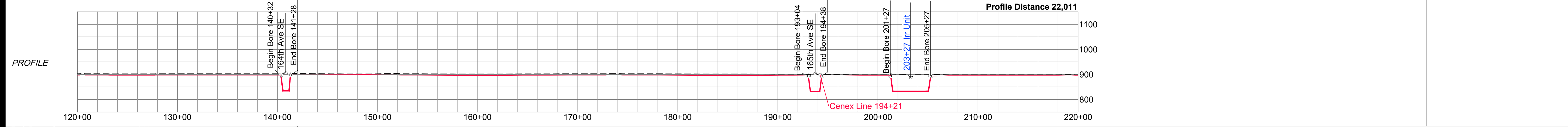
NOTE: See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Wetlands
- Waterbodies
- Noxious Weeds
- Saline Soil
- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace



ENVIRO	Name	Water Crossing	Method	Wetland Name	Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix
	scaa002e	Bore	Yes		203+27	Intermediate	Approx. 150' ECD	090202050704	090202050603

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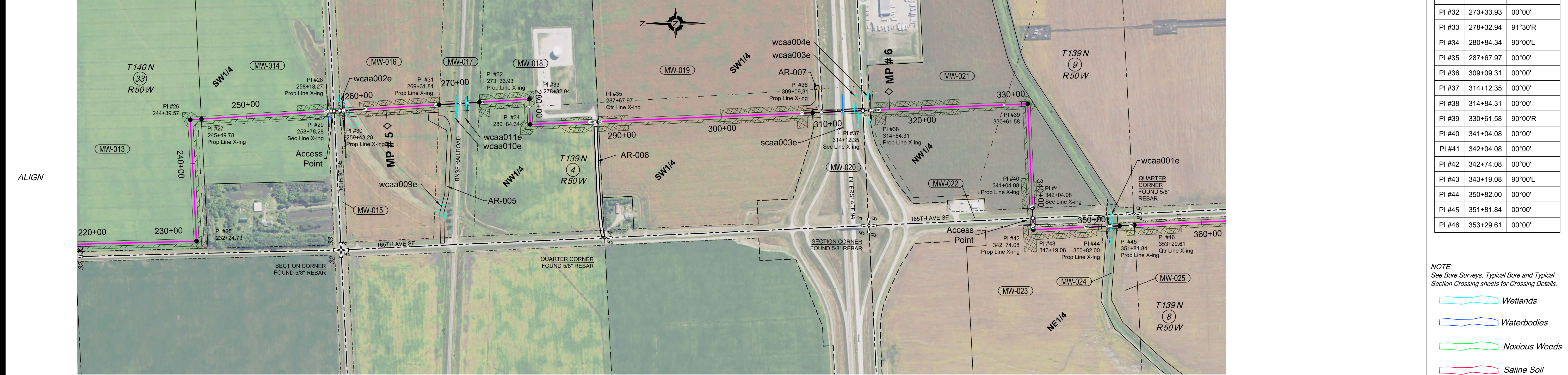


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Co, State	SECTION 33, T140N, R50W, SECTIONS 4, 8, 9, T139N, R50W, CASS COUNTY, NORTH DAKOTA												
OWNER	MW-013	MW-014	MW-015	MW-016	MW-017	MW-018	MW-019	MW-020	MW-021	MW-022	MW-023	MW-024	MW-025
RODDAGE	2543.88' / 154.17 Rods	1263.50' / 76.58 Rods	130.00' / 7.88 Rods	988.54' / 59.91 Rods	402.11' / 24.37 Rods	1434.04' / 86.91 Rods	2141.34' / 129.78 Rods	575.01' / 34.85 Rods	2619.77' / 158.77 Rods	170.00' / 10.30 Rods	807.91' / 48.96 Rods	99.85' / 6.05 Rods	147.76' / 8.96 Rods

PIPE SCHMATIC													
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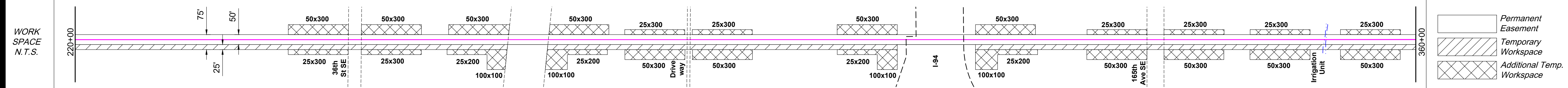
FEATURES	<p>257+98 Begin Bore</p> <p>258+16 OHE</p> <p>258+22 Waterline</p> <p>258+25 Nustar Line</p> <p>258+46 UFO</p> <p>258+78 36th St SE</p> <p>259+35 UFO</p> <p>259+66 UFO</p> <p>259+80 UFO</p> <p>261+87 End Bore</p> <p>269+02 Begin Bore</p> <p>271+43 BNSF RR</p> <p>272+15 UFO</p> <p>273+63 End Bore</p> <p>279+08 Cenex Line</p> <p>286+86 Begin Bore</p> <p>287+34 Driveway</p> <p>287+82 End Bore</p> <p>308+04 Begin Bore</p> <p>309+98 Access Rd</p> <p>312+09 Interstate 94</p> <p>314+12 Access Rd</p> <p>314+90 UGE</p> <p>315+17 Cenex Line</p> <p>315+70 End Bore</p> <p>328+25 Cenex Line</p> <p>340+88 Begin Bore</p> <p>342+04 165th Ave SE</p> <p>342+68 UFO</p> <p>342+89 End Bore</p> <p>348+50 Begin Bore</p> <p>350+57 Culvert 14</p> <p>350+72 Culvert 14</p> <p>350+99 Ex Dm 14</p> <p>353+00 End Bore</p>												
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PI TABLE		
PI #	STATION	DEFLECTION
PI #25	232+24.73	91°30'L
PI #26	244+39.57	89°30'R
PI #27	245+49.78	00°00'
PI #28	258+13.27	00°00'
PI #29	258+78.28	00°00'
PI #30	259+43.28	00°00'
PI #31	269+31.81	00°00'
PI #32	273+33.93	00°00'
PI #33	278+32.94	91°30'R
PI #34	280+84.34	90°00'L
PI #35	287+67.97	00°00'
PI #36	309+09.31	00°00'
PI #37	314+12.35	00°00'
PI #38	314+84.31	00°00'
PI #39	330+61.58	90°00'R
PI #40	341+04.08	00°00'
PI #41	342+04.08	00°00'
PI #42	342+74.08	00°00'
PI #43	343+19.08	90°00'L
PI #44	350+82.00	00°00'
PI #45	351+81.84	00°00'
PI #46	353+29.61	00°00'

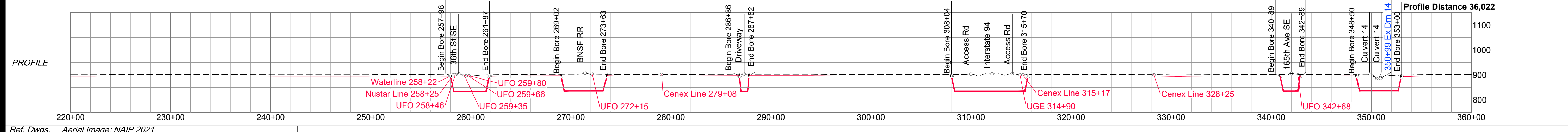
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- Wetlands
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- Noxious Weeds
- Saline Soil



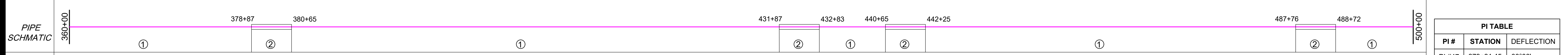
ENVIRO	Water Crossing	Name	Bridge						scaa003e							
	Wetland	Name	Survey Extent	wcaa002e	260+24	wcaa009e	269+00	wcaa010e	271+00	wcaa011e	271+98	wcaa003e	313+47	wcaa004e	314+68	wcaa001e
	Environmental Feature			Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Wetland	Minor	Wetland	Wetland	Wetland	Wetland	
	Miscellaneous/Comments			Approx. 175' ECD			Approx. 100' ECD		Approx. 100' ECD		Approx. 100' ECD	Approx. 50' mats	Approx. 100' ECD	Approx. 50' mats	Approx. 100' ECD	Approx. 50' mats
	HUC-12 Watershed			090202050603												
	Seeding Mix															

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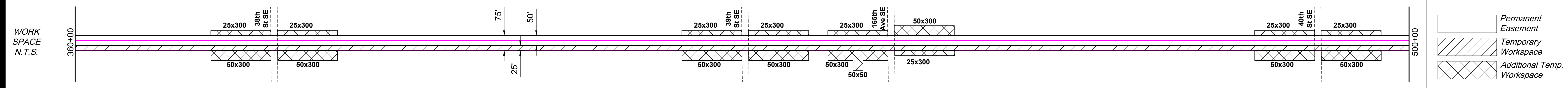
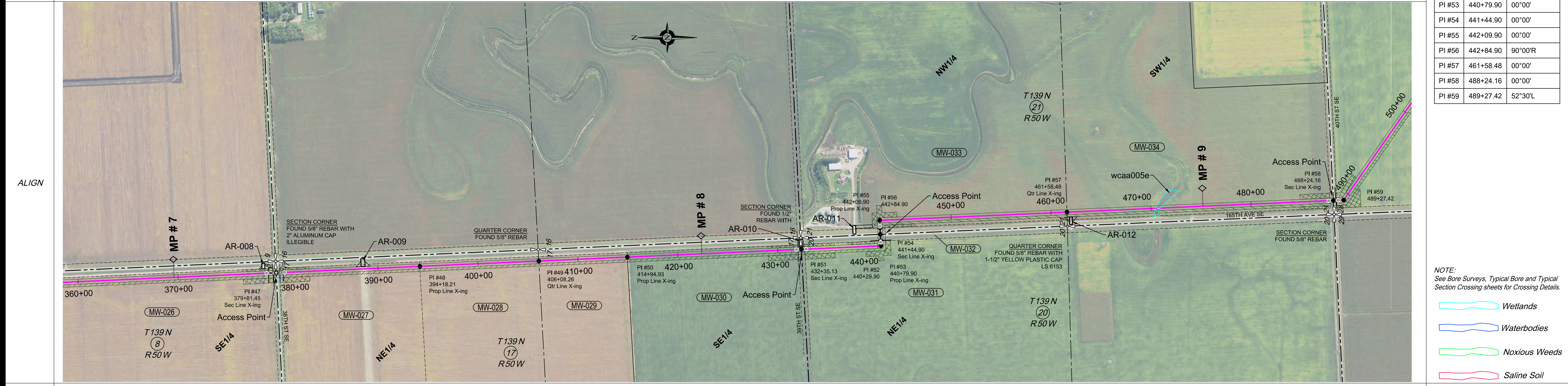


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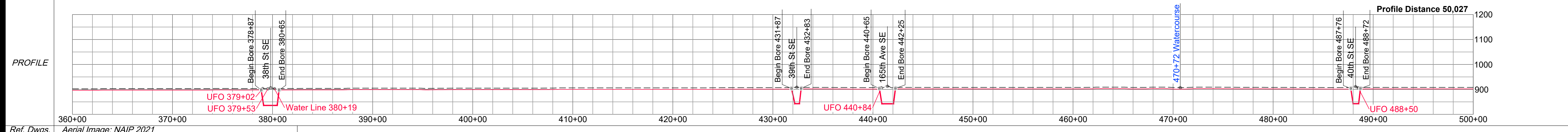
Co, State	SECTION 8, 17, 20, 21, 28, T139N, R50W, CASS COUNTY, NORTH DAKOTA									
OWNER	MW-026 PART OF SE1/4 WITH EXCEPTIONS SEC. 8, T139N, R50W 2619' Cultivated - 33' Uncultivated	MW-027 PART OF NE1/4 WITH EXCEPTIONS SEC. 17, T139N, R50W 1283' Cultivated - 154' Uncultivated	MW-028 PART OF SOUTH 72 RODS WITH EXCEPTIONS SEC. 17, T139N, R50W 1190' Cultivated	MW-029 AUDITORS LOT 3 OF SOUTH HALF SEC. 17, T139N, R50W 887' Cultivated	MW-030 AUDITORS LOT 1 OF SE1/4 SEC. 17, T139N, R50W 1707' Cultivated - 33' Uncultivated	MW-031 NE1/4 SEC. 20, T139N, R50W 845' Cultivated	MW-032 SEC. 21 & 22, T139N, R50W 130' Uncultivated	MW-033 NW1/4 SEC. 21, T139N, R50W 1949' Cultivated	MW-034 PART OF THE SW 1/4 LESS RW SEC. 21, T139N, R50W 2518' Cultivated - 148' Uncultivated	
RODDAGE	2651.84' / 160.72 Rods	1436.77' / 87.08 Rods	1190.04' / 72.12 Rods	886.67' / 53.74 Rods	1740.20' / 105.47 Rods	844.78' / 51.20 Rods	130.00' / 7.88 Rods	1948.58' / 118.10 Rods	2665.68' / 161.56 Rods	



FEATURES	PI TABLE		
	PI #	STATION	DEFLECTION
	PI #47	379+81.45	00°00'
	PI #48	394+18.21	00°00'
	PI #49	406+08.26	00°00'
	PI #50	414+94.93	00°00'
	PI #51	432+35.13	00°00'
	PI #52	440+29.90	90°00'L
	PI #53	440+79.90	00°00'
	PI #54	441+44.90	00°00'
	PI #55	442+09.90	00°00'
	PI #56	442+84.90	90°00'R
	PI #57	461+58.48	00°00'
	PI #58	488+24.16	00°00'
	PI #59	489+27.42	52°30'L

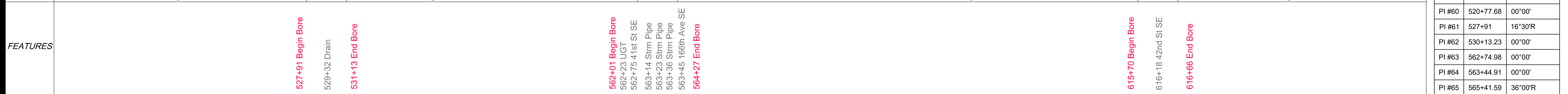


ENVIRO	Name	WCA
	Water Crossing	470+72
Wetland	Wetland	
Miscellaneous/Comments		Approx. 100' ECD Approx. 50' mats
HUC-12 Watershed	090202050603	
Seeding Mix		



<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>13,469</td> <td>12.75" OD, .250" WT, X65, FBE, TRL</td> </tr> <tr> <td>2</td> <td>531</td> <td>12.75" OD, .312" WT, X65, FBE w/ARO, TRL</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	13,469	12.75" OD, .250" WT, X65, FBE, TRL	2	531	12.75" OD, .312" WT, X65, FBE w/ARO, TRL	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	No.	Date	Description				<p>WAHPETON EXPANSION PROJECT</p> <p>1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p> <p>Sec. 8, 17, 20, 21, 28, T139N, R50W, 5th P.M., Cass Co., North Dakota</p> <p>Sheet 4 R1</p>
	Mark	Quantity	Description																		
1	13,469	12.75" OD, .250" WT, X65, FBE, TRL																			
2	531	12.75" OD, .312" WT, X65, FBE w/ARO, TRL																			
No.	Date	Description																			

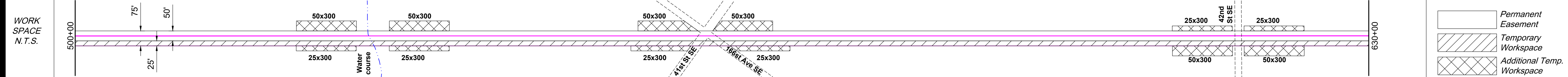
Co, State	SECTIONS 28, 33, 34, T139N, R50W, SECTIONS 3, T138N, R50W, CASS COUNTY, NORTH DAKOTA										
MW-035	MW-036	MW-037	MW-038	MW-038A	MW-038B	MW-041					
OWNER	NW1/4 LESS PARCELS SEC. 28, T139N, R50W 3220' Cultivated - 33' Uncultivated	NE1/4 SEC. 28, T139N, R50W 878' Cultivated - 58' Uncultivated	SE1/4 SEC. 28, T139N, R50W 3191' Cultivated - 71' Uncultivated	NE1/4 SEC. 33, T139N, R50W 70' Uncultivated	NW1/4 SEC. 34, T139N, R50W 2594' Cultivated - 33' Uncultivated	SW1/4 SEC. 34, T139N, R50W 2613' Cultivated - 33' Uncultivated	NW1/4 SEC. 3, T138N, R50W 2440' Cultivated - 98' Uncultivated				
RODDAGE	520+78	530+13	562+75	563+45	589+72	616+18					
	3253.52' / 197.18 Rods	935.55' / 56.70 Rods	3261.75' / 197.68 Rods	69.93' / 4.24 Rods	2626.89' / 159.21 Rods	2646.29' / 160.38 Rods	2537.84' / 153.81 Rods				



PI TABLE		
PI #	STATION	DEFLECTION
PI #60	520+77.68	00°00'
PI #61	527+91	16°30'R
PI #62	530+13.23	00°00'
PI #63	562+74.98	00°00'
PI #64	563+44.91	00°00'
PI #65	565+41.59	36°00'R
PI #66	589+71.80	00°00'
PI #67	616+18.09	00°00'

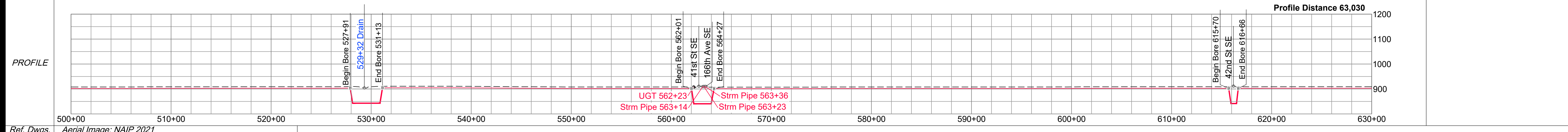


- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Wetlands
 - Waterbodies
 - Noxious Weeds
 - Saline Soil



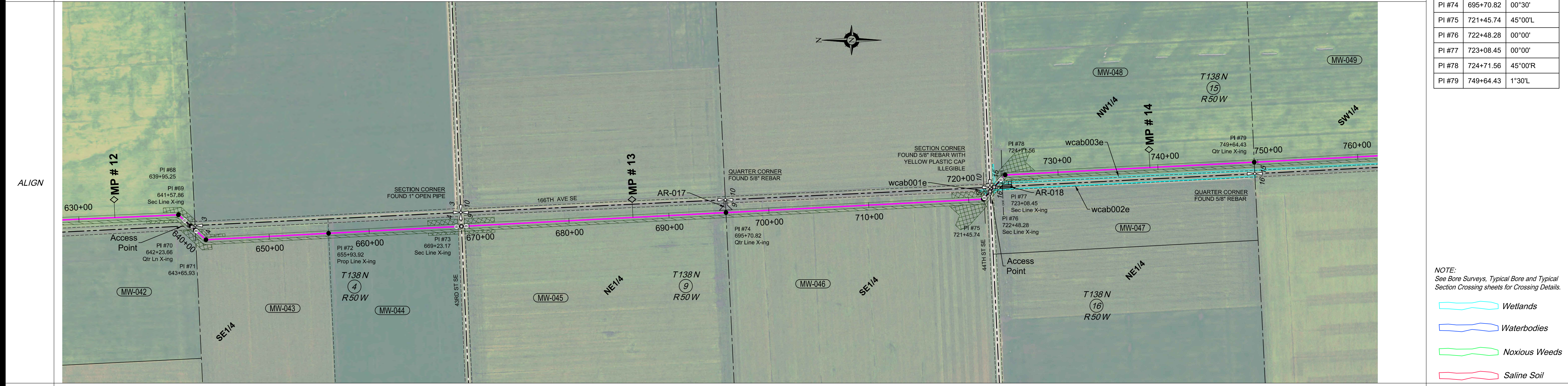
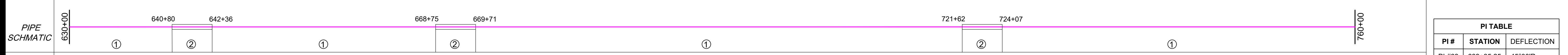
ENVIRO	Water Crossing Name	Crossing Method	Wetland Name		Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix	Bore	Notes
			DSK_WL_04	wcaa006e						
	scab001e	Bore					090202040605	Yes	Minor	
	scab002e	Bore						Yes	Minor	

ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

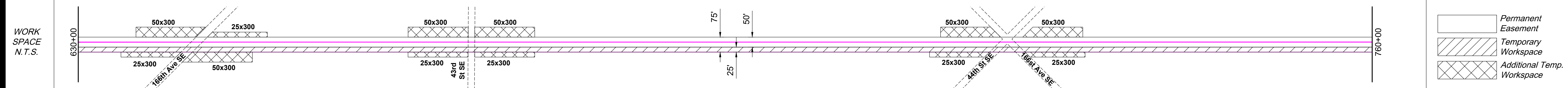
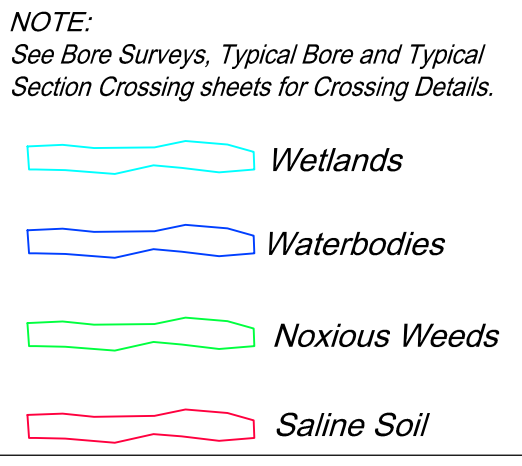


<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>12,356</td> <td>12.75" OD, .250" WT, X65, FBE, TRL</td> </tr> <tr> <td>2</td> <td>644</td> <td>12.75" OD, .312" WT, X65, FBE w/ARO, TRL</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	12,356	12.75" OD, .250" WT, X65, FBE, TRL	2	644	12.75" OD, .312" WT, X65, FBE w/ARO, TRL	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				<p>WHAHPETON EXPANSION PROJECT</p> <p>1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p> <p>Sec. 28, 33, T139N, R50W, Sec. 3, 4, T138N, R50W, 5th P.M., Cass Co., North Dakota</p> <p>Sheet 5 R1</p>
	Mark	Quantity	Description																		
1	12,356	12.75" OD, .250" WT, X65, FBE, TRL																			
2	644	12.75" OD, .312" WT, X65, FBE w/ARO, TRL																			
No.	Date	Description																			

OWNER	MW-042	MW-043	MW-044	MW-045	MW-046	MW-047	MW-048	MW-049
641+58	GOVT LOT 4 & SE1/4 OF THE NE1/4 SEC. 4, T138N, R50W 66' Uncultivated	N1/2 OF THE SE1/4 SEC. 4, T138N, R50W 1370' Cultivated	S1/2 OF THE SE1/4 WITH EXCEPTION SEC. 4, T138N, R50W 1296' Cultivated - 33' Uncultivated	NE1/4 SEC. 9, T138N, R50W 2615' Cultivated - 33' Uncultivated	SE1/4 SEC. 9, T138N, R50W 2630' Cultivated - 47' Uncultivated	E1/2 OF THE E1/2 OF THE NE1/4 SEC. 16, T138N, R50W 60' Uncultivated	NW1/4 SEC. 15, T138N, R50W 2609' Cultivated - 47' Uncultivated	SW1/4 SEC. 15, T138N, R50W 2616' Cultivated - 49' Uncultivated
RODDAGE	65.79' / 3.99 Rods	1370.27' / 83.05 Rods	1329.25' / 80.56 Rods	2647.65' / 160.46 Rods	2677.46' / 162.27 Rods	60.17' / 3.65 Rods	2655.99' / 160.97 Rods	2665.36' / 161.54 Rods

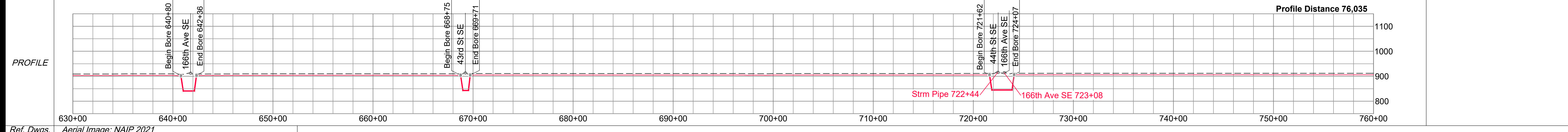


PI #	STATION	DEFLECTION
PI #68	639+95.25	45°00'R
PI #69	641+57.86	00°00'
PI #70	642+23.66	00°00'
PI #71	643+65.93	45°00'L
PI #72	655+93.92	00°00'
PI #73	669+23.17	00°00'
PI #74	695+70.82	00°30'
PI #75	721+45.74	45°00'L
PI #76	722+48.28	00°00'
PI #77	723+08.45	00°00'
PI #78	724+71.56	45°00'R
PI #79	749+64.43	1°30'L



ENVIRO	Name	Crossing Method	Wetland Name	Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix
	wcab001e	721+17	722+18	Wetland	Approx. 50' ECD	Approx. 40' mats	090202040605	
	wcab002e	722+63	749+69	Wetland	Approx. 50' ECD	Approx. 40' mats		
	wcab003e	723+32	776+21	Wetland	Approx. 50' ECD	Approx. 40' mats		

ENVIRONMENTAL NOTES:
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 2. Actual wetland or stream width may vary at time of construction.
 * Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction



Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
	Proposed Block Valve
	Proposed Bore
	Alignment PI
	Utility Pole
	Well
	Valve
	Alignment
	Section Line
	Quarter Line
	Fence Line
	UG Fiber Optic
	UG Electric
	Overhead Elec
	Existing Pipeline
	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	12,503	12.75" OD, .250" WT, X65, FBE, TRL
2	497	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

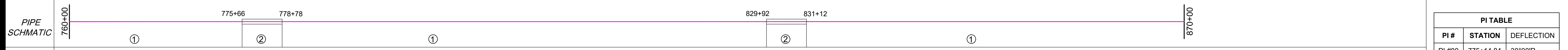
REVISIONS		
No.	Date	Description

WHA PETON EXPANSION PROJECT

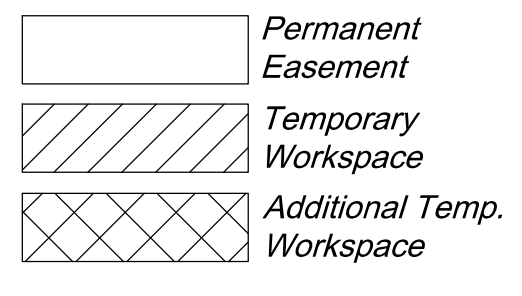
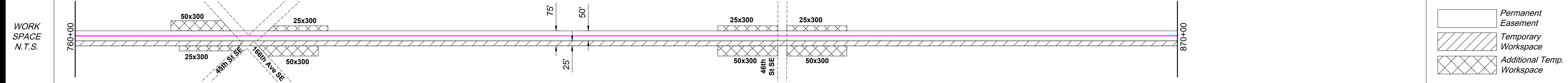
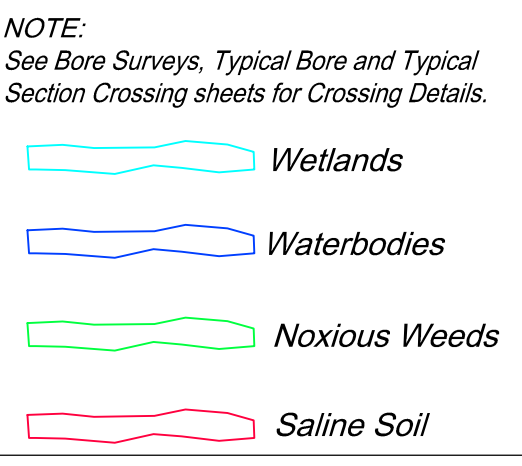
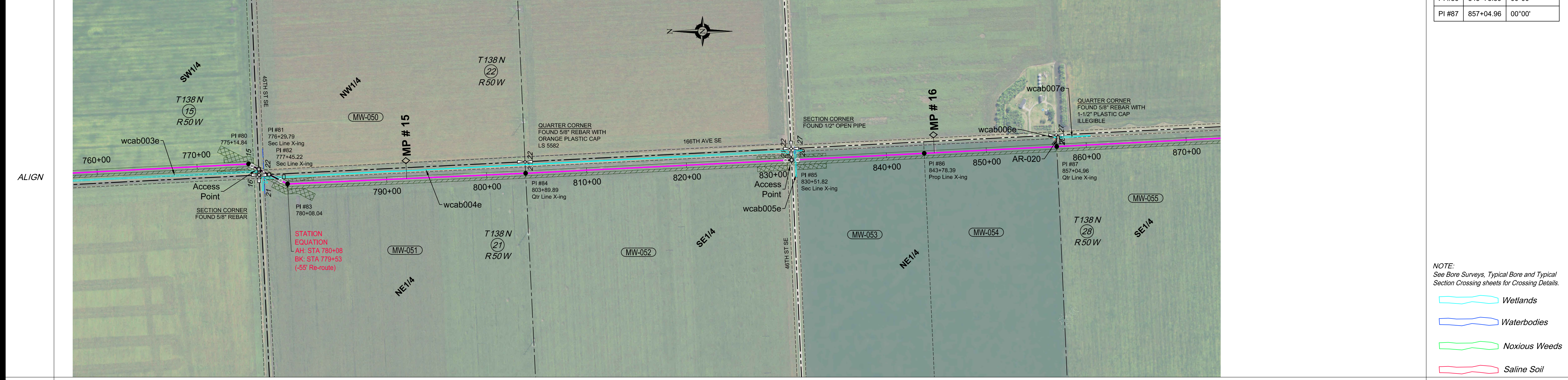
Scale: 1" = 500' HORIZ. 1" = 200' VERT.

Sec. 4, 9, 15, 16, T138N, R50W, 5th P.M., Cass Co., North Dakota
 Sheet 6 R1

Co, State	SECTIONS 15, 21, 22, 28, T138N, R50W, CASS COUNTY, NORTH DAKOTA											
OWNER	MW-050		MW-051		MW-052		MW-053		MW-054		MW-055	
RODDAGE	115.43' / 7.00 Rods		2589.13' / 156.92 Rods		2661.93' / 161.33 Rods		1326.57' / 80.40 Rods		1326.57' / 80.40 Rods		2349.51' / 142.39 Rods	

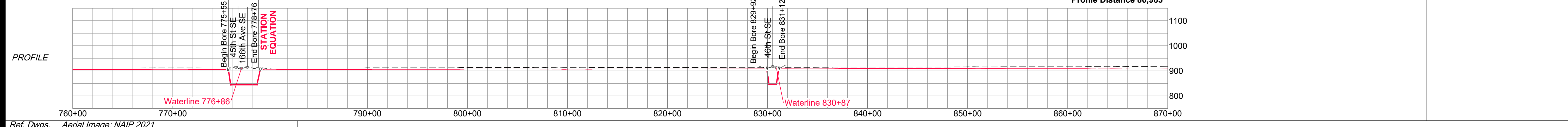


PI TABLE		
PI #	STATION	DEFLECTION
PI #80	775+14.84	30°00'R
PI #81	776+29.79	00°00'
PI #82	777+45.22	00°00'
PI #83	780+08.04	30°00'L
PI #84	803+89.89	00°00'
PI #85	830+51.82	00°00'
PI #86	843+78.39	00°00'
PI #87	857+04.96	00°00'



Water Crossing	Name	Bridge	Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix
wcab003e	wcab003e		723+32 - 776+21	Wetland	Approx. 50' ECD		
wcab004e	wcab004e		776+93 - 830+28	Wetland	Approx. 50' ECD		
wcab005e	wcab005e		830+80 - 831+65	Wetland	Approx. 100' ECD	090202040605	
wcab006e	wcab006e		856+90 - 857+47	Wetland	Approx. 50' ECD		
wcab007e	wcab007e		860+46	Wetland	Approx. 50' ECD		

ENVIRONMENTAL NOTES:
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 2. Actual wetland or stream width may vary at time of construction.
 * Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction



Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99999766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
	Proposed Block Valve
	Proposed Bore
	Alignment PI
	Utility Pole
	Well
	Valve
	Alignment
	Section Line
	Quarter Line
	Fence Line
	UG Fiber Optic
	UG Electric
	Overhead Elec
	Existing Pipeline
	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	10,568	12.75" OD, .250" WT, X65, FBE, TRL
2	432	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS		
No.	Date	Description

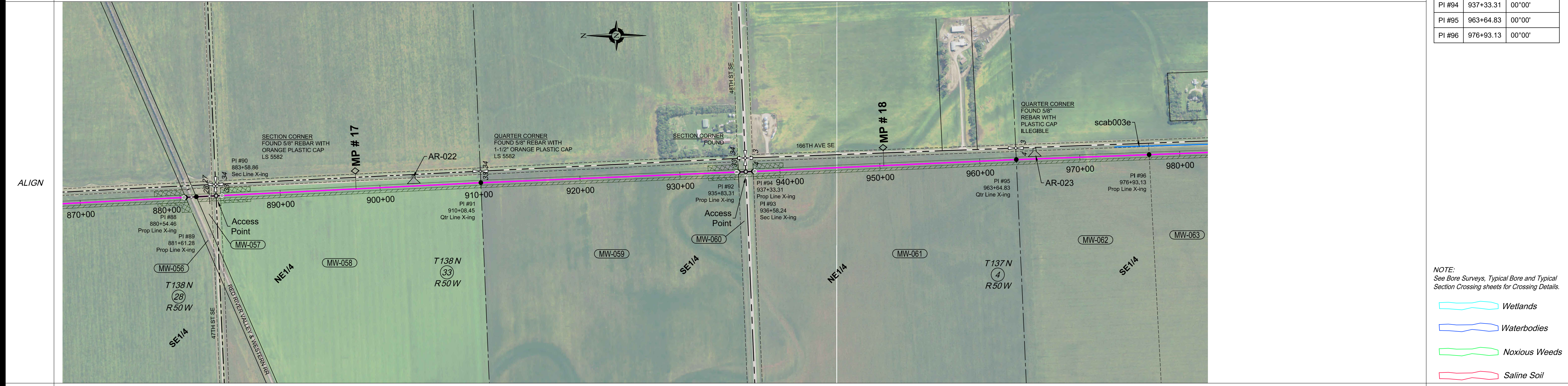
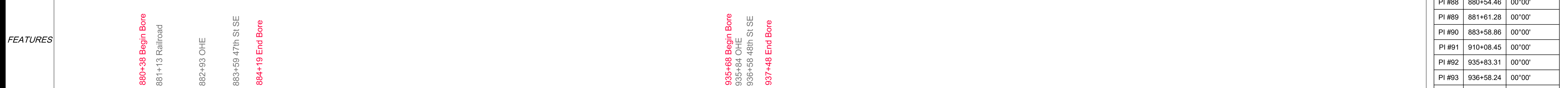
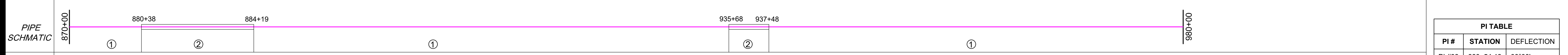
WAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

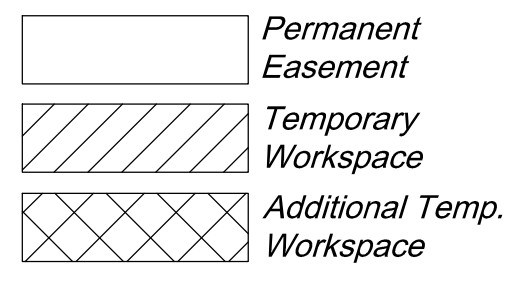
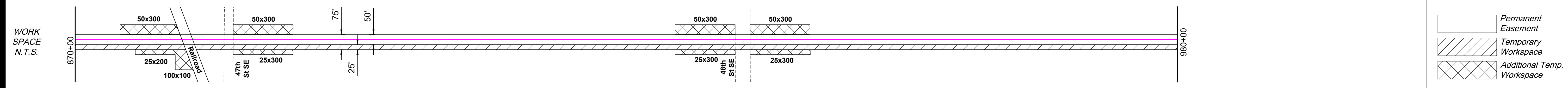
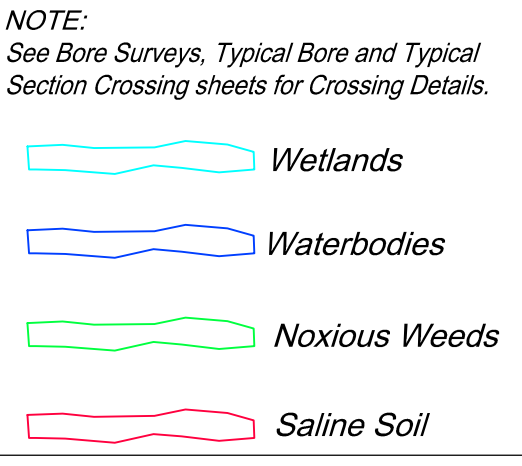
Sec. 15, 21, 22, 28, T138N, R50W, 5th P.M., Cass Co., North Dakota

Sheet 7 R1

OWNER	MW-056	MW-057	MW-058	MW-059	MW-060	MW-061	MW-062	MW-063
880+54	881+61	883+59	910+08	935+83	937+33	963+65	976+93	
SEC. 28, T138N, R50W 107' Uncultivated	SE1/4 LESS RW SEC. 3, T138N, R50W 198' Uncultivated	NE1/4 SEC. 33, T138N, R50W 2246' Cultivated - 304' Uncultivated	SE1/4 SEC. 33, T138N, R50W 2229' Cultivated - 346' Uncultivated	SEC. 33, T138N, R50W 150' Uncultivated	NE1/4 LESS RW SEC. 4, T137N, R50W 2378' Cultivated - 254' Uncultivated	N1/2 OF THE NE1/4 LESS RW SEC. 4, T137N, R50W 1065' Cultivated - 263' Uncultivated	S1/2 OF THE SE1/4 SEC. 4, T137N, R50W 1031' Cultivated - 263' Uncultivated	
RODDAGE	106.82' / 6.47 Rods	197.58' / 11.97 Rods	2549.59' / 160.58 Rods	2574.86' / 156.05 Rods	150.00' / 9.09 Rods	2631.52' / 159.49 Rods	1328.30' / 80.50 Rods	1294.16' / 78.43 Rods

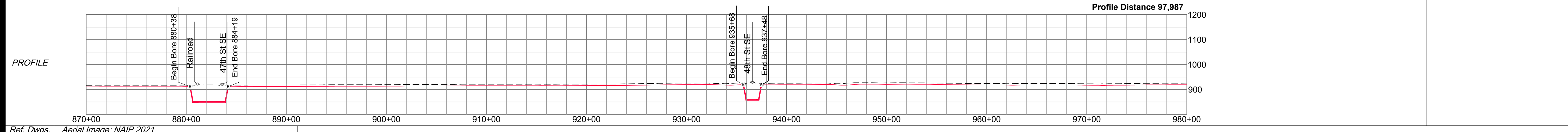


PI #	STATION	DEFLECTION
PI #88	880+54.46	00°00'
PI #89	881+61.28	00°00'
PI #90	883+58.86	00°00'
PI #91	910+08.45	00°00'
PI #92	935+83.31	00°00'
PI #93	936+58.24	00°00'
PI #94	937+33.31	00°00'
PI #95	963+64.83	00°00'
PI #96	976+93.13	00°00'



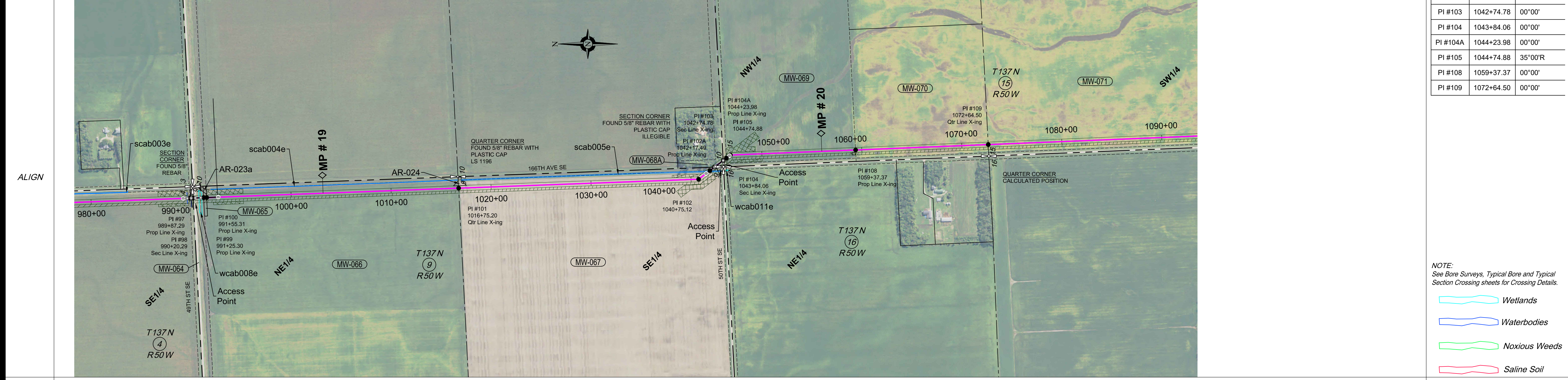
ENVIRO	Name	Crossing Method	Bridge	Wetland Name	Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix	090202040605	scab003e	973+51	983+66	Minor

ENVIRONMENTAL NOTES:
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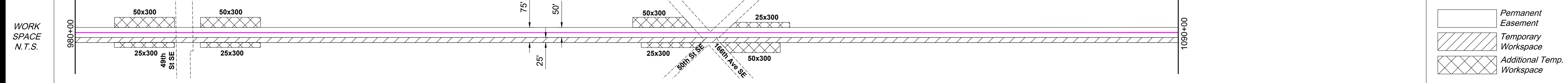
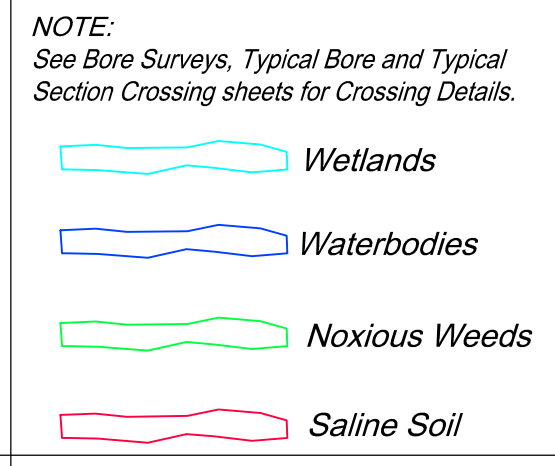


<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.999989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10,561</td> <td>12.75" OD, .250" WT, X65, FBE, TRL</td> </tr> <tr> <td>2</td> <td>439</td> <td>12.75" OD, .312" WT, X65, FBE w/ARO, TRL</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	10,561	12.75" OD, .250" WT, X65, FBE, TRL	2	439	12.75" OD, .312" WT, X65, FBE w/ARO, TRL	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				<p>WHAHPETON EXPANSION PROJECT</p> <p>1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p> <p>Sec. 28, 33, T138N, R50W, Sec. 4, T137N, R50W, 5th P.M., Cass Co., North Dakota</p> <p>Sheet 8 R1</p>
	Mark	Quantity	Description																		
1	10,561	12.75" OD, .250" WT, X65, FBE, TRL																			
2	439	12.75" OD, .312" WT, X65, FBE w/ARO, TRL																			
No.	Date	Description																			

OWNER	MW-064	MW-065	MW-066	MW-067	MW-068A	MW-069	MW-070	MW-071							
989+87	S1/2 OF THE SE1/4 SEC. 4, T137N, R50W 138' Uncultivated	991+25	PART OF THE NE1/4 SEC. 9, T137N, R50W 30' Uncultivated	991+55	E1/2 OF THE NE1/4 WITH EXCEPTIONS SEC. 9, T137N, R50W 2351' Cultivated - 169' Uncultivated	1016+75	SE1/4 WITH EXCEPTIONS SEC. 9, T137N, R50W 2542' Cultivated - 48' Uncultivated	1042+17	NE1/4 WITH EXCEPTIONS SEC. 16, T137N, R50W 206' Uncultivated	1044+24	N1/2NW1/4 SEC. 15, T137N, R50W 1513' Cultivated	1059+37	SW1/4 OF THE NW1/4 SEC. 15, T137N, R50W 1327' Cultivated	1072+65	SW1/4 SEC. 15, T137N, R50W 2594' Cultivated - 60' Uncultivated
RODDAGE	138.01' / 8.36 Rods	30.01' / 1.82 Rods	2519.89' / 152.72 Rods	2542.29' / 154.08 Rods	206.49' / 12.51 Rods	1513.39' / 91.72 Rods	1327.14' / 80.43 Rods	2654.39' / 160.87 Rods							

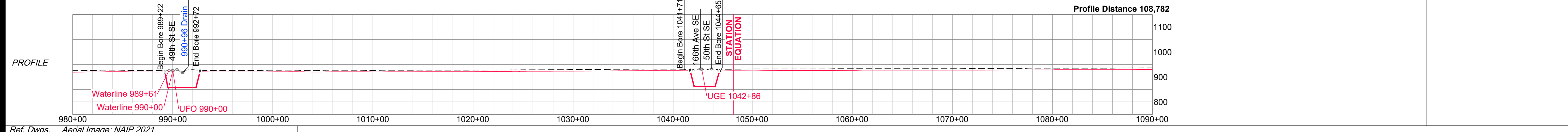


PI TABLE		
PI #	STATION	DEFLECTION
PI #97	989+87.29	00°00'
PI #98	990+20.29	00°00'
PI #99	991+25.30	00°00'
PI #100	991+55.31	00°00'
PI #101	1016+75.20	00°00'
PI #102	1040+75.12	35°00'L
PI #102A	1042+17.49	00°00'
PI #103	1042+74.78	00°00'
PI #104	1043+84.06	00°00'
PI #104A	1044+23.98	00°00'
PI #105	1044+74.88	35°00'R
PI #108	1059+37.37	00°00'
PI #109	1072+64.50	00°00'



ENVIRO	Name	Crossing Method	scab003e	scab004e	scab005e
Water Crossing	Bridge				
Wetland Name			wcab008e		
Environmental Feature	Survey Extent	973+51	983+66	991+98	1016+67
Miscellaneous/Comments		Minor	Wetland	Intermediate	Intermediate
HUC-12 Watershed		090202040605			090202040604
Seeding Mix					

ENVIRONMENTAL NOTES:
 1. Wetlands depicted on these sheets represent actual field survey data or NWI.
 2. Actual wetland or stream width may vary at time of construction.
 * Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction



HARNED SURVEYING & ENGINEERING, INC.
 11815 ROBINDALE ROAD
 LOUISVILLE, KY 40243
 OFFICE (502) 254-3921
 FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM
 North Dakota North (NAD 83)(2011)
 International Foot
 *Distances are Grid Distances.
 Combined Scale Factor = 0.99989766
 Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
 Drawn By: D. Smith
 Checked by: J. Harned

LEGEND:

- ⊠ Proposed Block Valve
- ⊕ Proposed Bore
- Alignment PI
- Utility Pole
- ⊙ Well
- ⊗ Valve
- Alignment
- - - Section Line
- · - Quarter Line
- x - x - x - Fence Line
- - - UG Fiber Optic
- · - UG Electric
- · - Overhead Elec
- · - Existing Pipeline
- · - Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	10,458	12.75" OD, .250" WT, X65, FBE, TRL
2	542	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS

No.	Date	Description

WHAHPETON EXPANSION PROJECT

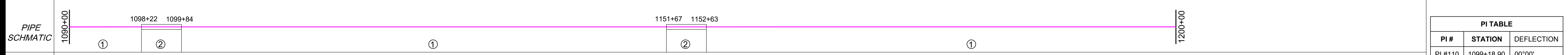
1" = 500' HORIZ.
 1" = 200' VERT.

1" = 500' - 22 x 34
 1" = 1000' - 11 x 17

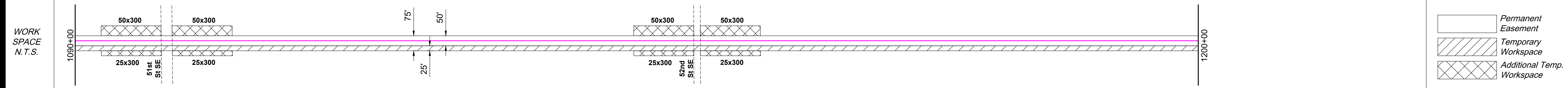
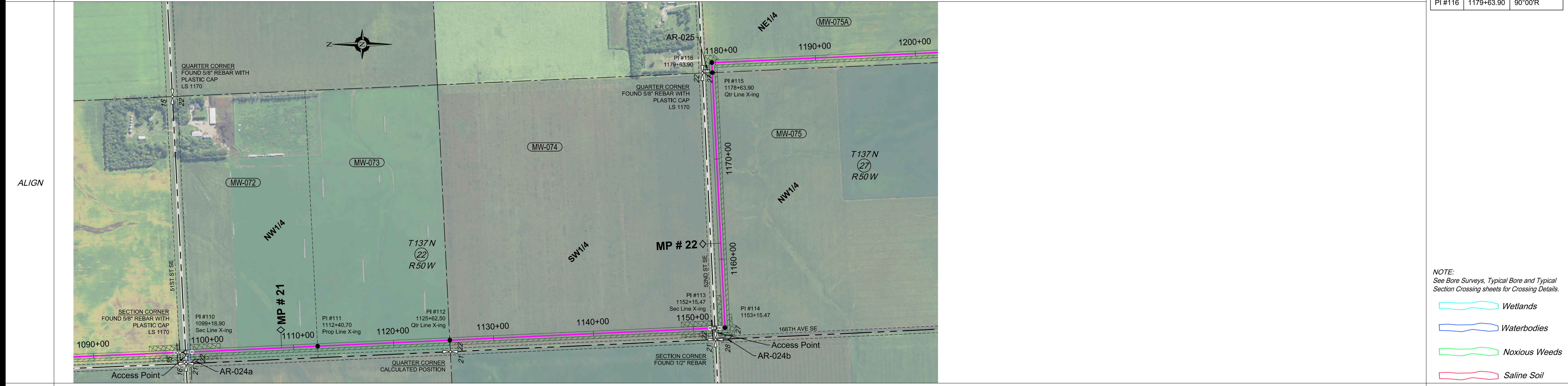
Sec. 4, 9, 15, 16, T137N, R50W,
 5th P.M., Cass Co., North Dakota

Sheet 9 R1

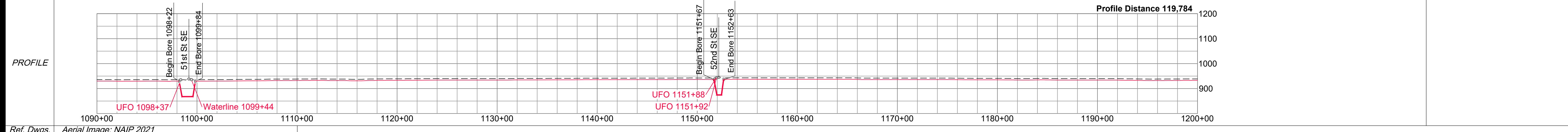
OWNER	MW-072	MW-073	MW-074	MW-075	MW-075A
RODDAGE	1099+19 N1/2NW1/4 SEC. 22, T137N, R50W 1289' Cultivated - 33' Uncultivated 1321.80' / 80.11 Rods	1112+41 S1/2 OF THE NW1/4 SEC. 22, T137N, R50W 1322' Cultivated 1321.80' / 80.11 Rods	1125+63 SW1/4 SEC. 22, T137N, R50W 2620' Cultivated - 33' Uncultivated 2652.98' / 160.79 Rods	1152+15 PART OF THE NW1/4 SEC. 27, T137N, R50W 2615' Cultivated - 33' Uncultivated 2648.42' / 160.51 Rods	1178+64 NE1/4 SEC. 27, T137N, R50W 2650' Cultivated 2649.80' / 160.59 Rods



PI #	STATION	DEFLECTION
PI #110	1099+18.90	00°00'
PI #111	1112+40.70	00°00'
PI #112	1125+62.50	00°00'
PI #113	1152+15.47	00°00'
PI #114	1153+15.47	90°00'L
PI #115	1178+63.90	00°00'
PI #116	1179+63.90	90°00'R



ENVIRO	Water Crossing	Name	
		Crossing Method	
Wetland Crossing	Wetland Name		
		Survey Extent	
Environmental Feature	Environmental Feature		
	Miscellaneous/Comments		
HUC-12 Watershed			090202040604
Seeding Mix			



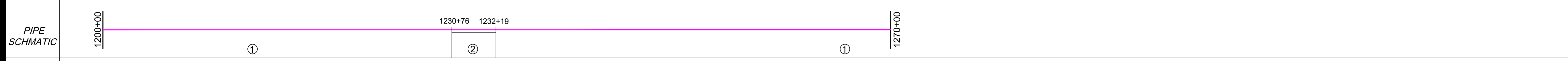
<p>HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093</p> <p>HSE Project # 19-21</p>	<p>SURVEY DATUM</p> <p>North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.</p> <p>Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned</p>	<p>LEGEND:</p> <ul style="list-style-type: none"> Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road 	<p>SUMMARY of MATERIALS</p> <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10,742</td> <td>12.75" OD, .250" WT, X65, FBE, TRL</td> </tr> <tr> <td>2</td> <td>258</td> <td>12.75" OD, .312" WT, X65, FBE w/ARO, TRL</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	10,742	12.75" OD, .250" WT, X65, FBE, TRL	2	258	12.75" OD, .312" WT, X65, FBE w/ARO, TRL	<p>REVISIONS</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				<p>WHAHPETON EXPANSION PROJECT</p> <p>1" = 500' HORIZ. 1" = 200' VERT.</p>	<p>WBI ENERGY TRANSMISSION An MDU Resources Group company</p> <p>Sec. 22, 27, T137N, R50W, 5th P.M., Cass Co., North Dakota</p> <p>Sheet 10 R1</p>
	Mark	Quantity	Description																		
1	10,742	12.75" OD, .250" WT, X65, FBE, TRL																			
2	258	12.75" OD, .312" WT, X65, FBE w/ARO, TRL																			
No.	Date	Description																			

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Wetlands
- Waterbodies
- Noxious Weeds
- Saline Soil
- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace

ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

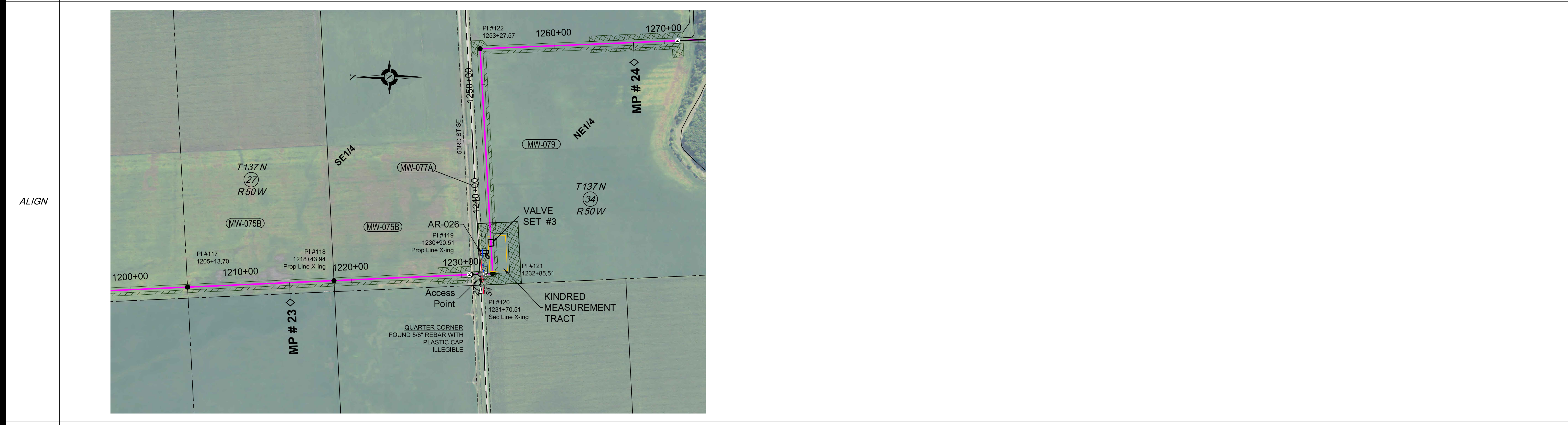
Co, State	NORTH DAKOTA				
OWNER	MW-075B N1/2SE1/4 SEC. 27, T137N, R50W 1330' Uncultivated	MW-075C SW1/4SE1/4 SEC. 27, T137N, R50W 1247' Uncultivated	MW-077A SOUTH 80 FEET OF THE SW1/4 SEC. 27, T137N, R50W 80' Uncultivated	MW-079 PART OF NE1/4 NORTH OF RIVER SEC. 34, T137N, R50W 4117' - 203' Uncultivated	
RODDAGE	1330.24' / 80.62 Rods	1246.57' / 75.55 Rods	80.00' / 4.85 Rods	4319.94' / 261.81 Rods	



PI TABLE		
PI #	STATION	DEFLECTION
PI #117	1205+13.70	00°00'
PI #118	1218+43.94	00°00'
PI #118	1218+43.94	00°00'
PI #119	1230+90.51	00°00'
PI #120	1231+70.51	00°00'
PI #121	1232+85.51	90°00'L
PI #122	1253+27.57	90°00'R

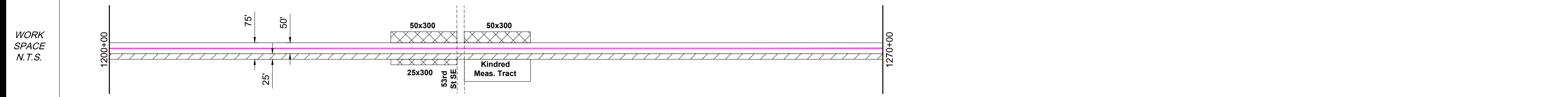
FEATURES

1230+76 Begin Bore
1231+71 53rd St. SE
1231+89 UGT
1232+04 Water
1232+19 End Bore



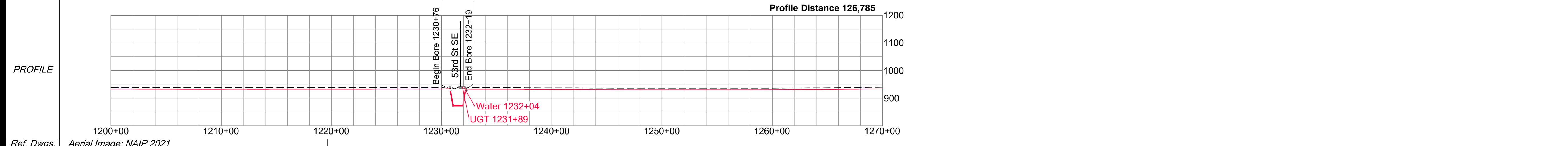
NOTE:
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- Wetlands
- Waterbodies
- Noxious Weeds
- Saline Soil
- Permanent Easement
- Temporary Workspace
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ENVIRO	Name	
	Crossing Method	
	Wetland Name	
	Crossing Survey Extent	
	Environmental Feature	
Miscellaneous/Comments		
HUC-12 Watershed	090202040604	
Seeding Mix		

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Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM

North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	6,857	12.75" OD, .250" WT, X65, FBE, TRL
2	143	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS

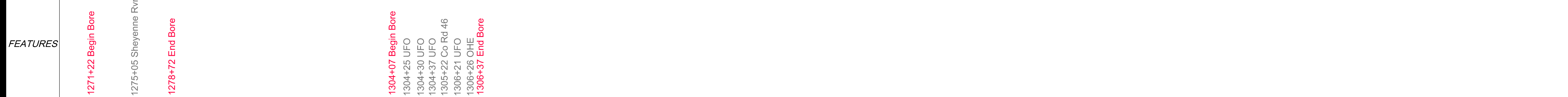
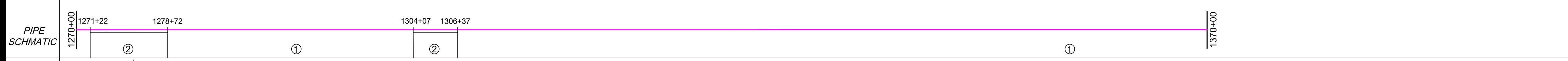
No.	Date	Description

500 0 500 1000
scale 1" = 500' - 22 x 34 feet
1" = 1000' - 11 x 17

WHPETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

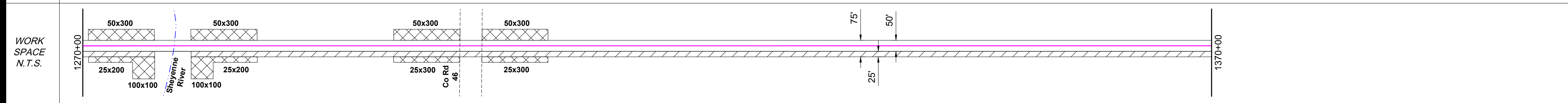
Co, State	SECTION 34, T137N, R50W, CASS COUNTY, SECTION 3, T136N, R50W, RICHLAND COUNTY, NORTH DAKOTA											
OWNER	MW-080	MW-081	MW-082	MW-083	MW-084	MW-085						
RODDAGE	1275+05 PART OF NE 1/4 SOUTH OF RIVER SEC. 34, T137N, R50W 261' Cultivated - 93' Uncultivated 356.93' / 21.63 Rods	1278+62 E 1/2 OF THE SE 1/4 SEC. 34, T137N, R50W 2555' Cultivated 2555.09' / 154.85 Rods	1304+22 SEC. 3, T136N, R50W SEC. 34, T137N, R50W 201' Uncultivated 201.48' / 12.12 Rods	1302+22 GOVT LOT 4 & SW 1/4 OF THE NW 1/4 EXCEPT HIGHWAY SEC. 3, T136N, R50W 2416' Cultivated 2416.27' / 146.44 Rods	1330+37 W 1/2 OF THE SW 1/4 SEC. 3, T136N, R50W 3648' Cultivated 3648.03' / 221.09 Rods	1366+85 E 1/2 OF THE SW 1/4 SEC. 3, T136N, R50W 1322' Cultivated 1321.51' / 80.09 Rods						



PI TABLE		
PI #	STATION	DEFLECTION
PI #123	1275+05.44	00°00'
PI #124	1278+62.37	00°00'
PI #125	1289+13.02	9°00'L
PI #126	1303+71.52	8°00'R
PI #127	1304+21.52	00°00'
PI #128	1305+21.52	00°00'
PI #129	1306+21.52	00°00'
PI #130	1330+37.47	00°00'
PI #131	1355+76.58	89°00'L
PI #132	1366+85.50	00°00'

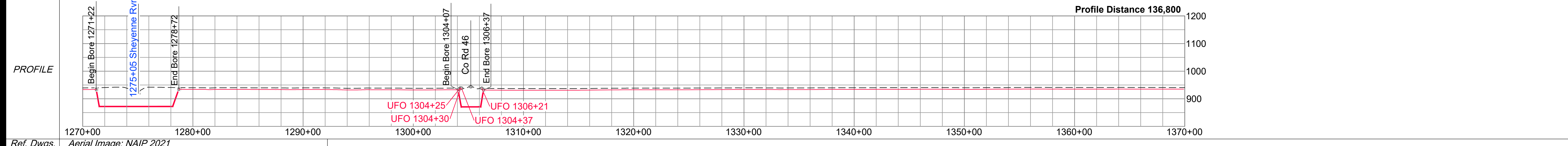


- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Wetlands
 - Waterbodies
 - Noxious Weeds
 - Saline Soil
 - Permanent Easement
 - Temporary Workspace
 - Additional Temp. Workspace



ENVIRO	Name	scab006e	
	Water Crossing	Bore	
	Wetland Name		
	Environmental Feature	Intermediate	
	Miscellaneous/Comments		
HUC-12 Watershed	090202040604		090201051005
Seeding Mix			

ENVIRONMENTAL NOTES:
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Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

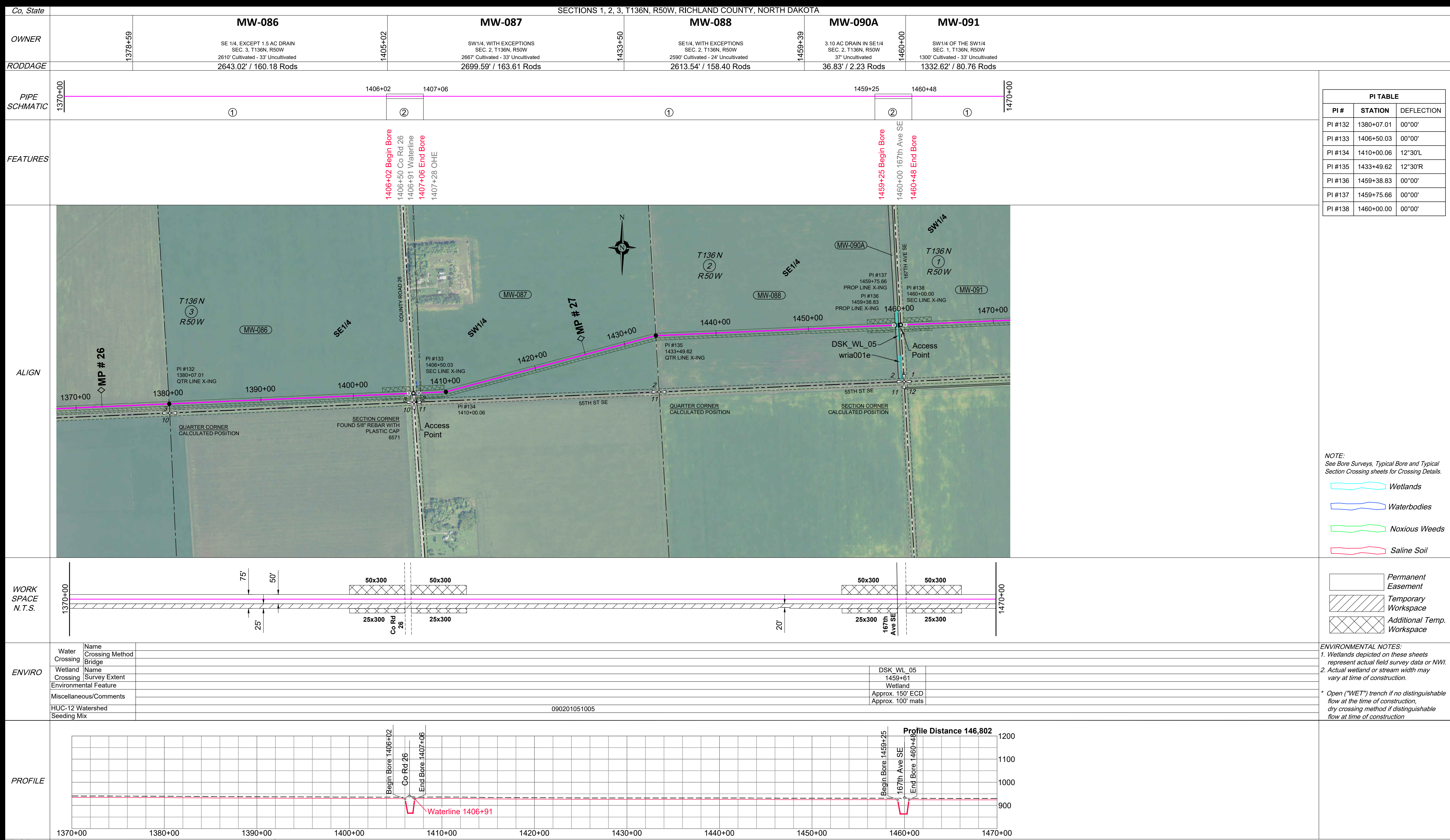
LEGEND:	
	Proposed Block Valve
	Proposed Bore
	Alignment PI
	Utility Pole
	Well
	Valve
	Alignment
	Section Line
	Quarter Line
	Fence Line
	UG Fiber Optic
	UG Electric
	Overhead Elec
	Existing Pipeline
	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	9,020	12.75" OD, .250" WT, X65, FBE, TRL
2	980	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS		
No.	Date	Description

WHAPELTON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

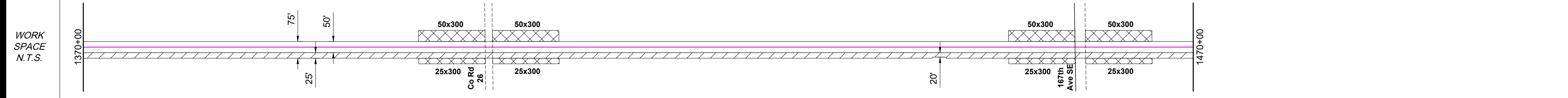


PI TABLE		
PI #	STATION	DEFLECTION
PI #132	1380+07.01	00°00'
PI #133	1406+50.03	00°00'
PI #134	1410+00.06	12°30'L
PI #135	1433+49.62	12°30'R
PI #136	1459+38.83	00°00'
PI #137	1459+75.66	00°00'
PI #138	1460+00.00	00°00'

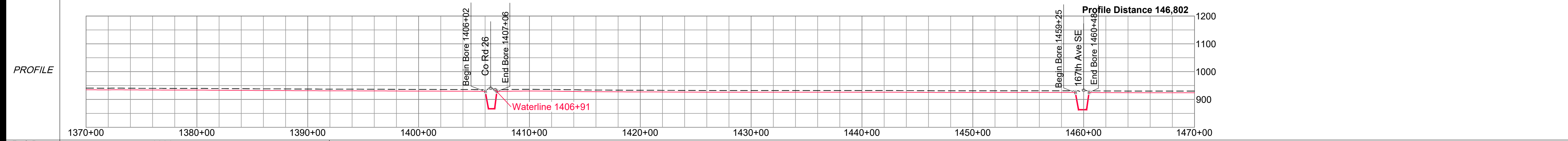
- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Wetlands
 - Waterbodies
 - Noxious Weeds
 - Saline Soil

- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace

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Water Crossing	Name	Crossing Method
	DSK WL_05	1459+61 Wetland
Wetland Crossing		Survey Extent
Environmental Feature		
Miscellaneous/Comments		
HUC-12 Watershed		090201051005
Seeding Mix		



Ref. Dwgs. Aerial Image: NAIP 2021

HSE INC.
HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM
North Dakota North (NAD 83)(2011)
International Foot
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Drawing Date: 01-19-2022
Drawn By: D. Smith
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LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	9,773	12.75" OD, .250" WT, X65, FBE, TRL
2	227	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS

No.	Date	Description

500 0 500 1000
scale 1" = 500' - 22 x 34 feet
1" = 1000' - 11 x 17

WAHPETON EXPANSION PROJECT

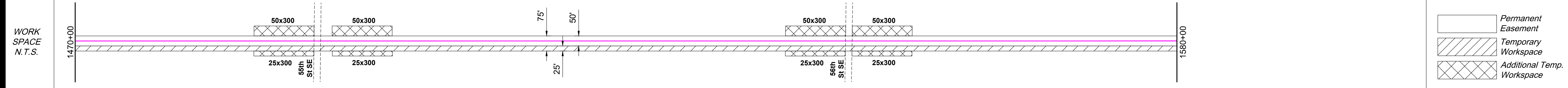
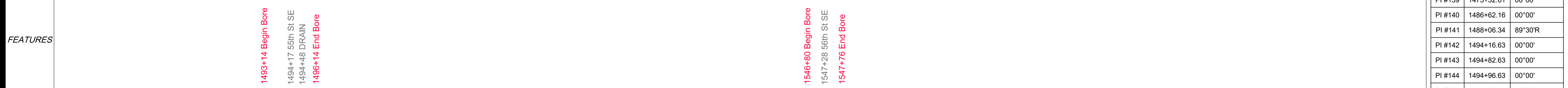
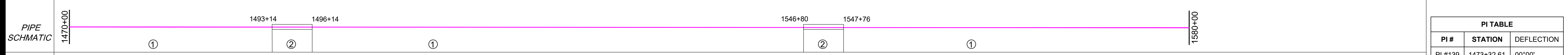
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WBI ENERGY TRANSMISSION
An MDU Resources Group company

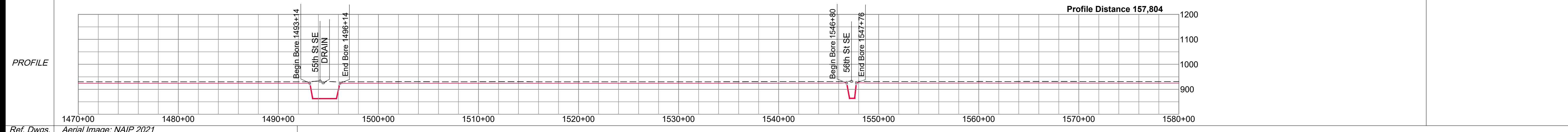
Sec. 1, 2, 3, T136N, R50W,
5th P.M., Richland Co., North Dakota

Sheet 13 R1

Co, State	MW-092	MW-093	MW-094	MW-095	MW-096	MW-097	MW-098	MW-099	
OWNER	E1/2 OF THE SW1/4 SEC. 1, T136N, R50W 1330' Cultivated	SE1/4, WITH EXCEPTIONS SEC. 1, T136N, R50W 751' Cultivated - 33' Uncultivated	N1/2 OF THE NE1/4 WITH EXCEPTIONS SEC. 12, T136N, R50W 66' Uncultivated	S1/4 OF N80° OF THE NE1/4 SEC. 12, T136N, R50W 14' Uncultivated	N1/2 OF THE NE1/4 WITH EXCEPTIONS SEC. 12, T136N, R50W 1248' Cultivated	S1/2 OF THE NE1/4 SEC. 12, T136N, R50W 1334' Cultivated	SE1/4 SEC. 12, T136N, R50W 2650' Cultivated	NE1/4, WITH EXCEPTIONS SEC. 13, T136N, R50W 2596' Cultivated - 60' Uncultivated	
RODDAGE	1329.54' / 80.58 Rods	1486+62	1494+17	1494+17	1494+97	1507+45	1520+78	1547+28	1573+84

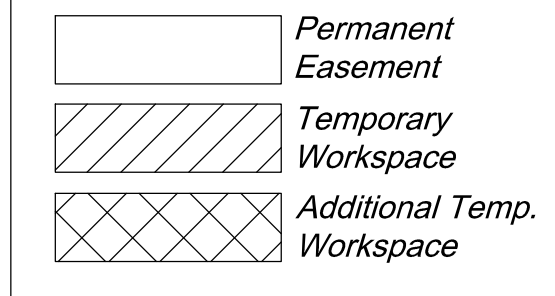
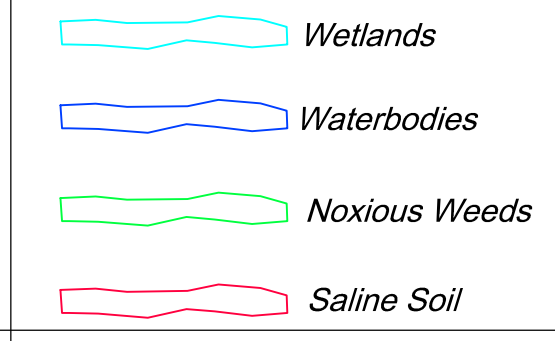


ENVIRO	Water Crossing	Name: sria001e	Bridge Method: Bore
	Wetland Crossing	Name: wria002e	Survey Extent: 1494+48
	Environmental Feature		Wetland
	Miscellaneous/Comments	Approx. 150' ECD	Approx. 80' ECD
	HUC-12 Watershed		Approx. 40' mats
	Seeding Mix		090201051005



PI TABLE		
PI #	STATION	DEFLECTION
PI #139	1473+32.61	00°00'
PI #140	1486+62.16	00°00'
PI #141	1488+06.34	89°30'R
PI #142	1494+16.63	00°00'
PI #143	1494+82.63	00°00'
PI #144	1494+96.63	00°00'
PI #145	1507+44.52	00°00'
PI #146	1520+78.20	00°00'
PI #147	1547+28.20	00°00'
PI #148	1573+84.00	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.



ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

SURVEY DATUM
North Dakota North (NAD 83)(2011) International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	10,604	12.75" OD, .250" WT, X65, FBE, TRL
2	396	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

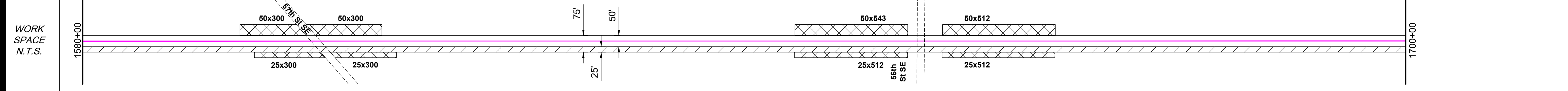
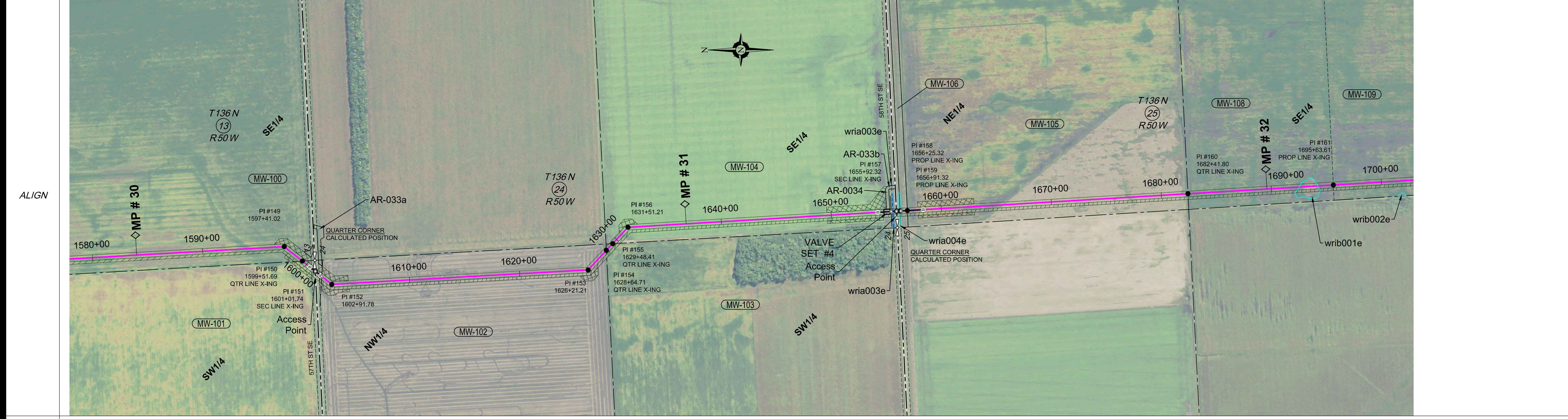
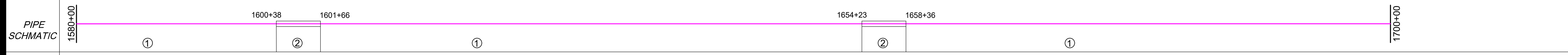
REVISIONS

No.	Date	Description

Scale: 1" = 500' HORIZ. 1" = 200' VERT.

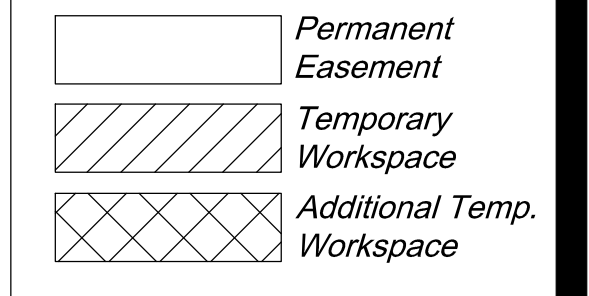
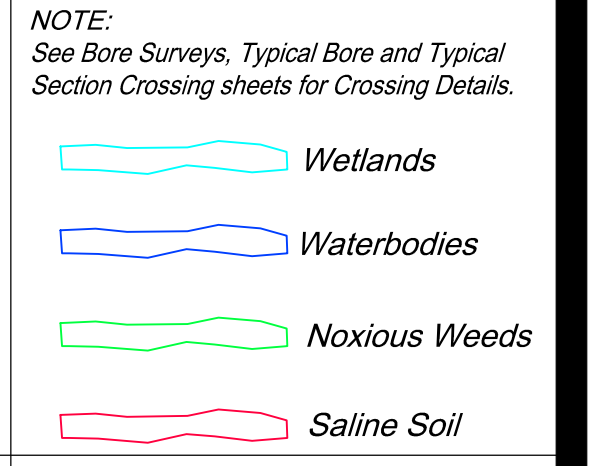
WAHPETON EXPANSION PROJECT

Co, State	SECTIONS 13, 24, 25, T136N, R50W, RICHLAND COUNTY, NORTH DAKOTA									
OWNER	MW-100	MW-101	MW-102	MW-103	MW-104	MW-106	MW-105	MW-108	MW-109	
RODDAGE	SE1/4, WITH EXCEPTIONS SEC. 13, T136N, R50W 2120' Cultivated - 448' Uncultivated 2567.68' / 155.62 Rods	WITH EXCEPTIONS SEC. 13, T136N, R50W 103' Cultivated - 47' Uncultivated 150.06' / 9.09 Rods	E1/2 OF THE NW1/4 SEC. 24, T136N, R50W 2678' Cultivated - 87' Uncultivated 2762.97' / 167.45 Rods	SW1/4 SEC. 24, T136N, R50W 84' Cultivated 83.69' / 5.07 Rods	SE1/4, WITH EXCEPTIONS SEC. 24, T136N, R50W 2594' Cultivated - 50' Uncultivated 2643.92' / 160.24 Rods	SEC. 24, T136N, R50W 66' Uncultivated 66.00' / 4.00 Rods	NE1/4, WITH EXCEPTIONS SEC. 24, T136N, R50W 2550' Cultivated 2550.47' / 154.57 Rods	N1/2 OF THE SE1/4, WITH EXCEPTIONS SEC. 25, T136N, R50W 1322' Cultivated 1321.81' / 80.11 Rods	S1/2 OF THE SE1/4, WITH EXCEPTIONS SEC. 25, T136N, R50W 1291' Cultivated - 33' Uncultivated 1323.75' / 80.23 Rods	

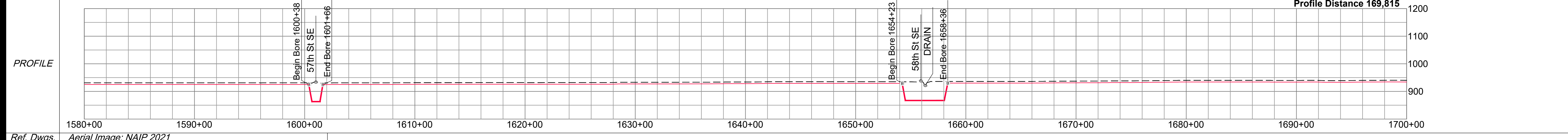


ENVIRO	Water Crossing	Name: wria003e	Method: Bore				
	Wetland Crossing	Name: wria004e	Method: Drain	1655+59	1656+22	wrib001e	wrib002e
	Environmental Feature	Miscellaneous/Comments		Approx. 150' ECD	Wetland	Wetland	Wetland
	HUC-12 Watershed	Seeding Mix		Approx. 40' mats	Approx. 500' ECD	Approx. 250' mats	Approx. 100' ECD

PI TABLE		
PI #	STATION	DEFLECTION
PI #149	1597+41.02	41°30'R
PI #150	1599+51.69	00°00'
PI #151	1601+01.74	00°00'
PI #152	1602+91.78	41°30'L
PI #153	1626+21.21	43°30'L
PI #154	1628+64.71	00°00'
PI #155	1629+48.41	00°00'
PI #156	1631+51.21	43°30'R
PI #157	1655+92.32	00°00'
PI #158	1656+25.32	00°00'
PI #159	1656+91.32	00°00'
PI #160	1682+41.80	00°00'
PI #161	1695+63.61	00°00'



ENVIRONMENTAL NOTES:
 1. Wetlands depicted on these sheets represent actual field survey data or NWI.
 2. Actual wetland or stream width may vary at time of construction.
 * Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction



Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
⊠	Proposed Block Valve
⊙	Proposed Bore
●	Alignment PI
○	Utility Pole
⊕	Well
⊗	Valve
—	Alignment
- - -	Section Line
- · - · -	Quarter Line
- x - x - x -	Fence Line
- · - · - · - · -	UG Fiber Optic
- · - · - · - · -	UG Electric
- · - · - · - · -	Overhead Elec
- · - · - · - · -	Existing Pipeline
- · - · - · - · -	Dirt Road

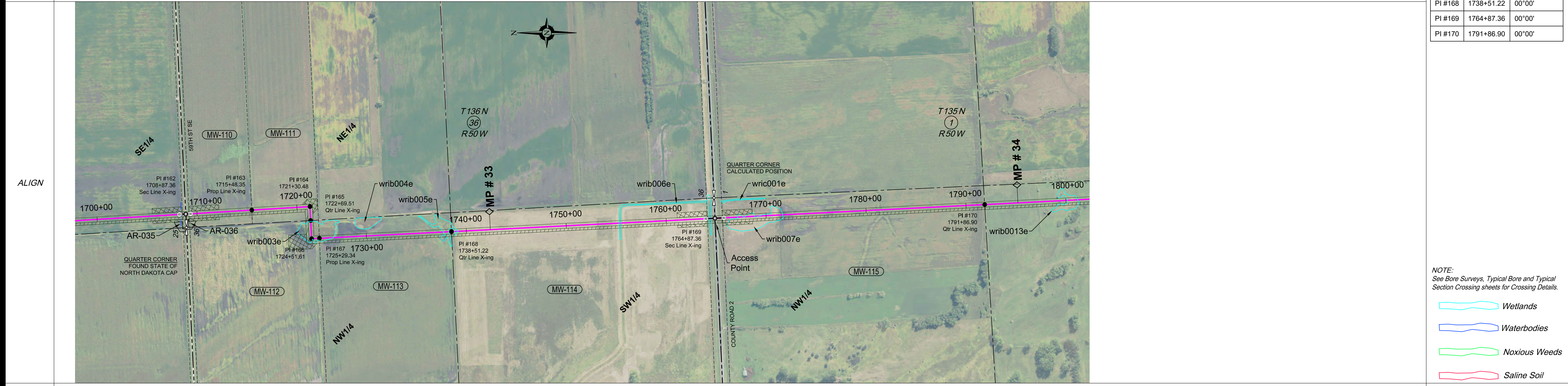
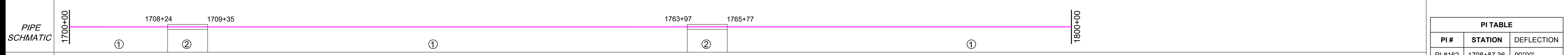
SUMMARY of MATERIALS		
Mark	Quantity	Description
1	11,459	12.75" OD, .250" WT, X65, FBE, TRL
2	541	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS		
No.	Date	Description

WHAHPETON EXPANSION PROJECT

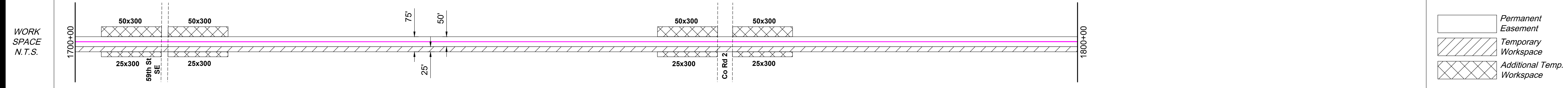
1" = 500' HORIZ.
1" = 200' VERT.

OWNER	MW-110	MW-111	MW-112	MW-113	MW-114	MW-115
1708+87	N1/2 OF THE N1/2, OF THE NE1/4 SEC. 36, T136N, R50W 628' Cultivated - 33' Uncultivated	S1/2 OF THE N1/2, OF THE NE1/4 SEC. 36, T136N, R50W 721' Cultivated	N1/2 OF THE NW1/4 SEC. 36, T136N, R50W 260' Uncultivated	S1/2 OF THE NW1/4, WITH EXCEPTIONS, SEC. 36, T136N, R50W 929' Cultivated - 393' Uncultivated	SW1/4, WITH EXCEPTIONS SEC. 36, T136N, R50W 2529' Cultivated - 107' Uncultivated	GOVT LOT 3 & SE1/4 OF THE NW1/4 SEC. 1, T135N, R50W 2625' Cultivated - 75' Uncultivated
RODDAGE	660.99' / 40.06 Rods	721.17' / 43.71 Rods	259.83' / 15.75 Rods	1321.87' / 80.11 Rods	2636.14' / 159.77 Rods	2699.55' / 163.61 Rods



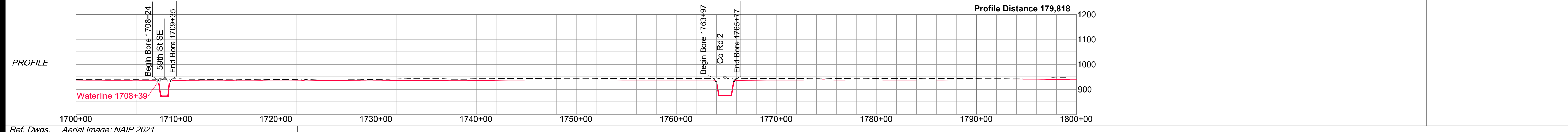
PI TABLE		
PI #	STATION	DEFLECTION
PI #162	1708+87.36	00°00'
PI #163	1715+48.35	00°00'
PI #164	1721+30.48	90°30'R
PI #165	1722+69.51	00°00'
PI #166	1724+51.61	90°00'L
PI #167	1725+29.34	00°00'
PI #168	1738+51.22	00°00'
PI #169	1764+87.36	00°00'
PI #170	1791+86.90	00°00'

- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Wetlands
 - Waterbodies
 - Noxious Weeds
 - Saline Soil



ENVIRO	Name	Crossing Method	Wetland Name	Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix
	wrib003e	Bridge	Wetland	1722+82	Wetland	Approx. 200' ECD	090201051005	
	wrib004e	Bridge	Wetland	1726+72	Wetland	Approx. 200' ECD		
	wrib005e	Bridge	Wetland	1728+94	Wetland	Approx. 100' ECD		
	wrib006e	Bridge	Wetland	1731+56	Wetland	Approx. 75' mats		
	wrib007e	Bridge	Wetland	1737+68	Wetland	Approx. 100' ECD		
	wric001e	Bridge	Wetland	1739+19	Wetland	Approx. 600' mats		
	wrib013e	Bridge	Wetland	1755+39	Wetland	Approx. 80' mats		
	wric001e	Bridge	Wetland	1764+42	Wetland	Approx. 100' ECD		
	wrib013e	Bridge	Wetland	1767+12	Wetland	Approx. 125' mats		
	wric001e	Bridge	Wetland	1771+65	Wetland			
	wric001e	Bridge	Wetland	1765+59	Wetland			
	wric001e	Bridge	Wetland	1770+00	Wetland			
	wrib013e	Bridge	Wetland	1800+15	Wetland			
	wrib013e	Bridge	Wetland	1801+18	Wetland			

ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction



Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM
North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	9,709	12.75" OD, .250" WT, X65, FBE, TRL
2	291	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS

No.	Date	Description

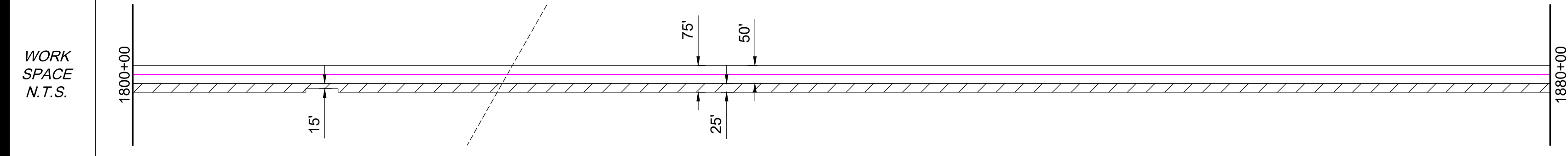
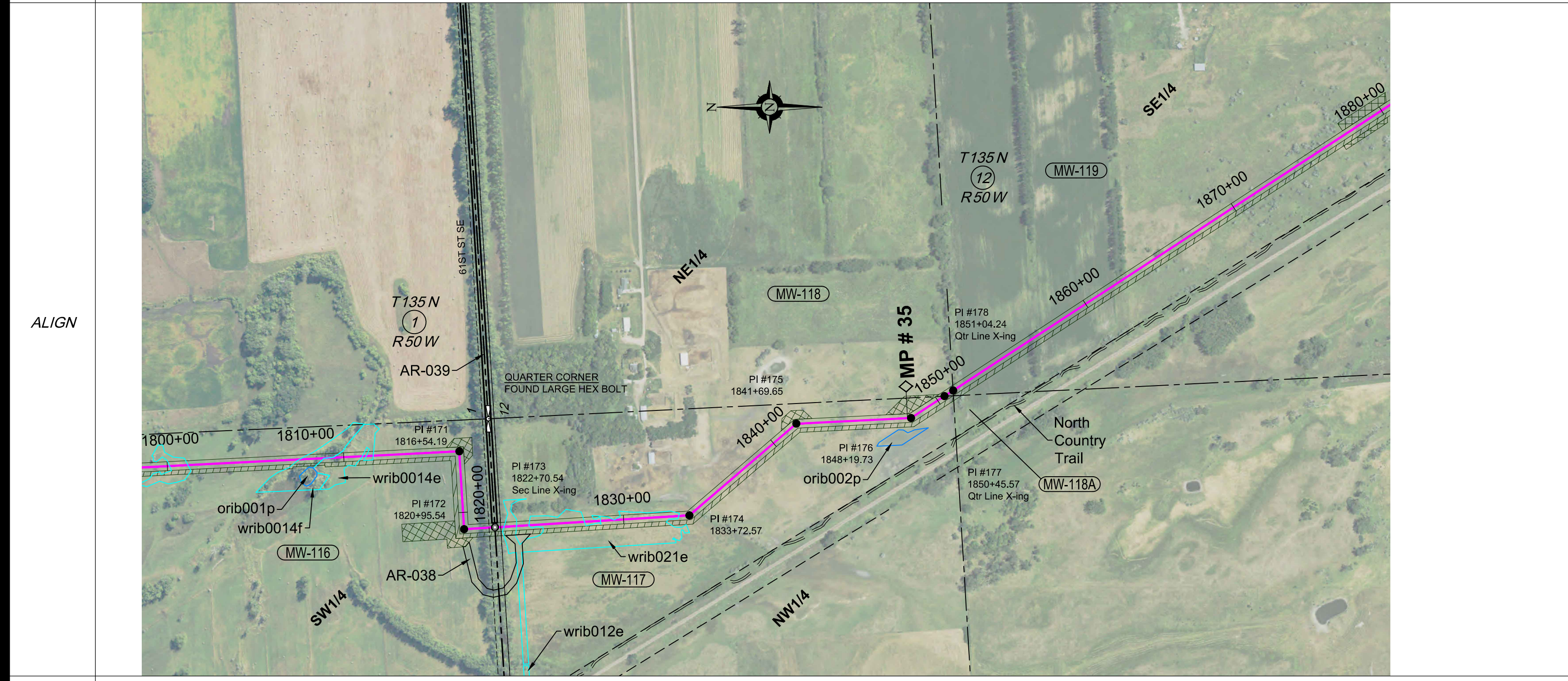
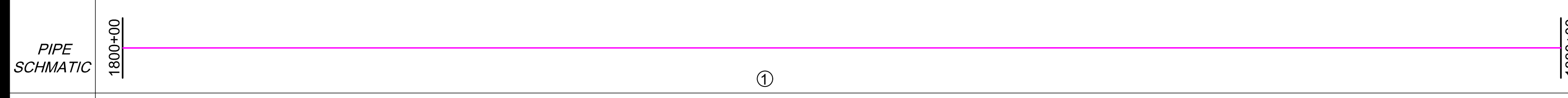
WAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

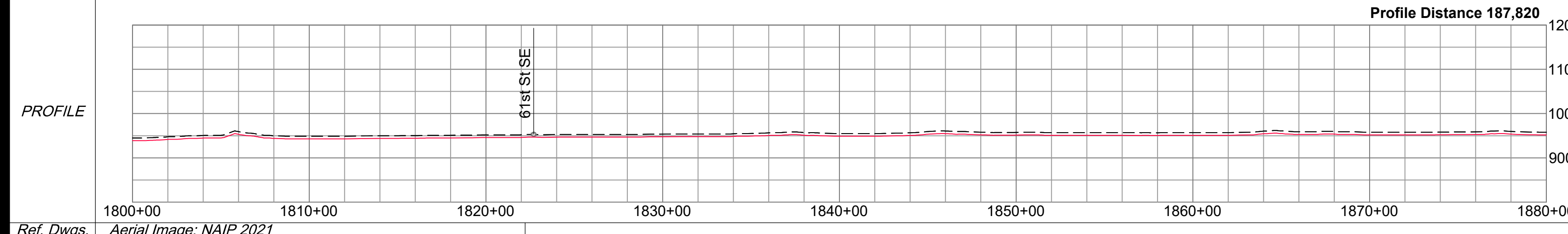
Sec. 36, T136N, R50W,
Sec. 1, T135N, R50W,
5th P.M., Richland Co., North Dakota

Sheet 16 R1

OWNER	MW-116 SW1/4, EXCEPT RAILROAD SEC. 1, T135N, R50W 713' Cultivated - 2371' Uncultivated	MW-117 PART OF NW1/4 LYING NE OF RAILROAD SEC. 12, T135N, R50W 1036' Cultivated - 1739' Uncultivated	MW-118 NE1/4, WITH EXCEPTIONS SEC. 12, T135N, R50W 59' Uncultivated	MW-119 SE1/4 LYING EAST OF RAILROAD SEC. 12, T135N, R50W 1037' Cultivated - 1997' Uncultivated
RODDAGE	3083.64' / 186.89 Rods	2775.02' / 168.18 Rods	58.67' / 3.56 Rods	3033.52' / 183.85 Rods

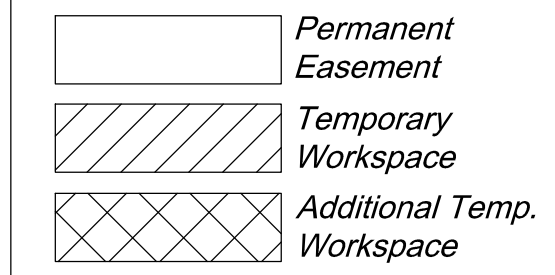
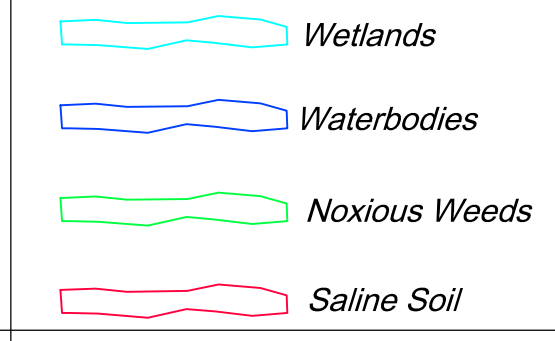


ENVIRO	Water Crossing Name	orib001p		orib002p	
	Wetland Name	wrib0014f	wrib0014e	wrib012e	wrib021e
	Environmental Feature	Wetland	Pond	Wetland	Pond
	Miscellaneous/Comments		Approx. 50' ECD	Approx. 100' ECD	Approx. 175' ECD
HUC-12 Watershed	090201051005				
Seeding Mix					



PI #	STATION	DEFLECTION
PI #171	1816+54.19	89°30'R
PI #172	1820+95.54	90°00'L
PI #173	1822+70.54	00°00'
PI #174	1833+72.57	37°00'L
PI #175	1841+69.65	38°00'R
PI #176	1848+19.73	30°30'L
PI #177	1850+45.57	00°00'
PI #178	1851+04.24	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.



ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

Ref. Dwgs. Aerial Image: NAIP 2021

HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
⊗ Proposed Block Valve	— Alignment
⊕ Proposed Bore	- - - Section Line
● Alignment PI	- - - Quarter Line
○ Utility Pole	- x - x - Fence Line
⊙ Well	- - - UG Fiber Optic
⊗ Valve	- - - UG Electric
	- - - Overhead Elec
	- - - Existing Pipeline
	- - - Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	8,000	12.75" OD, .250" WT, X65, FBE, TRL

REVISIONS		
No.	Date	Description

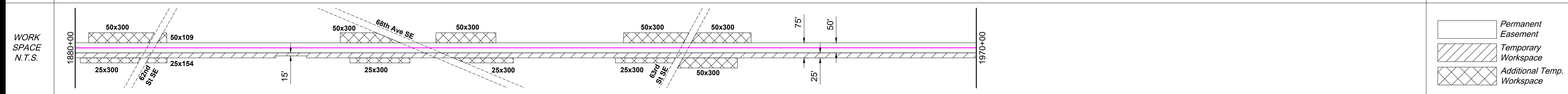
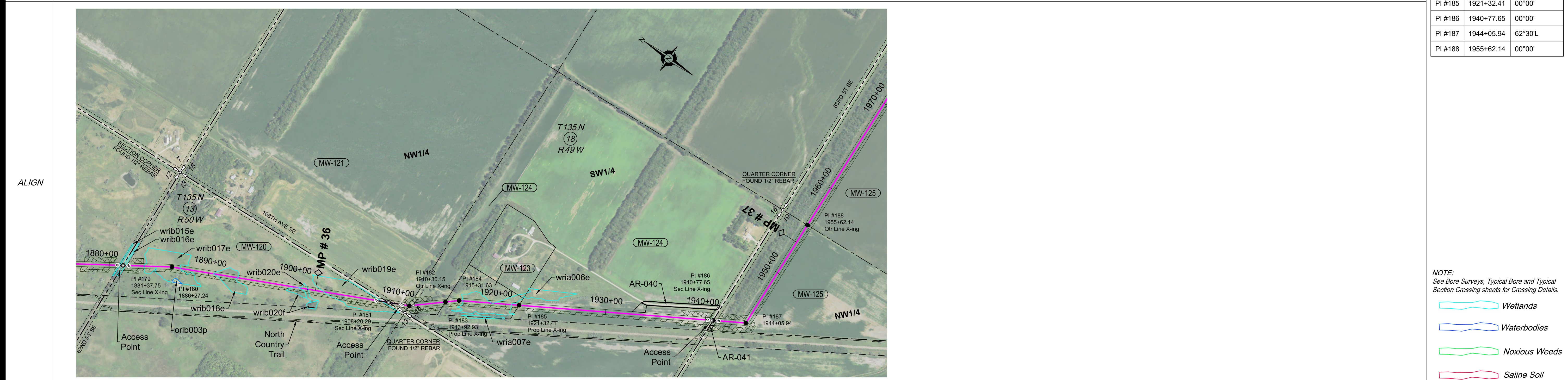
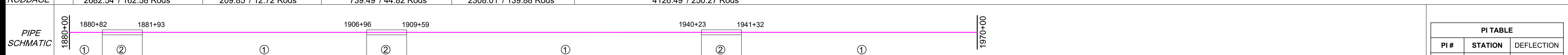
WAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

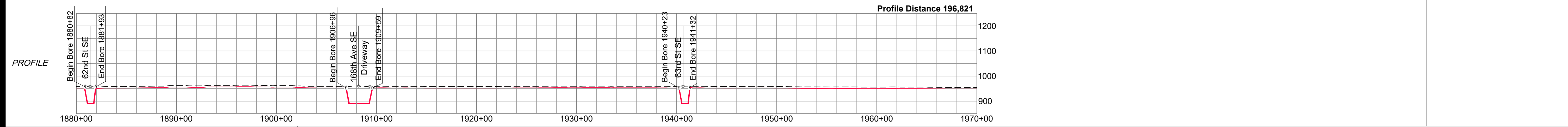
Sec. 1, 12, T135N, R50W,
5th P.M., Richland Co., North Dakota

Sheet 17 R1

Co, State	SECTION 13, T135N, R50W, SECTIONS 18, 19, T135N, R49W, RICHLAND COUNTY, NORTH DAKOTA				
OWNER	1881+38 NE1/4 LYING EAST OF RAILROAD WITH EXCEPTIONS SEC. 13, T135N, R50W 2683' Uncultivated	1908+20 GOVT LOT 2 & SE1/4 OF THE NE1/4 SEC. 18, T135N, R49W 210' Uncultivated	1910+30 PART OF THE SW1/4 SEC. 18, T135N, R49W 739' Uncultivated	1921+32 GOVT LOTS 3-4 & E1/2 OF THE SW1/4 WITH EXCEPTIONS SEC. 18, T135N, R49W 2308' Uncultivated	1940+78 ALL LYING EAST OF RAILROAD WITH EXCEPTIONS SEC. 19, T135N, R49W 3507' Cultivated - 619' Uncultivated
RODDAGE	2682.54' / 162.58 Rods	209.85' / 12.72 Rods	739.49' / 44.82 Rods	2308.01' / 139.88 Rods	4126.49' / 250.27 Rods



ENVIRO	Water Crossing	Name	Bridge	Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix
		orib003e			Pond		090201051004	
		wrib015e		1881+08	Wetland	Approx. 100' ECD	090201051005	
		wrib016e		1801+53	Wetland	Approx. 100' ECD		
		wrib017e		1883+48	Wetland	Approx. 100' ECD		
		wrib018e		1887+16	Wetland	Approx. 400' mats		
		wrib019e		1886+73	Wetland	Approx. 100' ECD		
		wrib020e		1890+50	Wetland	Approx. 275' mats		
		wrib020f		1892+92	Wetland	Approx. 50' ECD		
		wria006e		1897+92	Wetland	Approx. 40' mats	090201051004	
		wria007e		1901+36	Wetland	Approx. 200' mats		
		wria007e		1899+08	Wetland	Approx. 625' mats		
		wria007e		1901+18	Wetland	Approx. 100' ECD		
		wria007e		1901+68	Wetland	Approx. 100' ECD		
		wria007e		1909+47	Wetland	Approx. 625' mats		
		wria007e		1915+68	Wetland	Approx. 500' mats		
		wria007e		1926+90	Wetland			
		wria007e		1915+71	Wetland			
		wria007e		1919+96	Wetland			



HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM

North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- ⊗ Proposed Block Valve
- ⊕ Proposed Bore
- Alignment PI
- Utility Pole
- ⊙ Well
- ⊗ Valve
- Alignment
- - - Section Line
- · - Quarter Line
- x - x - x - Fence Line
- · · · UG Fiber Optic
- · · · UG Electric
- · · · Overhead Elec
- · · · Existing Pipeline
- · · · Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	8,518	12.75" OD, .250" WT, X65, FBE, TRL
2	482	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS

No.	Date	Description

WHAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

500 0 500 1000
scale 1" = 500' - 22 x 34 feet
1" = 1000' - 11 x 17

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Sec. 13, T135N, R50W,
Sec. 18, 19, T135N, R49W,
5th P.M., Richland Co., North Dakota

Sheet 18 R1

PI TABLE		
PI #	STATION	DEFLECTION
PI #179	1881+37.75	00°00'
PI #180	1886+27.24	7°30'R
PI #181	1908+20.29	00°00'
PI #182	1910+30.15	15°30'L
PI #183	1913+92.93	00°00'
PI #184	1915+31.63	10°30'R
PI #185	1921+32.41	00°00'
PI #186	1940+77.65	00°00'
PI #187	1944+05.94	62°30'L
PI #188	1955+62.14	00°00'

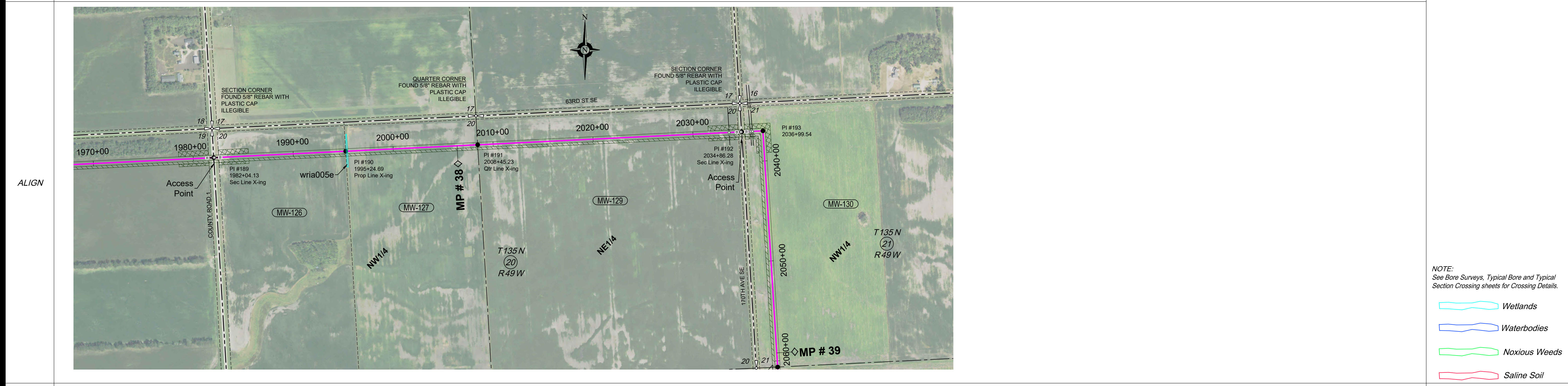
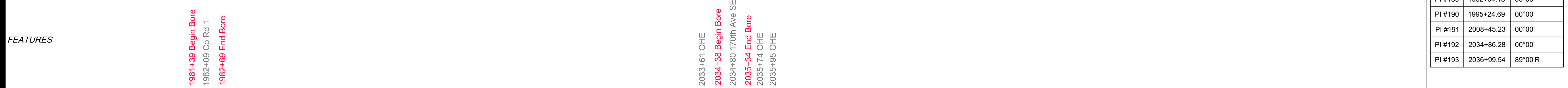
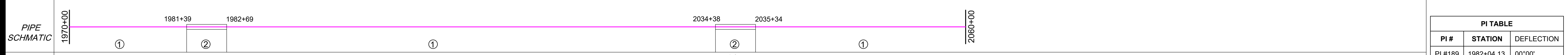
- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Wetlands
 - Waterbodies
 - Noxious Weeds
 - Saline Soil
 - Permanent Easement
 - Temporary Workspace
 - Additional Temp. Workspace

ENVIRONMENTAL NOTES:

- Wetlands depicted on these sheets represent actual field survey data or NWI.
- Actual wetland or stream width may vary at time of construction.

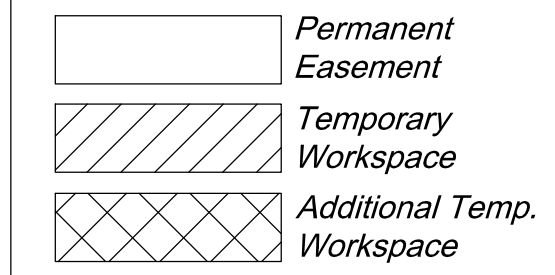
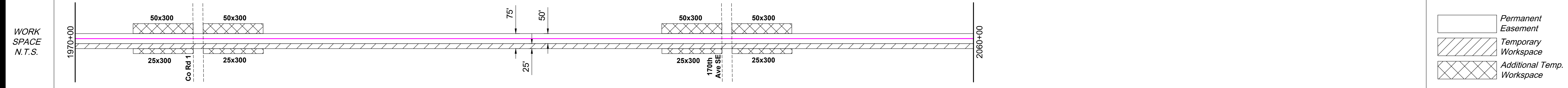
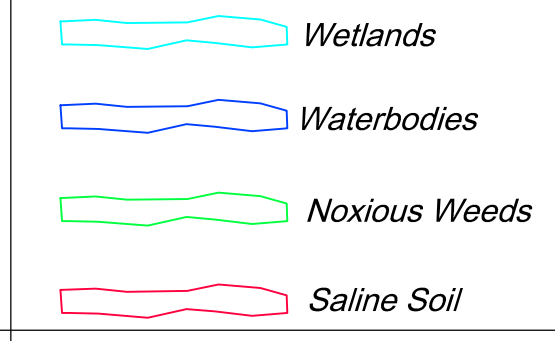
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

OWNER	1982+04	MW-126 W1/2 OF THE W1/2 SEC. 20, T135N, R49W 1288' Cultivated - 33' Uncultivated	1995+25	MW-127 E1/2 OF THE W1/2, WITH EXCEPTIONS SEC. 20, T135N, R49W 1321' Cultivated	2008+45	MW-129 NE1/4 SEC. 20, T135N, R49W 2608' Cultivated - 33' Uncultivated	2034+86	MW-130 W1/2 OF THE NW1/4 SEC. 21, T135N, R49W 2542' Cultivated - 33' Uncultivated
RODDAGE		1320.55' / 80.03 Rods		1320.55' / 80.03 Rods		2641.04' / 160.06 Rods		2575.35' / 156.08 Rods



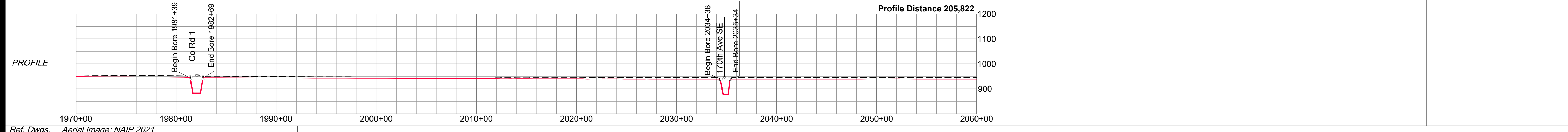
PI TABLE		
PI #	STATION	DEFLECTION
PI #189	1982+04.13	00°00'
PI #190	1995+24.69	00°00'
PI #191	2008+45.23	00°00'
PI #192	2034+86.28	00°00'
PI #193	2036+99.54	89°00'R

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.



ENVIRO	Water Crossing	Name	
	Bridge	Crossing Method	
	Wetland	Name	wria005e
	Survey Extent		1995+37
	Environmental Feature		Wetland
Miscellaneous/Comments			Approx. 100' ECD Approx. 40' mats
HUC-12 Watershed			090201051004
Seeding Mix			

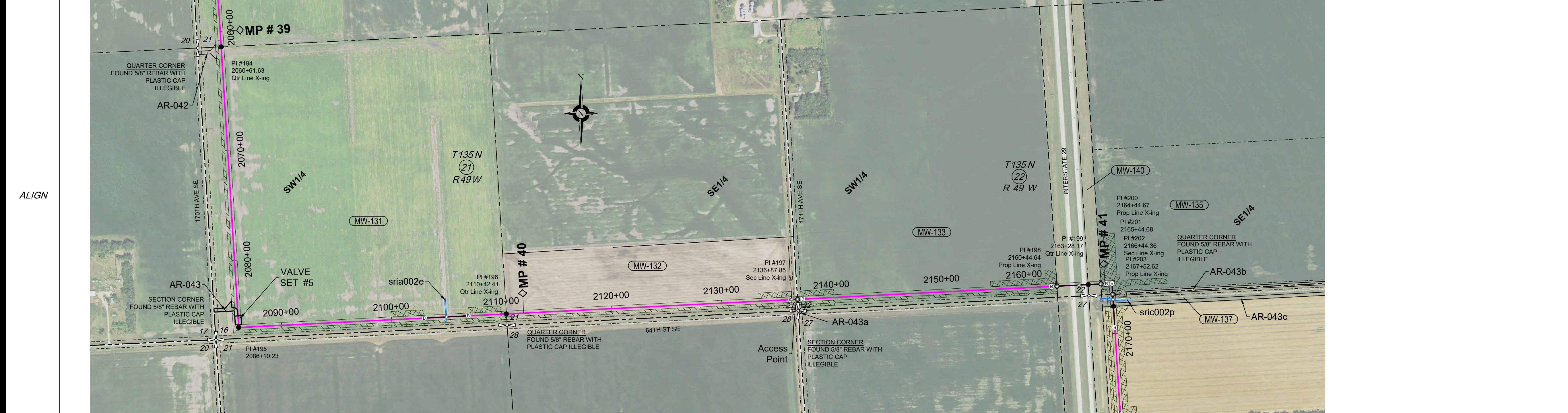
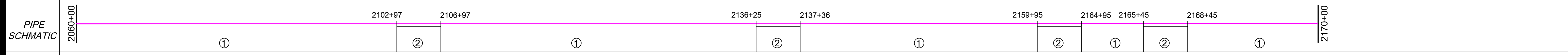
ENVIRONMENTAL NOTES:
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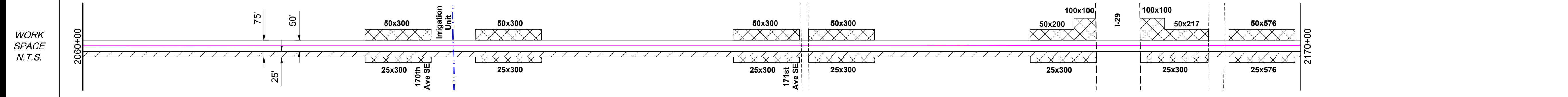
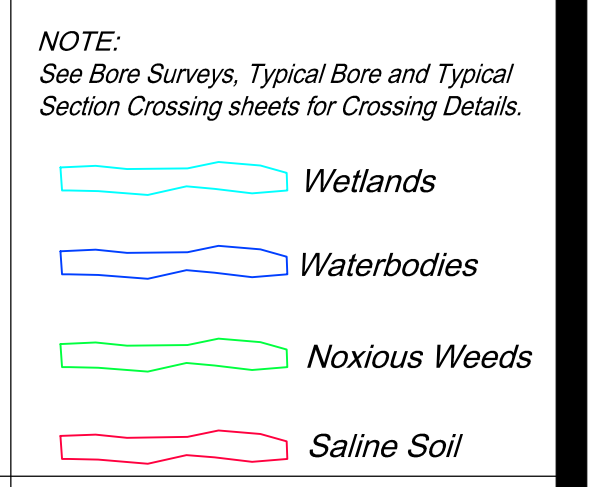
Ref. Dwgs. Aerial Image: NAIP 2021

 HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093 HSE Project # 19-21	SURVEY DATUM North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.999989766 Grid Dist. x 1.00010235 = Ground Dist.	LEGEND: [Symbol] Proposed Block Valve [Symbol] Proposed Bore [Symbol] Alignment PI [Symbol] Utility Pole [Symbol] Well [Symbol] Valve [Symbol] Alignment [Symbol] Section Line [Symbol] Quarter Line [Symbol] Fence Line [Symbol] UG Fiber Optic [Symbol] UG Electric [Symbol] Overhead Elec [Symbol] Existing Pipeline [Symbol] Dirt Road	SUMMARY of MATERIALS <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8,774</td> <td>12.75" OD, .250" WT, X65, FBE, TRL</td> </tr> <tr> <td>2</td> <td>226</td> <td>12.75" OD, .312" WT, X65, FBE w/ARO, TRL</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	8,774	12.75" OD, .250" WT, X65, FBE, TRL	2	226	12.75" OD, .312" WT, X65, FBE w/ARO, TRL	REVISIONS <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				WHAHPETON EXPANSION PROJECT		 An MDU Resources Group company
	Mark	Quantity	Description																			
	1	8,774	12.75" OD, .250" WT, X65, FBE, TRL																			
2	226	12.75" OD, .312" WT, X65, FBE w/ARO, TRL																				
No.	Date	Description																				
	Drawing Date: 01-19-2022 Drawn By: D. Smith Checked by: J. Harned				Sec. 20, 21, T135N, R49W, 5th P.M., Richland Co., North Dakota Sheet 19 R1																	

Co, State	SECTIONS 21, 22, 27, T135N, R49W, RICHLAND COUNTY, NORTH DAKOTA																				
OWNER	2060+62	MW-131 SW1/4 SEC. 21, T135N, R49W 4981' Cultivated			2110+42	MW-132 S1/2 OF THE S1/2 OF THE SE1/4 SEC. 21, T135N, R49W 2592' Cultivated - 53' Uncultivated			2136+88	MW-133 SW1/4, WITH EXCEPTIONS SEC. 22, T135N, R49W 2324' Cultivated - 33' Uncultivated		2160+45	MW-140 SEC. 22, T135N, R49W 400' Uncultivated		2164+45	MW-135 SE1/4 EXC 1-29 ROW SEC. 22, T135N, R49W 200' Cultivated		2166+44	MW-137 S7/8 OF N108.5' LESS E33' & W116.8' OF NE1/4 SEC. 27, T135N, R49W 75' Uncultivated		2167+53
RODDAGE	4980.78' / 301.87 Rods		2645.44' / 160.33 Rods			2356.79' / 142.84 Rods		400.04' / 24.24 Rods		199.69' / 12.10 Rods		75.25' / 4.56 Rods									

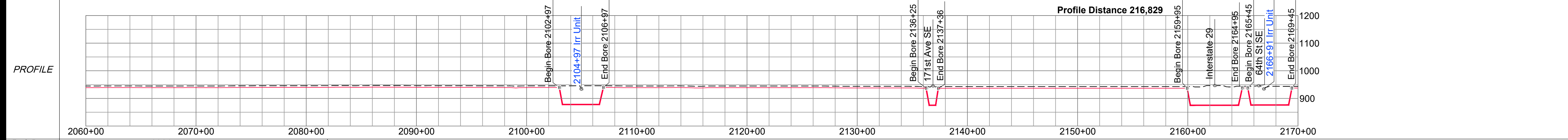


PI TABLE		
PI #	STATION	DEFLECTION
PI #194	2060+61.63	00°00'
PI #195	2086+10.23	89°30'L
PI #196	2110+42.41	00°00'
PI #197	2136+87.85	00°00'
PI #198	2160+44.64	00°00'
PI #199	2163+28.17	00°00'
PI #200	2164+44.67	00°00'
PI #201	2165+44.68	89°30'R
PI #202	2166+44.36	00°00'
PI #203	2167+52.62	00°00'



ENVIRO	Name	Crossing Method	Bore	Yes	2104+97	Minor	Approx. 100' ECD	Approx. 40' mats	090201051004	sria002e	Bore	Yes	2166+91	Intermediate	Approx. 100' ECD	Approx. 40' mats	090201051003	sric002p
	Water Crossing	Bridge	Bore	Yes	2104+97	Minor	Approx. 100' ECD	Approx. 40' mats	090201051004	sria002e	Bore	Yes	2166+91	Intermediate	Approx. 100' ECD	Approx. 40' mats	090201051003	sric002p

ENVIRONMENTAL NOTES:
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Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
	Proposed Block Valve
	Proposed Bore
	Alignment PI
	Utility Pole
	Well
	Valve
	Alignment
	Section Line
	Quarter Line
	Fence Line
	UG Fiber Optic
	UG Electric
	Overhead Elec
	Existing Pipeline
	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	9,689	12.75" OD, .250" WT, X65, FBE, TRL
2	811	12.75" OD, .312" WT, X65, FBE w/ARO, TRL
3	500	12.75" OD, .500" WT, X65, FBE, TRL

REVISIONS		
No.	Date	Description

WHAHPETON EXPANSION PROJECT

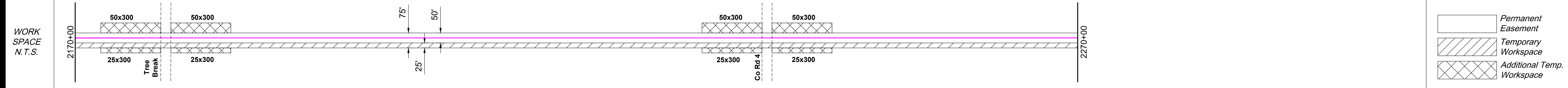
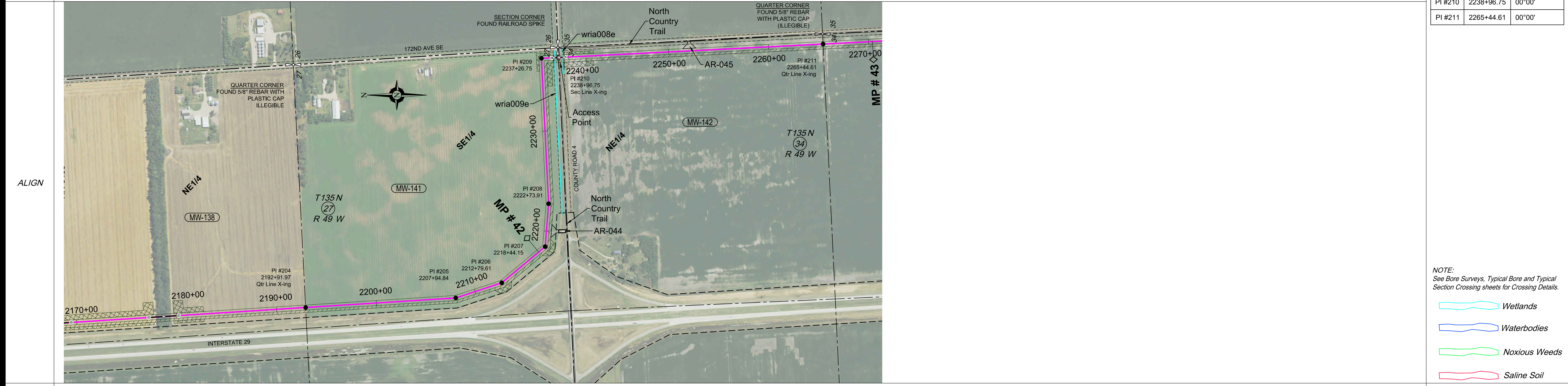
1" = 500' HORIZ.
1" = 200' VERT.

Co, State: NORTH DAKOTA
 SECTIONS 27, 34, T135N, R49W, RICHLAND COUNTY, NORTH DAKOTA

OWNER	MW-138 NE 1/4 EXC 4.49A DRN, 6.62A 1-29 ROW & 10.89A SEC. 27, T135N, R49W 2420' Cultivated - 152' Uncultivated	MW-141 SE 1/4 EXC 1-29 ROW SEC. 27, T135N, R49W 4572' Cultivated - 33' Uncultivated	MW-142 NE 1/4 EXC 1-29 ROW & 6.61A SEC. 34, T135N, R49W 2568' Cultivated - 80' Uncultivated
RODDAGE	2572.36' / 155.90 Rods	4604.77' / 279.08 Rods	2647.86' / 160.48 Rods
PIPE SCHMATIC	2170+00 ① 2177+21 ② 2180+21 ① 2238+32 ② 2239+62 ① 2270+00		

FEATURES
 2177+21 Begin Bore
 2178+71 Shelter Belt
 2180+21 End Bore
 2238+32 Begin Bore
 2238+50 UFO
 2238+97 Co Rd 4
 2239+04 Trail
 2239+52 OHE
 2239+62 End Bore

PI TABLE		
PI #	STATION	DEFLECTION
PI #204	2192+91.97	00°00'
PI #205	2207+94.84	14°30'L
PI #206	2212+79.61	21°30'L
PI #207	2218+44.15	45°30'L
PI #208	2222+73.91	7°30'L
PI #209	2237+26.75	90°00'R
PI #210	2238+96.75	00°00'
PI #211	2265+44.61	00°00'

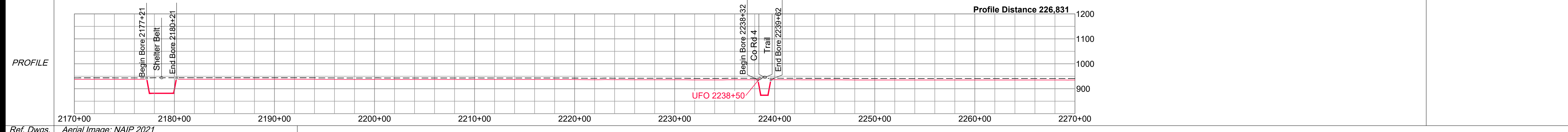


ENVIRO	Name	Survey Extent	Environmental Feature	Miscellaneous/Comments
Water Crossing	Bridge			
Wetland	wria009e	2238+59	Wetland	Approx. 100' ECD
	wria008e	2238+38	Wetland	Approx. 100' ECD
				Approx. 40' mats
HUC-12 Watershed				090201051003

NOTE:
 See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

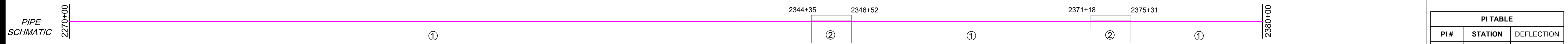
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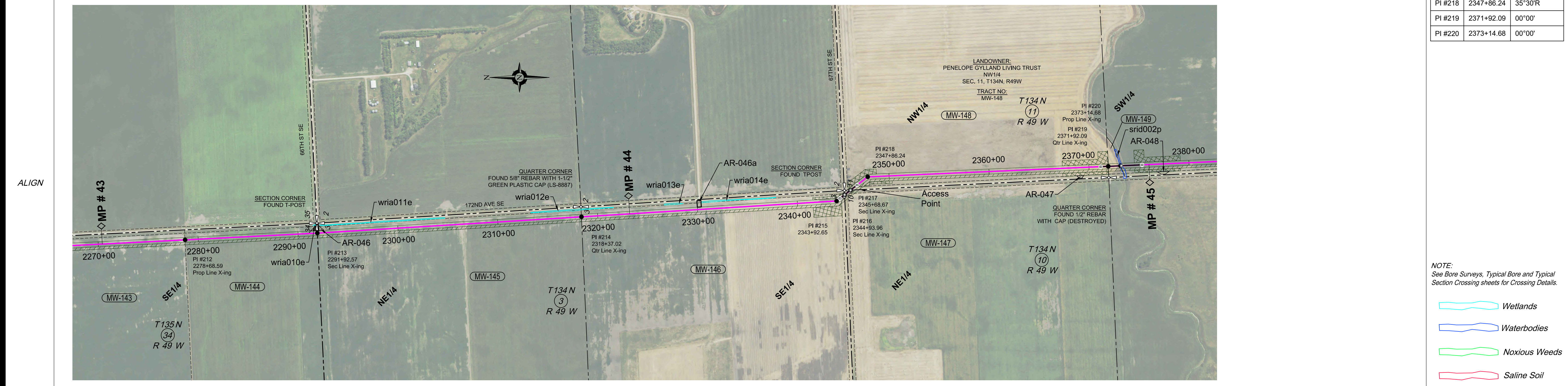


 HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093 HSE Project # 19-21	SURVEY DATUM North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	LEGEND: [Symbol] Proposed Block Valve [Symbol] Proposed Bore [Symbol] Alignment PI [Symbol] Utility Pole [Symbol] Well [Symbol] Valve [Symbol] Alignment [Symbol] Section Line [Symbol] Quarter Line [Symbol] Fence Line [Symbol] UG Fiber Optic [Symbol] UG Electric [Symbol] Overhead Elec [Symbol] Existing Pipeline [Symbol] Dirt Road	SUMMARY of MATERIALS <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>9,570</td> <td>12.75" OD, .250" WT, X65, FBE, TRL</td> </tr> <tr> <td>2</td> <td>430</td> <td>12.75" OD, .312" WT, X65, FBE w/ARO, TRL</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	9,570	12.75" OD, .250" WT, X65, FBE, TRL	2	430	12.75" OD, .312" WT, X65, FBE w/ARO, TRL	REVISIONS <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				WHAHPETON EXPANSION PROJECT 1" = 500' HORIZ. 1" = 200' VERT.	 An MDU Resources Group company Sec. 27, 34, T135N, R49W, 5th P.M., Richland Co., North Dakota Sheet 21 R1
	Mark	Quantity	Description																		
1	9,570	12.75" OD, .250" WT, X65, FBE, TRL																			
2	430	12.75" OD, .312" WT, X65, FBE w/ARO, TRL																			
No.	Date	Description																			

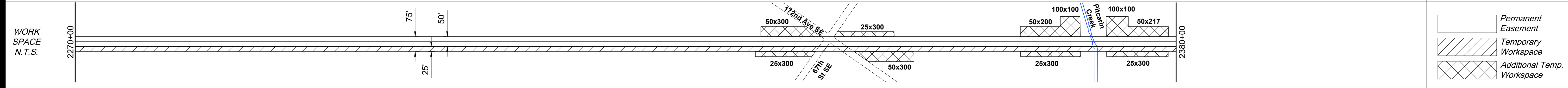
Co, State	SECTION 34, T135N, R49W, SECTIONS 3, 10, 11, T134N, R49W, RICHLAND COUNTY, NORTH DAKOTA													
OWNER	MW-143	MW-144	MW-145	MW-146	MW-147	MW-148	MW-149							
RODDAGE	1323.98' / 80.24 Rods	1323.98' / 80.24 Rods	2644.45' / 160.27 Rods	2638.31' / 159.90 Rods	201.16' / 12.19 Rods	2649.96' / 160.60 Rods	122.64' / 7.43 Rods							



PI TABLE		
PI #	STATION	DEFLECTION
PI #212	2278+68.59	00°00'
PI #213	2291+92.57	00°00'
PI #214	2318+37.02	00°00'
PI #215	2343+92.65	34°30'L
PI #216	2344+93.96	00°00'
PI #217	2345+68.67	00°00'
PI #218	2347+86.24	35°30'R
PI #219	2371+92.09	00°00'
PI #220	2373+14.68	00°00'



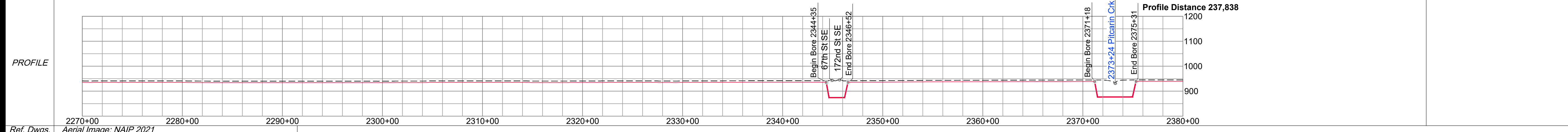
- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Wetlands
 - Waterbodies
 - Noxious Weeds
 - Saline Soil



- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace

ENVIRO	Name													srid002p
	Water Crossing Method													Bore
	Wetland Name	wria010e	wria011e	wria012e	wria013e	wria014e							Yes	
	Environmental Feature	Wetland		Wetland		Wetland		Wetland				Wetland		2373+34
Miscellaneous/Comments													Intermediate	
HUC-12 Watershed	090201051003												Approx. 100' ECD	
Seeding Mix	090201051002												Approx. 40' mats	

ENVIRONMENTAL NOTES:
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Ref. Dwgs. Aerial Image: NAIP 2021

HARNED SURVEYING & ENGINEERING, INC.
 11815 ROBINDALE ROAD
 LOUISVILLE, KY 40243
 OFFICE (502) 254-3921
 FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM
 North Dakota North (NAD 83)(2011)
 International Foot
 *Distances are Grid Distances.
 Combined Scale Factor = 0.99989766
 Grid Dist. x 1.00010235 = Ground Dist.

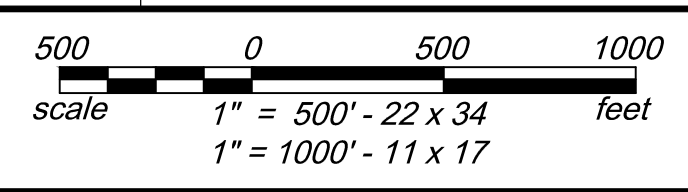
Drawing Date: 01-19-2022
 Drawn By: D. Smith
 Checked by: J. Harned

LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	?	12.75" OD, .250" WT, X65, FBE, TRL
2	?	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS		
No.	Date	Description



WAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
 1" = 200' VERT.

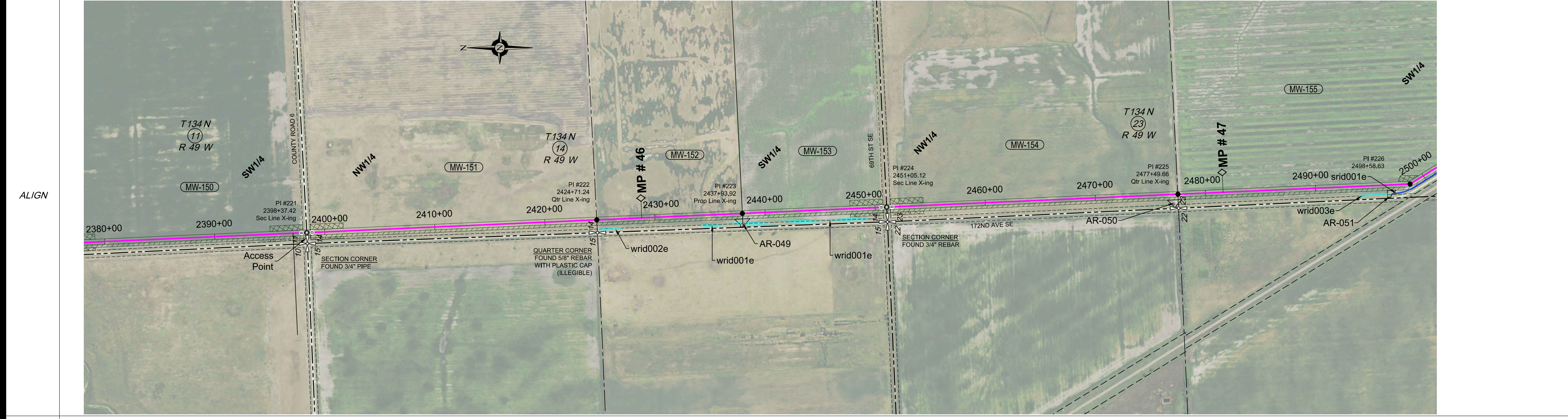
Sec. 34, T135N, R49W,
 Sec. 3, 10, 11, T134N, R49W,
 5th P.M., Richland Co., North Dakota

Sheet 22 R1

Co, State	SECTIONS 11, 14, 23, T134N, R49W, RICHLAND COUNTY, NORTH DAKOTA													
OWNER	MW-150 SW1/4, WITH EXCEPTIONS SEC. 11, T134N, R49W 2490' Cultivated - 33' Uncultivated			MW-151 NW1/4 SEC. 14, T134N, R49W 2601' Cultivated - 33' Uncultivated			MW-152 N 1/2 OF THE SW1/4 SEC. 14, T134N, R49W 1323' Cultivated		MW-153 S 1/2 OF THE SW1/4 SEC. 14, T134N, R49W 1278' Cultivated - 353' Uncultivated		MW-154 NW1/4 SEC. 23, T134N, R49W 2510' Cultivated - 135' Uncultivated		MW-155 SW1/4 EXC 1-29 ROW SEC. 23, T134N, R49W 4771' Cultivated - 73' Uncultivated	
RODDAGE	2522.70' / 152.89 Rods			2633.83' / 159.63 Rods			1322.68' / 80.16 Rods		1311.20' / 79.47 Rods		2644.54' / 160.28 Rods		4844.63' / 296.28 Rods	

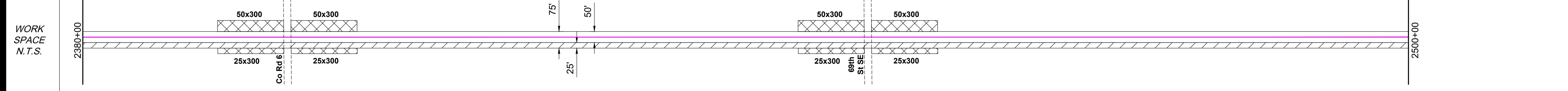


PI TABLE		
PI #	STATION	DEFLECTION
PI #221	2398+37.42	00°00'
PI #222	2424+71.24	00°00'
PI #223	2437+93.92	00°00'
PI #224	2451+05.12	00°00'
PI #225	2477+49.66	00°00'
PI #226	2498+58.63	29°00'L



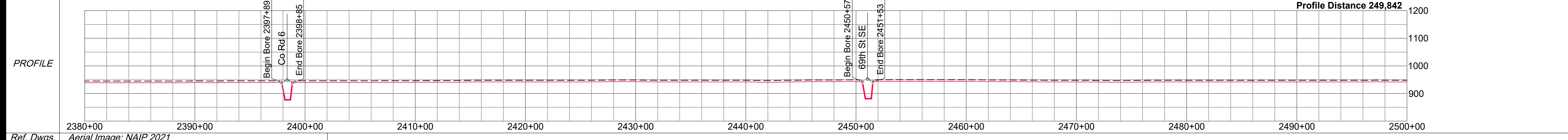
NOTE:
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- Wetlands
- Waterbodies
- Noxious Weeds
- Saline Soil
- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace



ENVIRO	Water Crossing Name	Crossing Method	Wetland Name	Crossing Survey Extent	Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix	Crossing Details	
									Station	Notes
			wrid002e	2424+88	Wetland		090201051002		2426+89	Wetland
			wrid001e	2434+27	Wetland	Approx. 50' ECD	090201051001		2449+15	Wetland
			wrid003e	2493+96	Wetland	Approx. 50' ECD			2496+60	Minor
			srld001e	2496+89	open-cut	Approx. 50' ECD			2552+20	Minor

ENVIRONMENTAL NOTES:
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Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
⊠	Proposed Block Valve
⊙	Proposed Bore
●	Alignment PI
○	Utility Pole
⊙	Well
⊠	Valve
—	Alignment
- - -	Section Line
- · - · -	Quarter Line
- x - x - x -	Fence Line
- · - · - · - · -	UG Fiber Optic
- · - · - · - · -	UG Electric
- · - · - · - · -	Overhead Elec
- · - · - · - · -	Existing Pipeline
- · - · - · - · -	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	?	12.75" OD, .250" WT, X65, FBE, TRL
2	?	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

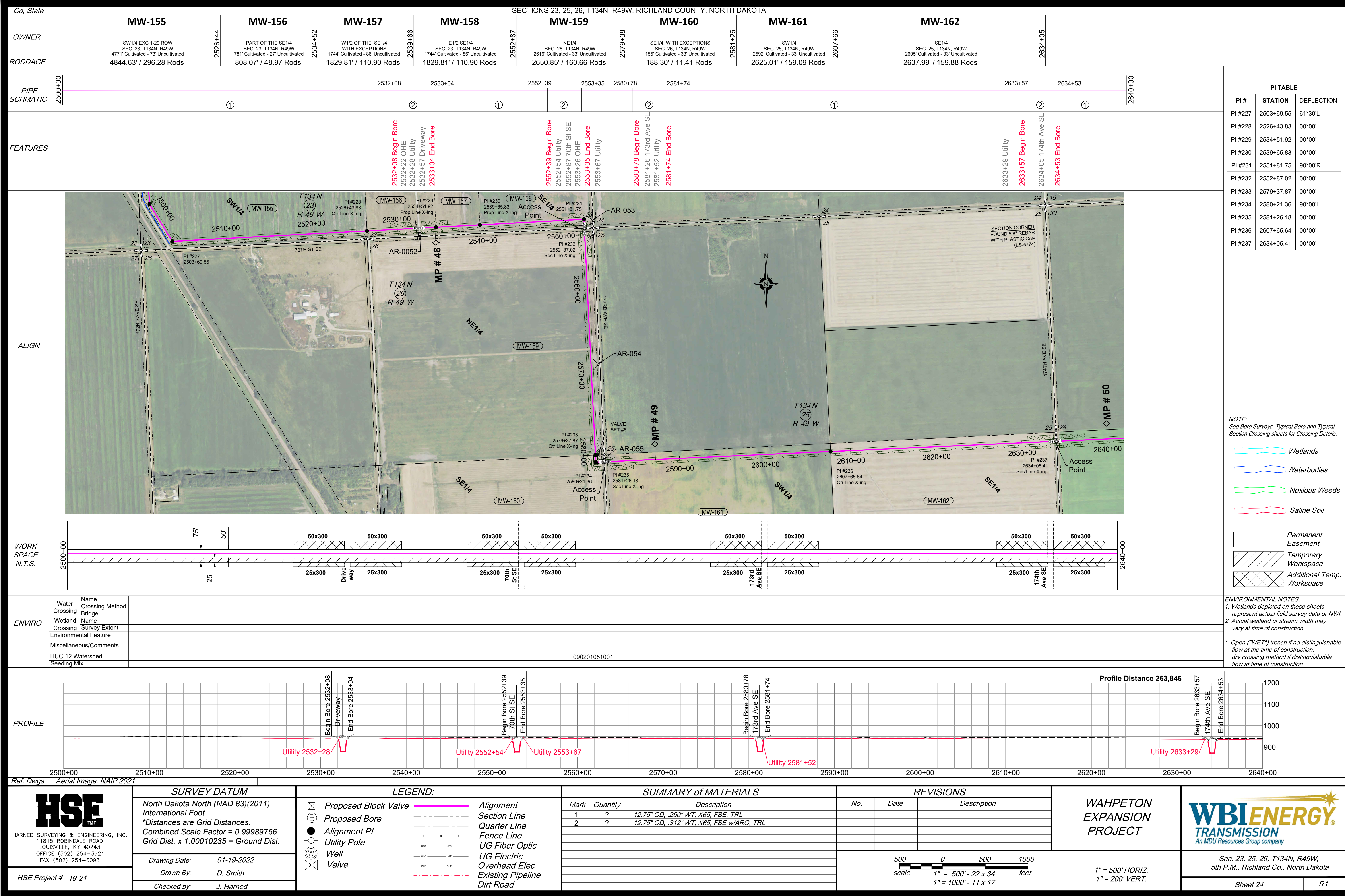
REVISIONS		
No.	Date	Description

WHAPELTON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

Sec. 11, 14, 23, T134N, R49W,
5th P.M., Richland Co., North Dakota

Sheet 23 R1

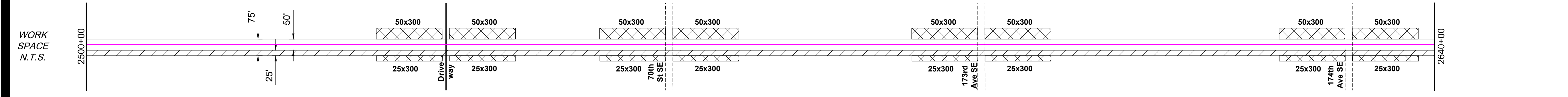


PI TABLE		
PI #	STATION	DEFLECTION
PI #227	2503+69.55	61°30'L
PI #228	2526+43.83	00°00'
PI #229	2534+51.92	00°00'
PI #230	2539+65.83	00°00'
PI #231	2551+81.75	90°00'R
PI #232	2552+87.02	00°00'
PI #233	2579+37.87	00°00'
PI #234	2580+21.36	90°00'L
PI #235	2581+26.18	00°00'
PI #236	2607+65.64	00°00'
PI #237	2634+05.41	00°00'

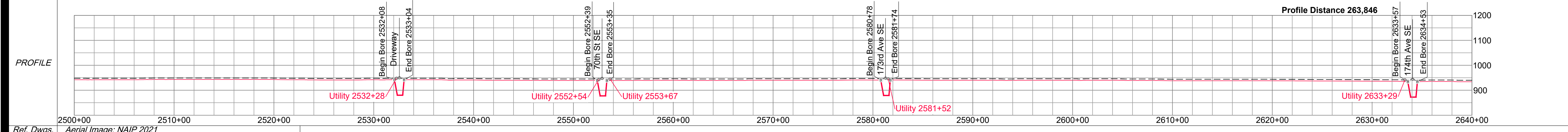
NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Wetlands
- Waterbodies
- Noxious Weeds
- Saline Soil
- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace

ENVIRONMENTAL NOTES:
1. Wetlands depicted on these sheets represent actual field survey data or NWI.
2. Actual wetland or stream width may vary at time of construction.
* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction



Water Crossing	Name	Crossing Method
Wetland Crossing	Name	Survey Extent
Environmental Feature		
Miscellaneous/Comments		
HUC-12 Watershed		090201051001
Seeding Mix		



Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM
North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

- LEGEND:**
- Proposed Block Valve
 - Proposed Bore
 - Alignment PI
 - Utility Pole
 - Well
 - Valve
 - Alignment
 - Section Line
 - Quarter Line
 - Fence Line
 - UG Fiber Optic
 - UG Electric
 - Overhead Elec
 - Existing Pipeline
 - Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	?	12.75" OD, .250" WT, X65, FBE, TRL
2	?	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS

No.	Date	Description

500 0 500 1000
scale 1" = 500' - 22 x 34 feet
1" = 1000' - 11 x 17

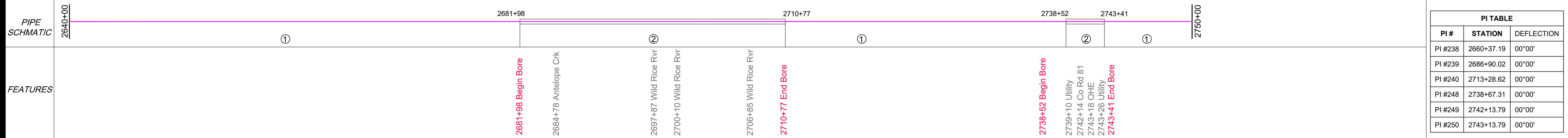
WAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

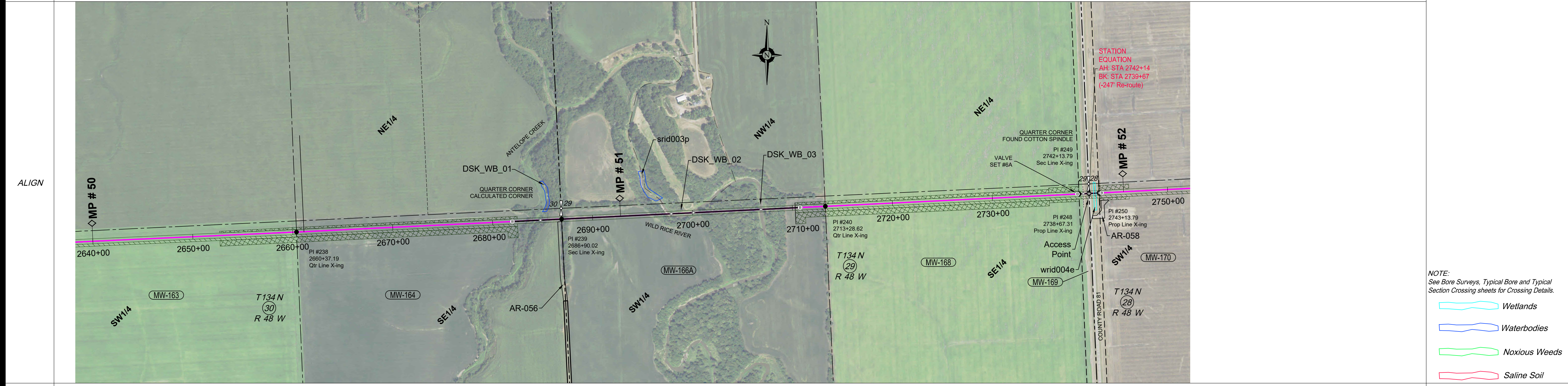
Sec. 23, 25, 26, T134N, R49W,
5th P.M., Richland Co., North Dakota

Sheet 24 R1

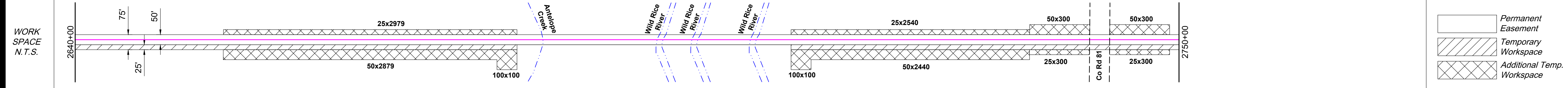
Co, State	SECTIONS 28, 29, 30, T134N, R48W, RICHLAND COUNTY, NORTH DAKOTA											
OWNER	MW-163		MW-164		MW-166A		MW-168		MW-169		MW-170	
RODDAGE	2631.77' / 159.50 Rods		2652.83' / 160.78 Rods		2638.60' / 159.92 Rods		2538.69' / 153.86 Rods		200.00' / 12.12 Rods		1892.29' / 114.68 Rods	



PI TABLE		
PI #	STATION	DEFLECTION
PI #238	2660+37.19	00°00'
PI #239	2686+90.02	00°00'
PI #240	2713+28.62	00°00'
PI #248	2738+67.31	00°00'
PI #249	2742+13.79	00°00'
PI #250	2743+13.79	00°00'



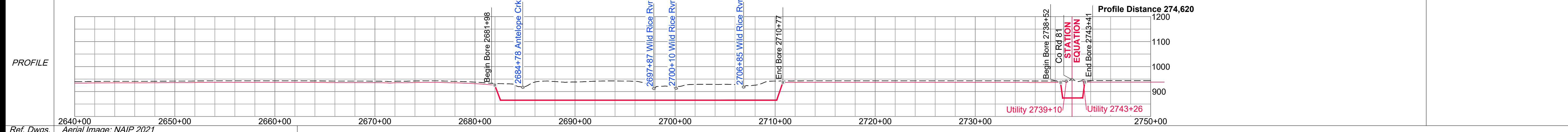
- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Wetlands
 - Waterbodies
 - Noxious Weeds
 - Saline Soil



- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace

ENVIRO	Name	Crossing Method	Crossing				Environmental Feature	Miscellaneous/Comments	HUC-12 Watershed	Seeding Mix
			Water	Wetland	Environmental	Miscellaneous				
	DSK_WB_01	Bridge	2684+78	2684+78	Creek			090201051001	090201050906	
	srid003p	Bore	2697+87	2697+87	River				090201050907	
	DSK_WB_02	Bore	2706+85	2706+85	Intermediate				090201050805	
	DSK_WB_02	Bore	2706+85	2706+85	Major				090201040401	

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Ref. Dwgs. Aerial Image: NAIP 2021

HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093

HSE Project # 19-21

SURVEY DATUM
North Dakota North (NAD 83)(2011)
International Foot
*Distances are Grid Distances.
Combined Scale Factor = 0.99989766
Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
Drawn By: D. Smith
Checked by: J. Harned

LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	7,618	12.75" OD, .250" WT, X65, FBE, TRL
2	3,136	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS

No.	Date	Description

Scale: 1" = 500' HORIZ. / 1" = 200' VERT.

WAHPETON EXPANSION PROJECT

Sec. 28, 29, 30, T134N, R48W,
5th P.M., Richland Co., North Dakota

Sheet 25 R1

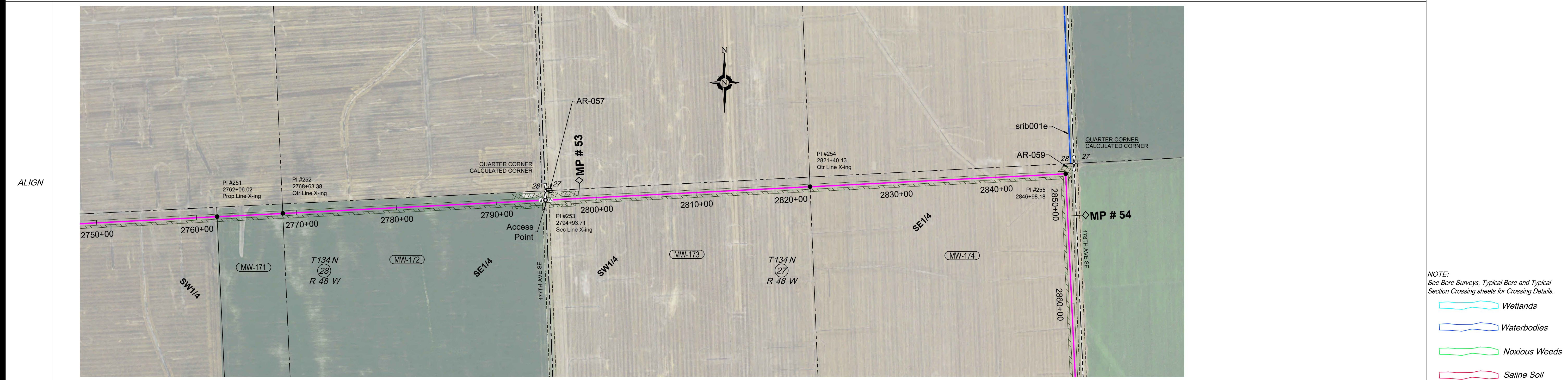
Co, State: NORTH DAKOTA
 SECTIONS 27, 28, T134N, R48W, RICHLAND COUNTY, NORTH DAKOTA

OWNER: MW-171 (PART OF THE SW1/4 SEC. 28, T134N, R48W 65' Cultivated), MW-172 (SE1/4 SEC. 28, T134N, R48W 2597' Cultivated - 33' Uncultivated), MW-173 (SW1/4 SEC. 27, T134N, R48W 2597' Cultivated - 33' Uncultivated), MW-174 (SE1/4 SEC. 27, T134N, R48W 5045' Cultivated - 66' Uncultivated)

RODDAGE: MW-171 (657.36' / 39.84 Rods), MW-172 (2630.33' / 159.41 Rods), MW-173 (2646.41' / 160.39 Rods), MW-174 (5110.65' / 309.74 Rods)

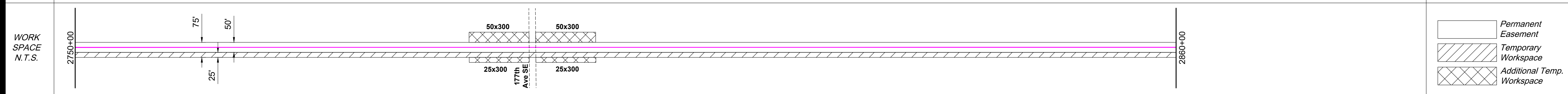


PI TABLE		
PI #	STATION	DEFLECTION
PI #251	2762+06.02	00°00'
PI #252	2768+63.38	00°00'
PI #253	2794+93.71	00°00'
PI #254	2821+40.13	00°00'
PI #255	2846+98.18	90°00'R



NOTE: See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

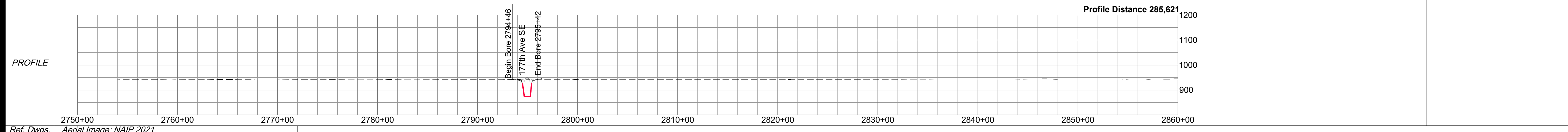
- Wetlands
- Waterbodies
- Noxious Weeds
- Saline Soil



- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace

ENVIRO	Name	Crossing Method	Station
Water Crossing	Bridge		srib001e
Wetland Crossing	Survey Extent		3046+23
Environmental Feature	Ditch		Approx. 50' ECD
Miscellaneous/Comments			
HUC-12 Watershed			090201040401
Seeding Mix			

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Ref. Dwgs. Aerial Image: NAIP 2021

SURVEY DATUM
 North Dakota North (NAD 83)(2011)
 International Foot
 *Distances are Grid Distances.
 Combined Scale Factor = 0.99989766
 Grid Dist. x 1.00010235 = Ground Dist.

Drawing Date: 01-19-2022
 Drawn By: D. Smith
 Checked by: J. Harned

LEGEND:

- Proposed Block Valve
- Proposed Bore
- Alignment PI
- Utility Pole
- Well
- Valve
- Alignment
- Section Line
- Quarter Line
- Fence Line
- UG Fiber Optic
- UG Electric
- Overhead Elec
- Existing Pipeline
- Dirt Road

SUMMARY of MATERIALS

Mark	Quantity	Description
1	10,904	12.75" OD, .250" WT, X65, FBE, TRL
2	96	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

REVISIONS

No.	Date	Description

Scale: 1" = 500' - 22 x 34 feet
 1" = 1000' - 11 x 17

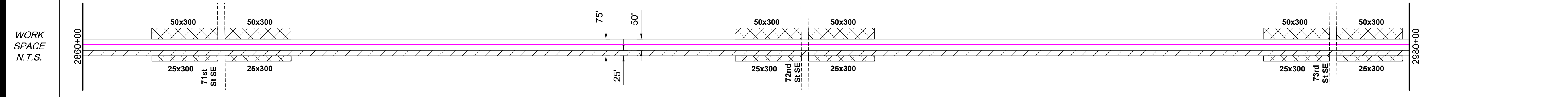
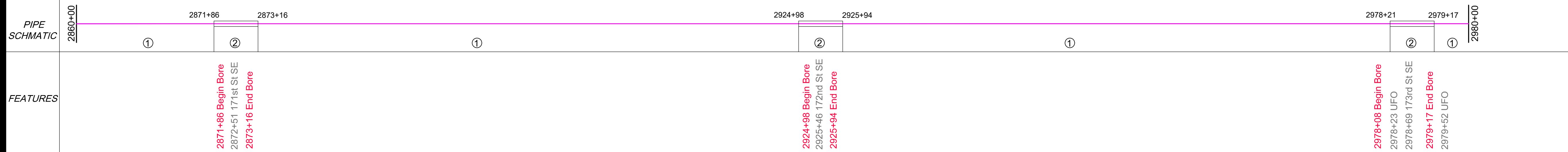
WAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
 1" = 200' VERT.

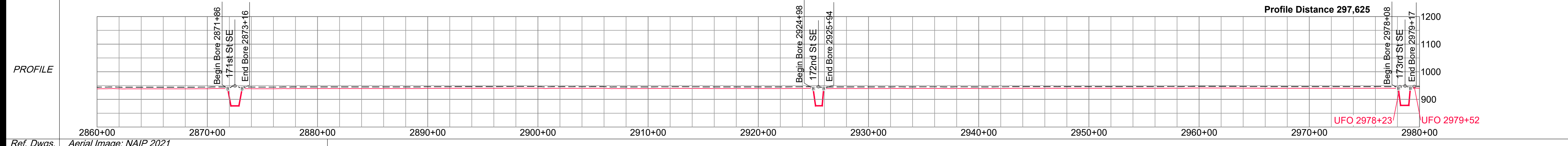
Sec. 27, 28, T134N, R48W,
 5th P.M., Richland Co., North Dakota

Sheet 26 R1

Co, State	SECTION 34, T134N, R48W, SECTION 3, T133N, R48W, RICHLAND COUNTY, NORTH DAKOTA					
OWNER	MW-175	MW-176	MW-177	MW-178	MW-179	
RODDAGE	2672+51 NE1/4 SEC. 34, T134N, R48W 2615' Cultivated - 33' Uncultivated 2647.51' / 160.46 Rods	2998+98 SE1/4 SEC. 34, T134N, R48W 2614' Cultivated - 33' Uncultivated 2647.47' / 160.45 Rods	2925+46 GOVERNMENT LOTS 1-2 SEC. 3, T133N, R48W 1303' Cultivated - 33' Uncultivated 1335.68' / 80.95 Rods	2938+81 S1/2NE1/4 SEC. 3, T133N, R48W 1336' Cultivated 1335.69' / 80.95 Rods	2952+17 SE1/4 SEC. 3, T133N, R48W 2619' Cultivated - 33' Uncultivated 2651.91' / 160.72 Rods	2978+69



ENVIRO	Water Crossing	Name	srib006e	Bore	Yes	srib005e	Bore	Yes
	Wetland Crossing	Wetland Name	2925+24	Minor	Approx. 100' ECD	2978+46	Minor	Approx. 40' mats
	Environmental Feature	Miscellaneous/Comments	090201040401		090201050805			
	HUC-12 Watershed	Seeding Mix						



PI TABLE		
PI #	STATION	DEFLECTION
PI #256	2872+50.80	00°00'
PI #257	2898+98.30	00°00'
PI #258	2925+45.78	2°00'R
PI #259	2938+81.46	00°00'
PI #260	2952+17.14	00°00'
PI #261	2978+69.06	00°00'

- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Wetlands
 - Waterbodies
 - Noxious Weeds
 - Saline Soil

- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace

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* Open ("WET") trench if no distinguishable flow at the time of construction, dry crossing method if distinguishable flow at time of construction

HSE Project # 19-21

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
⊠	Proposed Block Valve
⊙	Proposed Bore
●	Alignment PI
○	Utility Pole
⊕	Well
⊗	Valve
—	Alignment
- - -	Section Line
- · - · -	Quarter Line
- x - x - x -	Fence Line
- - - - -	UG Fiber Optic
- - - - -	UG Electric
- - - - -	Overhead Elec
- - - - -	Existing Pipeline
- - - - -	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	11,665	12.75" OD, .250" WT, X65, FBE, TRL
2	335	12.75" OD, .312" WT, X65, FBE w/ARO, TRL

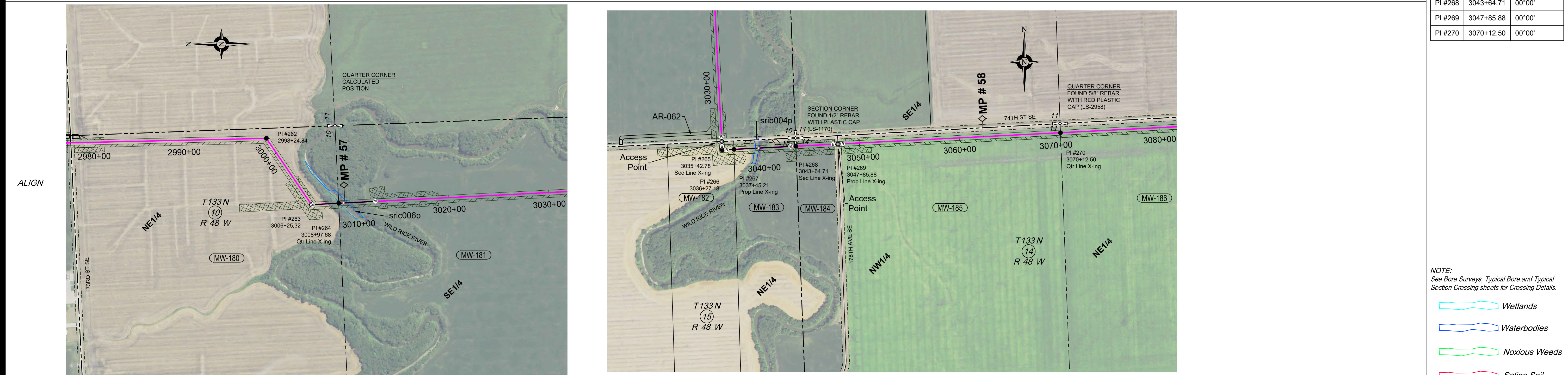
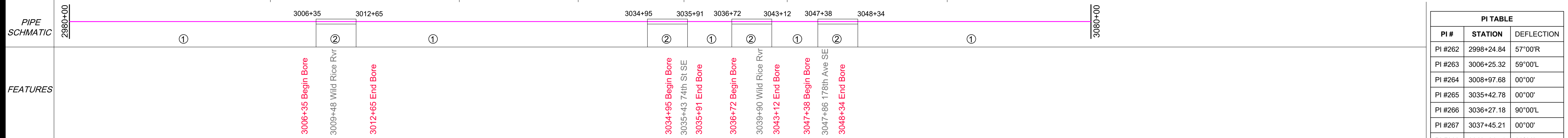
REVISIONS		
No.	Date	Description

Wahpeton Expansion Project

1" = 500' HORIZ.
1" = 200' VERT.

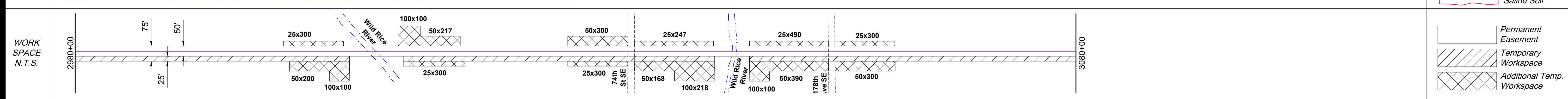
Sec. 34, T134N, R48W,
Sec. 3, T133N, R48W,
5th P.M., Richland Co., North Dakota
Sheet 27 R1

Co, State	SECTIONS 10, 14, 15, T133N, R48W, RICHLAND COUNTY, NORTH DAKOTA										
OWNER	MW-180	MW-181	MW-182	MW-183	MW-184	MW-185	MW-186				
RODDAGE	NE1/4 SEC. 10, T133N, R48W 2863' Cultivated - 136' Uncultivated 2999.07' / 181.76 Rods	SE1/4 SEC. 10, T133N, R48W 2334' Cultivated - 312' Uncultivated 2645.67' / 160.34 Rods	W1/2E1/2NE1/4 SEC. 15, T133N, R48W 169' Cultivated - 33' Uncultivated 202.42' / 12.27 Rods	E1/2E1/2NE1/4 SEC. 15, T133N, R48W 392' Cultivated - 228' Uncultivated 619.51' / 37.55 Rods	PART OF THE NW1/4 SEC. 14, T133N, R48W 396' Cultivated - 25' Uncultivated 421.17' / 25.53 Rods	PART OF THE NW1/4 SEC. 14, T133N, R48W 2202' Cultivated - 25' Uncultivated 2226.62' / 134.95 Rods	NE1/4 SEC. 14, T133N, R48W 2615' Cultivated - 33' Uncultivated 2647.60' / 160.46 Rods				



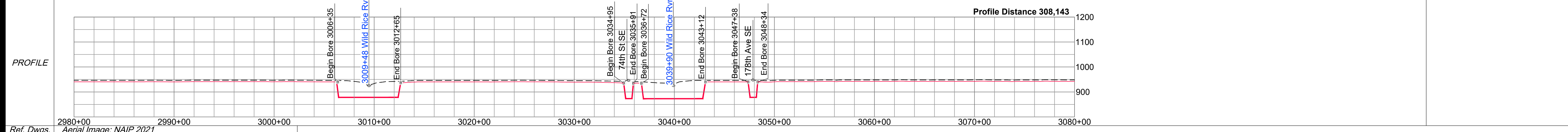
PI TABLE		
PI #	STATION	DEFLECTION
PI #262	2998+24.84	57°00'R
PI #263	3006+25.32	59°00'L
PI #264	3008+97.68	00°00'
PI #265	3035+42.78	00°00'
PI #266	3036+27.18	90°00'L
PI #267	3037+45.21	00°00'
PI #268	3043+64.71	00°00'
PI #269	3047+85.88	00°00'
PI #270	3070+12.50	00°00'

- NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.
- Wetlands
 - Waterbodies
 - Noxious Weeds
 - Saline Soil
 - Permanent Easement
 - Temporary Workspace
 - Additional Temp. Workspace



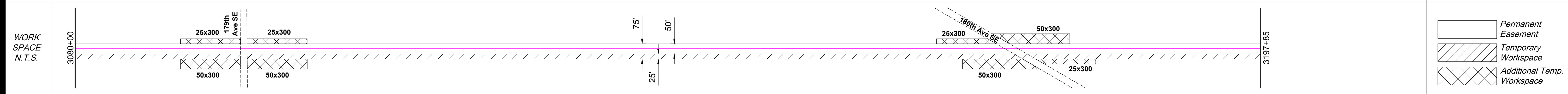
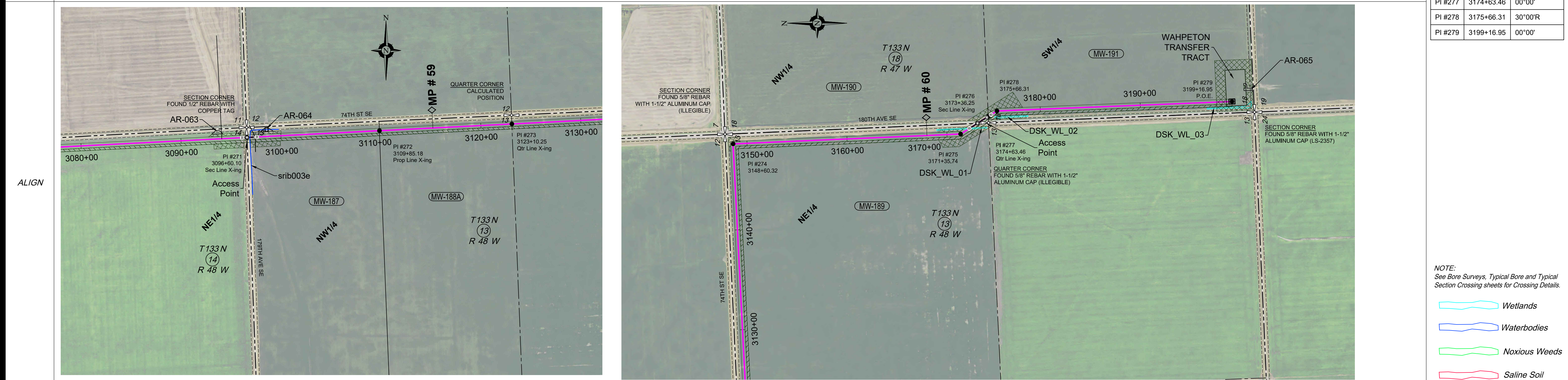
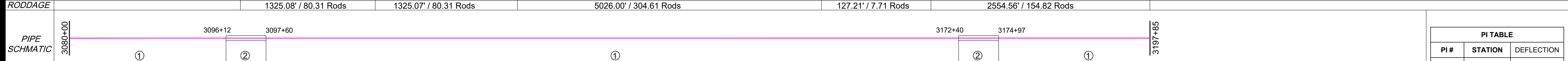
ENVIRO	Water Crossing		Name	Crossing Method	Bore	sric006p	sric004p
	Wetland Name	Survey Extent					
						3009+48	3039+90
						Intermediate	Intermediate
						Approx. 100' ECD	Approx. 100' ECD
						Approx. 100' mats	Approx. 60' mats
							090201050805

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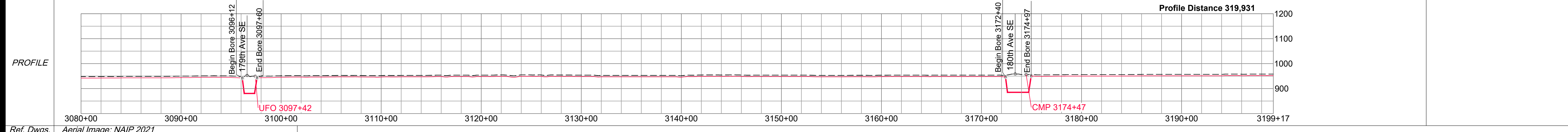


 HARNED SURVEYING & ENGINEERING, INC. 11815 ROBINDALE ROAD LOUISVILLE, KY 40243 OFFICE (502) 254-3921 FAX (502) 254-6093 HSE Project # 19-21	SURVEY DATUM North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	LEGEND: Proposed Block Valve Proposed Bore Alignment PI Utility Pole Well Valve Alignment Section Line Quarter Line Fence Line UG Fiber Optic UG Electric Overhead Elec Existing Pipeline Dirt Road	SUMMARY of MATERIALS <table border="1"> <thead> <tr> <th>Mark</th> <th>Quantity</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>8538</td> <td>12.75" OD, .250" WT, X65, FBE</td> </tr> <tr> <td>2</td> <td>1462</td> <td>12.75" OD, .312" WT, X65, FBE w/ARO</td> </tr> </tbody> </table>	Mark	Quantity	Description	1	8538	12.75" OD, .250" WT, X65, FBE	2	1462	12.75" OD, .312" WT, X65, FBE w/ARO	REVISIONS <table border="1"> <thead> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	No.	Date	Description				WHAHPETON EXPANSION PROJECT 1" = 500' HORIZ. 1" = 200' VERT.	 An MDU Resources Group company Sec. 10, 14, 15, T133N, R48W, 5th P.M., Richland Co., North Dakota Sheet 28 R1
	Mark	Quantity	Description																		
1	8538	12.75" OD, .250" WT, X65, FBE																			
2	1462	12.75" OD, .312" WT, X65, FBE w/ARO																			
No.	Date	Description																			

Co, State	SECTIONS 13, 14, T133N, R48W, SECTION 18, T133N, R47W, RICHLAND COUNTY, NORTH DAKOTA											
OWNER	3096+60	MW-187		MW-188A		MW-189		MW-190		MW-191		3197+85
RODDAGE		W1/2NW1/4 SEC. 13, T133N, R48W 1292' Cultivated - 33' Uncultivated		E1/2NW1/4 SEC. 13, T133N, R48W 1325' Cultivated		NE1/4 SEC. 13, T133N, R48W 4993' Cultivated - 33' Uncultivated		EXCEPT ABANDONED RAILROAD PLUS ABANDONED RAILROAD SEC. 18, T133N, R47W 127' Uncultivated		sw1/4 SEC. 18, T133N, R47W 2555' Cultivated		
		1325.08' / 80.31 Rods		1325.07' / 80.31 Rods		5026.00' / 304.61 Rods		127.21' / 7.71 Rods		2554.56' / 154.82 Rods		



ENVIRO	Water Crossing	Name	srib003e	Method	Bore
	Wetland Crossing	Name		Survey Extent	Yes
	Environmental Feature	Approx. 100' ECD	3096+88	Minor	
	Miscellaneous/Comments	Approx. 40' mats			
	HUC-12 Watershed	090201050805			
	Seeding Mix				



PI TABLE		
PI #	STATION	DEFLECTION
PI #271	3096+60.10	00°00'
PI #272	3109+85.18	00°00'
PI #273	3123+10.25	00°00'
PI #274	3148+60.32	90°00'R
PI #275	3171+35.74	30°00'L
PI #276	3173+36.25	00°00'
PI #277	3174+63.46	00°00'
PI #278	3175+66.31	30°00'R
PI #279	3199+16.95	00°00'

NOTE:
See Bore Surveys, Typical Bore and Typical Section Crossing sheets for Crossing Details.

- Wetlands
- Waterbodies
- Noxious Weeds
- Saline Soil

- Permanent Easement
- Temporary Workspace
- Additional Temp. Workspace

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HSE INC.
HARNED SURVEYING & ENGINEERING, INC.
11815 ROBINDALE ROAD
LOUISVILLE, KY 40243
OFFICE (502) 254-3921
FAX (502) 254-6093
HSE Project # 19-21

SURVEY DATUM	
North Dakota North (NAD 83)(2011) International Foot *Distances are Grid Distances. Combined Scale Factor = 0.99989766 Grid Dist. x 1.00010235 = Ground Dist.	
Drawing Date:	01-19-2022
Drawn By:	D. Smith
Checked by:	J. Harned

LEGEND:	
	Proposed Block Valve
	Proposed Bore
	Alignment PI
	Utility Pole
	Well
	Valve
	Alignment
	Section Line
	Quarter Line
	Fence Line
	UG Fiber Optic
	UG Electric
	Overhead Elec
	Existing Pipeline
	Dirt Road

SUMMARY of MATERIALS		
Mark	Quantity	Description
1	11,512	12.75" OD, .250" WT, X65, FBE
2	405	12.75" OD, .312" WT, X65, FBE w/ARO

REVISIONS		
No.	Date	Description

WAHPETON EXPANSION PROJECT

1" = 500' HORIZ.
1" = 200' VERT.

WBI ENERGY TRANSMISSION
An MDU Resources Group company

Sec. 13, 14, T133N, R48W,
Sec. 18, T133N, R47W
5th P.M., Richland Co., North Dakota
Sheet 29 R1