

**NOTES:**

- CROSSING SHALL BE IN ACCORDANCE WITH ALL CONDITIONS OF THE CROSSING AGREEMENT(S) AND ALL REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION.
- ALL WORK SHALL BE IN ACCORDANCE WITH NNG'S GROUND DISTURBANCE PROCEDURES & SPECIFICATIONS.
- WHERE PRACTICAL, ANGLE OF CROSSING ROAD SHALL BE AS CLOSE TO PERPENDICULAR AS POSSIBLE, BUT NOT LESS THAN 45°.
- 5ft MINIMUM CLEARANCE UNDER LOWEST POINT OF ROAD ROW WIDTH, INCLUDING ANY ADDITIONAL REQUIRED SETBACKS AND BAR DITCHES.
- IF NO DEFINED ROW EXISTS, THE ENTRY AND EXIT POINTS SHALL EXTEND AT LEAST 50ft FROM THE ROAD SURFACE, MEASURED PERPENDICULAR TO THE ROAD CENTERLINE.
- PIPELINE WARNING SIGNS TO BE INSTALLED AS PER NNG REQUIREMENTS AND TO BE INSTALLED ON ROW LINE NEXT TO THE FENCE IF POSSIBLE.
- SIZE OF TEMPORARY DRIVEWAY ENTRANCES TO BE 20'-35' AS PER PERMIT SPECIFICATIONS.
- CONTRACTOR MAY SWITCH EXIT/ENTRY POINT WITH NNG APPROVAL.
- CONTRACTOR MAY ELECT TO DRILL WITH/WITHOUT CURVATURE THROUGH THE DRILL PATH WITH NNG APPROVAL.
- PIPE SPECIFICATIONS AND CORRESPONDING MINIMUM ARC RADIUS OF INSTALLED PIPE ARE BELOW:

PIPE OD	PIPE SPECIFICATION	MIN. ARC RADIUS (ft)
NPS 8	0.280 IN WT, HSAW, API SL P5L2, GR X42, FBE+PC	800

M:\NNG 2019 NL EXPANSION PROJECT\PIPELINE\_TYPICALS\ROAD BORE CROSSING\ALEXANDRIA\ABL-TYP-01

**INTERNAL INFORMATION**  
DISTRIBUTION/COPIES LIMITED TO PROJECT NEEDS

NO.	REVISION - DESCRIPTION	BY	DATE	CHK'D	APP'D
F	ISSUED FOR FERC	HD	7/23/18		

**FILED WITH FERC**  
ANY CHANGES FROM WHAT IS SHOWN MUST BE IDENTIFIED AND REVIEWED BY REGULATORY BEFORE IMPLEMENTATION

STATUS	CHECKED		APPROVED	
	BY	DATE	BY	DATE
PRELIM				
BID				
CONST.				

FAC CODE: -	REL W.O. N/A
PL# -	CONST. YR 2018
STA# N/A	POI# N/A
DESIGN BY SS	DATE -
DRAWN BY HD	DATE 06/27/2018
ASBUILT	
FILE NO: -	
SCALE: N.T.S.	

**TYPICAL ROAD BORE OF PROPOSED 8" ALEXANDRIA BL LOOP EXTENSION PLAN MORRISON COUNTY, MINNESOTA**

**Northern Natural Gas**

PROJECT NO. **01124367**

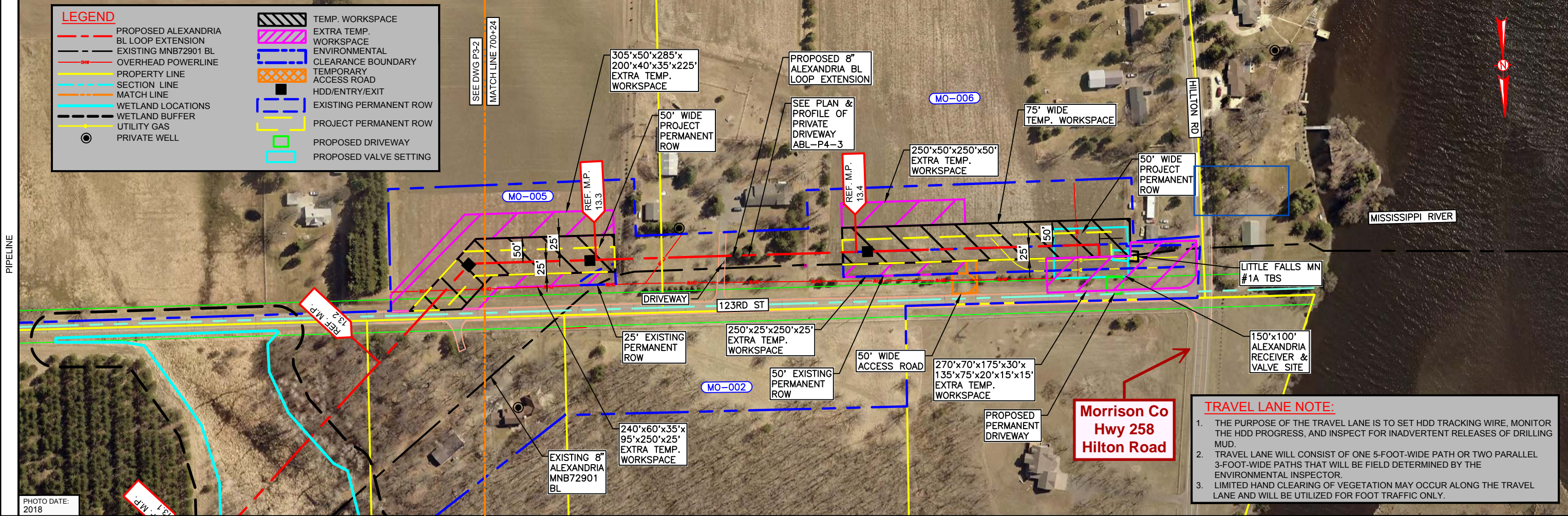
DWG. NO. **ABL-TYP-01**

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COUNTY & STATE	MORRISON COUNTY, MINNESOTA	
TRACT NO. & OWNERSHIP	MO-005 SEC. 30, T40N, R32W	MO-006 SEC. 30, T40N, R32W
USAGE		
DEPTH OF COVER (ft)	4	4
RODDAGE	21.73	55.18
EASEMENT	BLANKET	BLANKET

STATIONING	700+24 MATCH LINE	702+32 HDD ENTRY 702+48 REF MP 13.3	703+00 TREE LINE	703+50 TREE LINE	703+81 PROPERTY LINE	703+87 O/H WIRE	704+97 EDGE OF DRIVEWAY 705+03 CL OF DRIVEWAY	705+10 EDGE OF DRIVEWAY	706+27 TREE LINE	706+74 TREE LINE	706+78 WIRE FENCE	707+76 REF MP 13.4 707+96 HDD EXIT	710+67 GAS PIPELINE	712+24 O/H WIRE	712+68 89'35"21"RT 712+93 EXISTING 8" MNB72901 BL	712+93 END PROPOSED 8" ALEXANDRIA BL LOOP EXTENSION
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DESIGN FACTOR	0.50
CLASS LOCATION	I
HYDROSTATIC TEST PRESS (P.S.I.G.)	1050
M.A.O.P. (P.S.I.G.)	1269'
PIPE DETAIL	8" PIPE

Figure 1-8					
F ISSUED FOR FERC	AC	02/15/19	TH	GC	
NO.	REVISION - DESCRIPTION	BY	DATE	CHKD	APPD

<b>FILED WITH FERC</b> ANY CHANGES FROM WHAT IS SHOWN MUST BE IDENTIFIED AND REVIEWED BY REGULATORY BEFORE IMPLEMENTATION				
STATUS	CHECKED BY	DATE	APPROVED BY	DATE
PRELIM				
BID				
CONST.				

FAC. CODE: N/A	REL. W.O. N/A
PL#	CONST. YR 2019
STA# N/A	PO# N/A
DESIGN BY SPS	DATE 2/23/18
DRAWN BY AC	DATE 2/23/18
ASBUILT	
FILE NO.: P-100	
SCALE: 1:100	

**PROPOSED 8" ALEXANDRIA BL LOOP EXTENSION ALIGNMENT SHEET**  
SEC. 30, T40N, R32W  
MORRISON COUNTY, MINNESOTA

Northern Natural Gas  
PROJECT NO. 01124367  
DWG. NO. P3-3

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