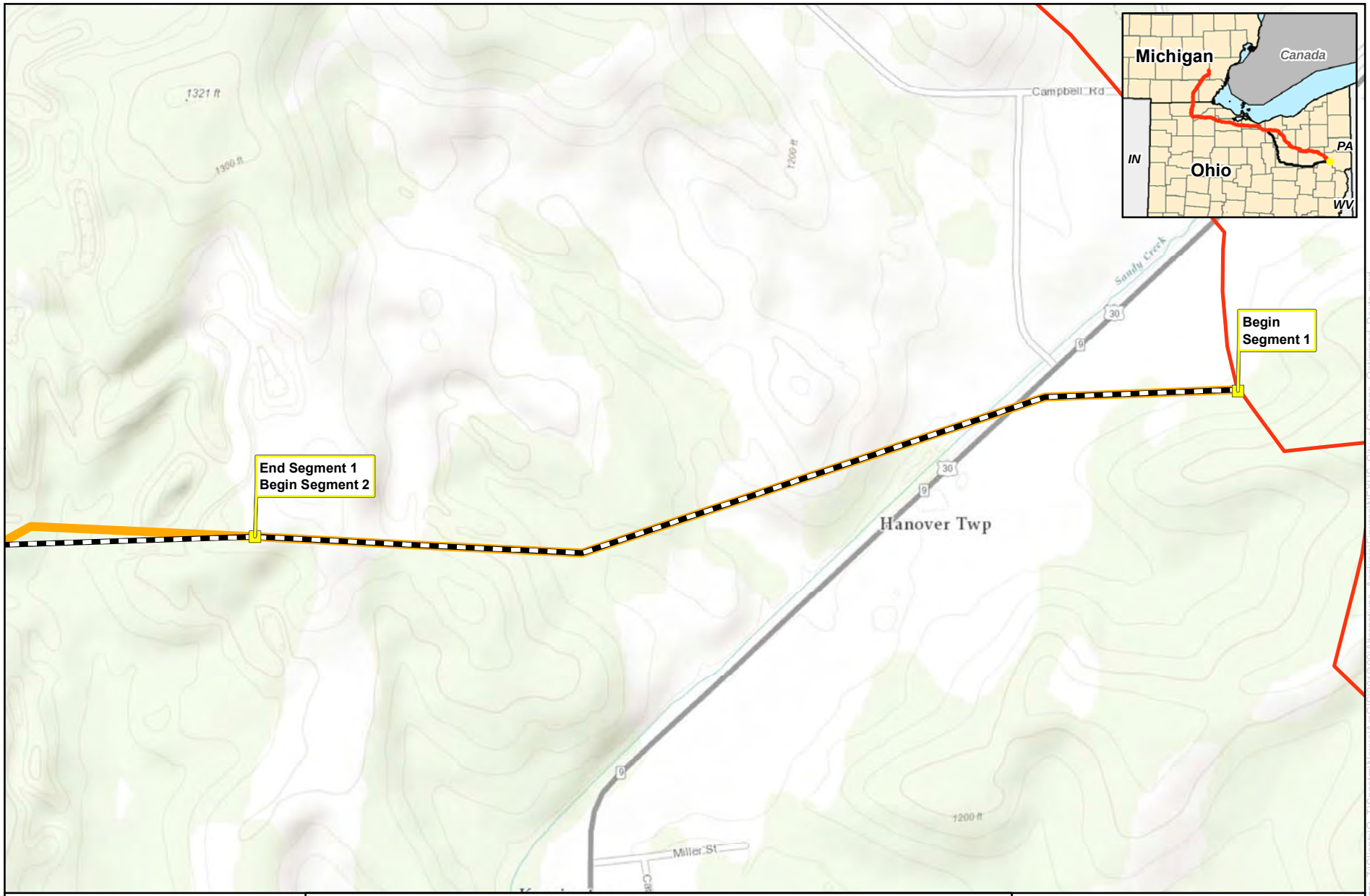
APPENDIX F

ALTERNATIVES FIGURES AND TABLES

APPENDIX F-1

OPTIMIZED CITY OF GREEN ROUTE ALTERNATIVE



0 375 750 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

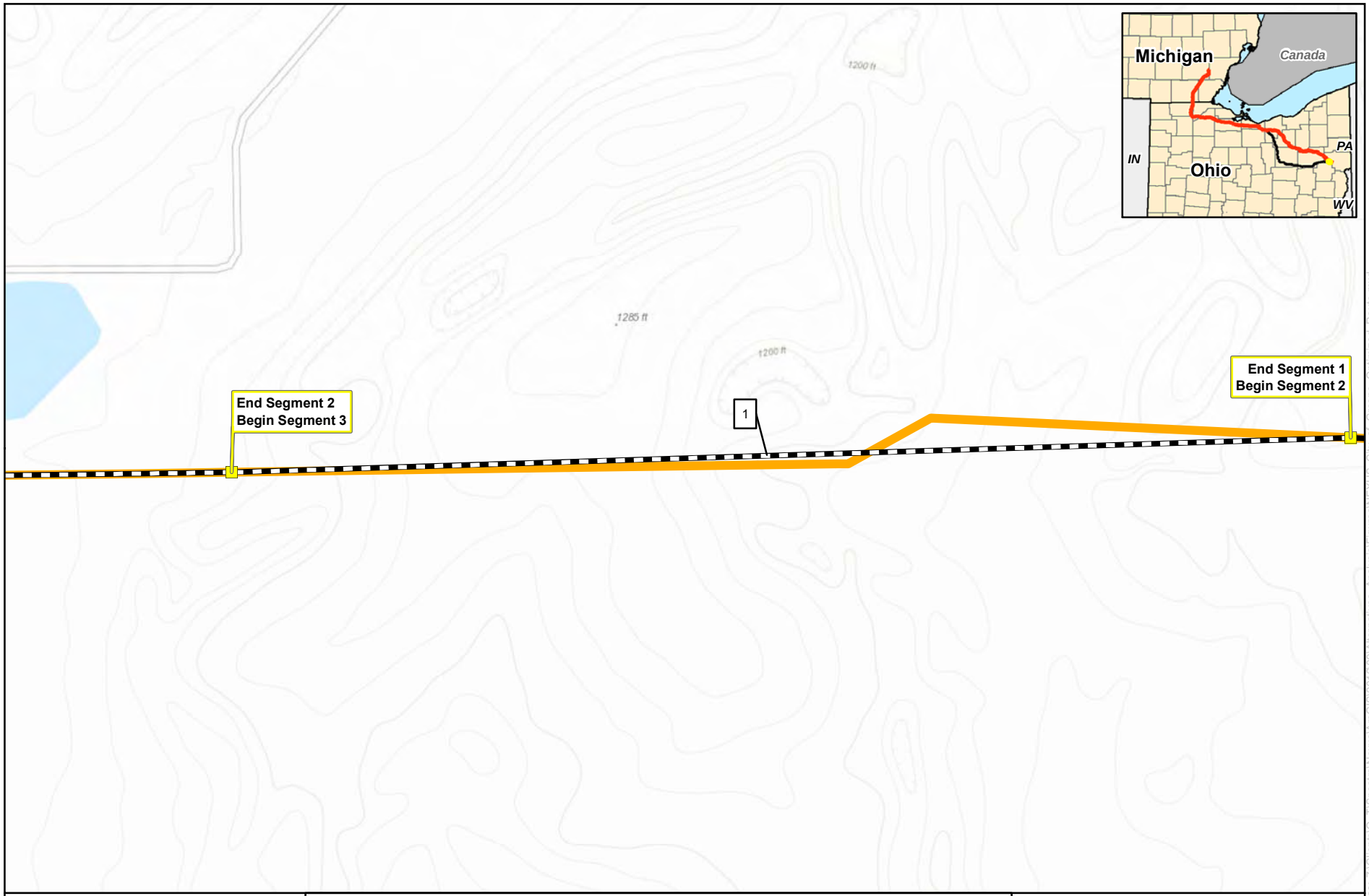
NGT Project

Optimized City of Green Route Alternative
Segment 1
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 200 400 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 2
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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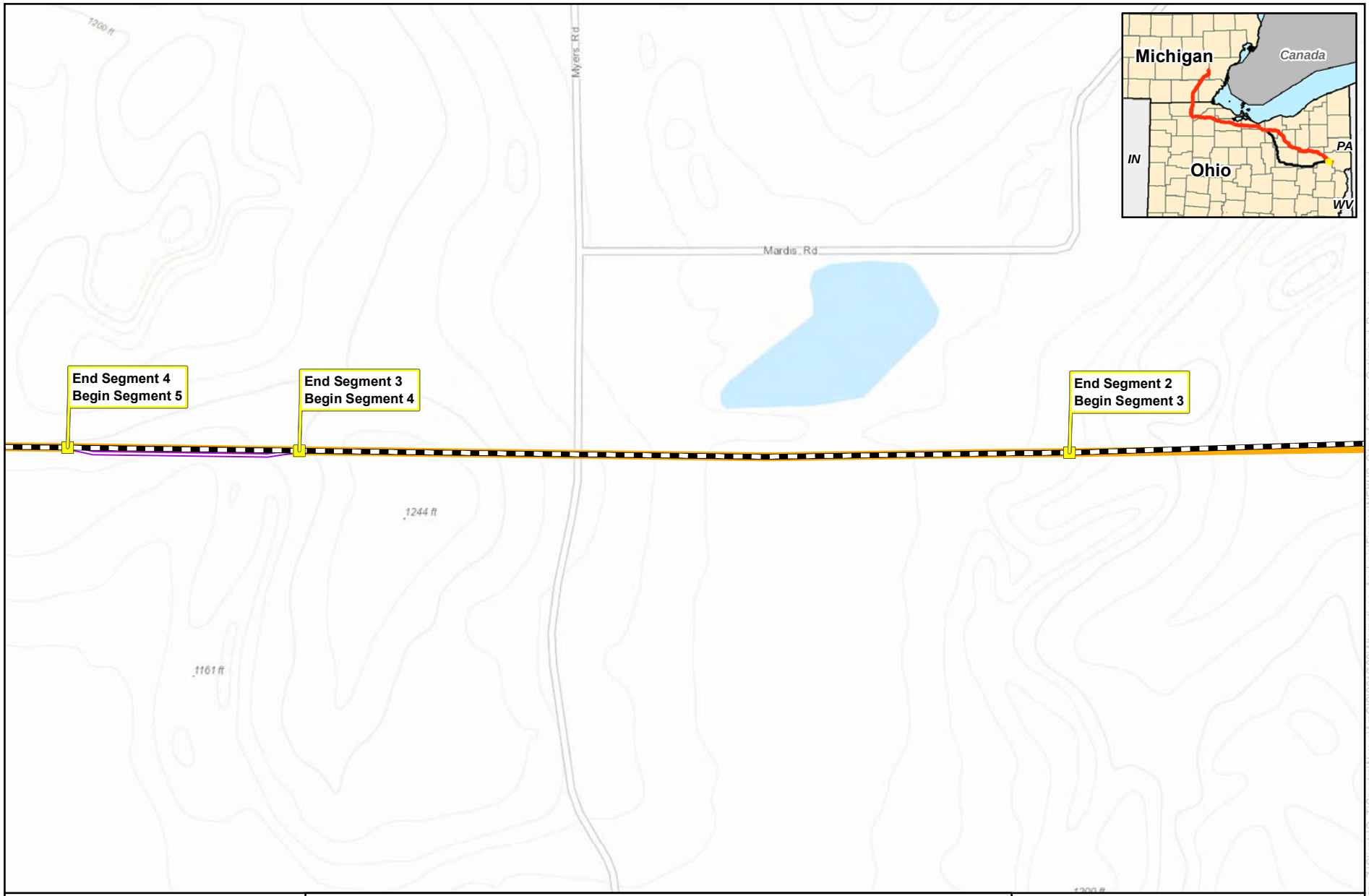

0 200 400 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 3
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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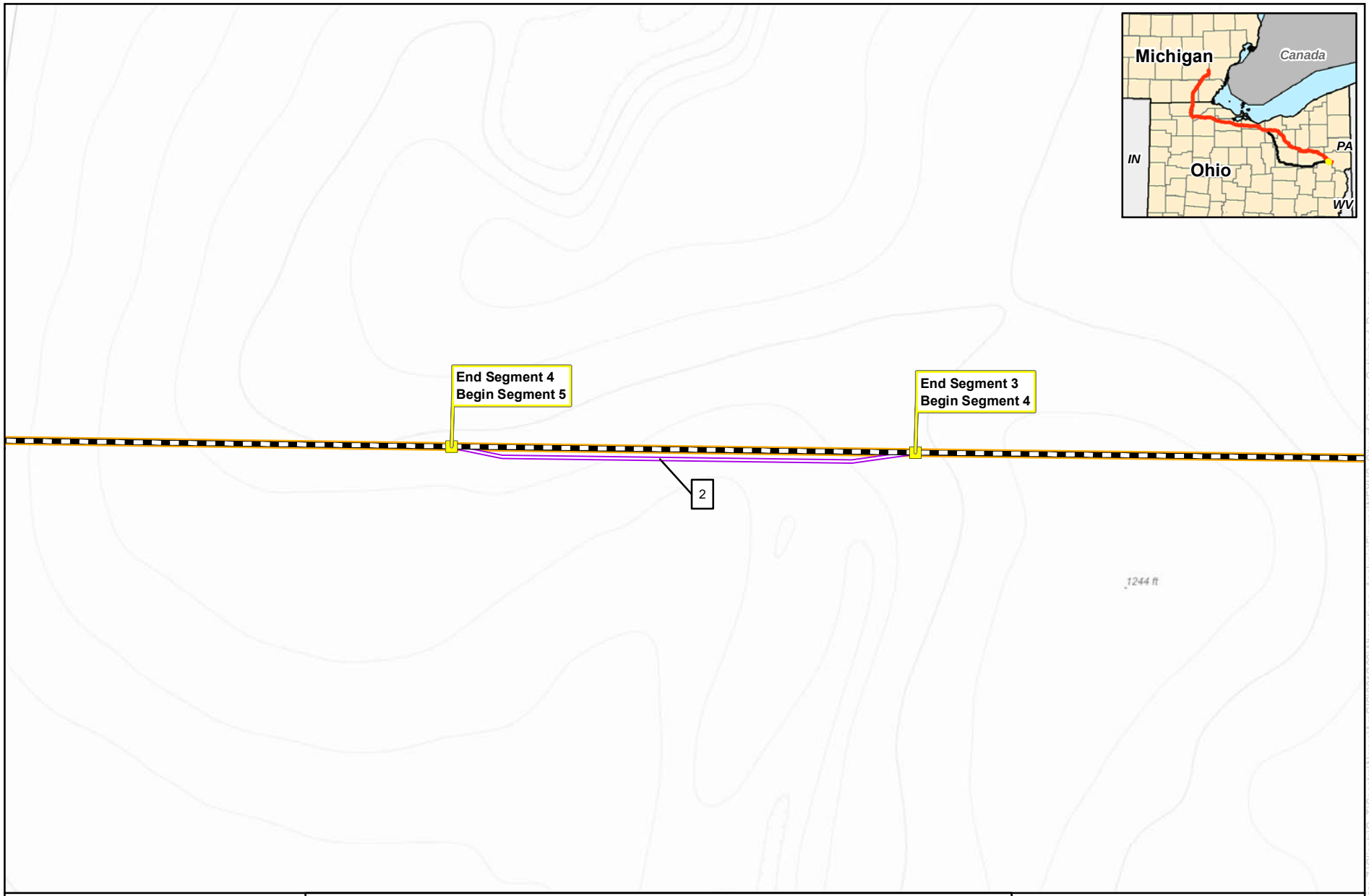

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N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 4
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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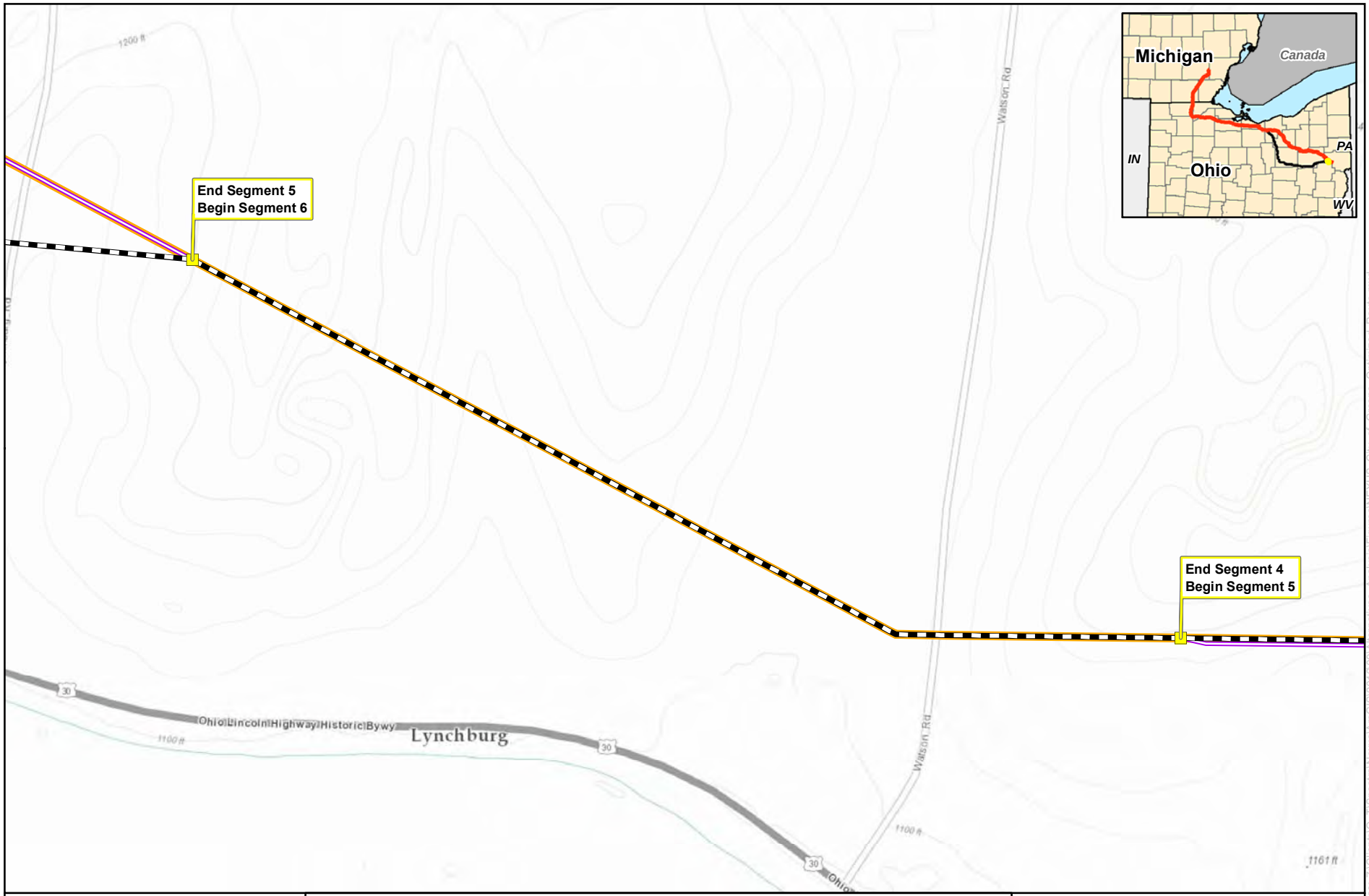

0 200 400 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 5
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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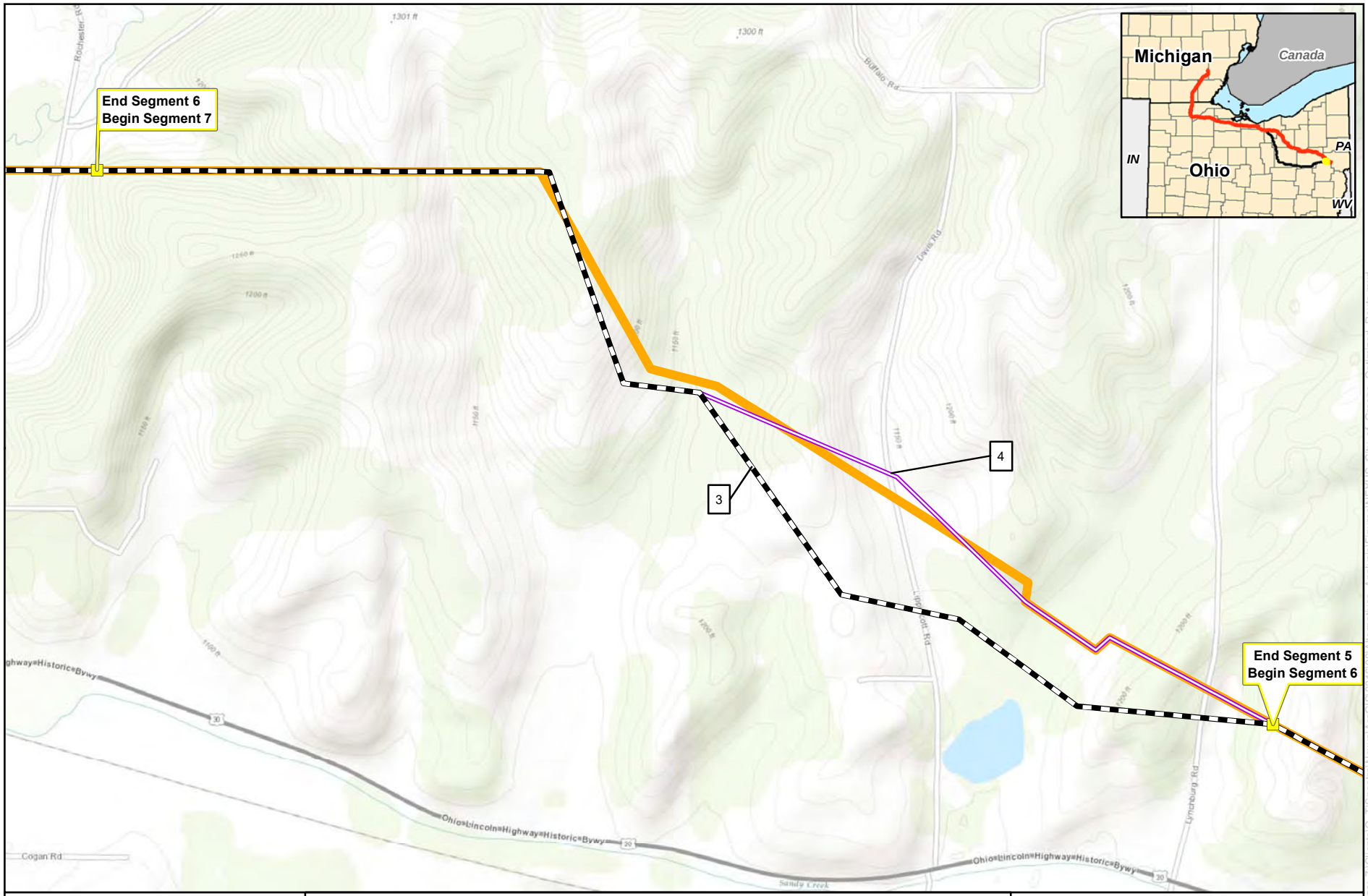

0 500 1,000 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 6
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\0_FiSpectraNexusArcGIS\2016\0\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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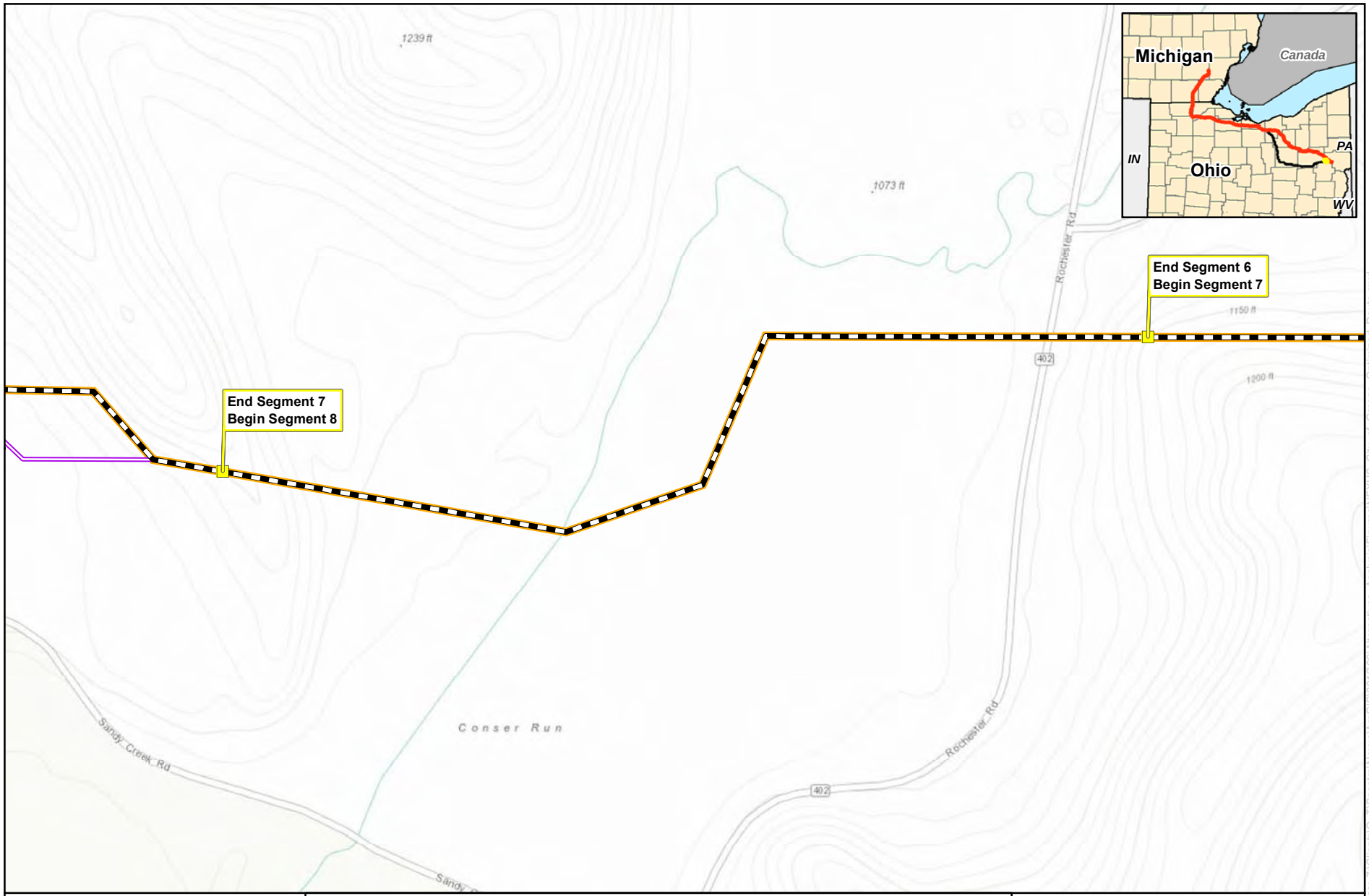

0 200 400 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 7
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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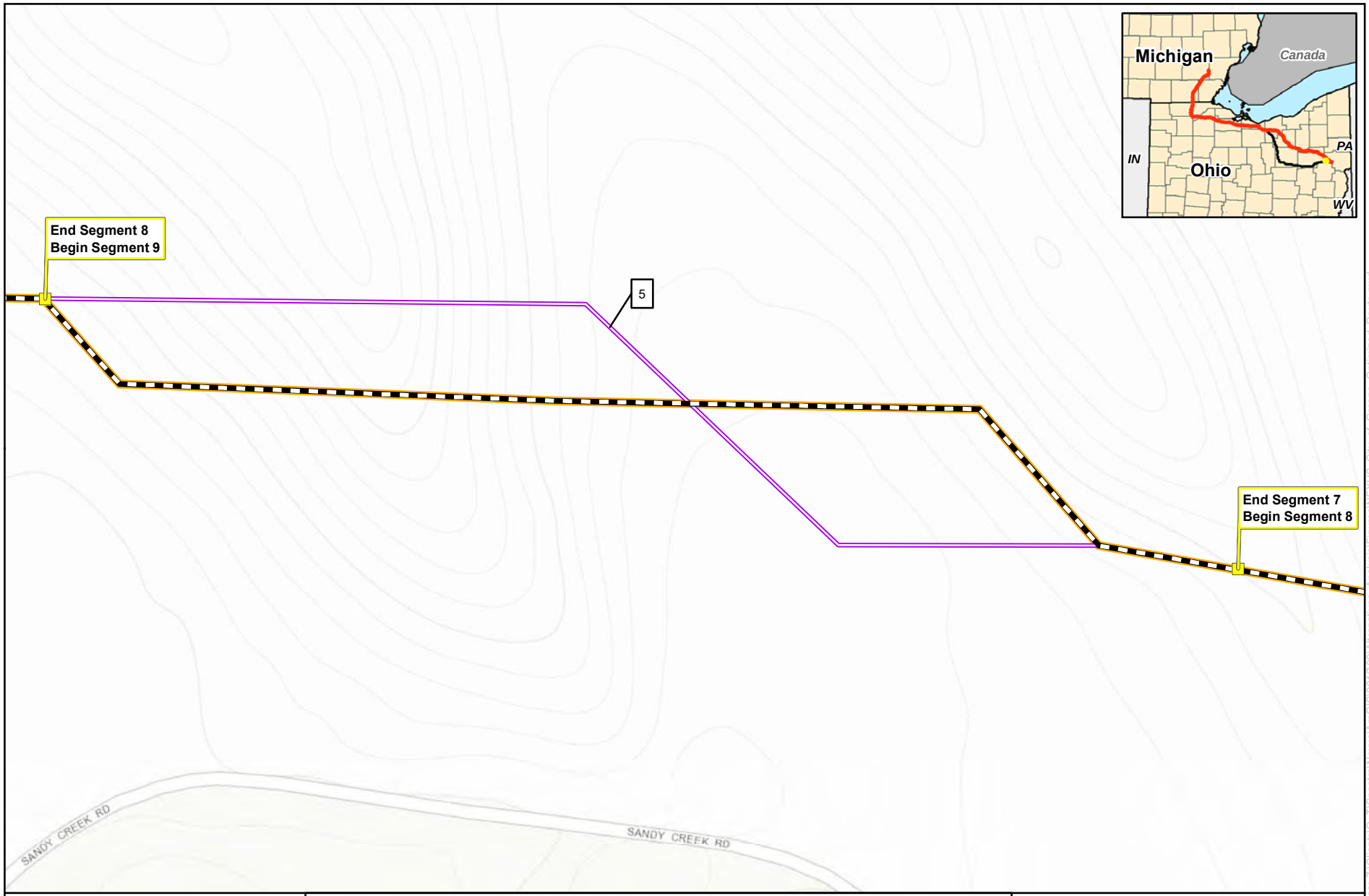

0 100 200 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 8
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\SpectraNexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 9
Fulton County, Ohio

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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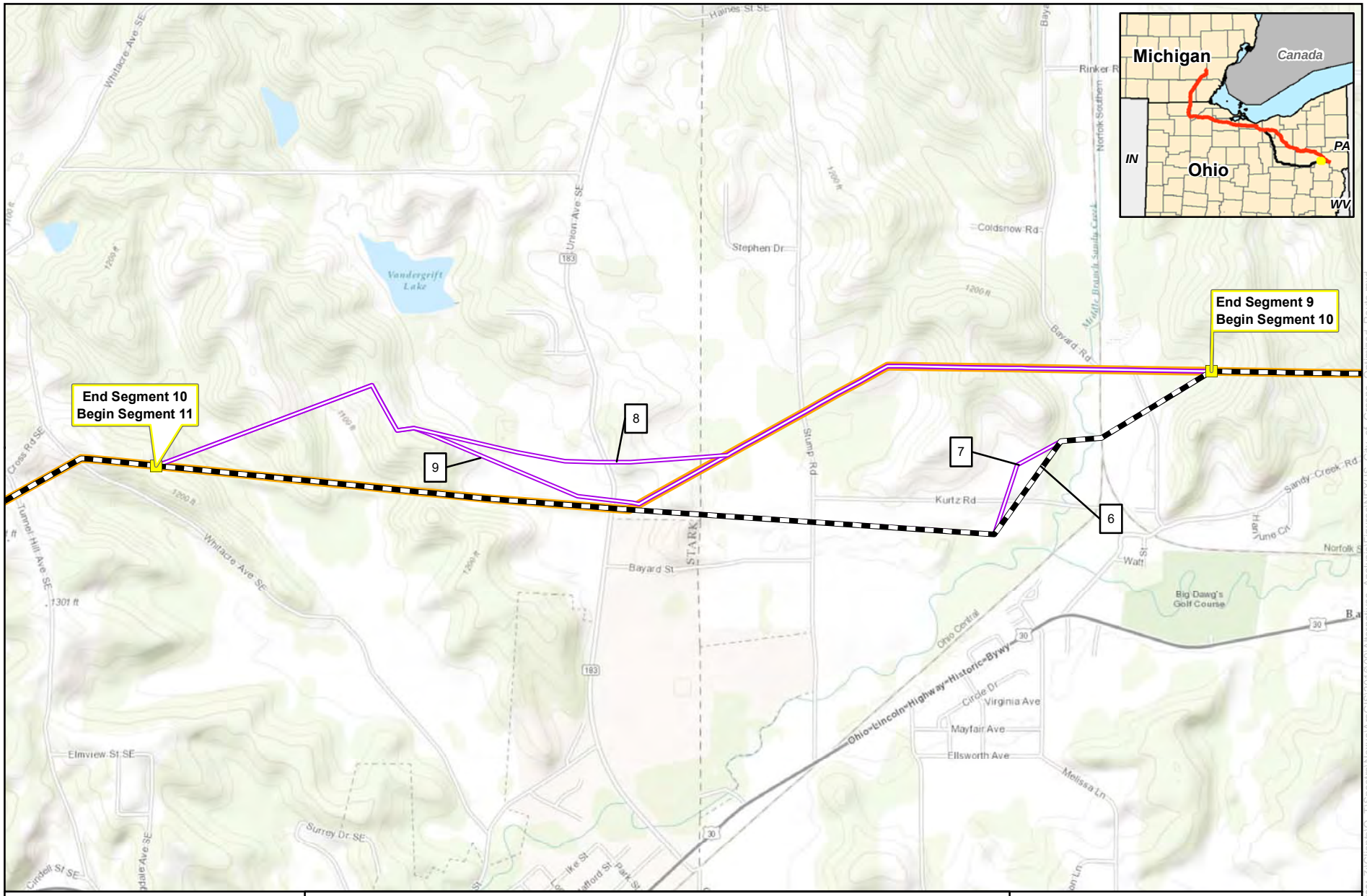

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N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 10
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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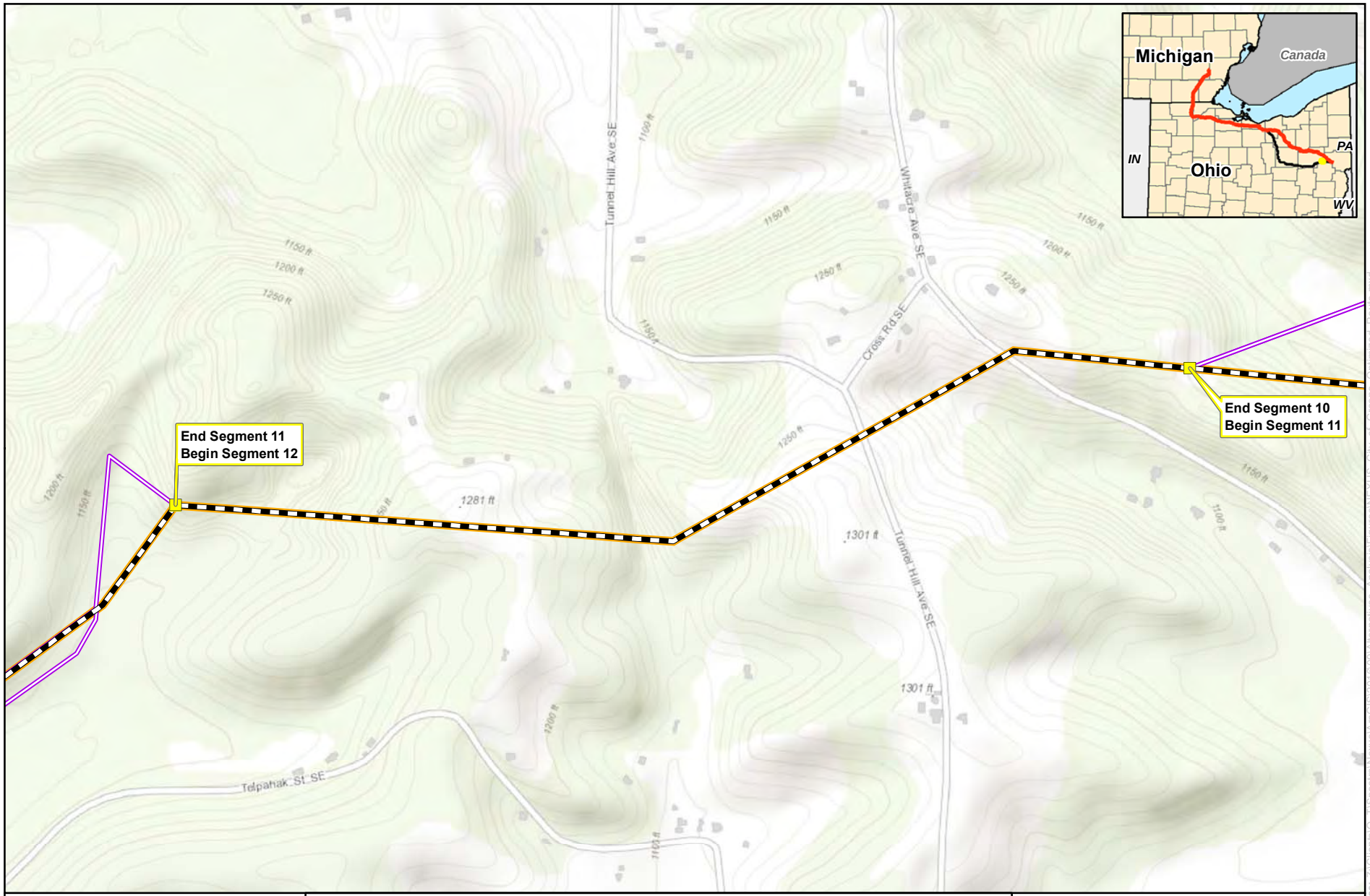

0 375 750 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 11
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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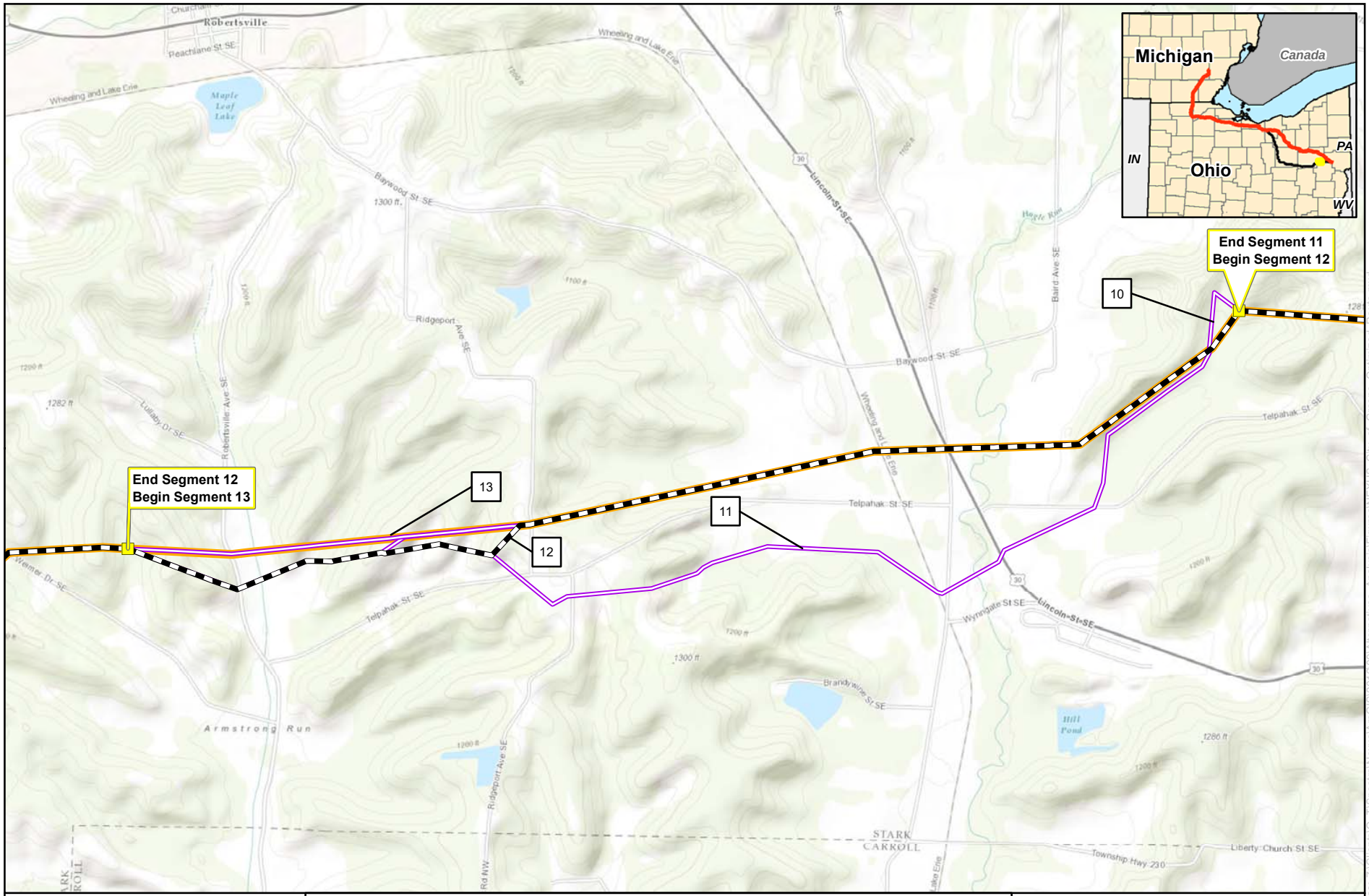

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N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 12
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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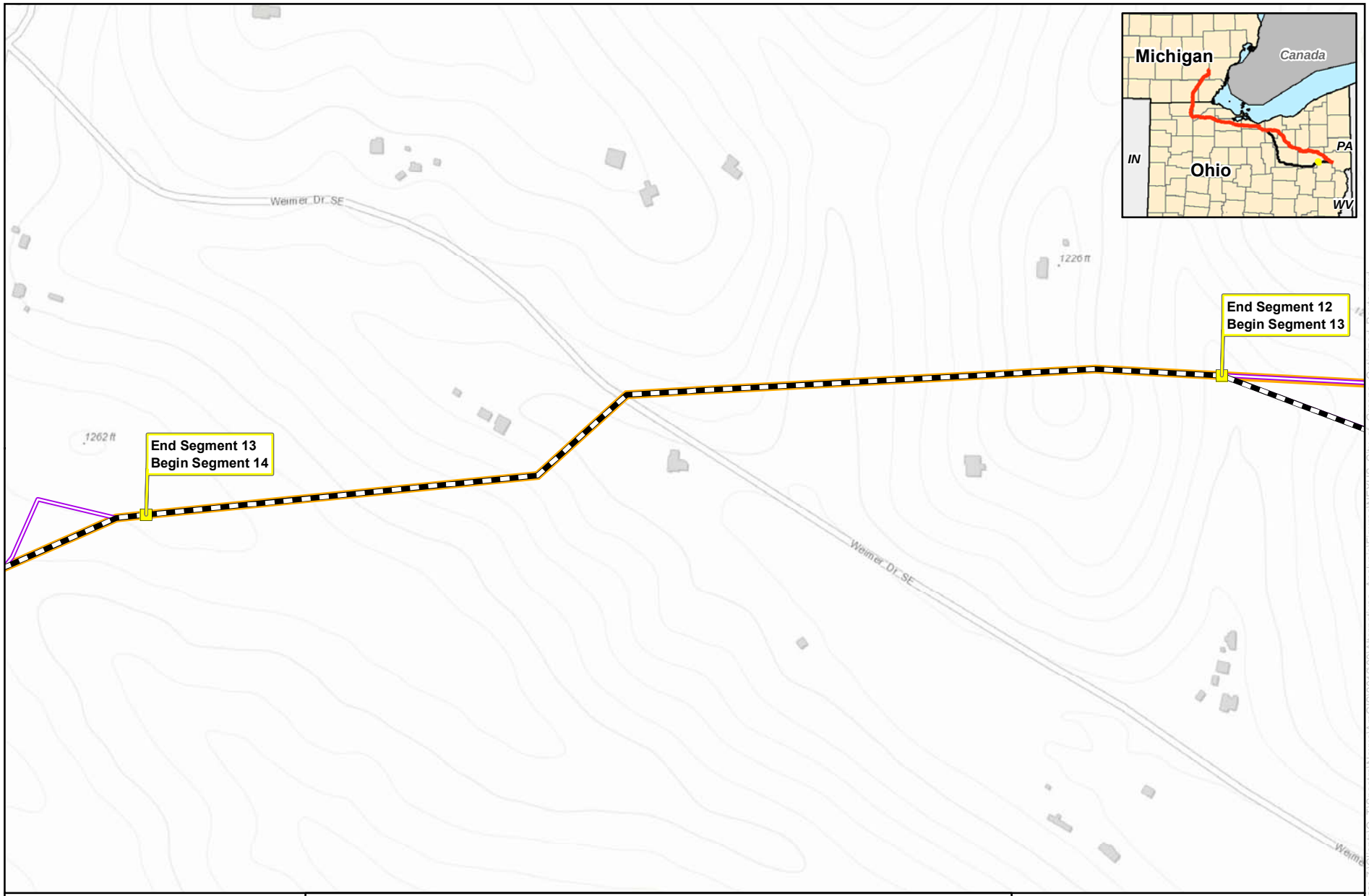

0 200 400 Feet

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For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 13
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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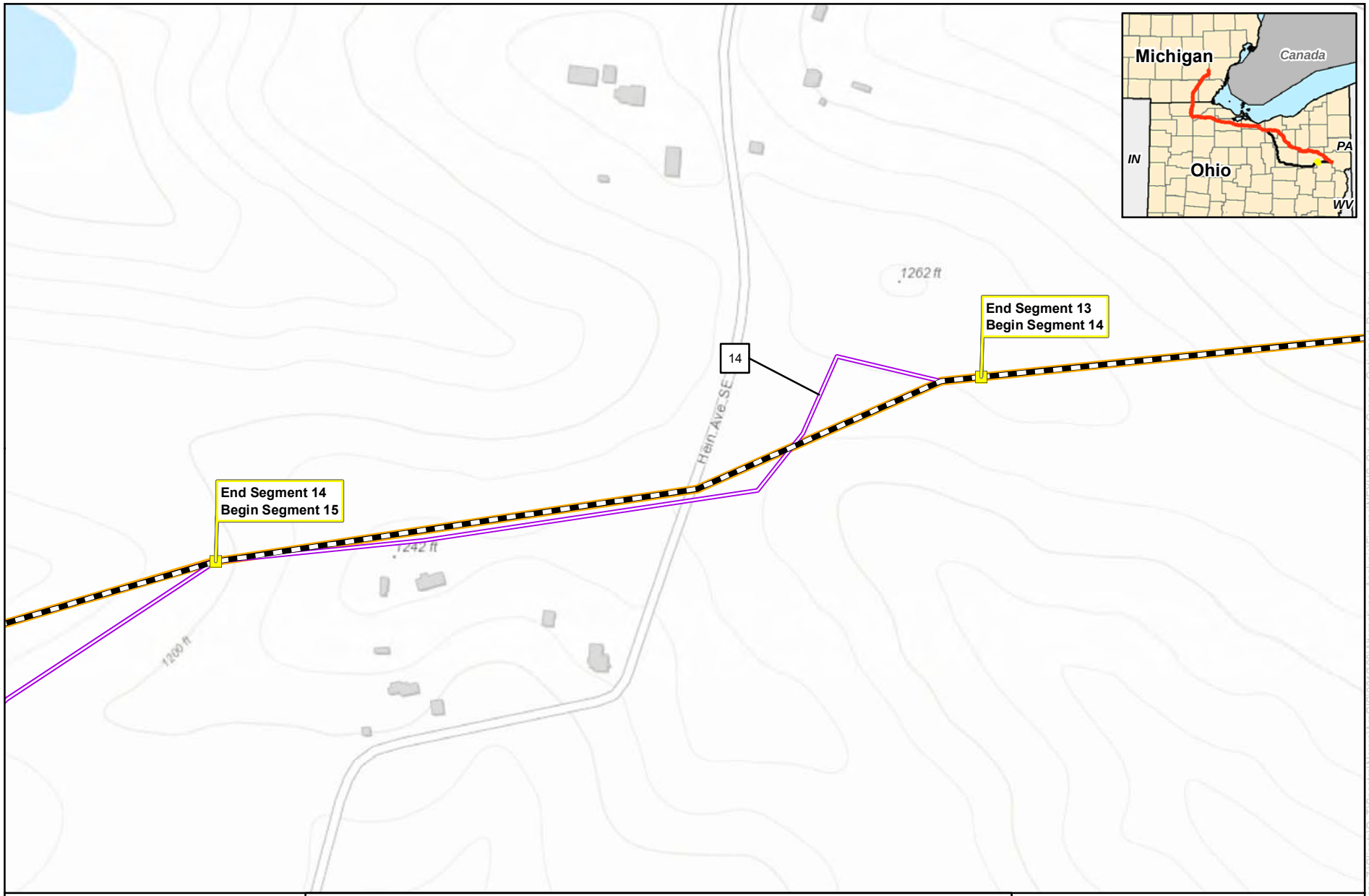

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Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 14
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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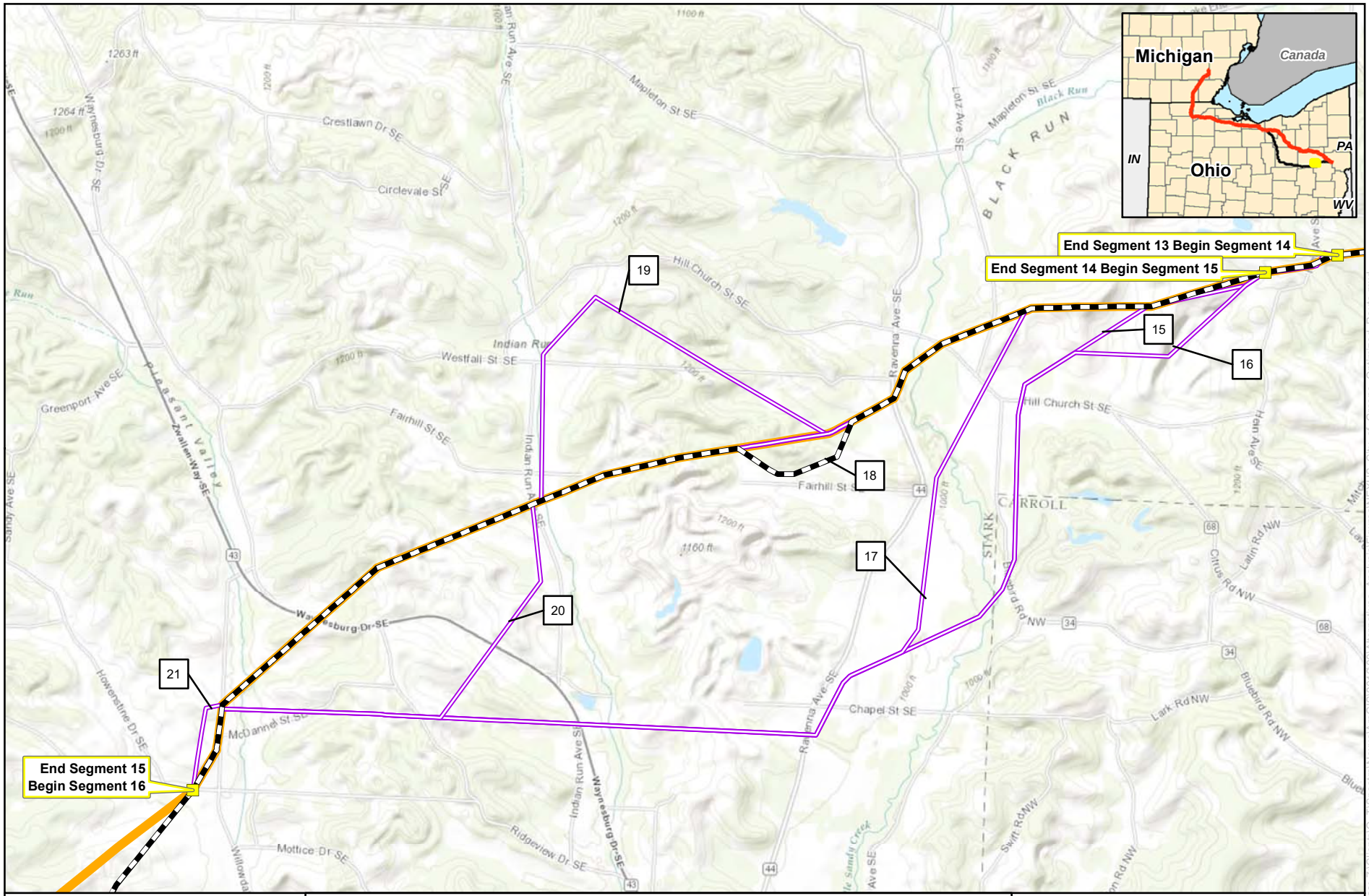

0 1,500 3,000 Feet

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For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 15
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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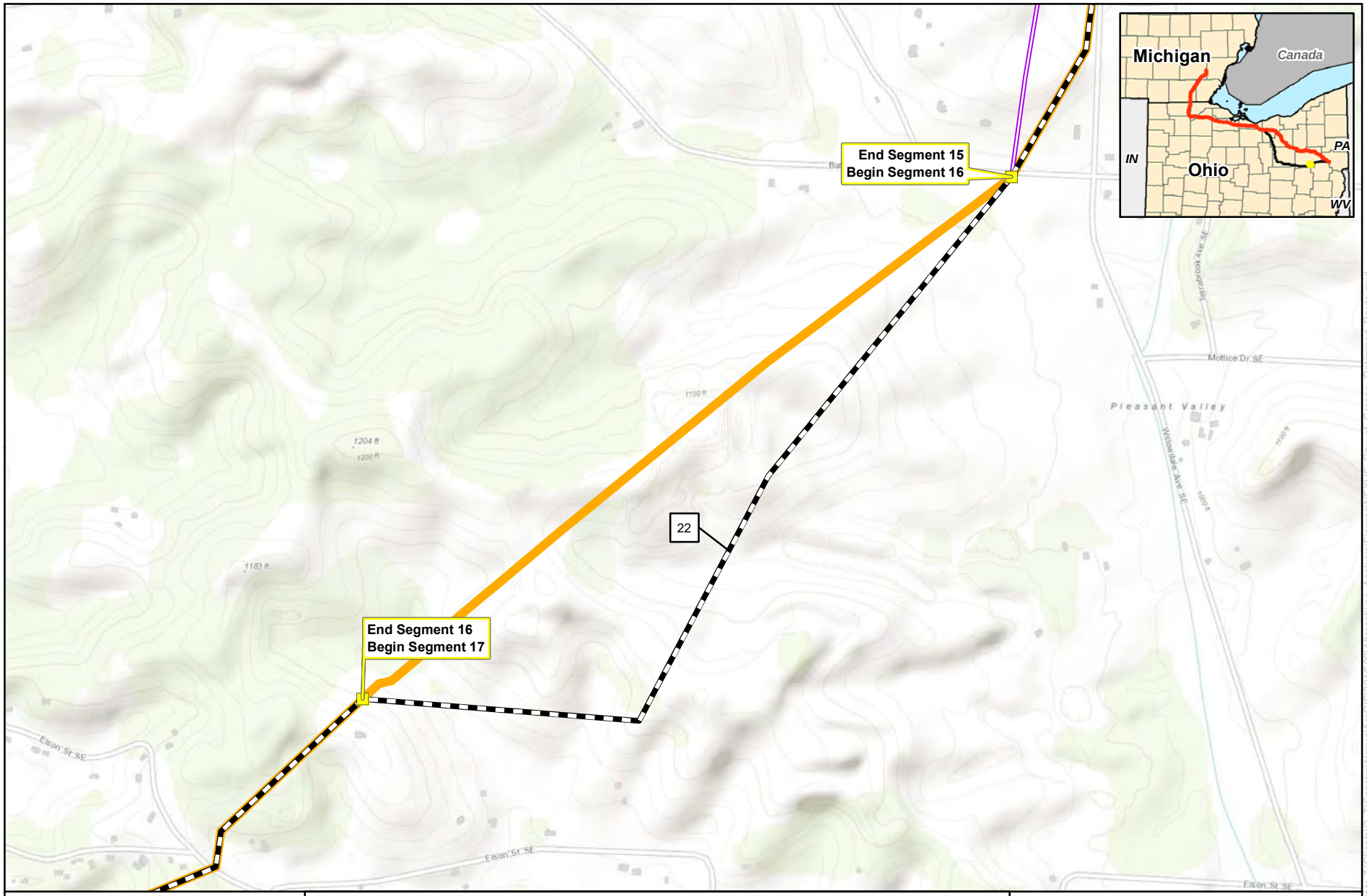

0 500 1,000 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 16
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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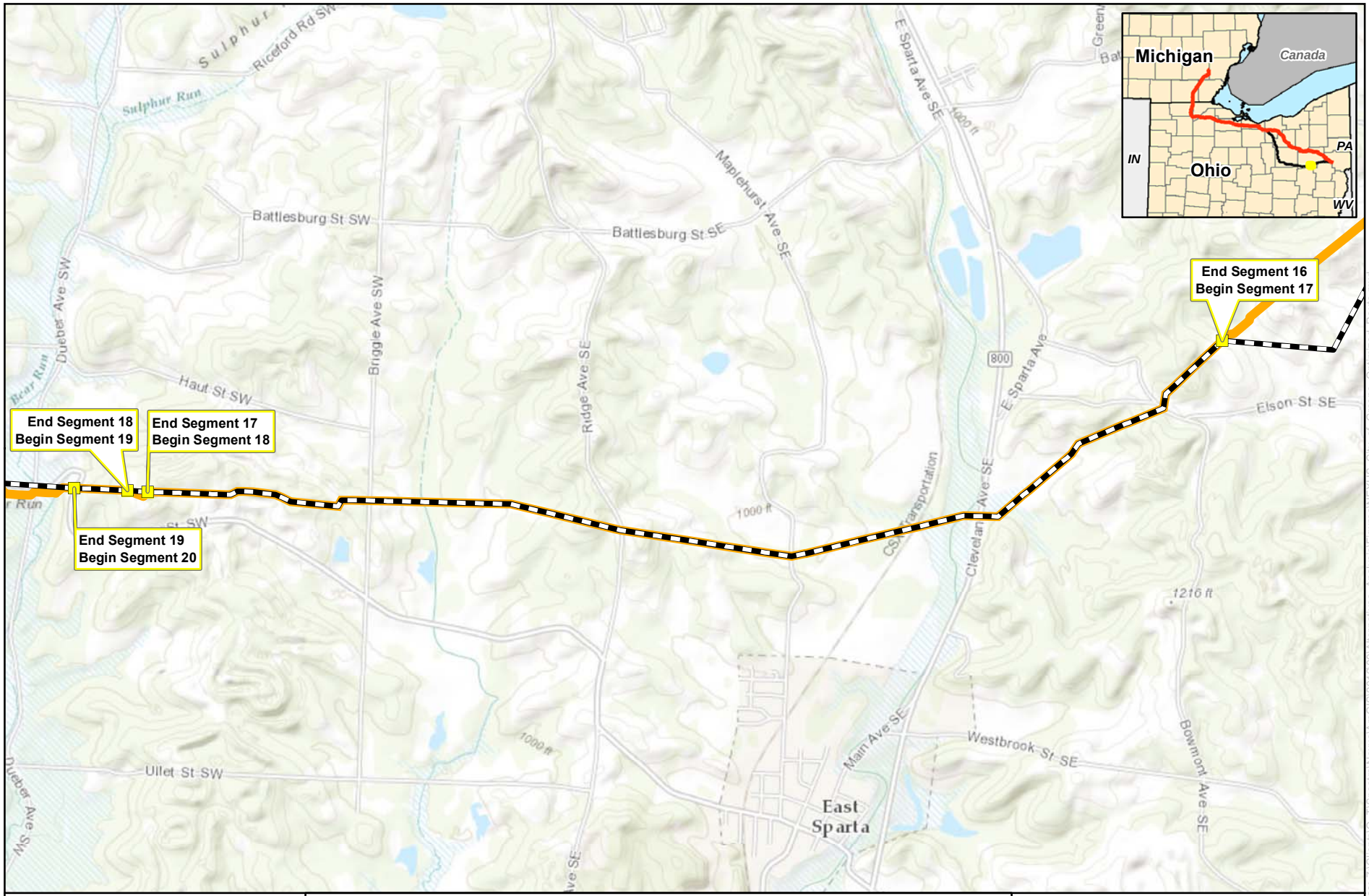

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N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 17
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)

0 100 200 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

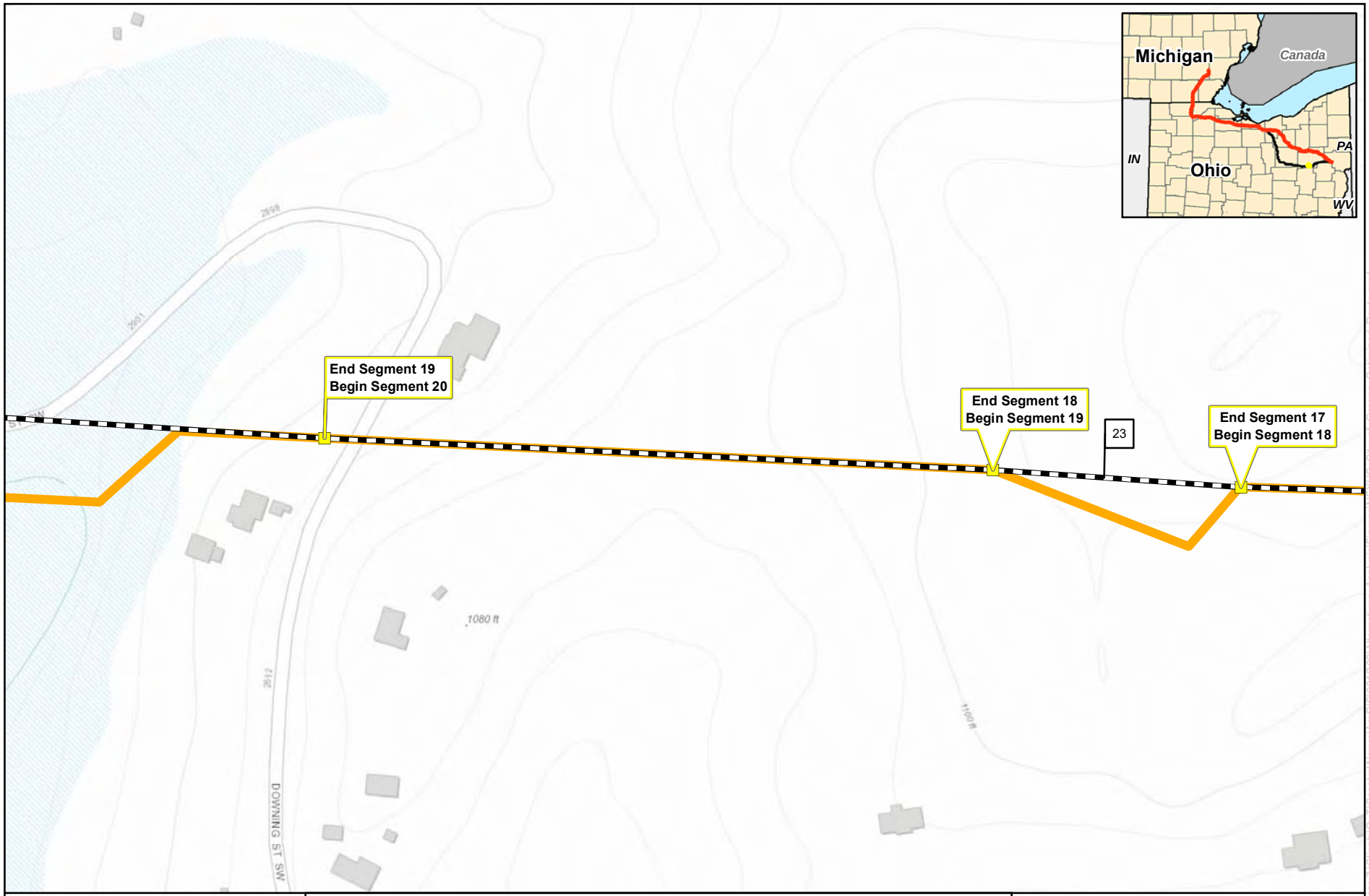
NGT Project

Optimized City of Green Route Alternative
Segment 18
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 100 200 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 19
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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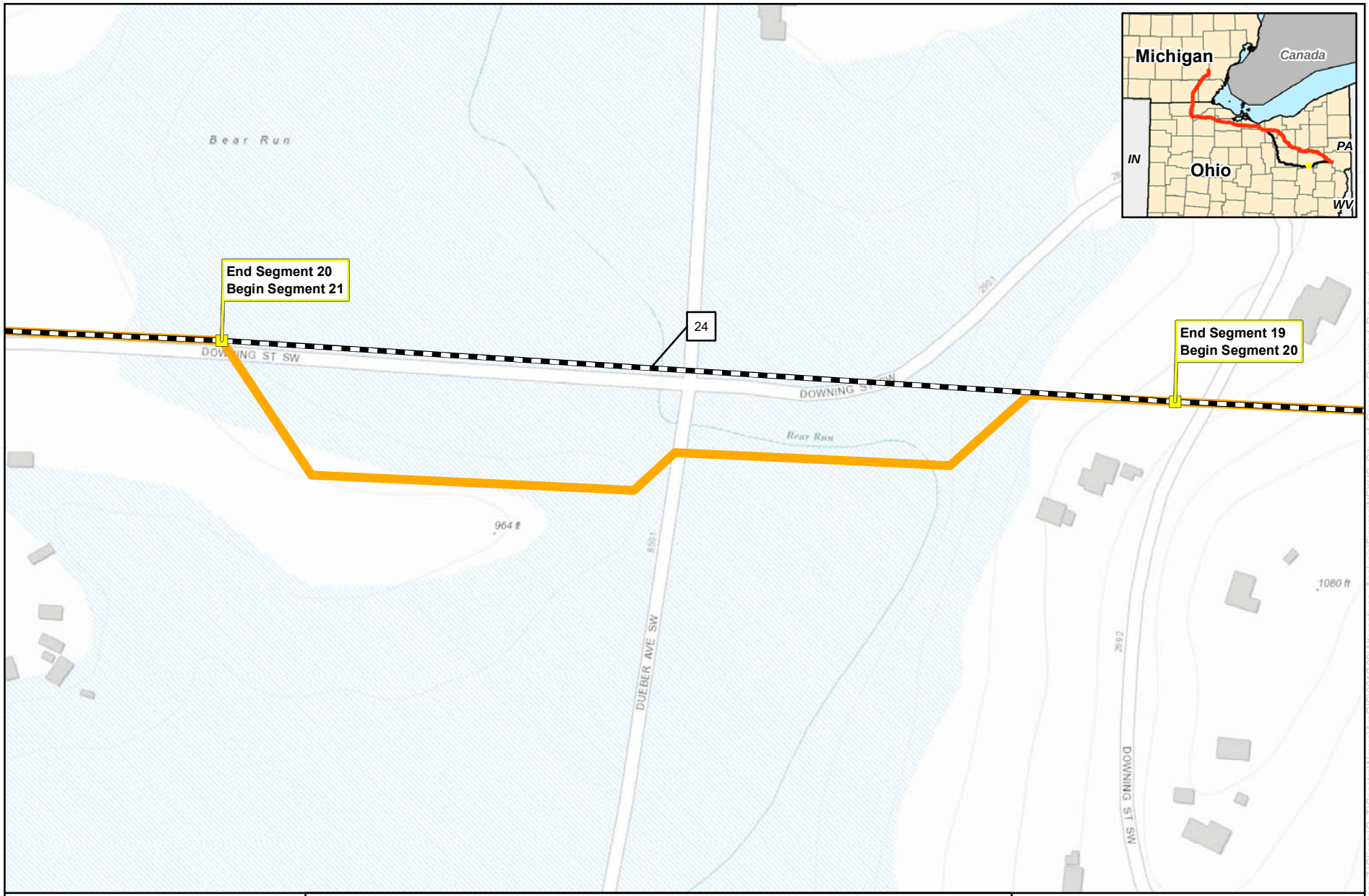

0 100 200 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 20
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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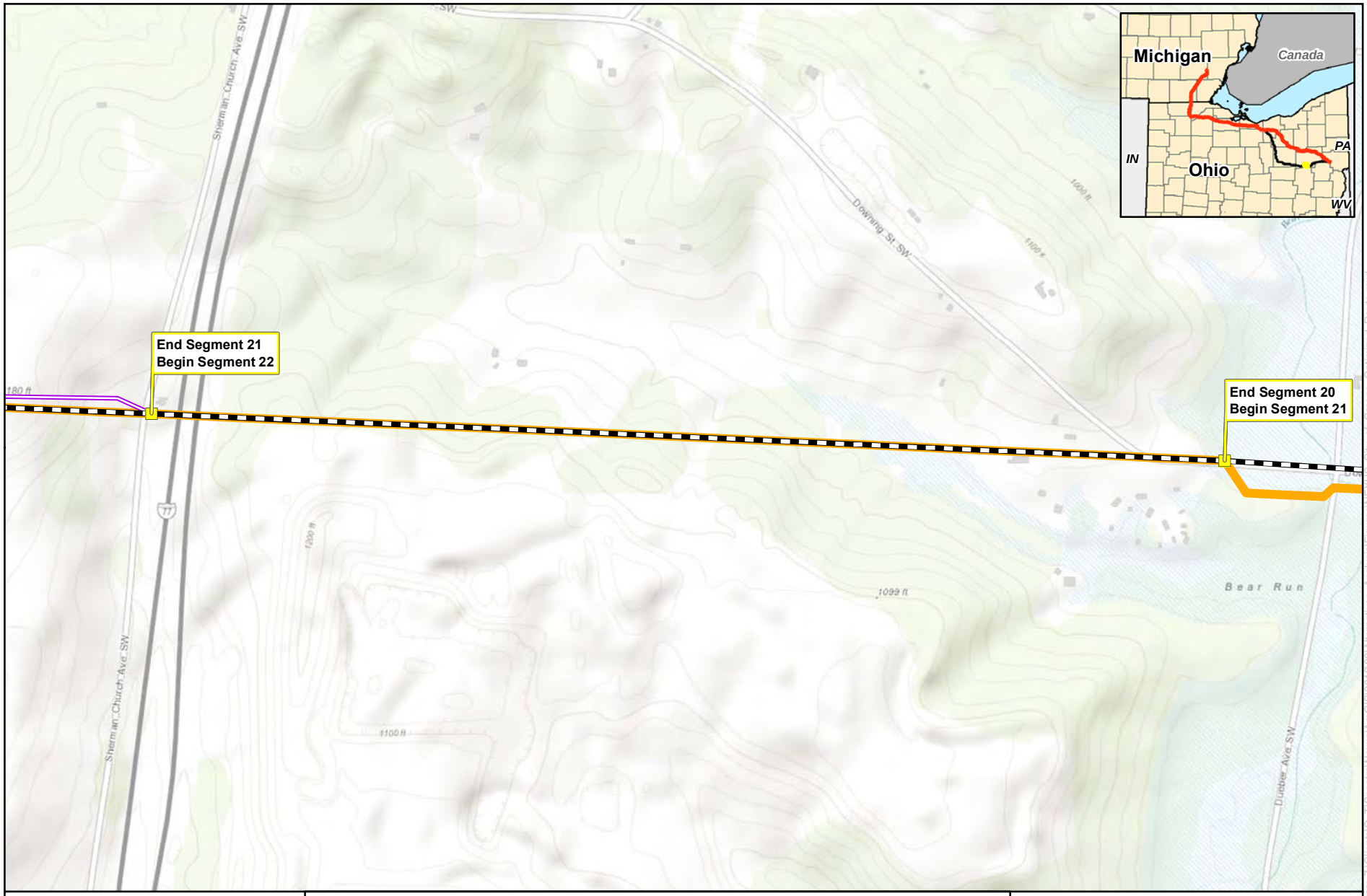

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N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 21
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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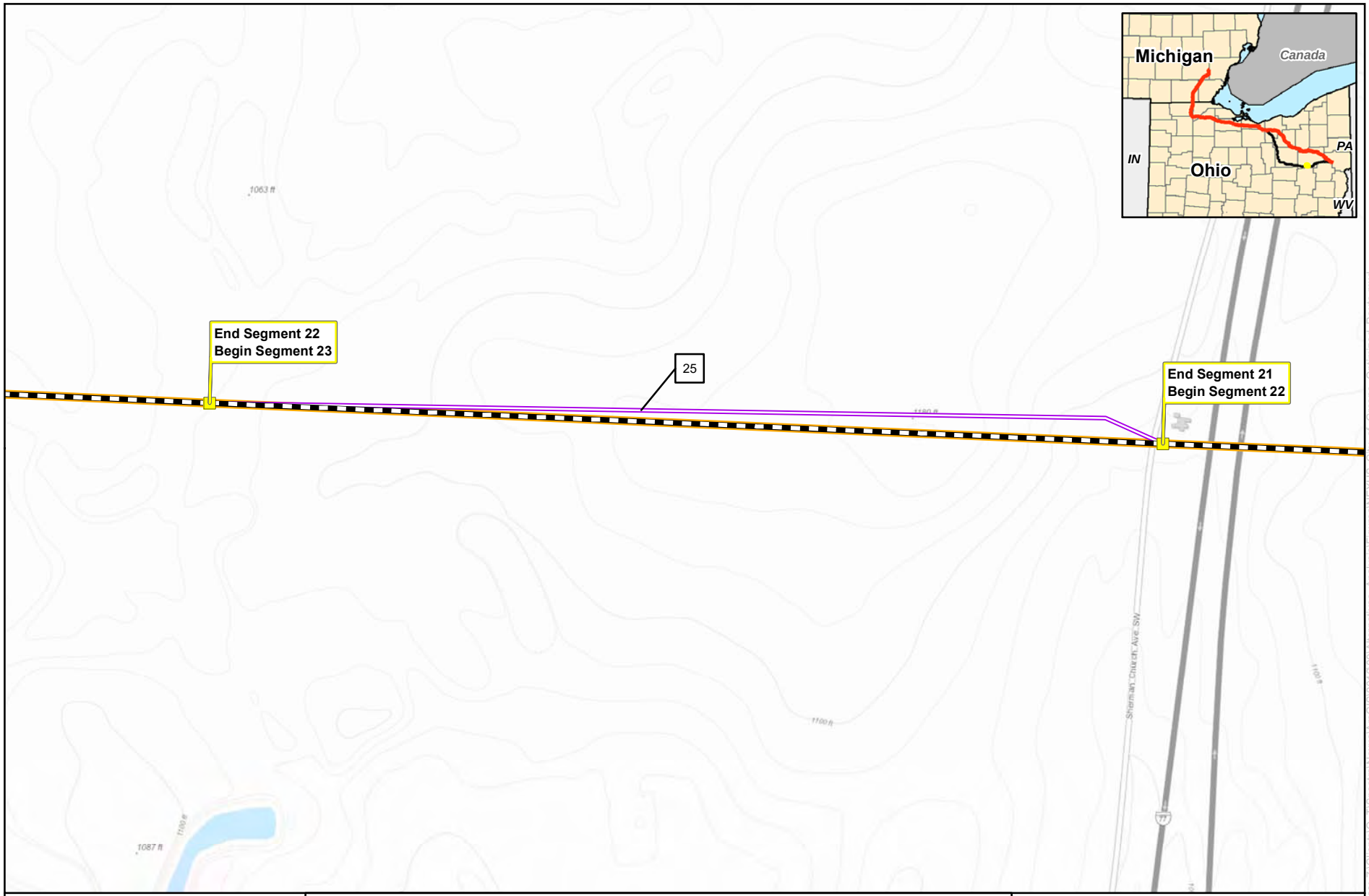


0 250 500 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

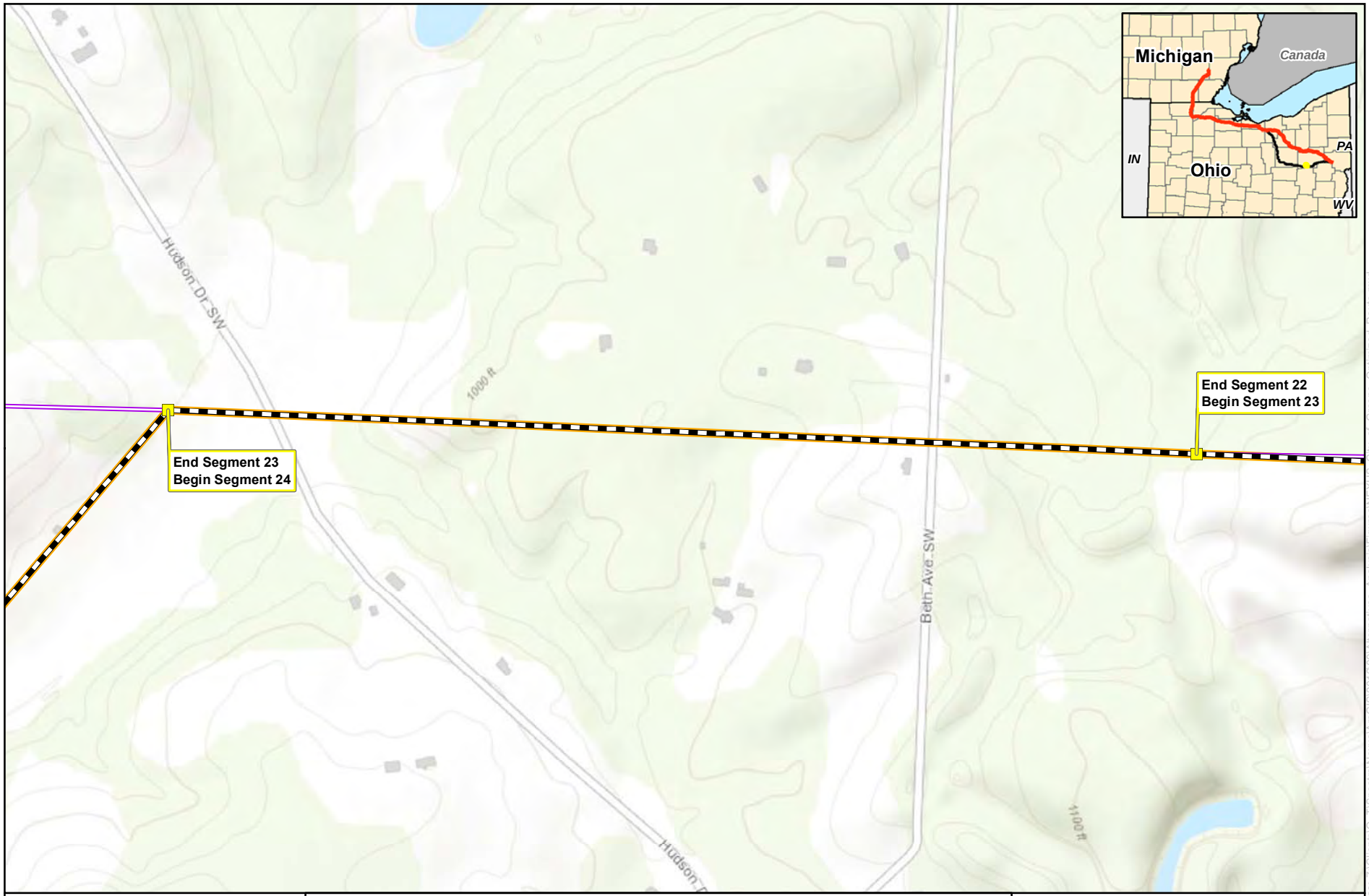
NGT Project

Optimized City of Green Route Alternative
Segment 22
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 290 580 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 23
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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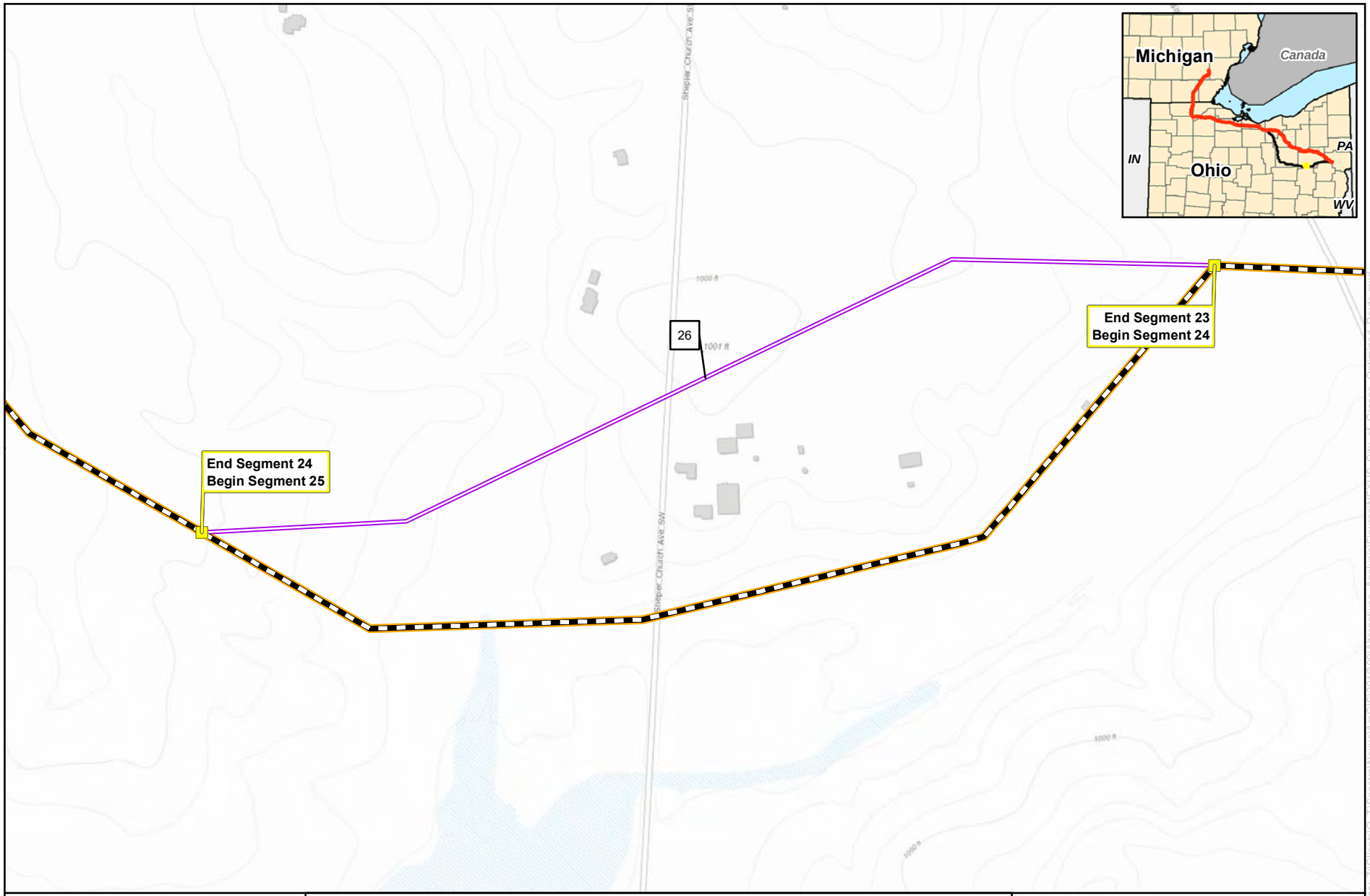


0 250 500 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

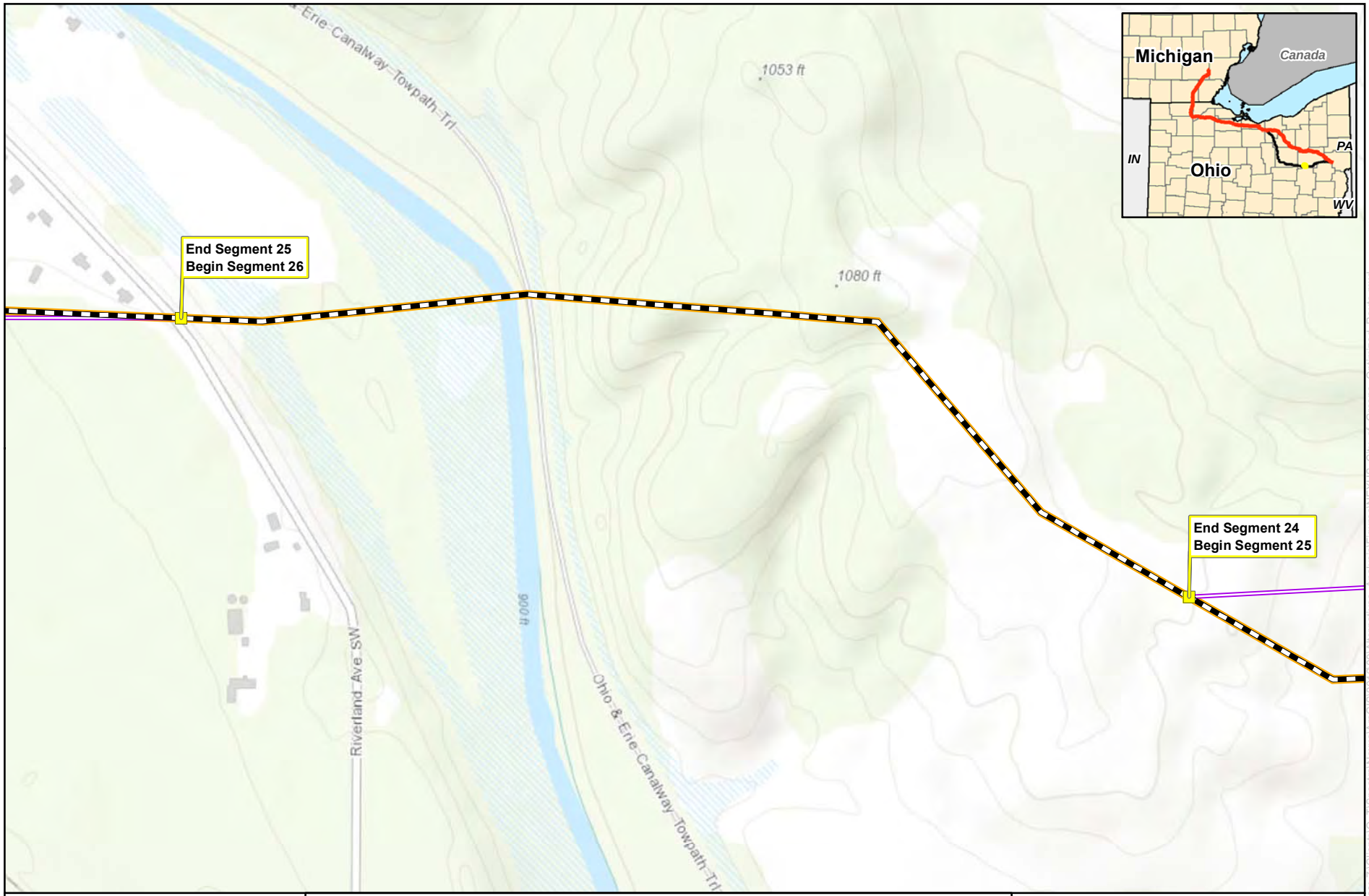
NGT Project

Optimized City of Green Route Alternative
Segment 24
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\SpectraNexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 290 580 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

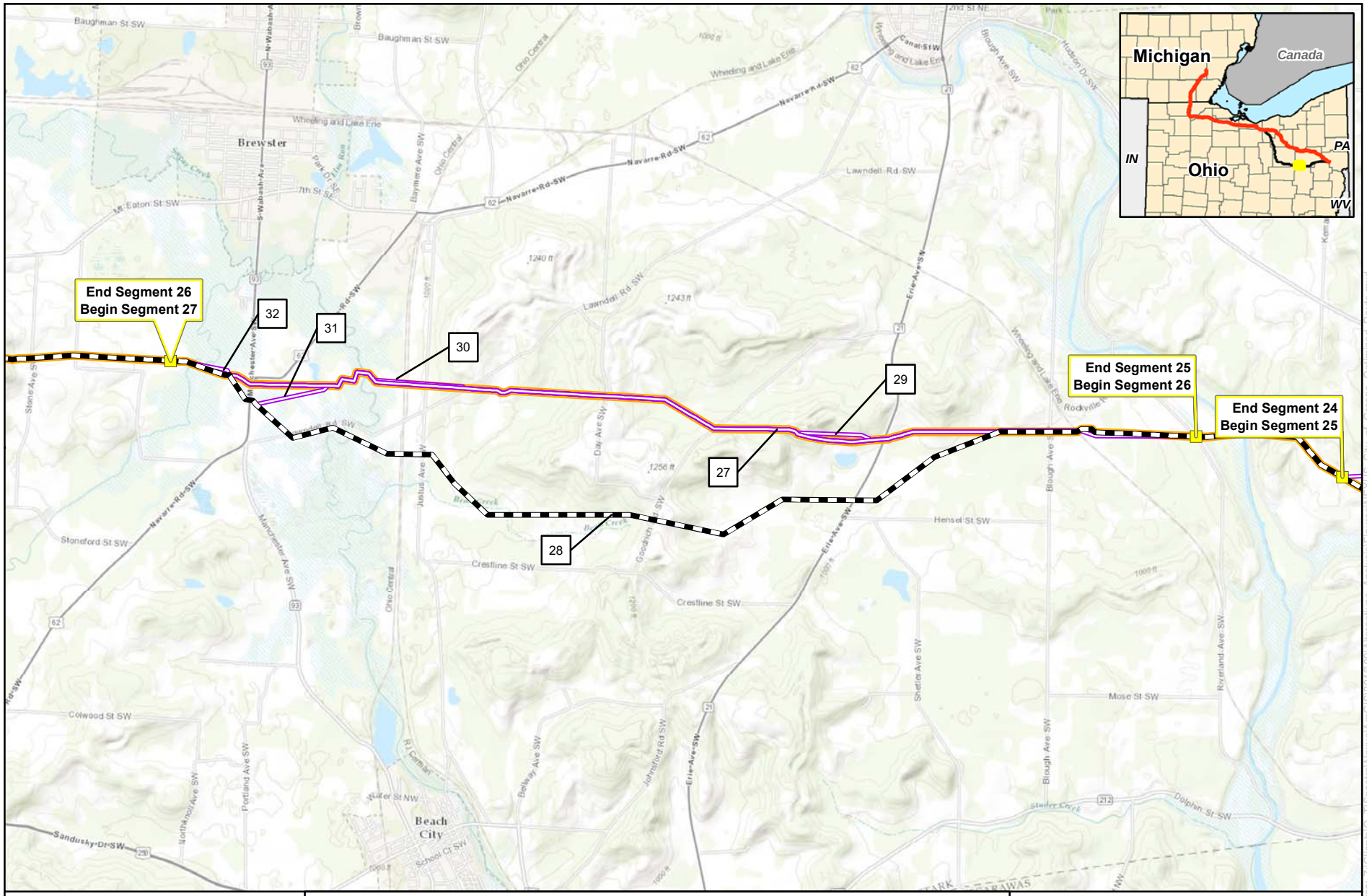
NGT Project

Optimized City of Green Route Alternative
Segment 25
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 2,000 4,000 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

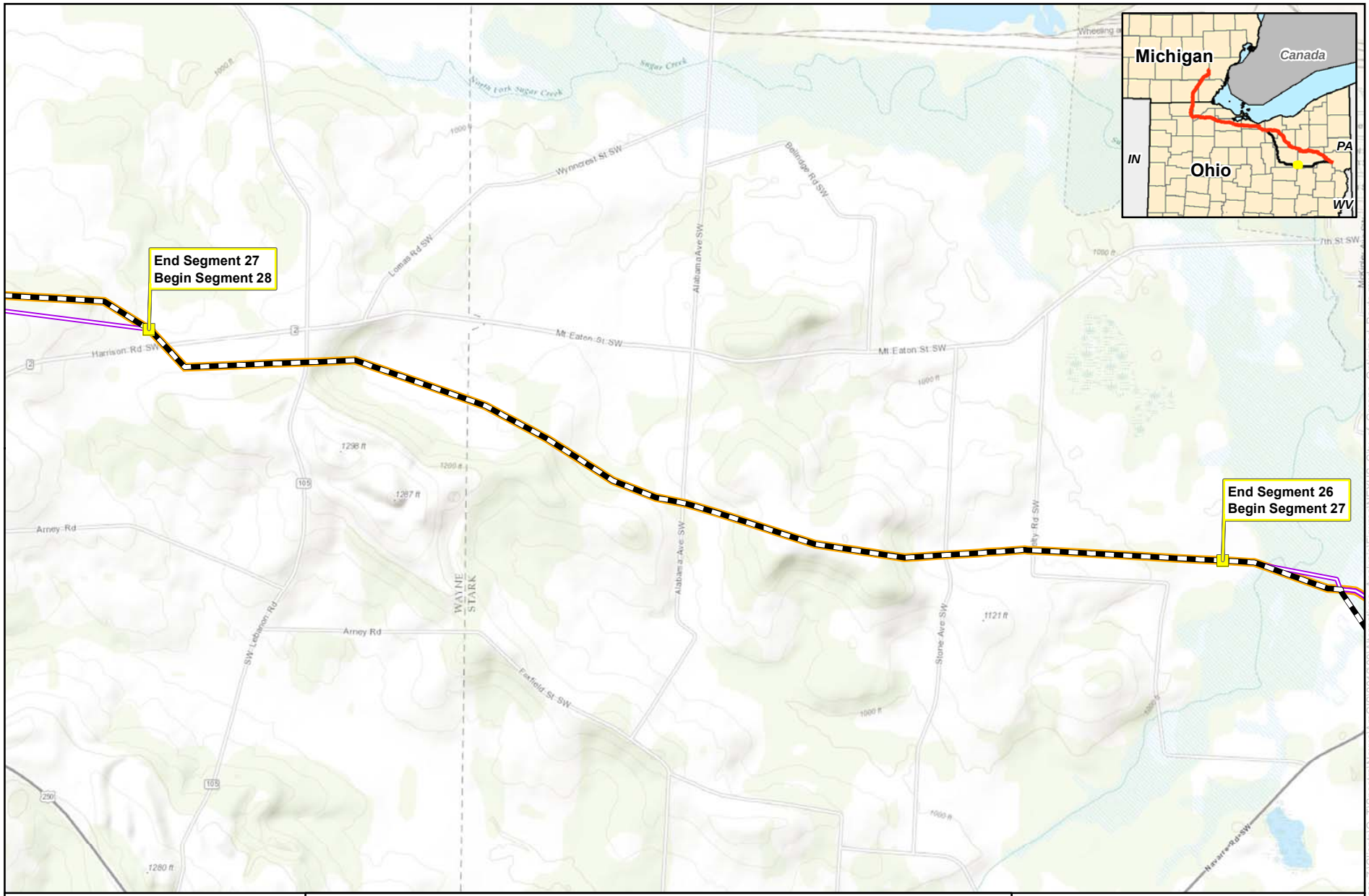
NGT Project

Optimized City of Green Route Alternative
Segment 26
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\NexusArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 1,000 2,000 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 27
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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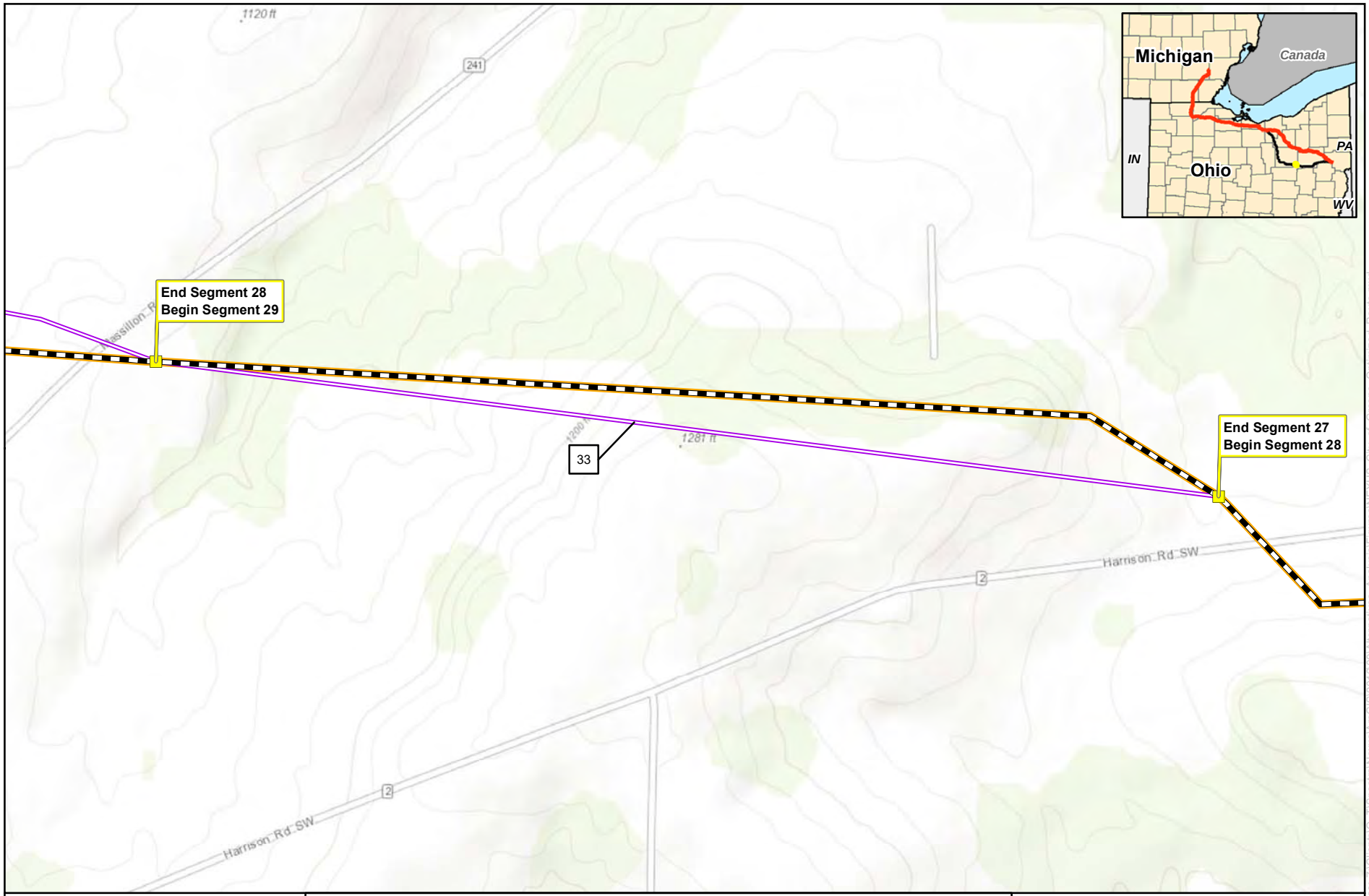

0 350 700 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 28
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\SpectraNexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

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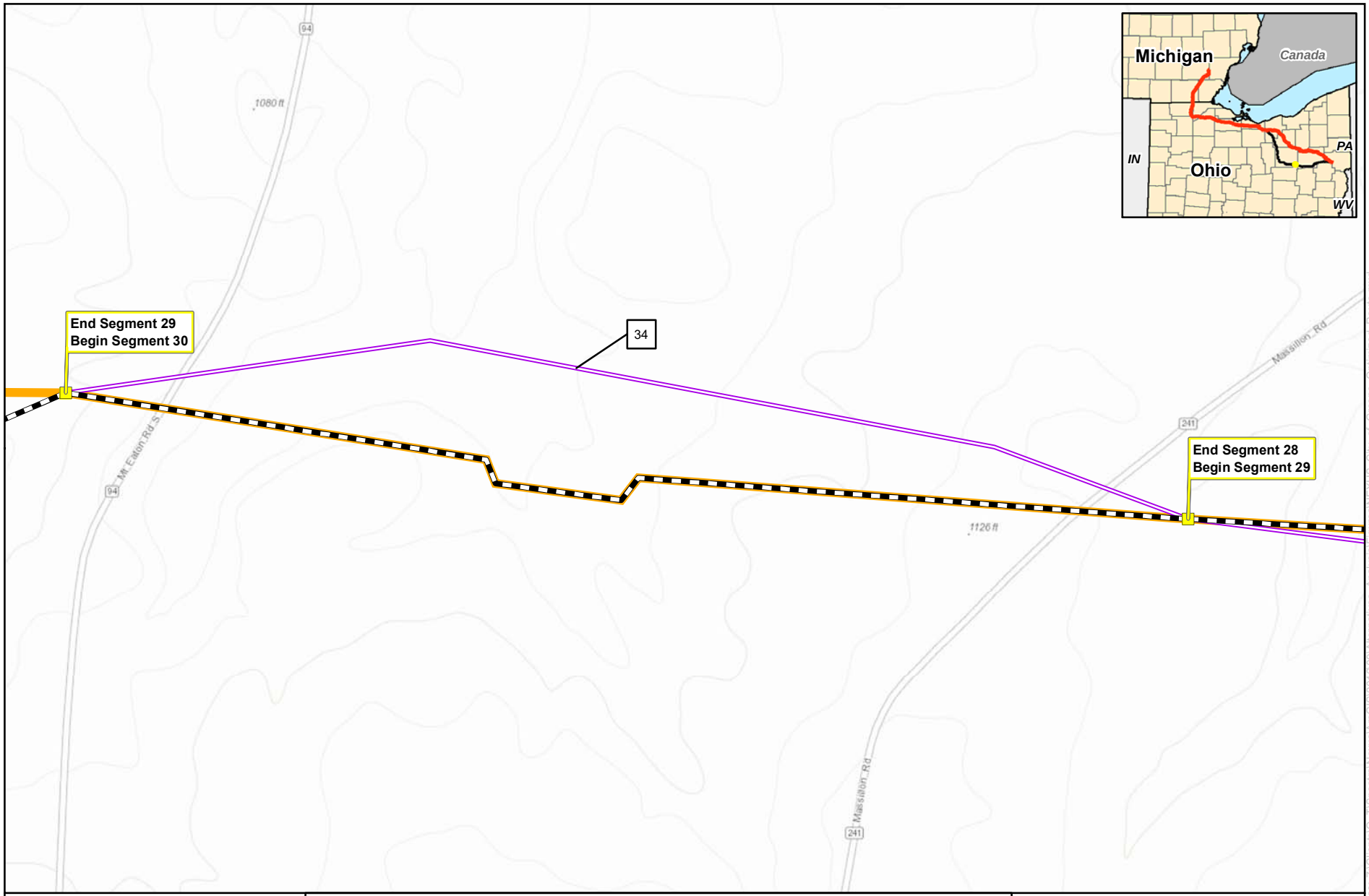


0 210 420 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

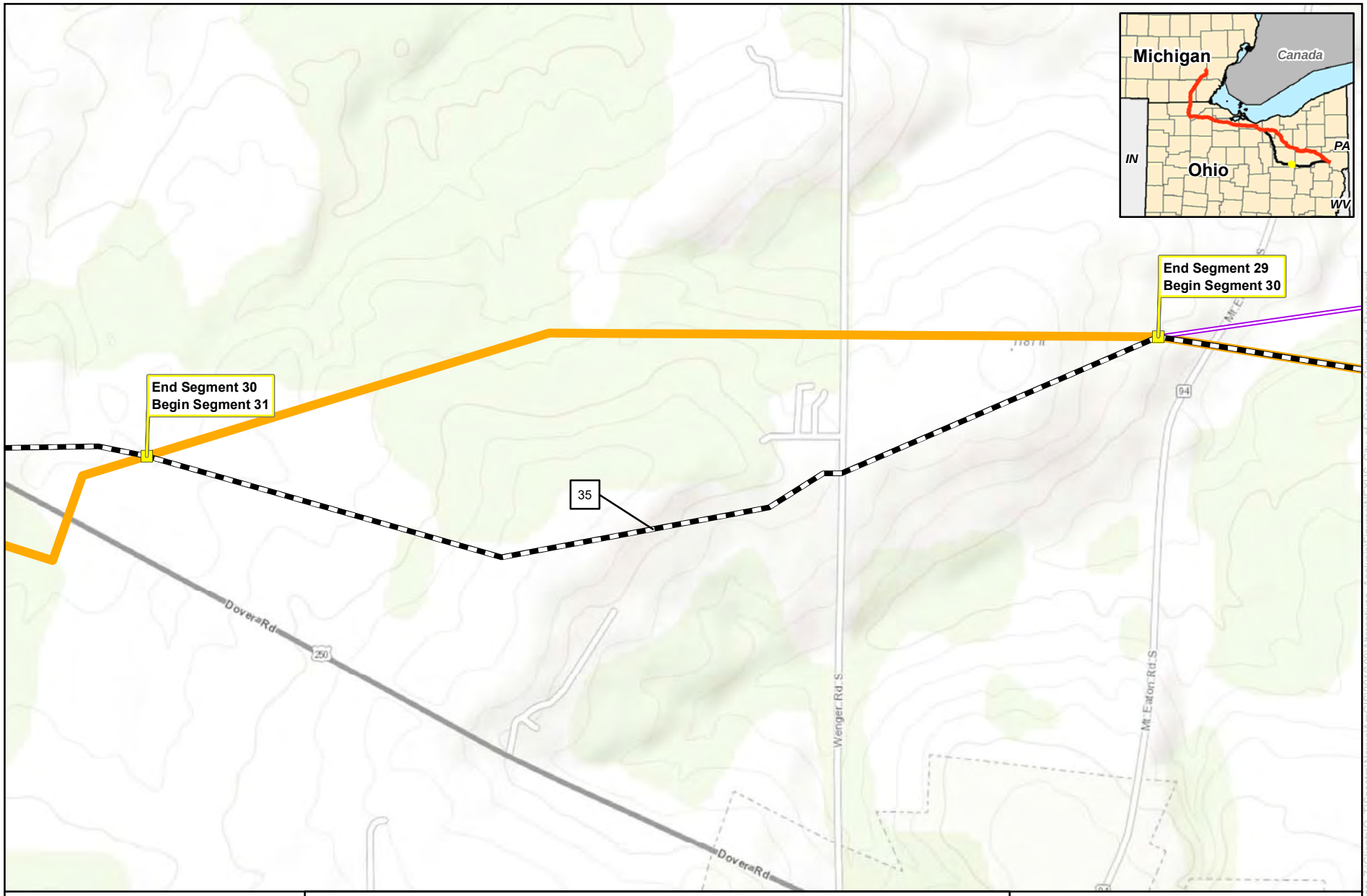
NGT Project

Optimized City of Green Route Alternative
Segment 29
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 375 750 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

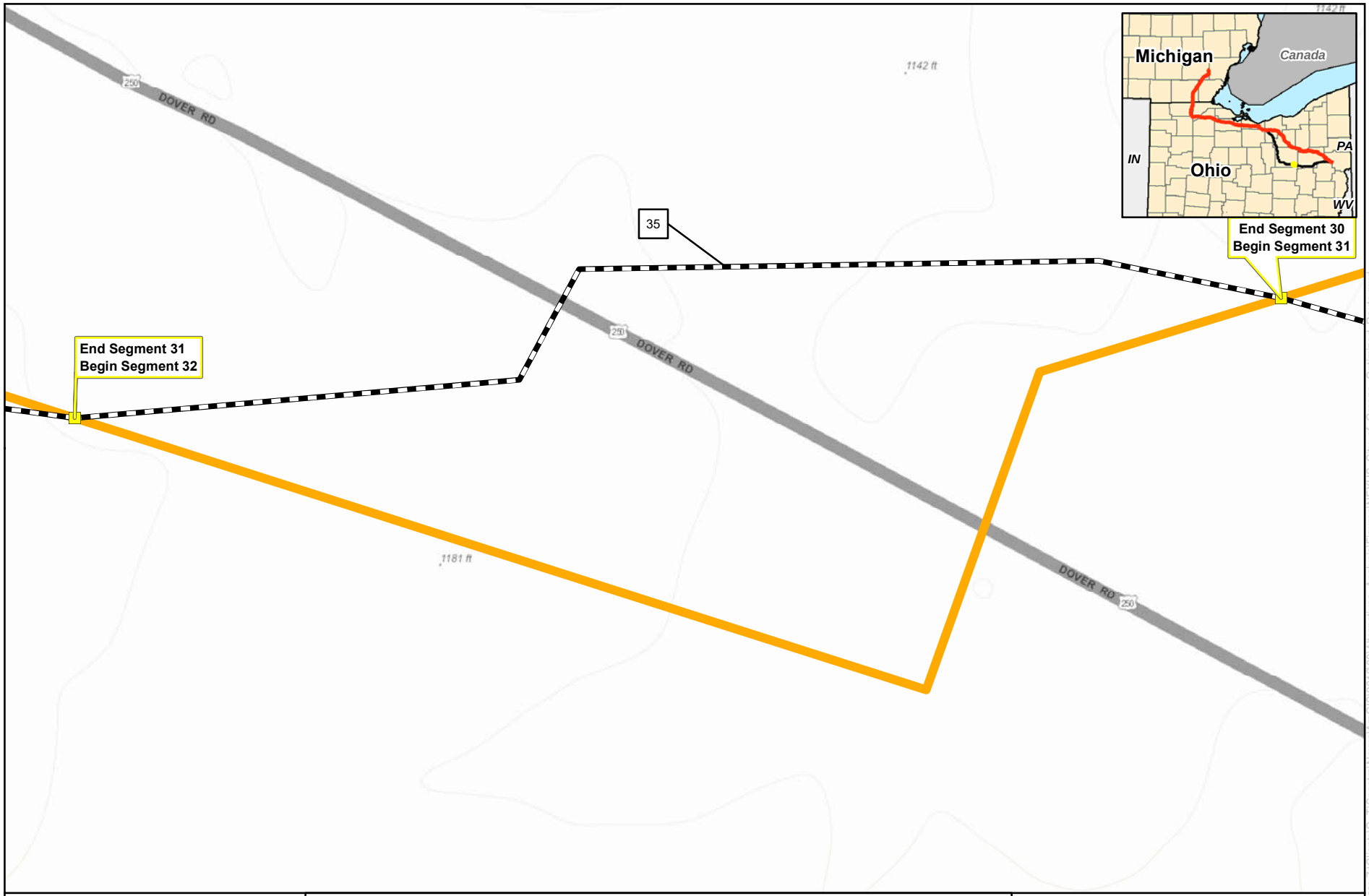
NGT Project

Optimized City of Green Route Alternative
Segment 30
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 100 200 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

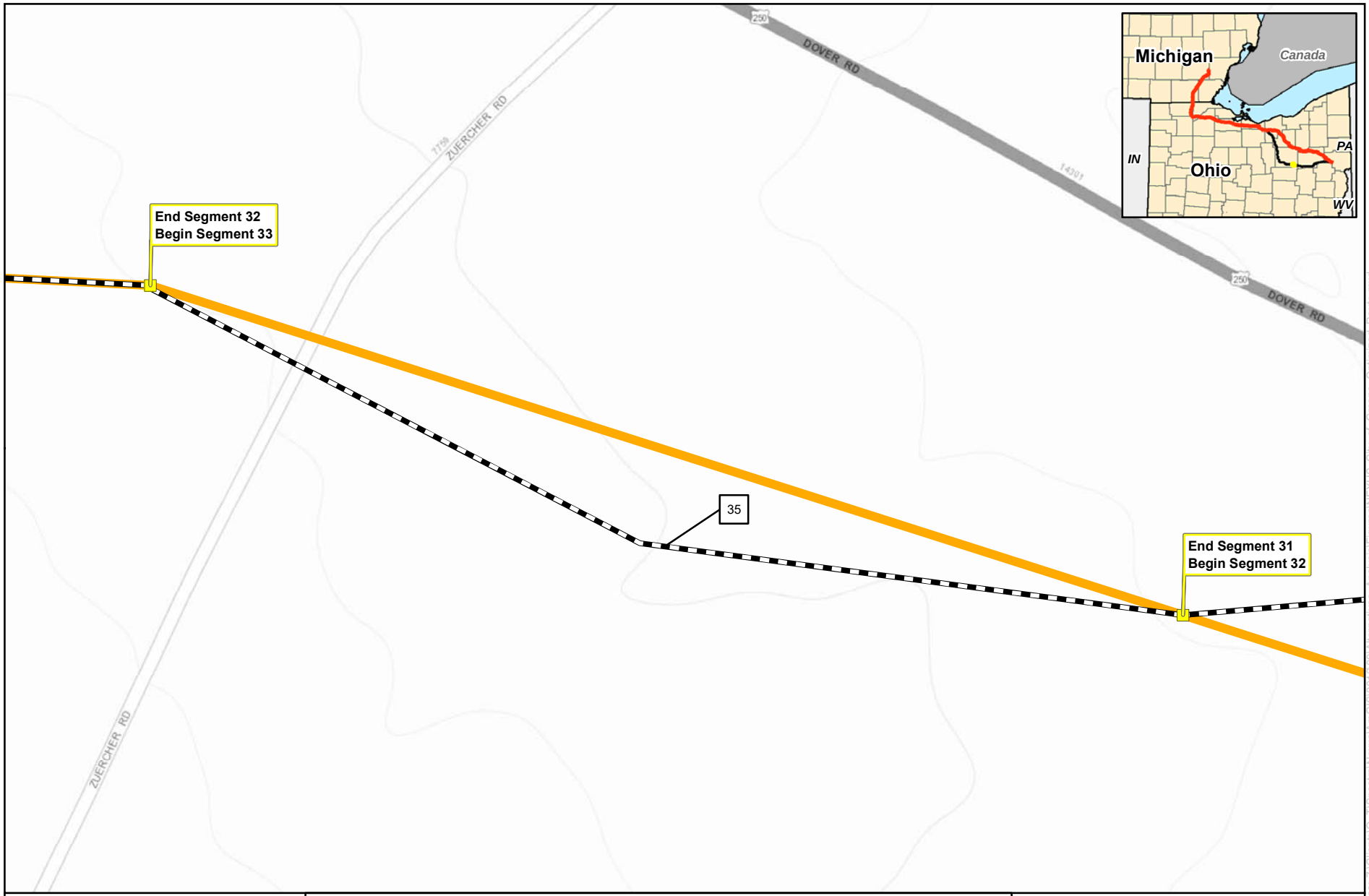
NGT Project

Optimized City of Green Route Alternative
Segment 31
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 100 200 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

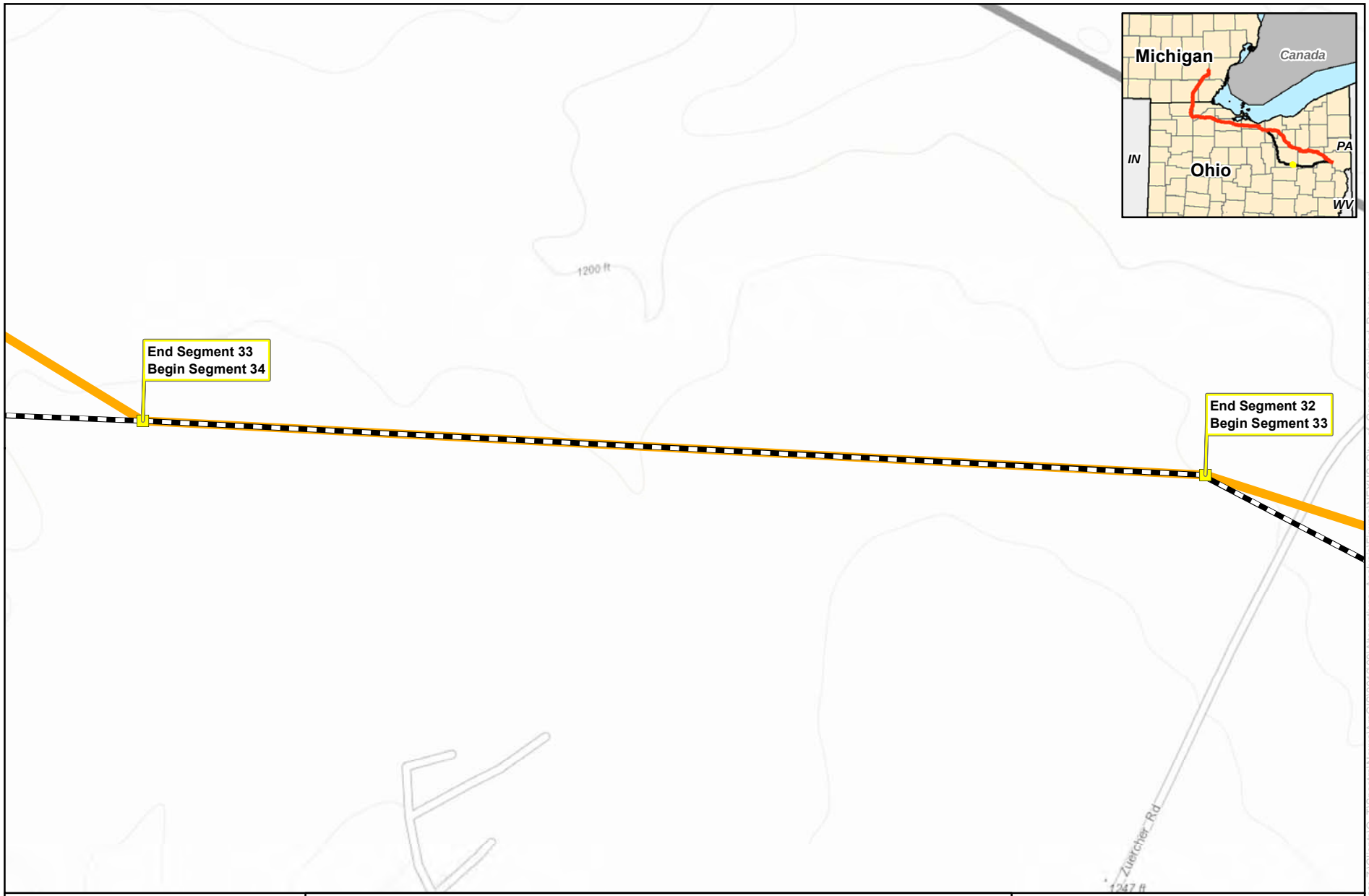
NGT Project

Optimized City of Green Route Alternative
Segment 32
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 160 320 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

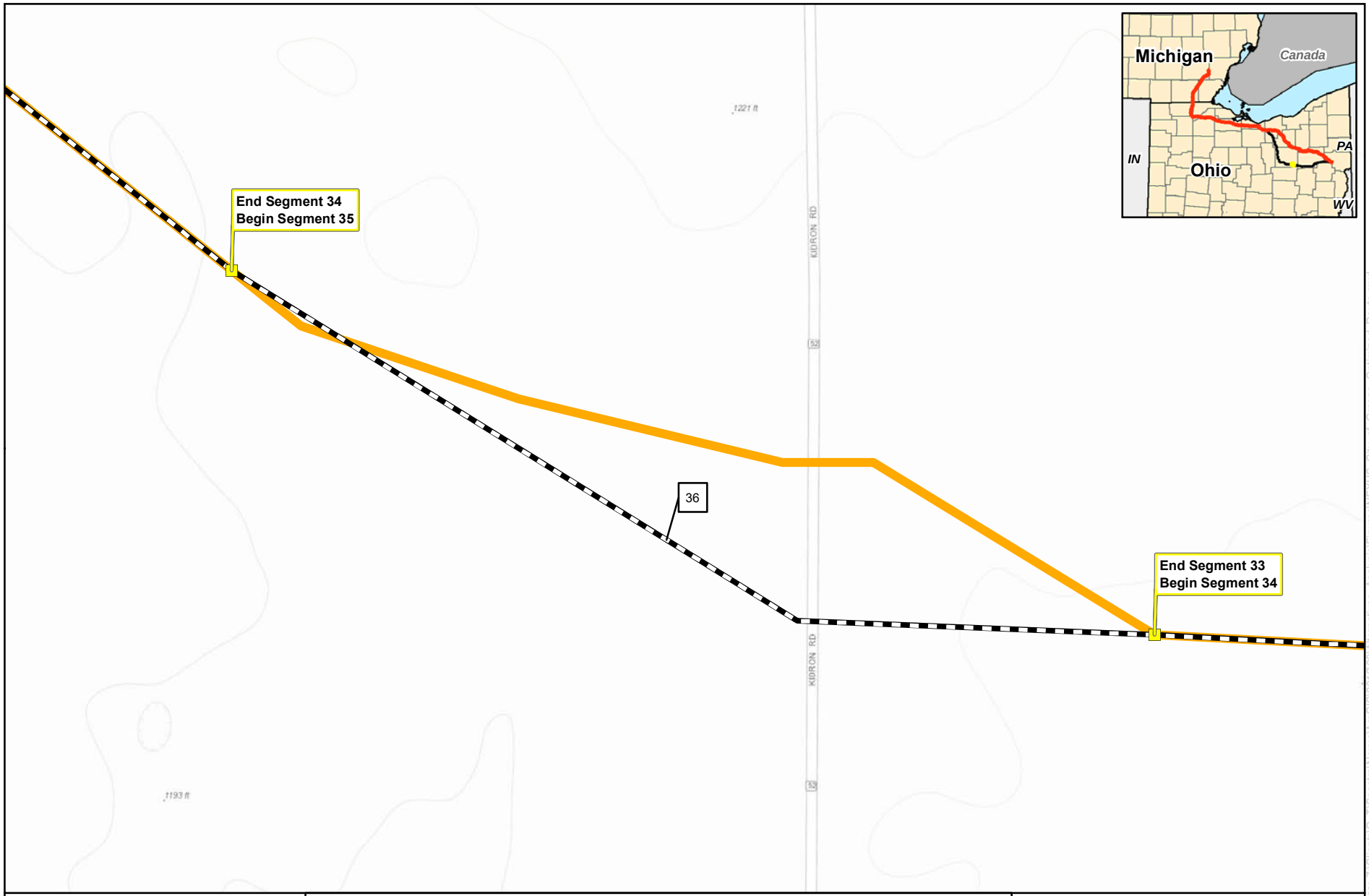
NGT Project

Optimized City of Green Route Alternative
Segment 33
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 125 250 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

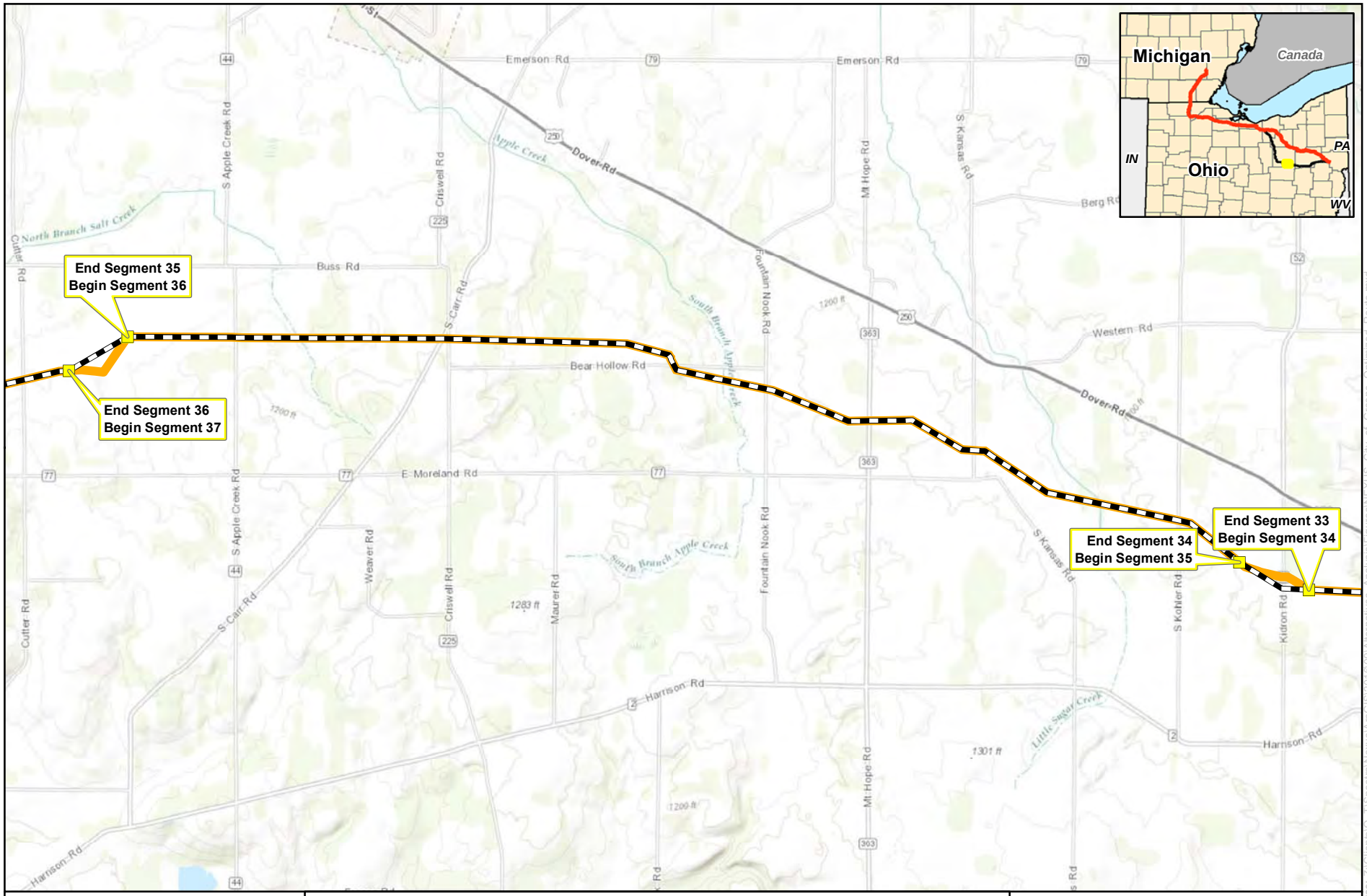
NGT Project

Optimized City of Green Route Alternative
Segment 34
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 1,600 3,200 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

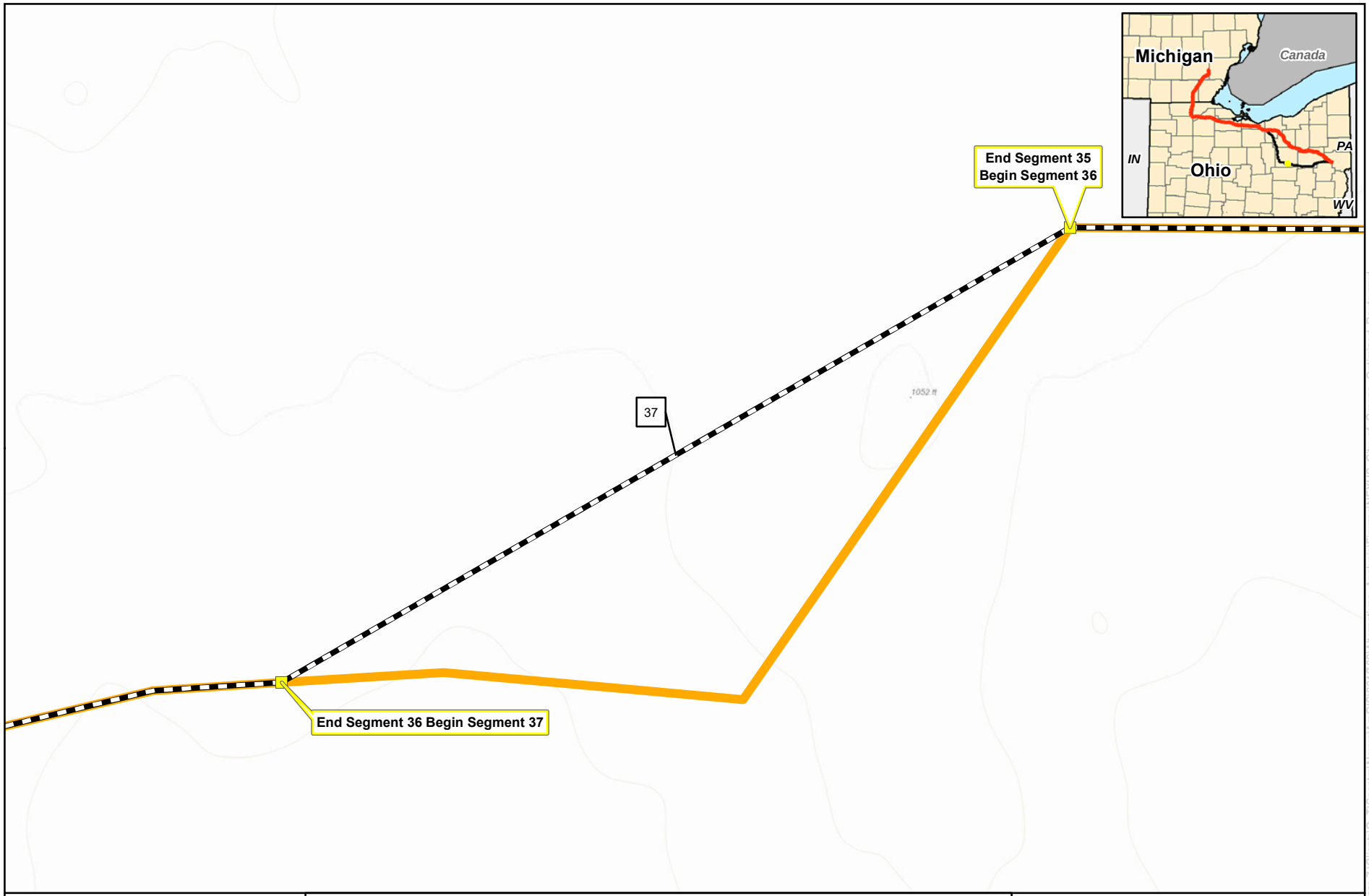
NGT Project

Optimized City of Green Route Alternative
Segment 35
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 125 250 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

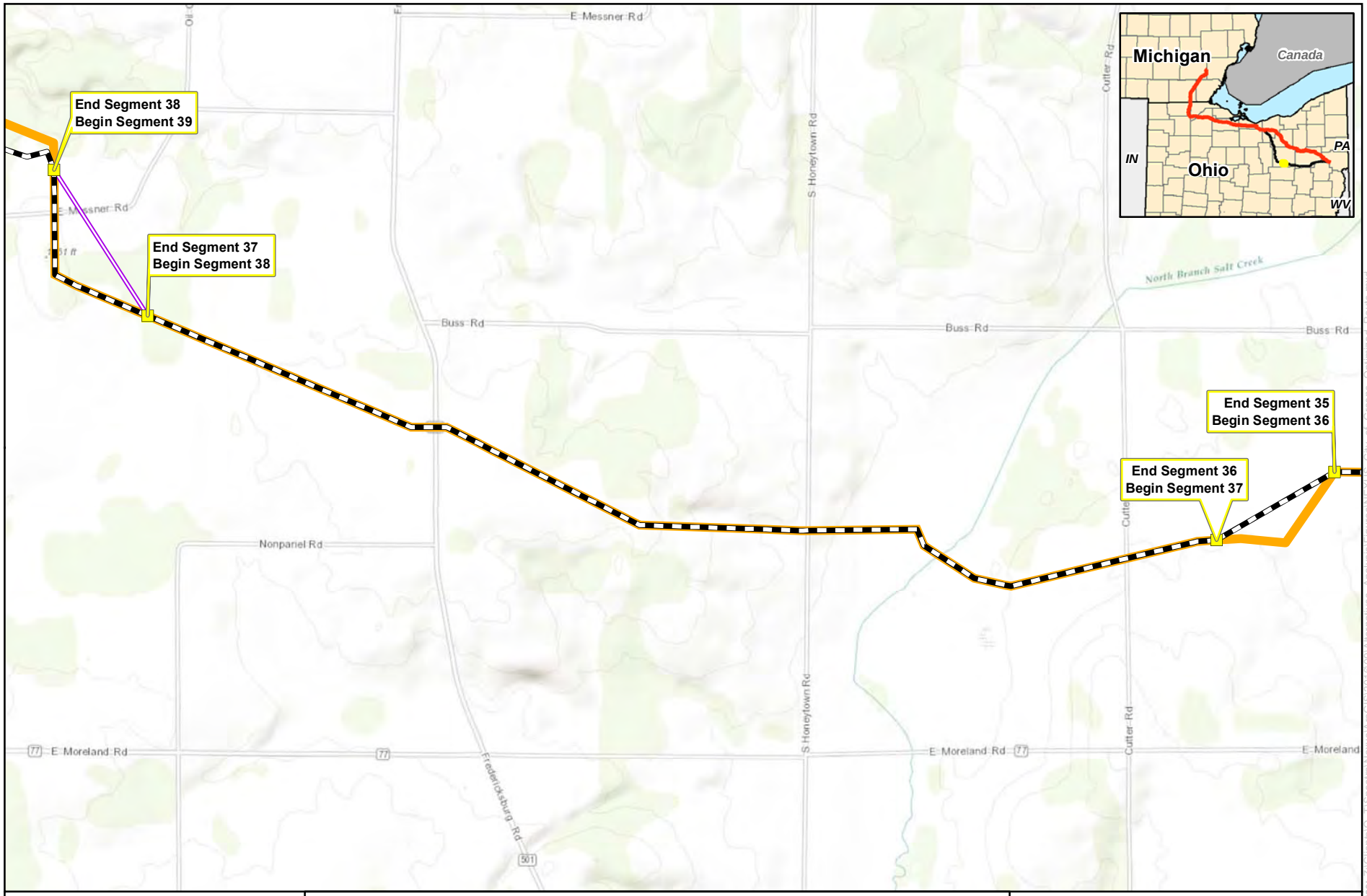
NGT Project

Optimized City of Green Route Alternative
Segment 36
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



Appendix F-1

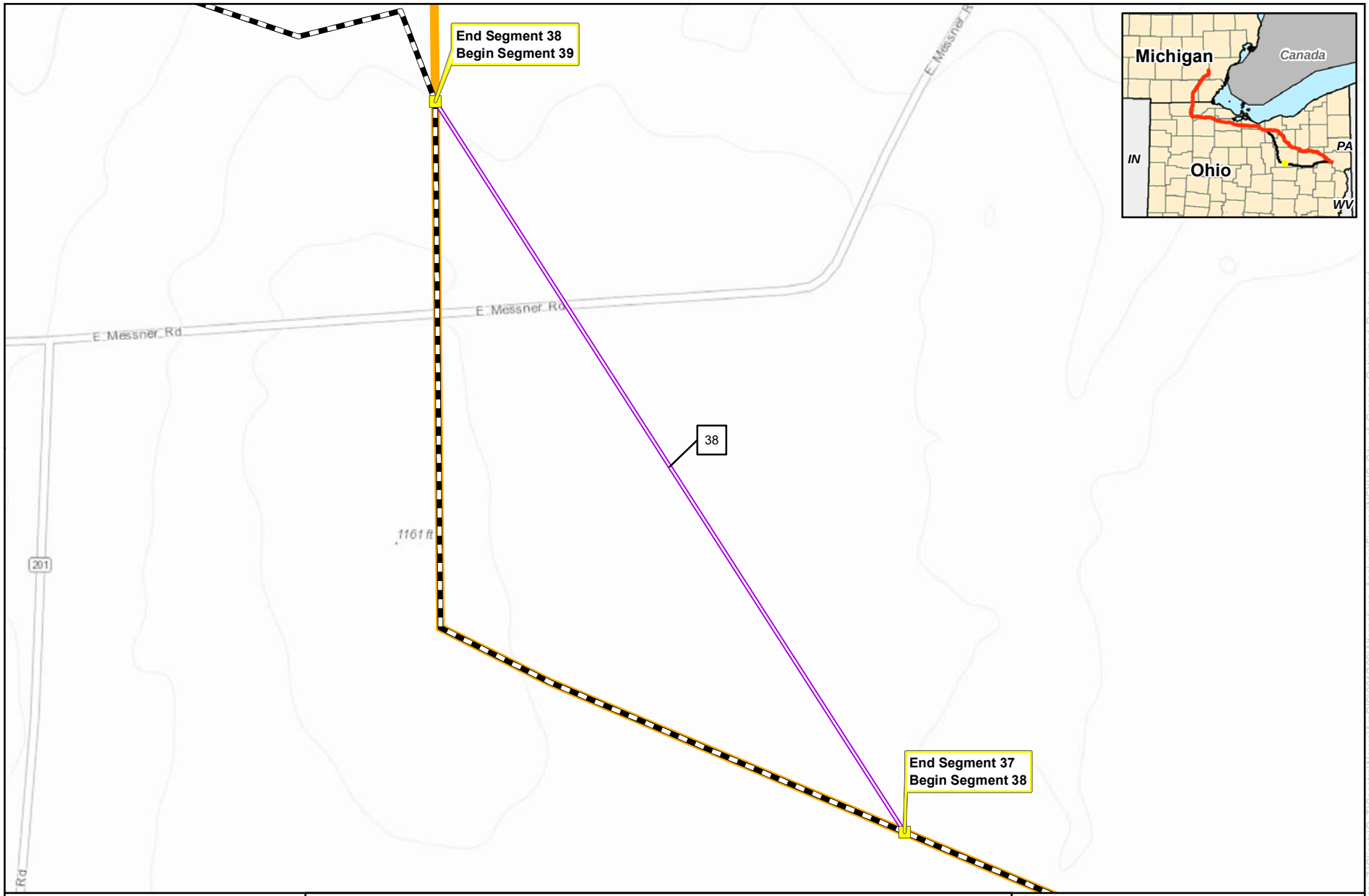
NGT Project

Optimized City of Green Route Alternative
Segment 37
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 160 320 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

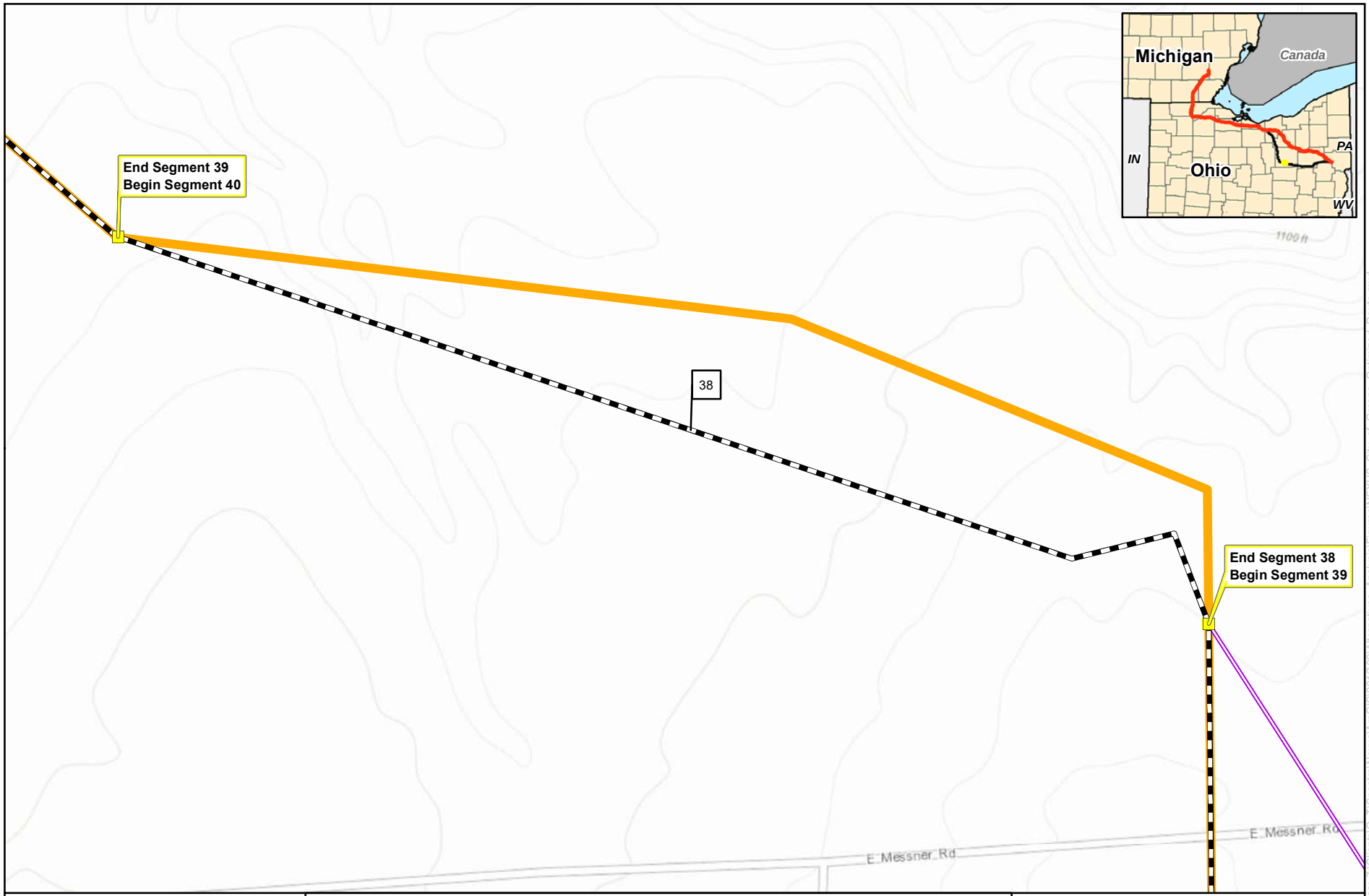
NGT Project

Optimized City of Green Route Alternative
Segment 38
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 160 320 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

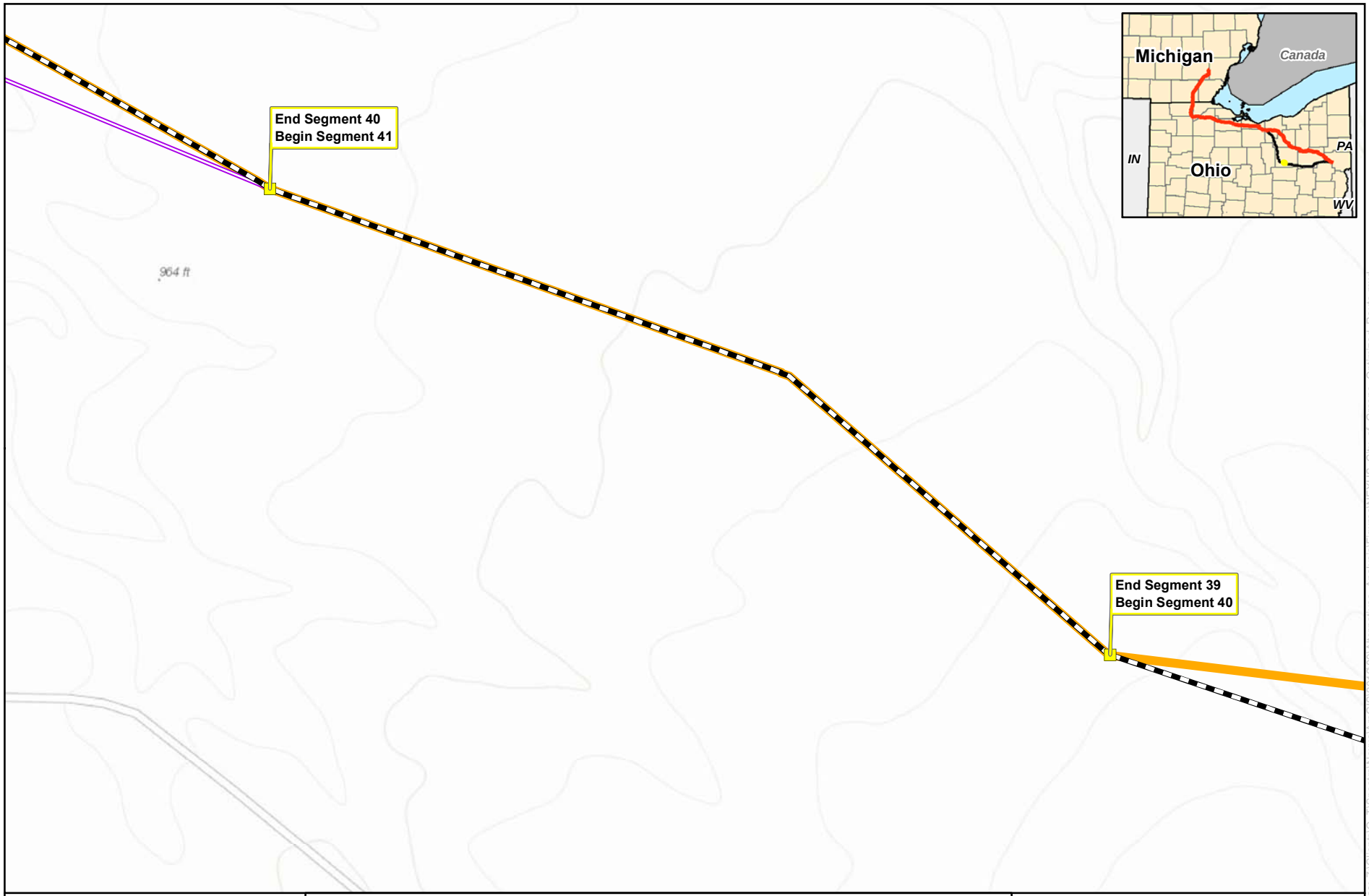
NGT Project

Optimized City of Green Route Alternative
Segment 39
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 160 320 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

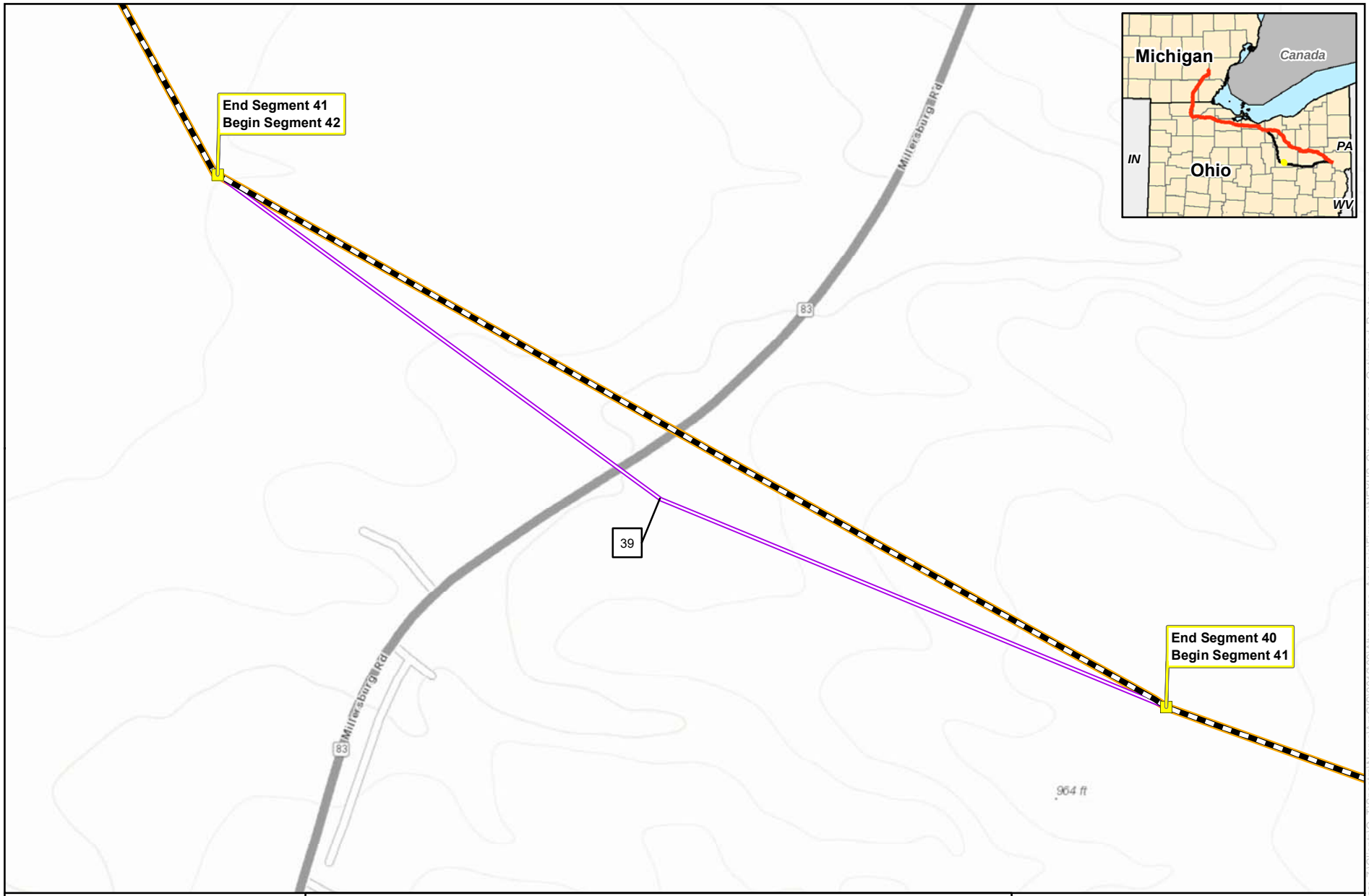
NGT Project

Optimized City of Green Route Alternative
Segment 40
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 160 320 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

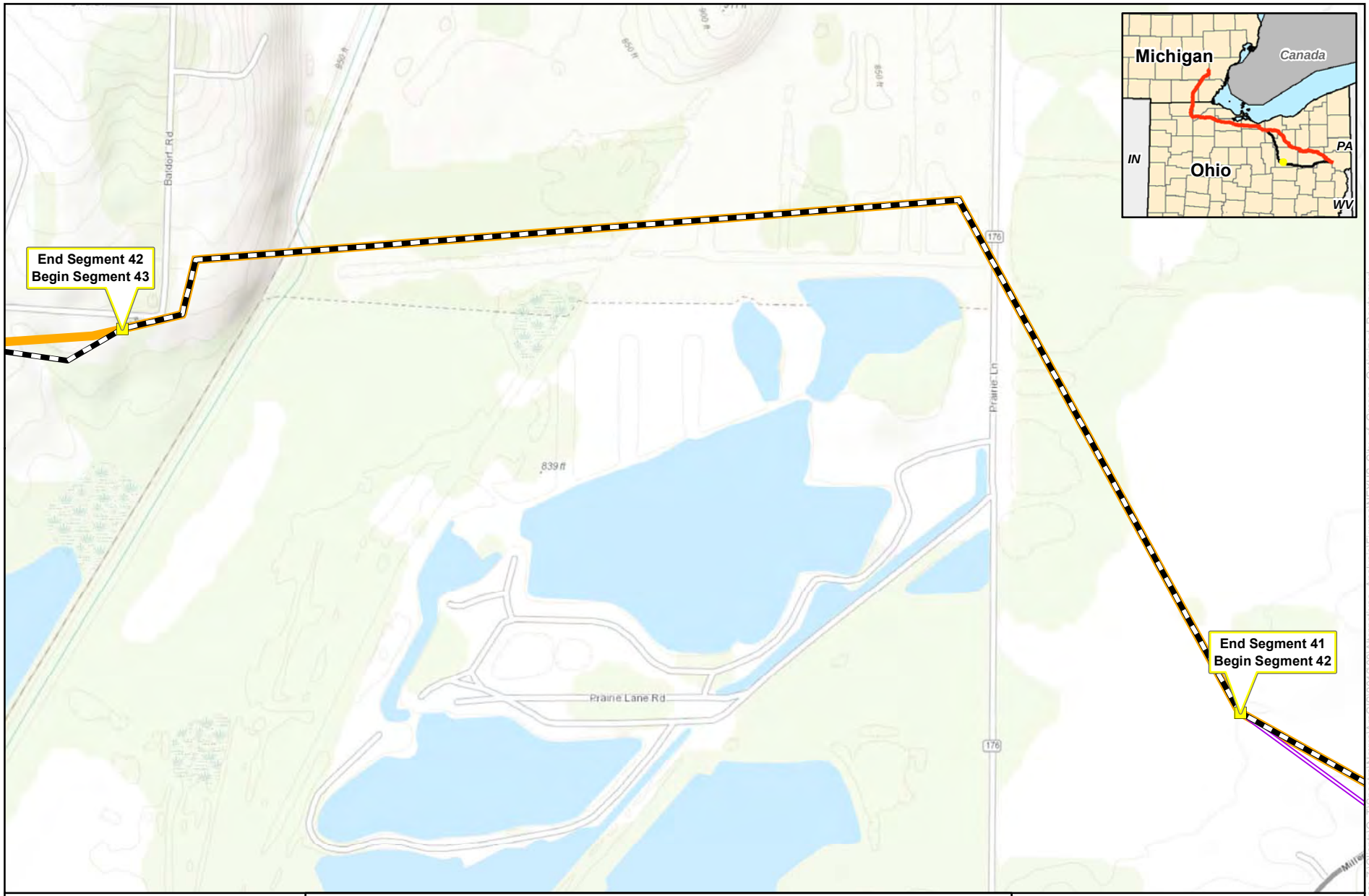
NGT Project

Optimized City of Green Route Alternative
Segment 41
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 420 840 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

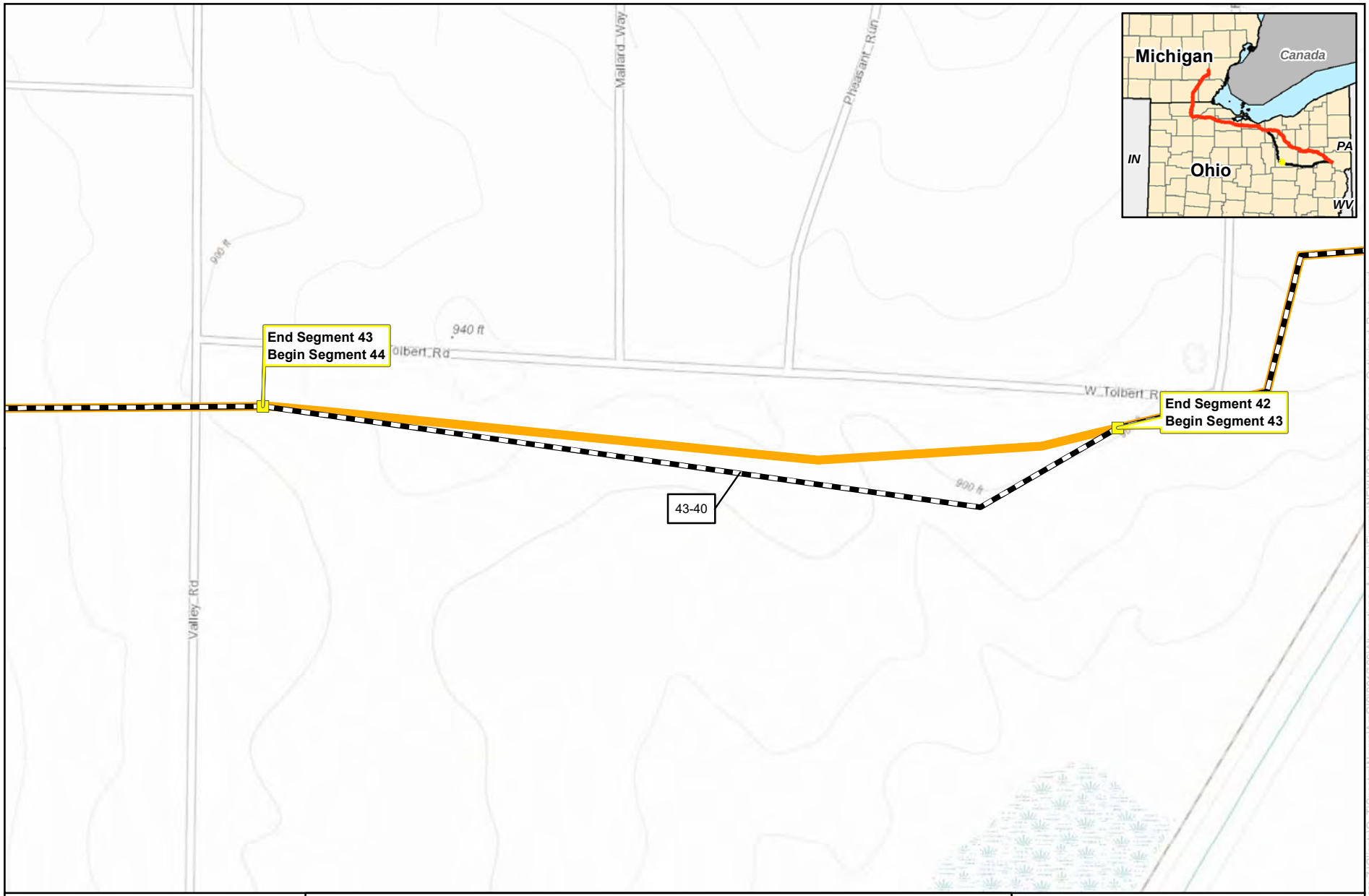
NGT Project

Optimized City of Green Route Alternative
Segment 42
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\SpectraNexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 160 320 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

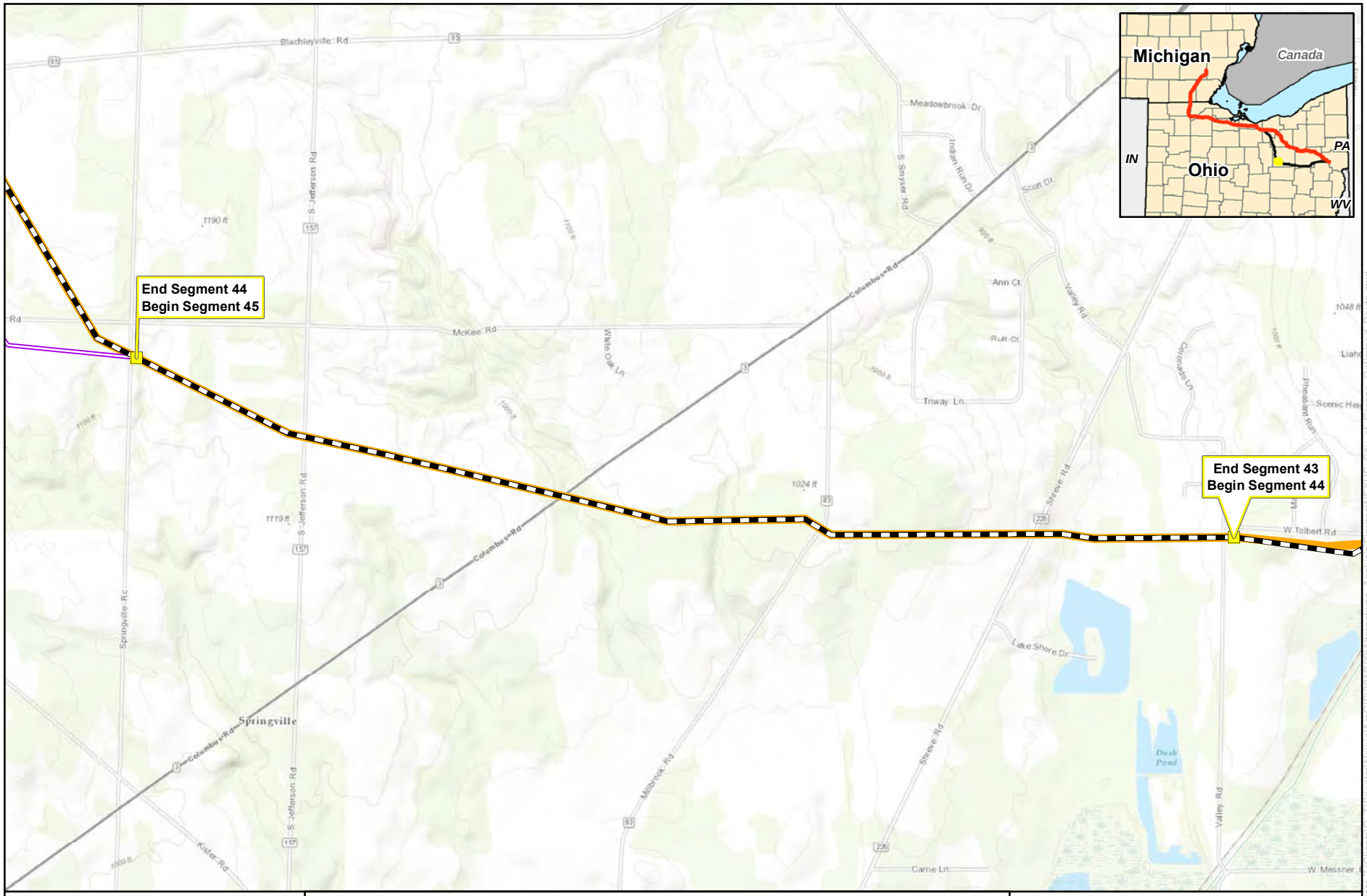
NGT Project

Optimized City of Green Route Alternative
Segment 43
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 1,000 2,000 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

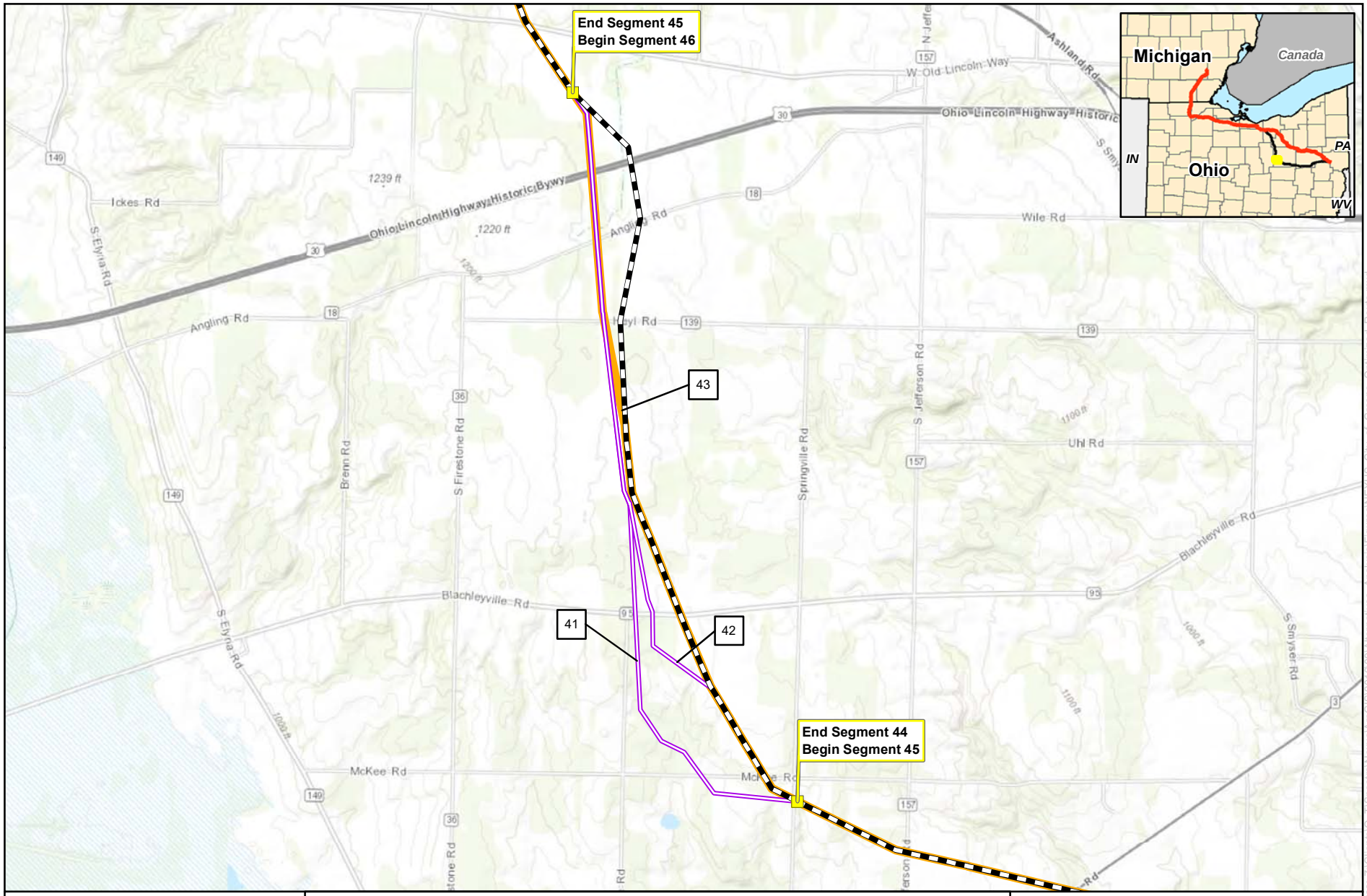
NGT Project

Optimized City of Green Route Alternative
Segment 44
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 1,500 3,000 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

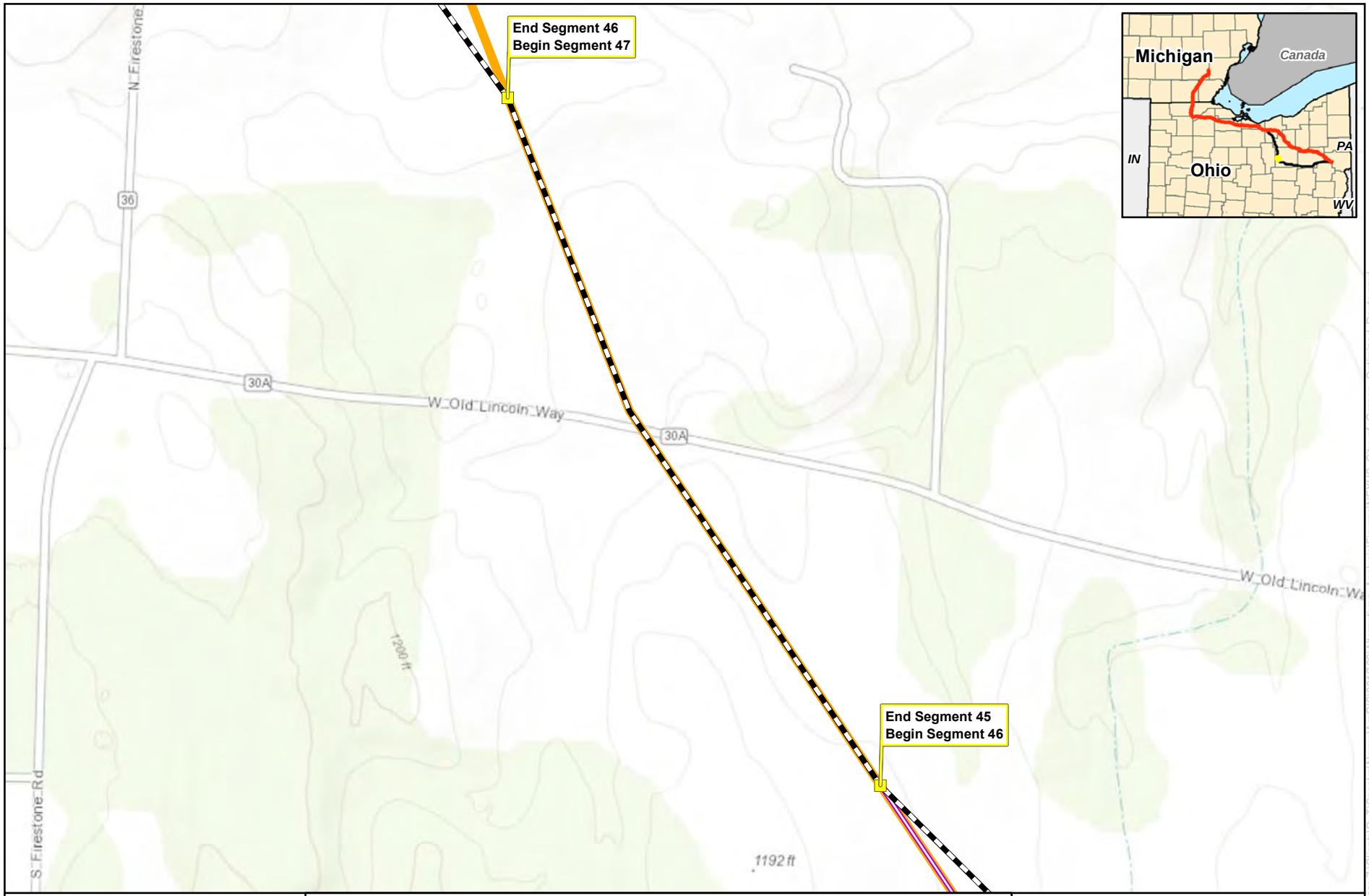
NGT Project

Optimized City of Green Route Alternative
Segment 45
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 290 580 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

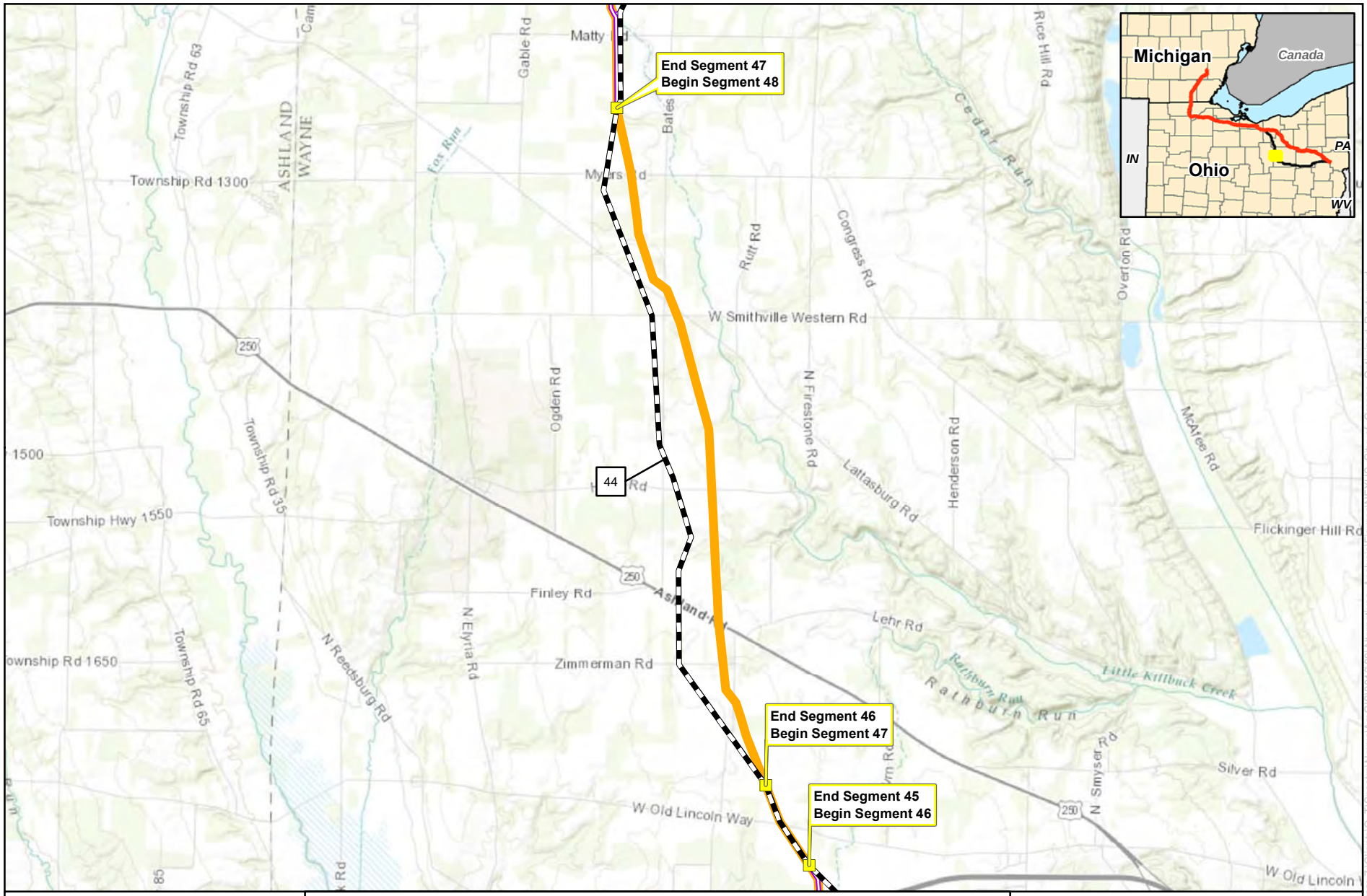
NGT Project

Optimized City of Green Route Alternative
Segment 46
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 2,500 5,000 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

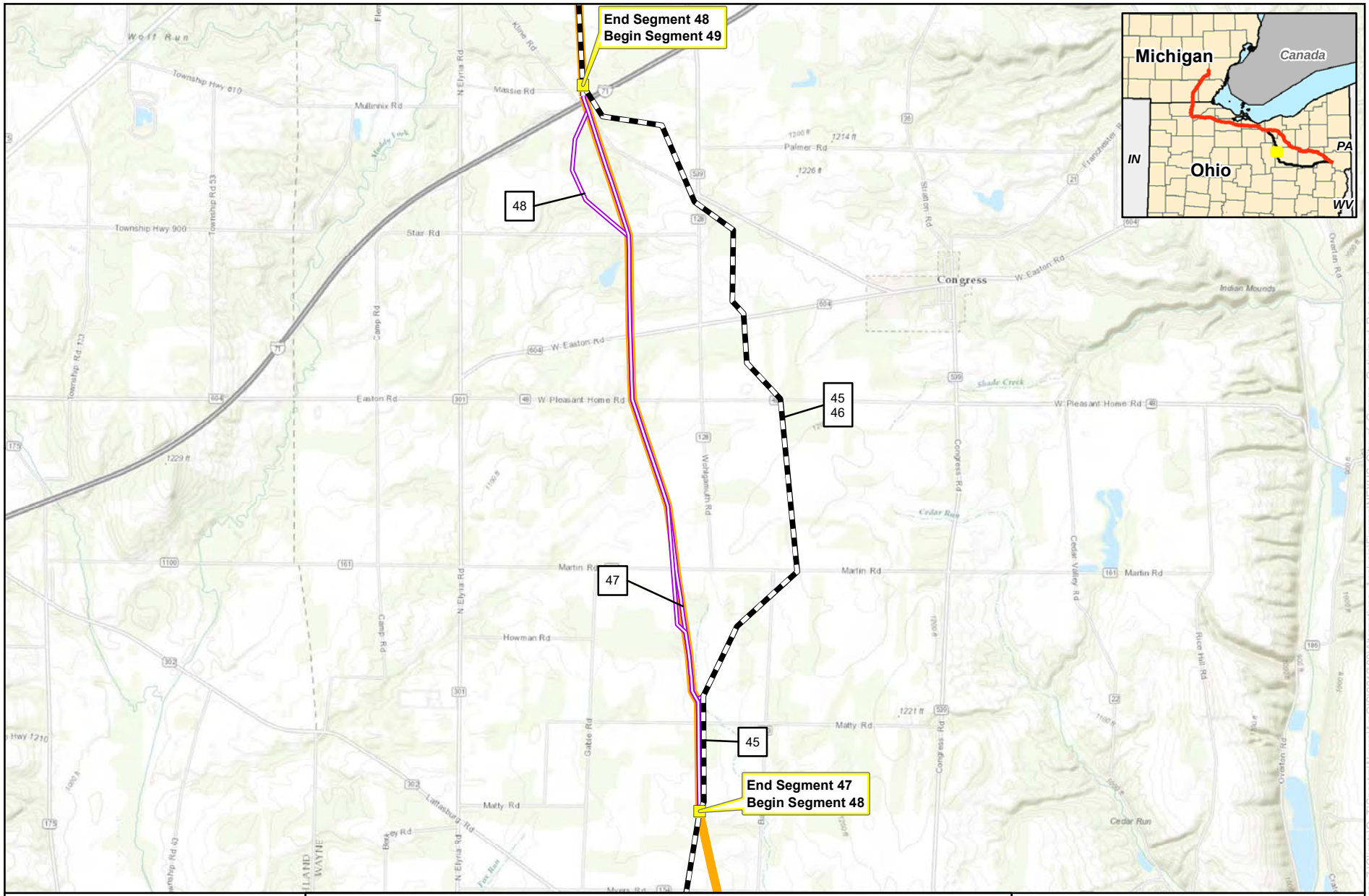
NGT Project

Optimized City of Green Route Alternative
Segment 47
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\SpectraNexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 2,100 4,200 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

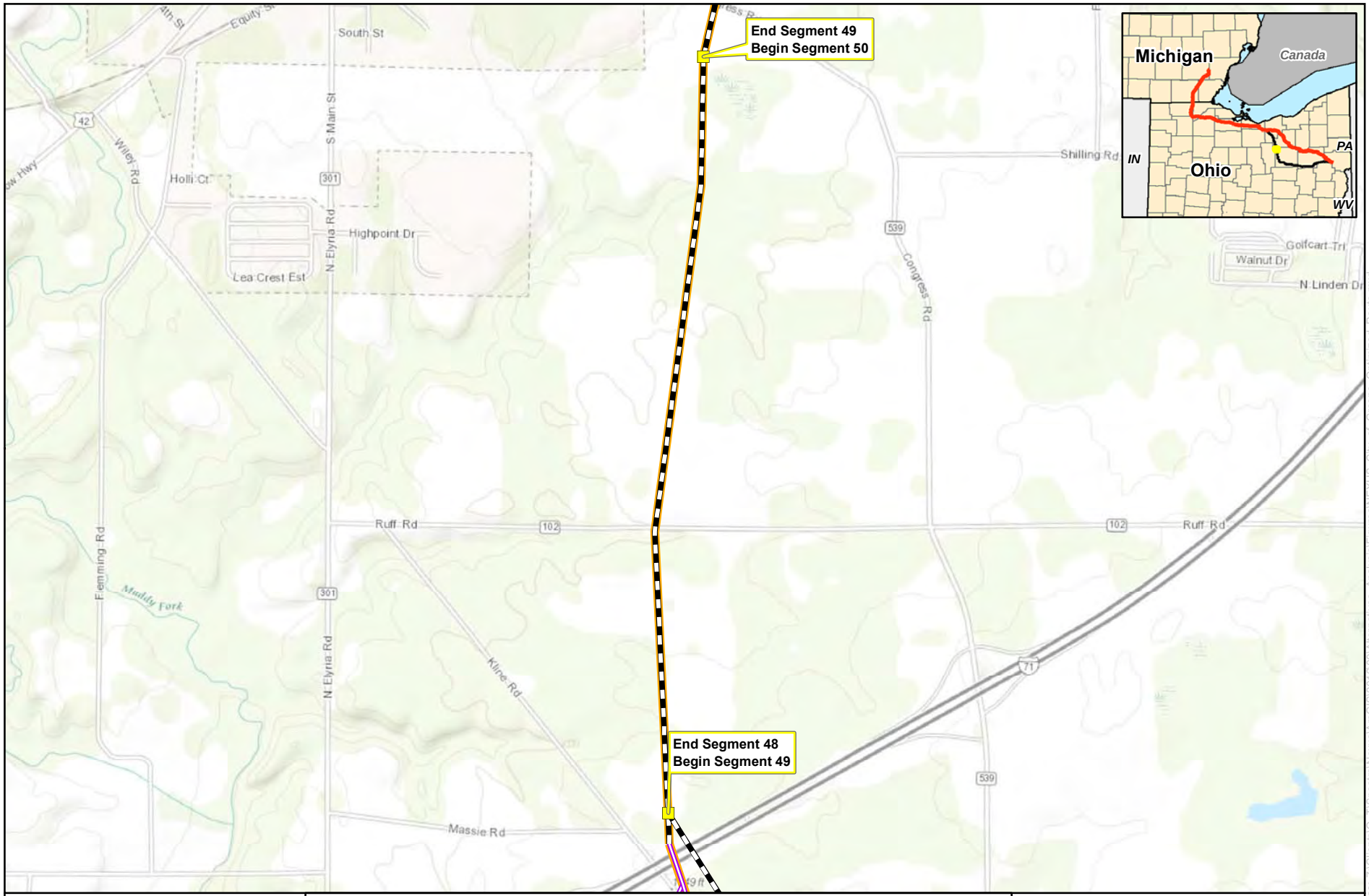
NGT Project

Optimized City of Green Route Alternative
Segment 48
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 750 1,500 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

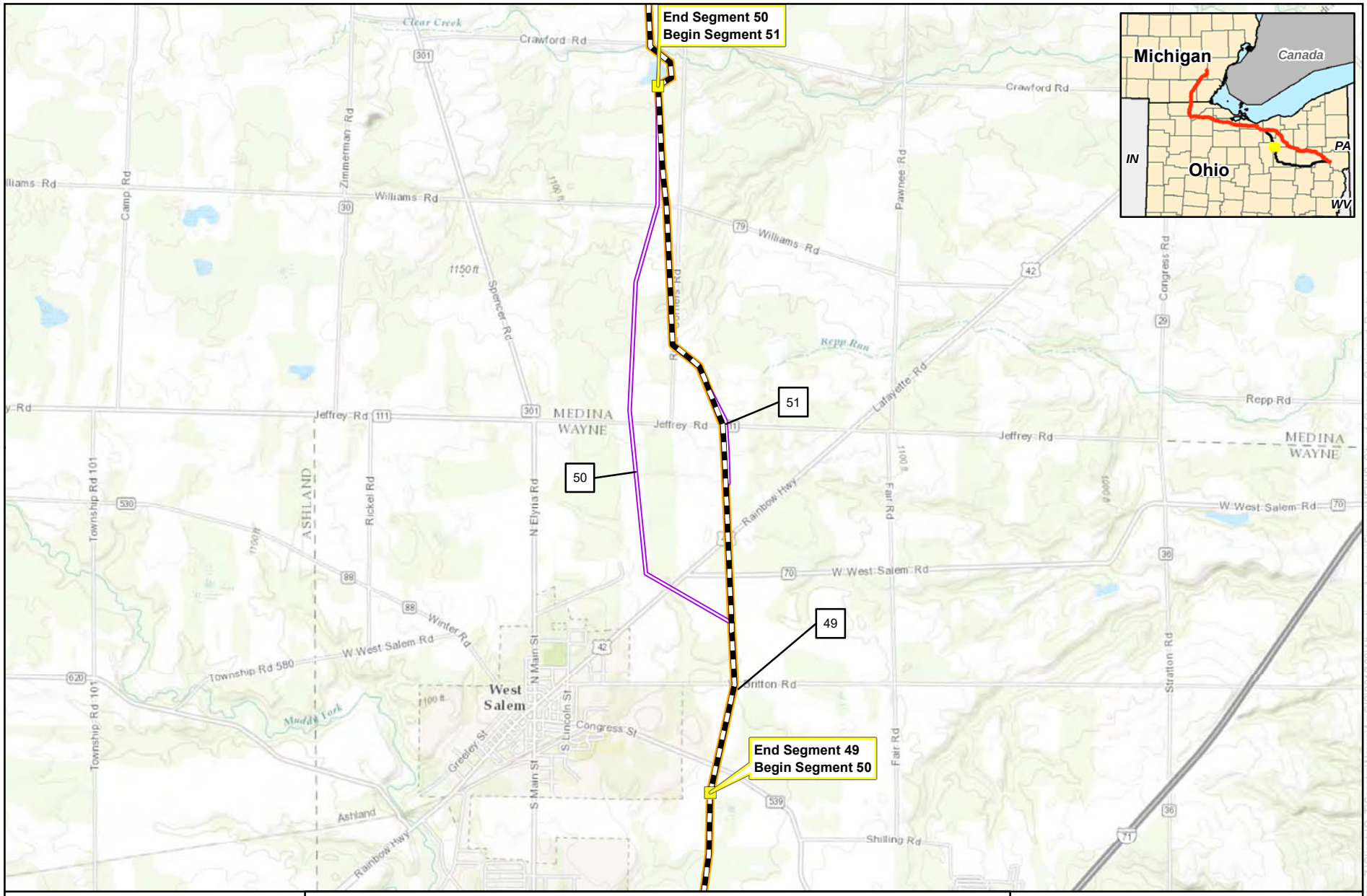
NGT Project

Optimized City of Green Route Alternative
Segment 49
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 1,500 3,000 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

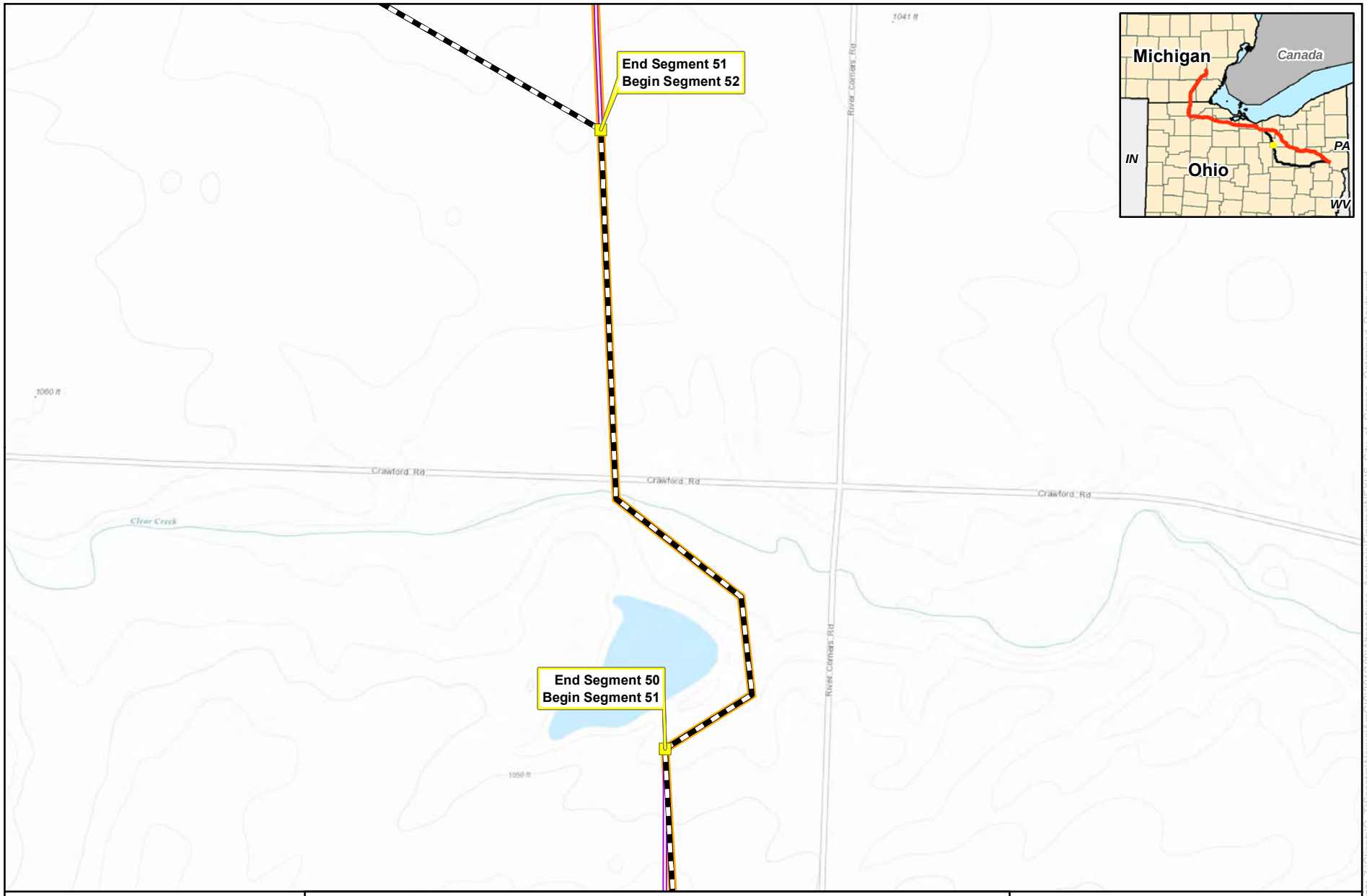
NGT Project

Optimized City of Green Route Alternative
Segment 50
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 250 500 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

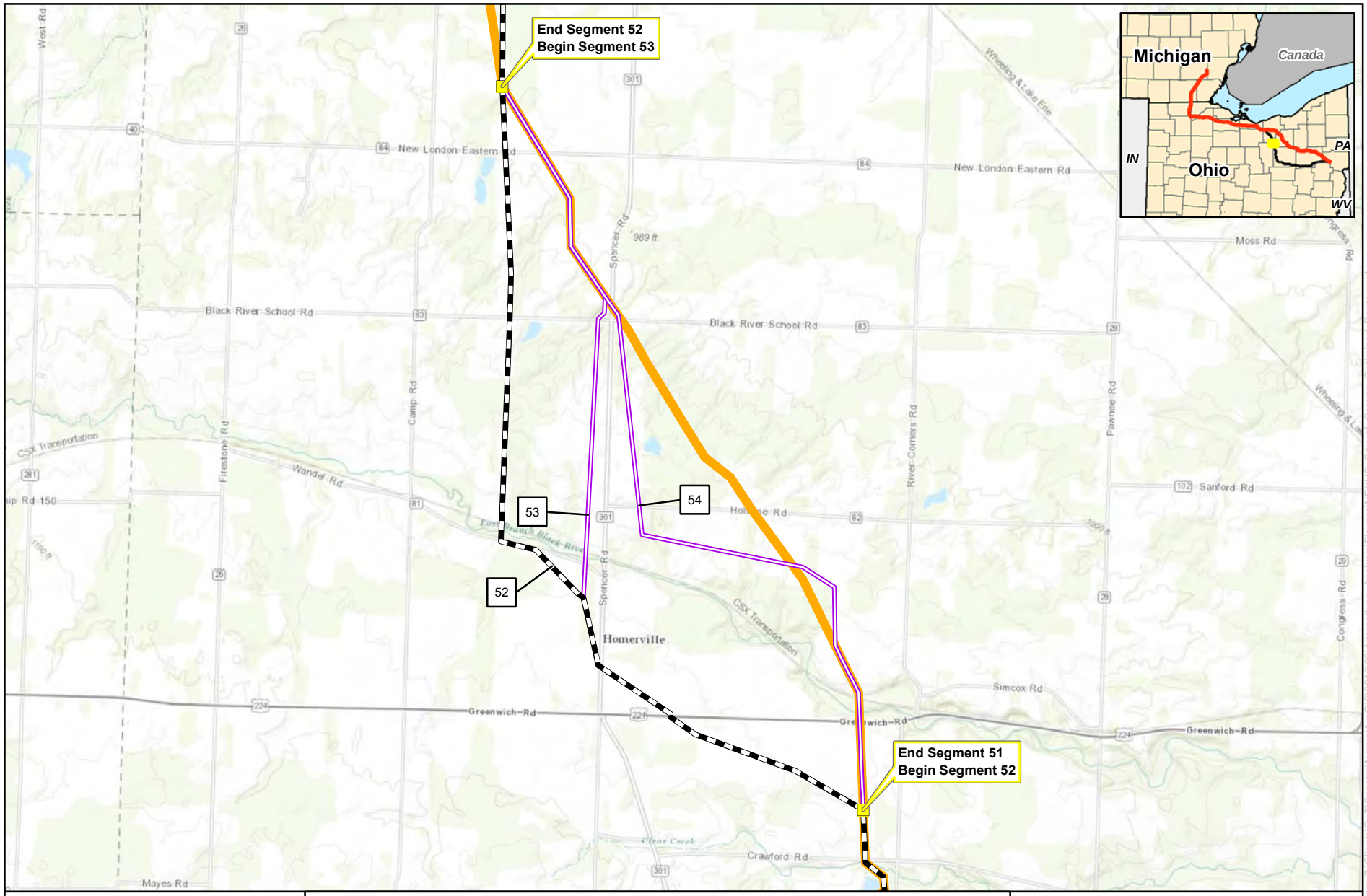
NGT Project

Optimized City of Green Route Alternative
Segment 51
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 1,750 3,500 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

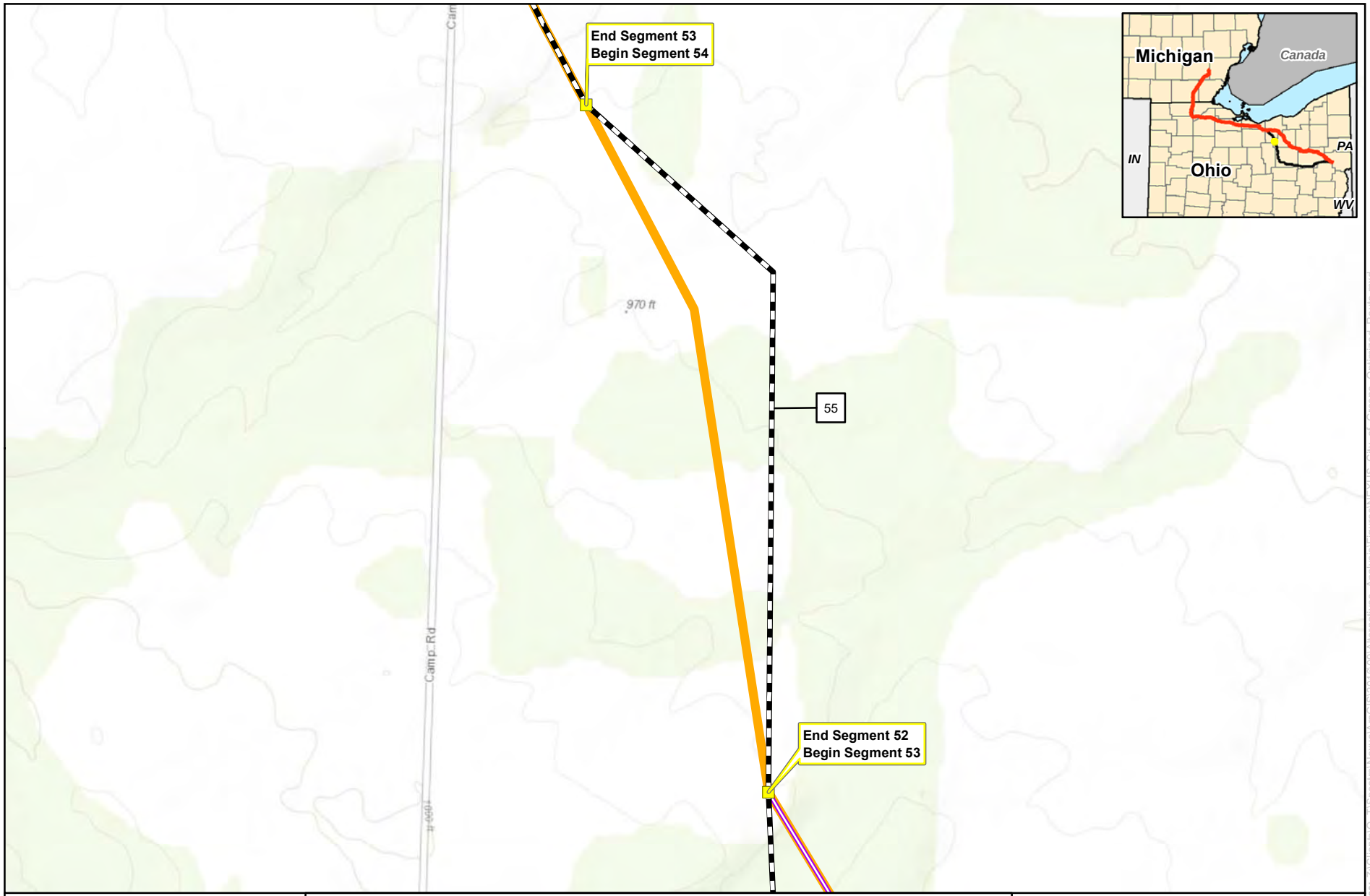
NGT Project

Optimized City of Green Route Alternative
Segment 52
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 350 700 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

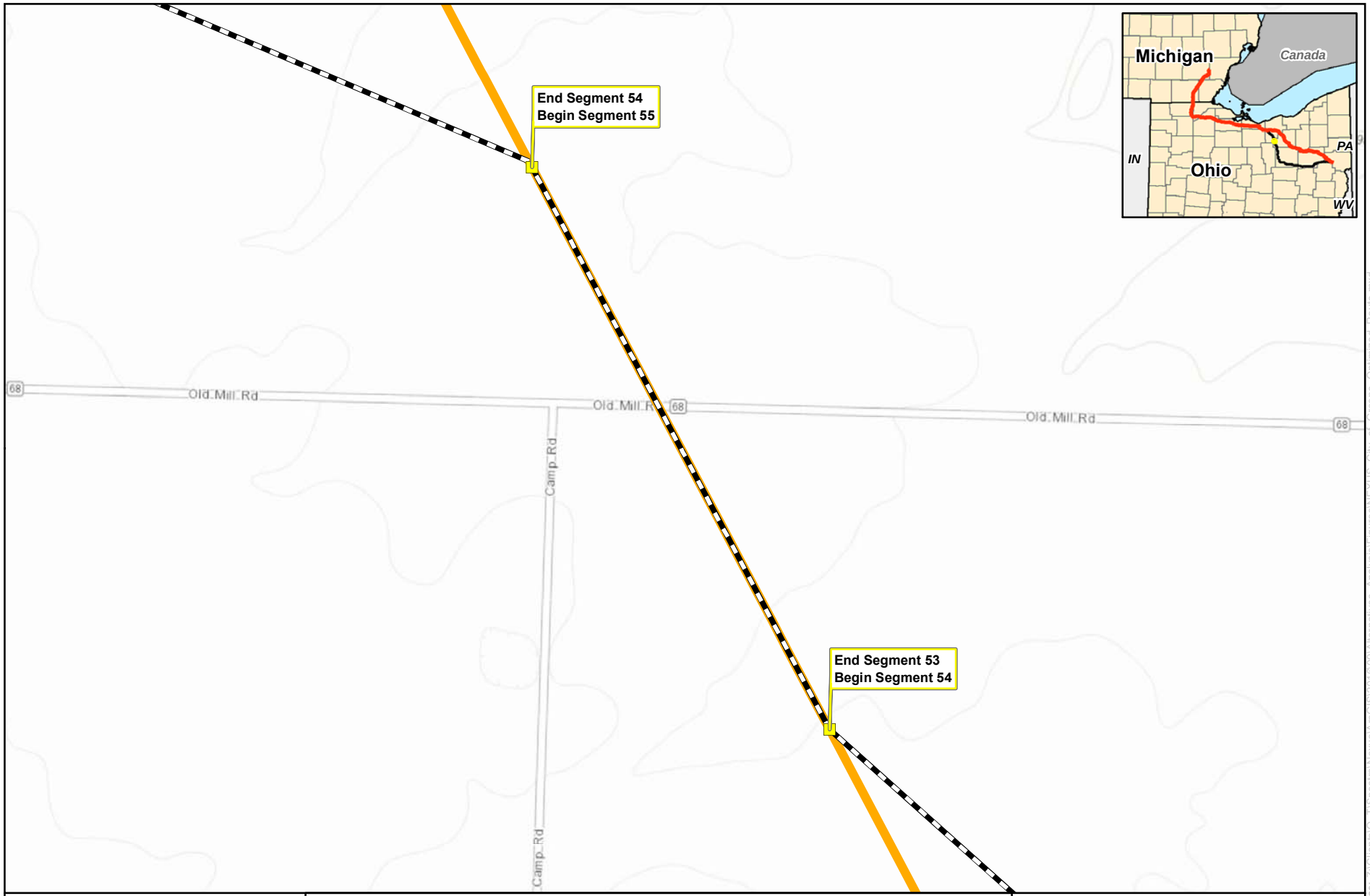
NGT Project

Optimized City of Green Route Alternative
Segment 53
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\SpectraNexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 160 320 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

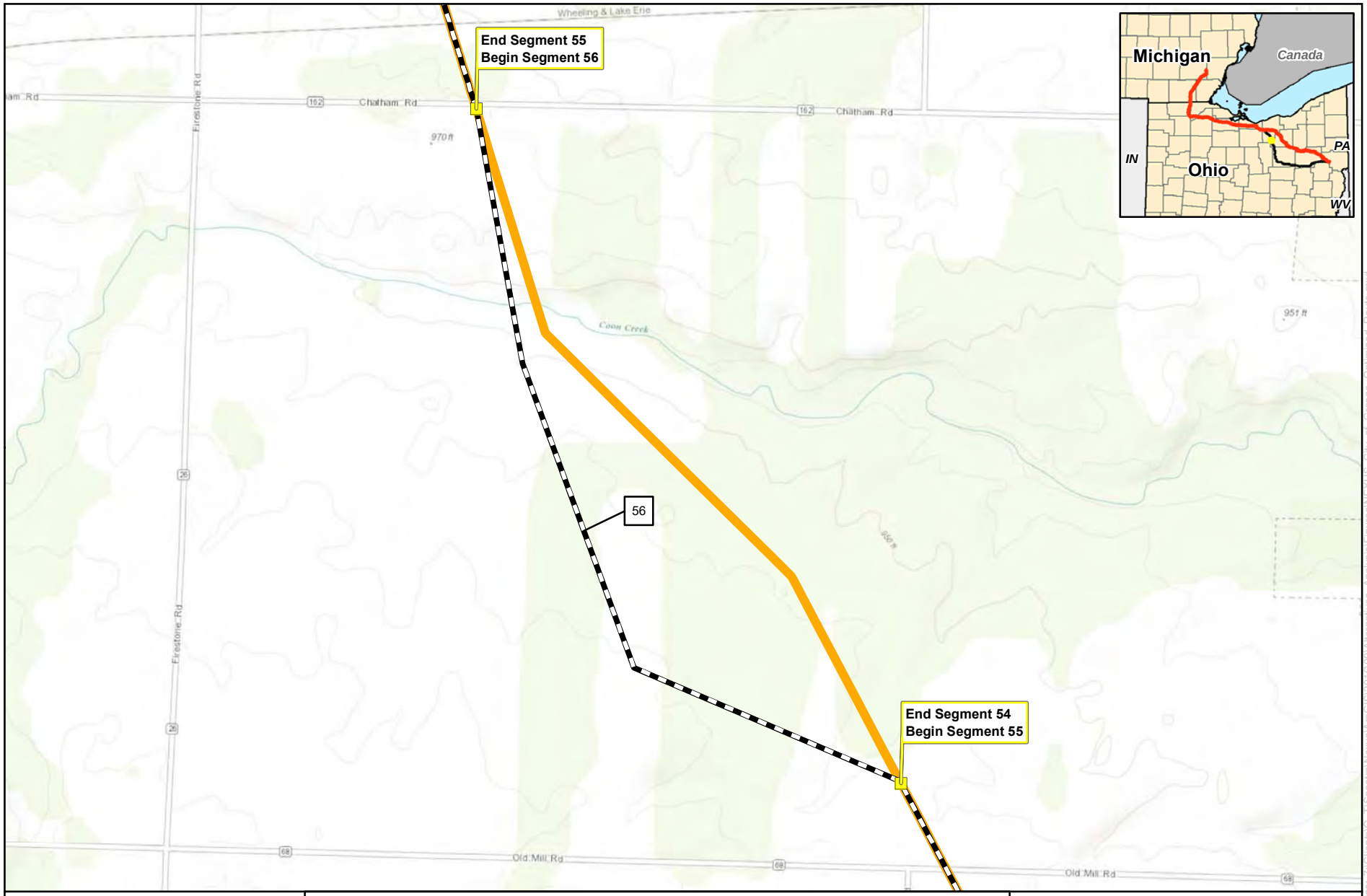
NGT Project

Optimized City of Green Route Alternative
Segment 54
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 460 920 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

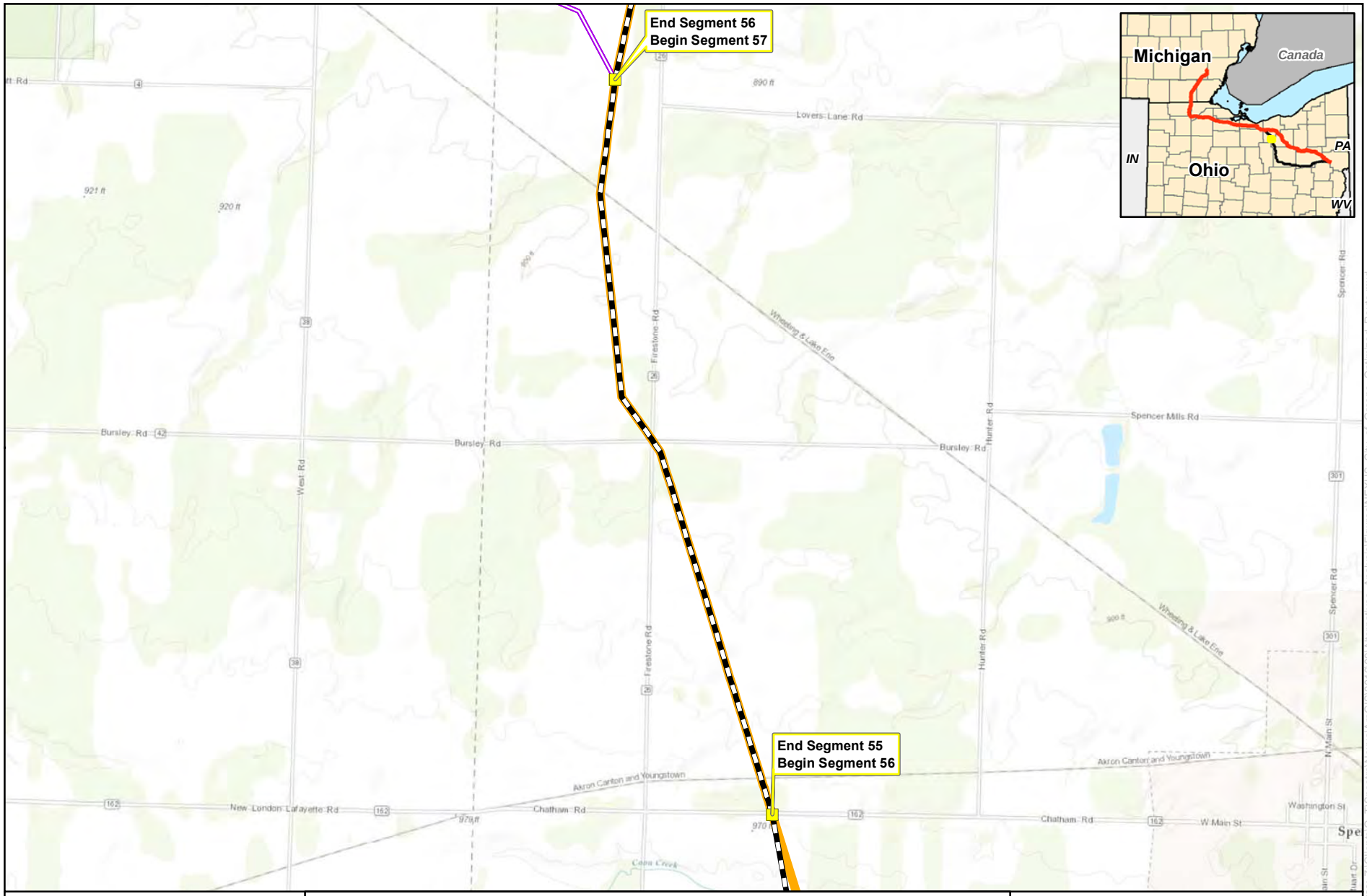
NGT Project

Optimized City of Green Route Alternative
Segment 55
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



0 1,000 2,000 Feet

N W E S

For Environmental Review Purposes Only

Appendix F-1

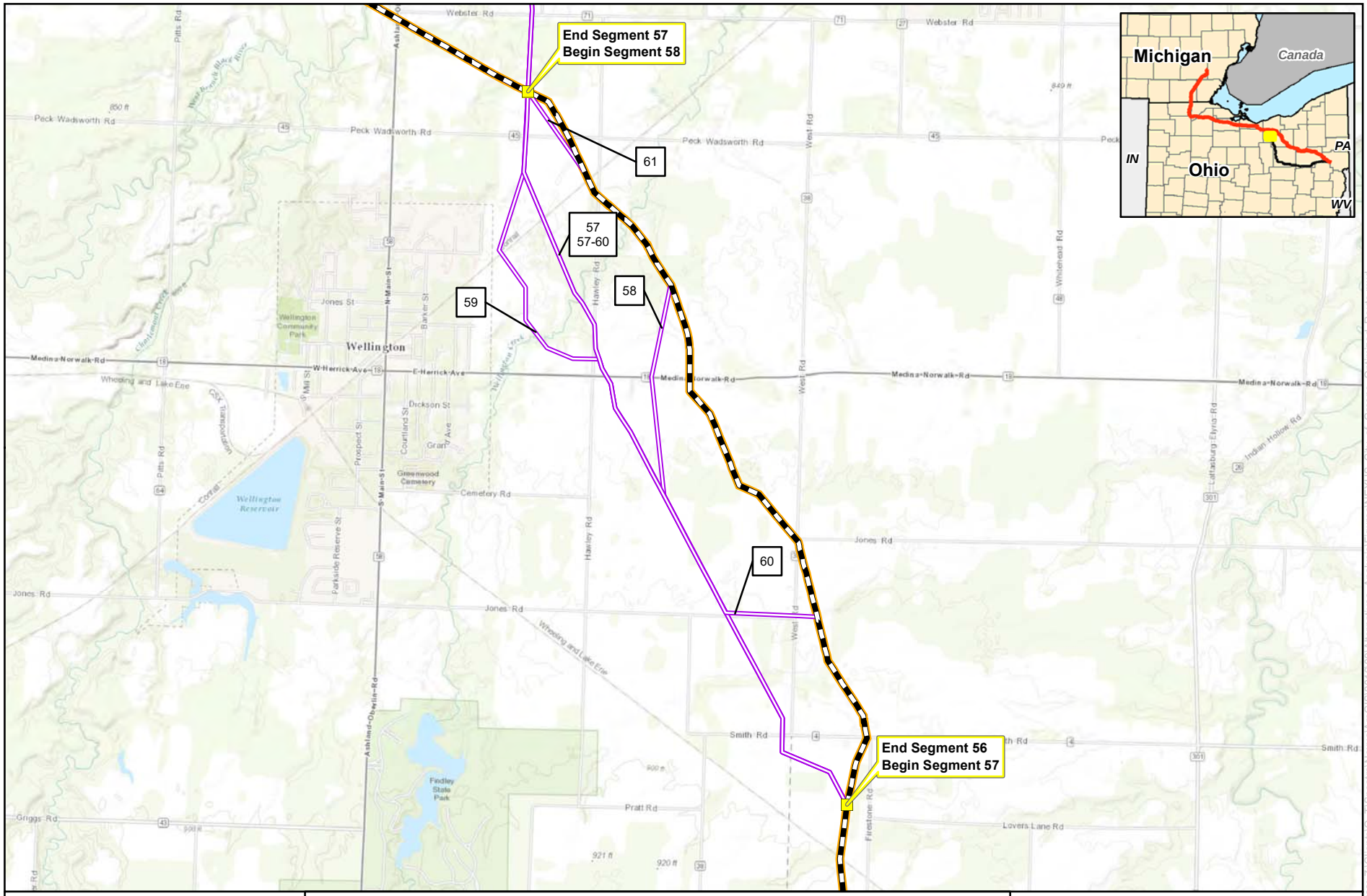
NGT Project

Optimized City of Green Route Alternative
Segment 56
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\SpectraNexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



Appendix F-1

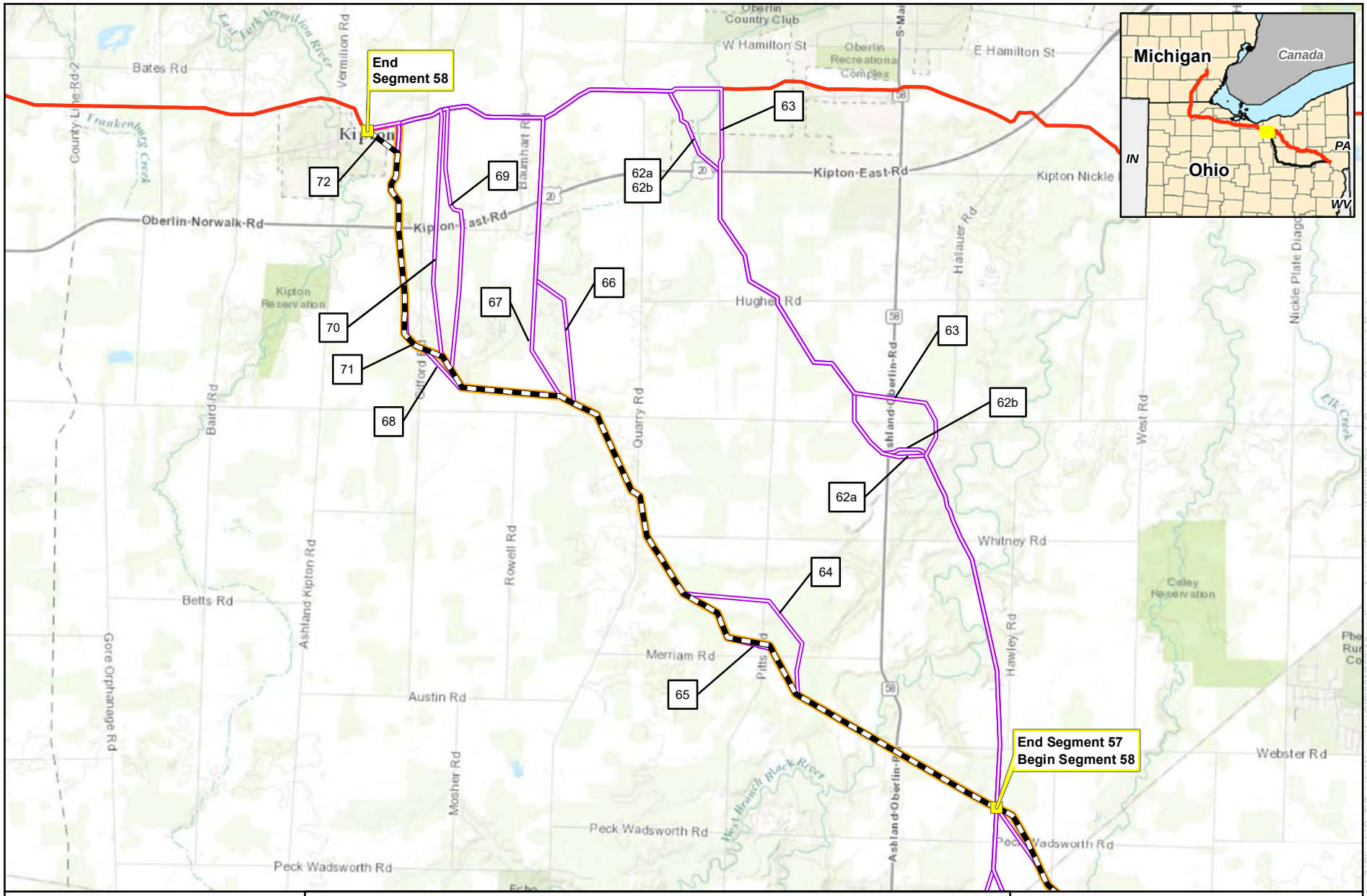
NGT Project

Optimized City of Green Route Alternative
Segment 57
Fulton County, Ohio

- Segment Break
- Proposed NEXUS Mainline
- Optimized City of Green Route Alternative
- Original City of Green Route Alternative
- Realignment Option

Source: Z:\Clients\Q_T\Spectra\Nexus\ArcGIS\2016\09\Alternatives_Analysis\Figures\NEXUS_City_of_Greene_Optimized_Route.mxd

Date: (10/13/2016)



Appendix F-1

NGT Project

Optimized City of Green Route Alternative
Segment 58
Fulton County, Ohio

APPENDIX F-2

RATIONALE FOR SELECTING SEGMENTS TO BE INCLUDED IN THE OPTIMIZED CITY OF GREEN ROUTE ALTERNATIVE

APPENDIX F-2

Rationale for Selecting Segments to be Included in the Optimized City of Green Route Alternative

Segment	Realignment Option [a]	Total Length (miles)	Greenfield Construction (miles)	Wetland Affected (acres)	Perennial Waterbody Crossings (no.)	WHPA (no.)	Agricultural Land (acres)	Forested Land (acres)	State Parks and Forest (no./mile)	County/Metro Parks (no./mile)	Steep Slopes (miles)	Sidehill Construction (miles)	Dwellings within 50 feet of the Pipe Centerline (no.)	Dwellings within 100 feet of the Pipe Centerline (no.)	Dwellings within 150 feet of the Pipe Centerline (no.)	Other Residential Type Structure within 150 feet (no.)	Selected for Optimized Route	Rationale
1	*	1.1	-	1.3	2	-	0.6	8.0	-	-	0.1	0.1	-	-	1	1	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
2	*	0.7	-	<0.1	1	-	-	6.0	-	-	0.2	0.1	-	-	-	-		
	1	0.6	-	-	1	-	-	5.9	-	-	0.2	0.1	-	-	-	-	✓	This realignment was selected for the Optimized Route because is it shorter and it minimizes impacts on wetlands and forested land.
3	*	0.4	-	0.1	1	-	1.4	2.9	-	-	0.1	0.1	-	1	1	1	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
4	*	0.1	-	-	-	-	1.4	0.4	-	-	0.1	0.1	-	-	-	-		
	2	0.1	-	-	-	-	1.3	0.4	-	-	0.1	<0.1	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on agricultural land and requires slightly less sidehill construction.
5	*	0.6	0.4	-	1	-	5.5	1.4	-	-	0.2	0.1	-	-	-	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
6	*	2.0	1.3	-	3	1	16.2	7.5	-	-	0.3	0.2	-	-	1	-		
	3	2.1	1.2	-	3	1	19.4	6.2	-	-	0.2	0.1	-	-	1	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land, steep slopes, and requires less sidehill construction.
	4	2.1	1.4	-	3	1	18.2	6.6	-	-	0.3	0.2	-	-	1	-		
7	*	0.6	0.2	-	1	-	5.4	1.9	-	-	0.1	<0.1	-	-	1	2	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
8	*	0.4	<0.1	-	-	-	1.7	1.7	-	-	0.2	0.1	-	-	-	-	✓	The original alignment was selected for the Optimized Route because there are no dwellings near the pipe centerline.

APPENDIX F-2 (cont'd)

Rationale for Selecting Segments to Be Included in the Optimized City of Green Route Alternative

Segment	Realignment Option [a]	Total Length (miles)	Greenfield Construction (miles)	Wetland Affected (acres)	Perennial Waterbody Crossings (no.)	WHPA (no.)	Agricultural Land (acres)	Forested Land (acres)	State Parks and Forest (no./mile)	County/Metro Parks (no./mile)	Steep Slopes (miles)	Sidehill Construction (miles)	Dwellings within 50 feet of the Pipe Centerline (no.)	Dwellings within 100 feet of the Pipe Centerline (no.)	Dwellings within 150 feet of the Pipe Centerline (no.)	Other Residential Type Structure within 150 feet (no.)	Selected for Optimized Route	Rationale
	5	0.3	<0.1	-	-	-	1.2	1.5	-	-	0.1	0.1	-	-	1	-		
9	*	0.8	-	-	2	-	7.6	2.5	-	-	0.3	0.2	-	-	-	2	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
10	*	2.8	0.6	-	5	-	17.2	12.3	-	-	0.7	0.6	-	-	1	1		
	6	2.9	0.2	-	5	-	22.5	11.2	-	-	0.7	0.6	-	-	-	2	✓	This realignment was selected for the Optimized Route because it requires less greenfield construction, reduces impacts on forest land, and is near fewer dwellings.
	7	2.9	0.2	-	5	-	23.1	11.2	-	-	0.7	0.6	-	-	-	2		
	8	2.9	1.3	-	5	-	21.4	10.2	-	-	0.5	0.3	1	1	2	5		
	9	2.9	1.2	-	5	-	24.8	8.5	-	-	0.4	0.2	-	-	2	3		
11	*	1.2	1.2	-	-	-	8.9	3.2	-	-	0.3	0.1	-	-	-	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
12	*	3.4	3.4	-	4	-	20.6	11.9	-	-	1.3	1.0	-	-	-	1		
	10	3.5	3.5	0.1	4	-	20.6	11.5	-	-	1.3	1.0	-	-	-	1		
	11	3.8	3.3	<0.1	5	-	34.4	6.8	-	-	0.9	0.6	-	1	1	5		
	12	3.5	3.5	-	4	-	23.5	10.7	-	-	1.2	0.9	-	-	-	3	✓	This realignment was selected for the Optimized Route because it reduces impacts on forested land and steep slopes, and requires less sidehill construction.
	13	3.4	3.4	-	4	-	22.2	11.2	-	-	1.3	1.0	-	-	-	3		
13	*	0.6	0.6	-	1	-	-	5.8	-	-	0.3	0.1	-	-	-	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.

APPENDIX F-2 (cont'd)

Rationale for Selecting Segments to Be Included in the Optimized City of Green Route Alternative

Segment	Realignment Option [a]	Total Length (miles)	Greenfield Construction (miles)	Wetland Affected (acres)	Perennial Waterbody Crossings (no.)	WHPA (no.)	Agricultural Land (acres)	Forested Land (acres)	State Parks and Forest (no./mile)	County/Metro Parks (no./mile)	Steep Slopes (miles)	Sidehill Construction (miles)	Dwellings within 50 feet of the Pipe Centerline (no.)	Dwellings within 100 feet of the Pipe Centerline (no.)	Dwellings within 150 feet of the Pipe Centerline (no.)	Other Residential Type Structure within 150 feet (no.)	Selected for Optimized Route	Rationale
14	*	0.3	0.3	-	-	-	2.1	1.5	-	-	-	-	-	-	-	-		
	14	0.4	0.4	-	-	-	3.2	0.9	-	-	<0.1	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land.
15	*	5.8	5.5	-	4	-	39.9	22.1	-	-	0.8	0.6	-	-	1	3		
	15	6.5	2.7	1.2	5	-	59.9	13.9	-	-	0.7	0.7	-	1	3	3		
	16	6.5	2.8	1.2	5	-	62.4	13.1	-	-	0.7	0.7	-	1	3	4		
	17	6.5	3.0	1.1	4	-	64.3	13.0	-	-	0.9	0.7	-	-	3	1		
	18	5.9	5.3	-	4	-	46.8	20.2	-	-	0.8	0.6	-	-	1	3	✓	This realignment was selected for the Optimized Route because it reduces greenfield construction, has no wetland impacts, and reduces impacts on forested land and dwellings near the pipe centerline.
	19	6.7	4.5	1.2	4	-	48.3	25.3	-	-	0.9	0.7	-	-	-	3		
	20	6.2	4.5	0.2	4	-	55.0	16.1	-	-	1.0	0.7	-	-	3	3		
	21	5.8	5.5	-	4	-	43.3	21.4	-	-	0.8	0.6	-	-	1	3		
16	*	1.2	1.2	-	-	-	6.8	3.1	-	-	0.2	0.2	-	-	-	-		
	22	1.4	1.3	-	-	-	12.9	1.9	-	-	0.1	<0.1	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land and steep slopes and requires less sidehill construction.
17	*	4.2	1.7	-	3	1	21.2	20.3	-	-	0.8	0.6	-	-	2	2	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
18	*	0.1	-	-	-	-	-	0.8	-	-	<0.1	<0.1	-	-	-	-		

APPENDIX F-2 (cont'd)

Rationale for Selecting Segments to Be Included in the Optimized City of Green Route Alternative

Segment	Realignment Option [a]	Total Length (miles)	Greenfield Construction (miles)	Wetland Affected (acres)	Perennial Waterbody Crossings (no.)	WHPA (no.)	Agricultural Land (acres)	Forested Land (acres)	State Parks and Forest (no./mile)	County/Metro Parks (no./mile)	Steep Slopes (miles)	Sidehill Construction (miles)	Dwellings within 50 feet of the Pipe Centerline (no.)	Dwellings within 100 feet of the Pipe Centerline (no.)	Dwellings within 150 feet of the Pipe Centerline (no.)	Other Residential Type Structure within 150 feet (no.)	Selected for Optimized Route	Rationale
	23	0.1	-	-	-	-	-	0.7	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land and steep slopes and requires less sidehill construction.
19	*	0.2	-	-	-	-	-	1.6	-	-	<0.1	<0.1	-	-	-	1	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
20	*	0.3	-	0.1	1	-	-	2.5	-	-	0.1	0.1	-	-	-	2	✓	The original alignment was selected for the Optimized Route because it minimizes impacts on wetlands and wellhead protection areas.
	24	0.3	-	0.9	1	1	-	0.6	-	-	0.1	<0.1	-	-	-	1	✓	
21	*	1.3	-	-	-	1	2.8	6.8	-	-	0.1	0.1	-	2	3	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
22	*	0.7	-	-	-	-	3.4	4.0	-	-	0.1	<0.1	-	-	1	-		
	25	0.7	-	-	-	-	4.5	3.0	-	-	<0.1	<0.1	-	-	1	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land and steep slopes.
23	*	0.9	-	-	1	-	2.9	5.0	-	-	0.1	0.1	-	-	1	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
24	*	0.8	0.7	-	-	-	12.6	-	-	-	<0.1	<0.1	1	1	1	-		
	26	0.8	0.3	-	-	-	11.4	-	-	-	<0.1	<0.1	-	-	-	-	✓	This realignment was selected for the Optimized Route because it requires less greenfield construction and minimizes impacts on agricultural land and dwellings near the pipe centerline.
25	*	0.9	0.3	0.2	1	-	8.7	3.1	-	1/0.3	0.1	<0.1	-	-	-	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
26	*	6.1	0.1	2.0	2	-	55.1	19.6	-	-	0.5	0.4	2	6	8	9		
	27	6.1	0.1	1.9	2	-	55.0	19.6	-	-	0.5	0.4	2	6	9	9		

APPENDIX F-2 (cont'd)

Rationale for Selecting Segments to Be Included in the Optimized City of Green Route Alternative

Segment	Realignment Option [a]	Total Length (miles)	Greenfield Construction (miles)	Wetland Affected (acres)	Perennial Waterbody Crossings (no.)	WHPA (no.)	Agricultural Land (acres)	Forested Land (acres)	State Parks and Forest (no./mile)	County/Metro Parks (no./mile)	Steep Slopes (miles)	Sidehill Construction (miles)	Dwellings within 50 feet of the Pipe Centerline (no.)	Dwellings within 100 feet of the Pipe Centerline (no.)	Dwellings within 150 feet of the Pipe Centerline (no.)	Other Residential Type Structure within 150 feet (no.)	Selected for Optimized Route	Rationale
	28	6.5	3.4	1.8	2	-	83.2	6.2	-	-	0.1	0.1	-	1	1	1	✓	This realignment was selected for the Optimized Route because it minimizes impacts on wetlands, forested land, steep slopes, and dwellings near the pipe centerline and requires less sidehill construction.
	29	6.1	0.1	1.9	2	-	54.8	19.8	-	-	0.6	0.5	2	6	10	8		
	30	6.1	0.1	1.9	2	-	55.1	19.6	-	-	0.5	0.4	2	5	9	8		
	31	6.2	0.3	1.8	2	-	55.9	19.5	-	-	0.5	0.4	-	3	4	7		
	32	6.2	0.2	1.8	2	-	56.1	19.2	-	-	0.5	0.4	2	6	9	9		
27	*	3.3	2.6	-	-	-	42.9	2.8	-	-	0.1	0.1	-	-	1	3	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
28	*	1.1	1.1	-	-	-	10.0	3.7	-	-	0.2	0.1	-	-	-	-		
	33	1.1	1.1	-	-	-	13.4	1.5	-	-	0.1	<0.1	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land and steep slopes and requires less sidehill construction.
29	*	0.7	0.7	-	-	-	7.1	1.6	-	-	<0.1	<0.1	-	-	-	1	✓	The original alignment was selected for the Optimized Route because it minimizes impacts on wetlands.
	34	0.7	0.7	1.7	-	-	9.3	-	-	-	-	-	-	-	-	-		
30	*	1.1	1.1	-	-	-	9.1	4.2	-	-	<0.1	-	-	-	-	-		
	35	1.2	1.2	-	-	-	16.6	-	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land and steep slopes.
31	*	0.4	0.4	-	-	-	4.5	0.5	-	-	-	-	-	-	-	-		
	35	0.4	0.3	-	-	-	4.1	-	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it requires less greenfield construction and minimizes impacts on agricultural and forested land.

APPENDIX F-2 (cont'd)

Rationale for Selecting Segments to Be Included in the Optimized City of Green Route Alternative

Segment	Realignment Option [a]	Total Length (miles)	Greenfield Construction (miles)	Wetland Affected (acres)	Perennial Waterbody Crossings (no.)	WHPA (no.)	Agricultural Land (acres)	Forested Land (acres)	State Parks and Forest (no./mile)	County/Metro Parks (no./mile)	Steep Slopes (miles)	Sidehill Construction (miles)	Dwellings within 50 feet of the Pipe Centerline (no.)	Dwellings within 100 feet of the Pipe Centerline (no.)	Dwellings within 150 feet of the Pipe Centerline (no.)	Other Residential Type Structure within 150 feet (no.)	Selected for Optimized Route	Rationale
32	*	0.3	0.3	-	-	-	4.5	0.2	-	-	-	-	-	-	-	-		
	35	0.3	0.3	-	-	-	4.7	-	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land.
33	*	0.5	0.5	-	-	-	6.4	0.7	-	-	-	-	-	-	-	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
34	*	0.4	0.4	-	-	-	4.0	0.8	-	-	-	-	-	-	-	-		
	36	0.4	0.4	-	-	-	5.3	-	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land.
35	*	5.7	5.3	<0.1	1	-	79.0	2.7	-	-	-	-	-	-	-	1	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
36	*	0.4	0.4	-	-	-	5.7	-	-	-	-	-	-	-	-	-		
	37	0.3	0.3	-	-	-	5.0	-	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it is shorter, requires less greenfield construction. and minimizes impacts on agricultural land.
37	*	2.8	2.8	-	1	-	38.9	0.7	-	-	-	-	-	-	-	1	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
38	*	0.5	0.5	-	-	-	7.2	0.2	-	-	-	-	-	-	-	-		
	38	0.4	0.4	-	-	-	5.6	0.3	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it is shorter, requires less greenfield construction. and minimizes impacts on agricultural land.
39	*	0.6	0.6	-	-	-	5.0	2.2	-	-	<0.1	<0.1	-	-	-	-		
	38	0.6	0.6	-	-	-	5.5	1.2	-	-	<0.1	<0.1	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land.

APPENDIX F-2 (cont'd)

Rationale for Selecting Segments to Be Included in the Optimized City of Green Route Alternative

Segment	Realignment Option [a]	Total Length (miles)	Greenfield Construction (miles)	Wetland Affected (acres)	Perennial Waterbody Crossings (no.)	WHPA (no.)	Agricultural Land (acres)	Forested Land (acres)	State Parks and Forest (no./mile)	County/Metro Parks (no./mile)	Steep Slopes (miles)	Sidehill Construction (miles)	Dwellings within 50 feet of the Pipe Centerline (no.)	Dwellings within 100 feet of the Pipe Centerline (no.)	Dwellings within 150 feet of the Pipe Centerline (no.)	Other Residential Type Structure within 150 feet (no.)	Selected for Optimized Route	Rationale
40	*	0.5	0.5	-	-	-	6.6	0.2	-	-	-	-	-	-	-	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
41	*	0.5	0.5	-	1	-	7.4	-	-	-	-	-	-	-	-	-	✓	The original alignment was selected for the Optimized Route because there was no apparent advantage to a route realignment.
	39	0.5	0.5	-	1	-	7.4	-	-	-	-	-	-	-	-	-		
42	*	1.8	1.6	5.4	4	-	20.5	1.3	-	-	<0.1	-	-	-	-	3	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
43	*	0.4	-	-	-	-	3.8	0.3	-	-	<0.1	<0.1	1	2	3	3		
	40	0.4	0.1	-	-	-	6.2	0.2	-	-	<0.1	<0.1	-	1	1	3	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land and dwellings near the pipe centerline.
44	*	3.3	3.2	0.6	2	-	35.8	5.3	-	-	<0.1	<0.1	-	-	-	1	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
45	*	3.4	2.9	-	-	-	46.3	1.6	-	-	-	-	-	-	-	-		
	41	3.7	2.3	<0.1	-	-	44.9	4.9	-	-	-	-	-	-	2	3		
	42	3.5	2.8	-	-	-	45.7	2.9	-	-	-	-	-	-	-	-		
	43	3.5	2.9	-	-	-	48.3	1.0	-	-	<0.1	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land.
46	*	0.7	0.7	-	-	-	7.8	0.6	-	-	-	-	-	-	-	2	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
47	*	5.1	5.1	-	-	1	65.2	3.8	-	-	<0.1	<0.1	-	-	1	4		

APPENDIX F-2 (cont'd)

Rationale for Selecting Segments to Be Included in the Optimized City of Green Route Alternative

Segment	Realignment Option [a]	Total Length (miles)	Greenfield Construction (miles)	Wetland Affected (acres)	Perennial Waterbody Crossings (no.)	WHPA (no.)	Agricultural Land (acres)	Forested Land (acres)	State Parks and Forest (no./mile)	County/Metro Parks (no./mile)	Steep Slopes (miles)	Sidehill Construction (miles)	Dwellings within 50 feet of the Pipe Centerline (no.)	Dwellings within 100 feet of the Pipe Centerline (no.)	Dwellings within 150 feet of the Pipe Centerline (no.)	Other Residential Type Structure within 150 feet (no.)	Selected for Optimized Route	Rationale
	44	5.2	3.8	-	-	-	73.3	0.6	-	-	-	-	-	-	1	-	✓	This realignment was selected for the Optimized Route because it requires less greenfield construction and minimizes impacts on forested land and structures near the pipeline centerline.
48	*	4.4	4.1	-	-	1	54.2	5.3	-	-	-	-	-	-	-	-		
	45	5.2	4.0	-	-	1	70.0	3.0	-	-	-	-	-	-	-	2		
	46	5.2	4.0	-	-	1	70.3	3.0	-	-	-	-	-	-	-	2		
	47	4.5	4.2	-	-	1	56.8	4.2	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it reduces impacts on forested land without routing near residential-type structures.
	48	4.6	4.4	-	-	1	55.8	5.9	-	-	-	-	-	-	-	-		
49	*	1.7	1.7	-	-	1	19.3	3.8	-	-	-	-	-	-	-	5	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
50	*	3.3	2.7	-	-	-	37.3	5.4	-	-	<0.1	-	-	-	-	6		
	49	3.3	2.7	-	-	-	37.2	5.4	-	-	<0.1	-	-	-	-	6		
	50	3.5	2.8	-	-	-	40.1	5.4	-	-	-	-	-	-	-	1	✓	This realignment was selected for the Optimized Route because it minimizes impacts on steep slopes and structures near the pipe centerline.
	51	3.4	2.7	-	-	-	37.4	5.5	-	-	<0.1	-	-	-	-	6		
51	*	0.5	0.5	-	1	-	4.5	1.9	-	-	<0.1	<0.1	-	-	-	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
52	*	4.2	4.2	-	1	-	40.3	12.2	-	-	<0.1	<0.1	-	-	2	-		

APPENDIX F-2 (cont'd)

Rationale for Selecting Segments to Be Included in the Optimized City of Green Route Alternative

Segment	Realignment Option [a]	Total Length (miles)	Greenfield Construction (miles)	Wetland Affected (acres)	Perennial Waterbody Crossings (no.)	WHPA (no.)	Agricultural Land (acres)	Forested Land (acres)	State Parks and Forest (no./mile)	County/Metro Parks (no./mile)	Steep Slopes (miles)	Sidehill Construction (miles)	Dwellings within 50 feet of the Pipe Centerline (no.)	Dwellings within 100 feet of the Pipe Centerline (no.)	Dwellings within 150 feet of the Pipe Centerline (no.)	Other Residential Type Structure within 150 feet (no.)	Selected for Optimized Route	Rationale
	52	4.7	3.7	<0.1	1	-	58.2	3.9	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it requires less greenfield construction and minimizes impacts on forested land and dwellings near the pipe centerline.
	53	4.7	3.7	-	1	-	56.5	5.8	-	-	<0.1	<0.1	-	-	-	1		
	54	4.6	4.4	-	1	-	56.9	4.9	-	-	<0.1	-	-	-	3	1		
53	*	0.7	0.7	-	-	-	9.4	1.1	-	-	-	-	-	-	-	-		
	55	0.8	0.8	-	-	-	11.8	-	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land.
54	*	0.3	0.3	-	1	-	3.7	0.4	-	-	-	-	-	-	-	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
55	*	1.1	1.1	-	1	-	12.2	2.1	-	-	-	-	-	-	-	-		
	56	1.2	1.2	-	1	-	17.5	-	-	-	-	-	-	-	-	-	✓	This realignment was selected for the Optimized Route because it minimizes impacts on forested land.
56	*	2.2	1.9	-	-	-	31.4	0.2	-	-	-	-	-	-	-	-	✓	The original alignment was selected for the Optimized Route because no realignments were identified for this segment of the route.
57	*	5.0	4.7	0.3	3	-	65.0	4.8	-	-	<0.1	<0.1	-	-	-	1	✓	The original alignment was selected for the Optimized Route because it minimizes impacts on wetlands, forested land, and dwellings near the pipe centerline.
	57	4.9	0.5	1.2	2	-	59.6	4.9	-	-	<0.1	-	-	-	4	6		
	58	5.0	2.3	0.4	4	-	65.0	4.8	-	-	<0.1	<0.1	-	-	-	1		
	59	5.2	1.2	0.5	2	-	70.0	1.8	-	-	<0.1	<0.1	-	-	2	2		
	60	5.2	1.1	1.1	2	-	65.0	5.0	-	-	<0.1	-	-	-	4	6		

APPENDIX F-2 (cont'd)

Rationale for Selecting Segments to Be Included in the Optimized City of Green Route Alternative

Segment	Realignment Option [a]	Total Length (miles)	Greenfield Construction (miles)	Wetland Affected (acres)	Perennial Waterbody Crossings (no.)	WHPA (no.)	Agricultural Land (acres)	Forested Land (acres)	State Parks and Forest (no./mile)	County/Metro Parks (no./mile)	Steep Slopes (miles)	Sidehill Construction (miles)	Dwellings within 50 feet of the Pipe Centerline (no.)	Dwellings within 100 feet of the Pipe Centerline (no.)	Dwellings within 150 feet of the Pipe Centerline (no.)	Other Residential Type Structure within 150 feet (no.)	Selected for Optimized Route	Rationale
	61	5.0	4.6	0.2	3	-	63.3	5.6	-	-	<0.1	<0.1	-	-	-	1		
58	*	8.4	8.1	-	6	-	106.2	8.7	-	-	<0.1	<0.1	-	-	2	1		
	62a	9.3	1.5	0.4	7	-	107.5	14.3	-	-	<0.1	<0.1	-	2	5	12		
	62b	9.2	1.5	0.4	7	-	106.8	14.3	-	-	<0.1	<0.1	-	2	5	10		
	63	9.7	2.3	0.4	7	-	115.1	13.3	-	-	<0.1	<0.1	-	1	6	8		
	64	8.6	7.9	-	6	-	111.2	7.4	-	-	<0.1	<0.1	-	-	2	1		
	65	8.4	8.1	-	6	-	106.0	8.7	-	-	<0.1	<0.1	-	-	2	1		
	66	8.7	6.2	<0.1	3	-	107.7	10.2	-	-	<0.1	<0.1	-	-	3	2		
	67	8.7	5.6	0.7	3	-	106.1	12.3	-	-	<0.1	<0.1	-	-	3	2		
	68	8.4	8.1	-	6	-	106.0	8.7	-	-	<0.1	<0.1	-	-	2	1		
	69	8.7	7.9	-	5	-	113.7	7.0	-	-	<0.1	<0.1	-	-	3	2		
	70	8.6	7.9	-	5	-	113.5	7.2	-	-	<0.1	<0.1	-	-	3	2		
	71	8.4	8.1	-	6	-	106.2	8.6	-	-	<0.1	<0.1	-	-	2	1		
	72	8.2	8.1	-	6	-	104.7	7.8	-	-	<0.1	<0.1	-	-	2	1	✓	This realignment was selected for the Optimized Route because it reduces the pipeline length, reduces impacts on forested land, and is routed near the fewest number dwellings and structures.

a Entries denoted by an asterisk (*) represent the original City of Green Route Alternative. Entries denoted by a number represent realignment options submitted by City of Green officials in an August 29, 2016 letter to the FERC (see FERC accession number 20160829-5239). The numbers in this table correspond to the numerical identifiers used by City of Green officials in their letter.

APPENDIX F-3

NGT PROJECT INCORPORATED ROUTE VARIATIONS

APPENDIX F-3

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
0.0 TGP	0.9 TGP	4,711	Columbiana	Avoids metering sites and other infrastructure at Kensington Process Facility.	Prefiling (June 2015)
0.0	0.2	775	Columbiana	Rerouted at landowner request	Data response (March 2016)
0.0	1.3	7,659	Columbiana	Rerouted around existing infrastructure per request of Momentum Midstream.	Prefiling (June 2015)
1.3	2.2	4,540	Columbiana	Avoids two high voltage powerline crossings and reroutes to travel perpendicular to the stream.	Application (November 2015)
1.4	1.7	1,414	Columbiana	Avoids a pond, house and barn	Prefiling (June 2015)
2.1	2.3	775	Columbiana	Variation to change crossing angle at the roadway	Data response (March 2016)
2.1	2.3	1,126	Columbiana	Avoids a well, minimizes distance paralleling stream and reduces footprint within FEMA floodplain	Prefiling (June 2015)
3.4	4.1	3,556	Columbiana	Reroute maintains proper offset from the First Energy easement.	Application (November 2015)
3.5	3.6	450	Columbiana	Avoid overlap with existing utility easement	Data response (March 2016)
3.8	4	941	Columbiana	Avoid overlap with existing utility easement	Data response (March 2016)
4.1	4.3	1,020	Columbiana	Landowner request to preserve trees north of the alignment	Prefiling (June 2015)
4.2	4.6	2,122	Columbiana	Avoids a wellhead and storage tank	Prefiling (June 2015)
4.3	4.5	614	Columbiana	Avoid overlap with existing utility easement	Data response (March 2016)
5.2	5.7	2,638	Columbiana	Reroute maintains proper offset from the First Energy easement and adjusts to create constructable crossing of Rochester Road.	Application (November 2015)
5.4	5.8	2,425	Columbiana	Reroute avoids crossing through a pond	Prefiling (June 2015)
5.7	5.8	420	Columbiana	Avoid overlap with existing utility easement	Data response (March 2016)
5.9	6.3	2,129	Columbiana	Avoid overlap with existing utility easement	Data response (March 2016)
5.9	6.6	1,552	Columbiana	Reroute maintains proper offset from the First Energy easement	Application (November 2015)
6.6	8.6	10,198	Columbiana	Minimizes wetland and forested crossing length by crossing Category III wetland via HDD.	Application (November 2015)
6.8	7.0	949	Columbiana		Prefiling (June 2015)
7.1	7.6	2,225	Columbiana	Avoid a sensitive resource wetland area	Data response (March 2016)
7.3	7.8	2,158	Columbiana	Minimizes steep slope and wetland crossings	Prefiling (June 2015)
7.7	7.8	772	Columbiana	Reroute to accommodate HDD entry location	Data response (March 2016)
8.7	9.8	6,939	Columbiana	Minimizes forested clearing and wetland impacts	Application (November 2015)
9.7	10.7	5,451	Columbiana	Reroute maintains proper offset from the First Energy easement	Application (November 2015)
10.3	10.5	912	Columbiana	Avoid overlap with existing utility easement	Data response (March 2016)
10.7	11.7	4,525	Columbiana	Changes the location of a railroad crossing and minimizes forested clearing	Application (November 2015)

APPENDIX F-3 (cont.)

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
11.3	11.5	1,345	Columbiana	Avoids and minimizes crossing through forested wetlands and along stream, which minimizes forested wetland conversion	Prefiling (June 2015)
11.8	14.1	11,306	Columbiana, Stark	Reroute maintains proper offset from the First Energy easement	Application (November 2015)
13.6	13.8	1,041	Stark	Creates a right-angle crossing at Highway 183; avoids two ditched streams at boring location	Prefiling (June 2015)
14.3	14.7	2,131	Stark	Reroute maintains proper offset from the First Energy easement	Application (November 2015)
14.3	14.7	2,057	Stark	Avoid overlap with existing utility easement	Data response (March 2016)
15.5	16.2	3,920	Stark	Reroute maintains proper offset from the First Energy easement	Application (November 2015)
15.7	17.4	9,098	Stark	Rerouted per landowner request	Data response (March 2016)
18.6	22.2	17,662	Stark	Reroute avoids running parallel to a stream, minimizes forest and wetland impacts and improves crossing at Highway 62	Application (November 2015)
18.7	19.1	1,804	Stark	Avoids a crude oil storage tank, minimizes forested wetland clearing adjacent to a creek and avoids a survey section corner point installed by Ohio State Survey	Prefiling (June 2015)
22.1	22.5	2,762	Stark	Reroute per landowner request to route the line between a pump jack and storage tanks on the property	Application (November 2015)
23.3	23.4	1,000	Stark	Reroute to improve crossing of existing pipeline	Data response (March 2016)
23.9	24.4	2,288	Stark	Reroute per landowner request to move to the southern portion of property	Application (November 2015)
24.5	25.3	3,876	Stark	Avoids a pond and several houses, reduces forested wetland impacts, eliminates a stream crossing and avoids a large section of FEMA-mapped floodplain	Prefiling (June 2015)
26.4	28.1	9,124	Stark	Reroute avoids a conservation easement and satisfies landowner request to move route clower to a tree line	Application (November 2015)
27.7	27.8	566	Stark	Reroute to avoid existing culvert	Data response (March 2016)
27.7	28.1	2,340	Stark	Avoids an OEPA Class III wetland	Prefiling (June 2015)
28.6	29.1	2,735	Stark	Requested change per ODNR staff; avoids forested uplands	Prefiling (June 2015)
29.9	30.1	1,007	Stark	Avoids three large storage tanks	Prefiling (June 2015)
29.9	30.3	1,760	Stark	Avoids traversing a pond	Application (November 2015)
30.4	30.8	2,305	Stark	Avoids a pond and large associated wetland area and moves the alignment further away from two residences	Prefiling (June 2015)
30.7	31.2	2,668	Stark	Avoids a cultural site	Application (November 2015)
30.9	31.2	1,410	Stark	Avoids sensitive resource area and driveway	Data response (March 2016)

APPENDIX F-3 (cont.)

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
31.4	32.1	2,973	Stark	Avoids a commercial structure, adjusts the crossing of a powerline, and improves constructability of a road and river crossing	Application (November 2015)
31.5	31.8	1,612	Stark	Avoid overlap with existing utility easement	Data response (March 2016)
32.5	39.6	37,066	Stark, Summit	Reroute to avoid impacts and address landowner concerns in the City of Green	Application (November 2015)
33.2	33.9	3,522	Stark	Reroute to avoid utilities	Data response (March 2016)
35.8	36.6	3,940	Summit	Reroute to avoid conflict with proposed business expansion	Data response (March 2016)
36.3	Joined at Removed Section of Former Alignment South of 37.2	4,669	Summit	Landowner request to avoid cutting through property and instead parallel northern property border.	Prefiling (June 2015)
36.7	37.0	1,330	Summit	Reroute to avoid conflict with proposed business expansion and to improve angle of existing pipelien crossing	Data response (March 2016)
39.7	41.9	9,515	Summit	Reroute based on stakeholder input and to avoid a Category III wetland	Data response (March 2016)
40.7	41.3	4,591	Summit	Reroute avoids impacts to a reservoir by adding a HDD	Application (November 2015)
41.9	42.6	3,089	Summit	Reroute maintains proper offset from the Dominion East Ohio Gas facilities	Application (November 2015)
42.2	42.3	643	Summit	Reroute to adjust angle of existing utility crossing	Data response (March 2016)
43.3	43.5	1,125	Summit	Reroute maintains proper offset from the Dominion East Ohio Gas facilities	Application (November 2015)
43.4	44.1	3,364	Summit	Reroute to avoid structures and workspace constraints	Data response (March 2016)
44.2	44.3	828	Summit	Reroute to adjust angle of existing pipeline crossing	Data response (March 2016)
44.4	45.2	4,302	Summit	Reroute maintains proper offset from the Dominion East Ohio Gas facilities	Application (November 2015)
46.4	46.4	373	Summit	Avoids stream impacts	Data response (March 2016)
46.4	46.7	1,717	Summit	Eliminates a point of inflection (PI)	Application (November 2015)
47.3	47.9	2,532	Summit	Eliminates a PI on a hill and minimizes forest impacts	Application (November 2015)
47.6	47.8	858	Summit	Reroute to accommodate HDD entry location	Data response (March 2016)
47.9	48.3	1,989	Summit, Wayne	Reroute to increase distance from residences and a barn	Prefiling (June 2015)
48.9	49.8	4,159	Summit	Eliminates crossing Pinto Drive and avoids storages tanks	Application (November 2015)
49	49.8	3,456	Wayne	Reroute to increase distance from residences	Prefiling (June 2015)
49.7	50.2	2,680	Summit	Reroute to avoid paralleling a stream	Data response (March 2016)
50.6	52.0	6,831	Wayne	Avoid overlap with existing utility easement	Data response (March 2016)

APPENDIX F-3 (cont.)

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
52.0	52.1	493	Wayne	Reroute due to a landowner request	Data response (March 2016)
52.1	52.6	2,775	Wayne	Avoid overlap with existing utility easement	Data response (March 2016)
52.5	54.7	10,771	Wayne	Improves constructability of Highway 585 crossing and avoids impacts to future development	Application (November 2015)
52.7	53.0	1,395	Wayne	Reroute to avoid paralleling a stream	Data response (March 2016)
53.0	53.7	3,583	Wayne	Reroute avoids crossing near residences and powerline, and reduces forested areas crossed	Prefiling (June 2015)
53.1	53.2	819	Wayne	Reroute to avoid a ponded wetland	Data response (March 2016)
54.2	54.9	4,268	Wayne	Reroute per landowner request and to improve crossing angle with existing pipeline	Data response (March 2016)
55.7	56.4	3,043	Wayne	Avoids impacts to future development	Application (November 2015)
Departs from Removed Section of Former Alignment North of 56.1	57.1	5,530	Medina	Avoids house currently under construction and two large sheds/barns which have been constructed in past month	Prefiling (June 2015)
56.8	59.1	8,801	Wayne, Medina	Avoids Wadsworth Municipal Airport property and minimizes forest clearing near a stream	Application (November 2015)
57.1	57.4	1,487	Wayne, Medina	Reroute to avoid paralleling a stream	Data response (March 2016)
59.1	60.0	4,662	Medina	Per landowners request at Open House meeting – variation no longer runs between their houses	Prefiling (June 2015)
59.4	59.5	372	Medina	Reroute per a landowner request	Data response (March 2016)
60.1	60.3	638	Medina	Reroute to avoid an existing injection well	Data response (March 2016)
61.4	62.0	3,312	Medina	Per landowners request at Open House meeting – one landowner requested to have pipeline on their property and another requested it not to be placed on their property	Prefiling (June 2015)
61.6	62.3	4,118	Medina	Avoids construction workspace in close proximity to a stream	Application (November 2015)
62.7	63.1	2,119	Medina	Avoids construction workspace in close proximity to a stream and accommodates landowner request	Application (November 2015)
64.4	65.2	3,848	Medina	Accommodates landowner request	Application (November 2015)
68.4	69.0	3,417	Medina	Reroute changes the location of the Chippewa Rail Trail crossing	Application (November 2015)
68.9	69.6	3,767	Medina	Reroute to avoid sensitive resource	Data response (March 2016)

APPENDIX F-3 (cont.)

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
69.2	69.3	661	Medina	Avoids having construction workspace in the vicinity of storage tanks	Application (November 2015)
70.0	70.5	2,703	Medina	Reroute to avoid a stormwater basin	Data response (March 2016)
70.4	70.9	2,743	Medina	Relocates PI and improves constructability	Application (November 2015)
70.8	71.8	5,264	Medina	Incorporates HDD crossing of a Category III wetland	Application (November 2015)
72.7	73.1	1,914	Medina	Shift due to updated civil survey	Data response (March 2016)
72.7	73.2	2,921	Medina	Avoids construction workspace in the vicinity of several streams and wetlands	Application (November 2015)
73.6	73.8	1,177	Medina	Avoids a communication box	Application (November 2015)
74.3	77.1	14,462	Medina	Per landowner request, that the pipeline be moved further to the north to travel through cleared agricultural fields – the resulting variation is further away from several developed lots, a stream crossing, a mature American Elm, and a wetland	Prefiling (June 2015)
75.0	75.2	652	Medina	Reoute to adjust crossing angle with existing pipeline	Data response (March 2016)
75.3	78.3	14,799	Medina	Avoids a Category III wetland	Application (November 2015)
75.9	76.2	1,300	Medina	Reoute to adjust crossing angle with existing pipeline	Data response (March 2016)
77.6	77.8	900	Medina	Reroute to shift PI away from existing pipelines	Data response (March 2016)
79.8	80.2	1,754	Lorain	Avoids a pond and moves the route further away from nearby homes	Prefiling (June 2015)
80.3	80.8	2,960	Lorain	Avoids a pet cemetery at request of landowners	Prefiling (June 2015)
80.4	80.6	1,196	Medina, Lorain	Avoid overlap with existing utility easement	Data response (March 2016)
80.8	81.7	3,999	Lorain	Avoids several houses and a wetland and reduces forested conversion.	Prefiling (June 2015)
81.2	81.7	2,354	Lorain	Avoids wetland impacts and moves workspace away from residence	Application (November 2015)
81.8	Joined at Removed Section of Former Alignment West of 82.9	5,224	Lorain	Avoids several homes and yards and reduces crossing distance through a portion of public park land	Prefiling (June 2015)
82.6	83.0	2,115	Lorain	Removes a PI in reroute around maple farm	Prefiling (June 2015)
Departs from Removed Section of Former Alignment West of 82.9	83.1	1,034	Lorain	Avoids a maple farm and minimizes mature forest conversion	Prefiling (June 2015)

APPENDIX F-3 (cont.)

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
82.9	83.2	1,559	Lorain	Avoid overlap with existing utility easement	Data response (March 2016)
83.5	83.6	589	Lorain	Avoid overlap with existing utility easement	Data response (March 2016)
84.0	84.6	4	Lorain	Reroute per landowner request	Data response (March 2016)
84.3	85.1	4,019	Lorain	Avoids traversing two existing pipelines	Prefiling (June 2015)
86.3	86.9	3,398	Lorain	Improves alignment for East Branch Black River HDD	Application (November 2015)
Departs from Removed Section of Former Alignment North of 88.0	Joined at Removed Section of Former Alignment North of 88.4	2,299	Lorain	Avoids wetland and portion of a Lorain County Metro Park	Prefiling (June 2015)
Departs from Removed Section of Former Alignment North of 88.4	89.3	4,452	Lorain	Avoids passing within 660 feet of an active eagle nest and minimizes stream crossing impacts	Prefiling (June 2015)
88.5	88.5	834	Lorain	Reroute to improve crossing of existing pipeline	Data response (March 2016)
89.3	89.9	3,119	Lorain	Avoids a Class III wetland or a high scoring class II wetland and minimizes mature forest clearing	Prefiling (June 2015)
89.6	91.4	834	Lorain	Reroute to improve crossing of existing pipeline	Data response (March 2016)
90.1	91.4	6,915	Lorain	Avoids area of future development per landowner request	Application (November 2015)
90.3	91	3,463	Lorain	Minimizes crossings of existing pipeline	Prefiling (June 2015)
Departs from Removed Section of Former Alignment East of 90.9	Joined at Removed Section of Former Alignment North of 92.2	9,059	Lorain	Avoids a confluence of five existing pipelines and avoids Black Swamp Woods conservation easement and its constituent conservation site (maple-ash-oak swamp)	Prefiling (June 2015)
91.1	91.4	1,504	Lorain	Avoids passing within 660 feet of an active eagle nest	Prefiling (June 2015)
92.1	92.2	487	Lorain	Centerline adjusted to allow adequate workspace for HDD	Data response (March 2016)
92.6	92.8	1,185	Lorain	Reroute to improve crossing of existing pipeline	Data response (March 2016)
94.5	96.0	7,993	Lorain	Reroute to shift pipeline further from residences	Prefiling (June 2015)

APPENDIX F-3 (cont.)

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
96.4	99.3	15,511	Lorain, Erie	Avoids crossing through a large section of an ODNR-mapped rare habitat (beech-sugar maple forest) and avoids a large area of forested wetland and upland. The variation will also reduce the crossing length through a conservation property owned by the Girl Scouts of America	Prefiling (June 2015)
96.4	106.3	49,330	Lorain, Erie, Huron	Avoids Boy and Girl Scout property, Western Reserve Land Conservancy and realigns HDD	Application (November 2015)
98.1	99.1	5,419	Lorain	Reroute across the Kipton Rock Quarry to co-locate with existing pipelines	Data response (March 2016)
99.2	99.4	1,245	Lorain	Reroute to avoid water well and natural ground spring	Data response (March 2016)
100.6	107.0	34,558	Erie	Variation shifts alignment further away from residences	Prefiling (June 2015)
109.0	110.3	5,839	Erie	Avoids two barns and avoids approximately 290 feet of crossing distance through a FEMA-mapped floodplain	Prefiling (June 2015)
110.3	111.2	4,564	Erie	Variation shifts alignment further away from residences	Prefiling (June 2015)
110.4	111.4	5,284	Erie	Avoids orchard and minimizes impacts to forested wetlands and forest	Application (November 2015)
111.9	112.3	1,919	Erie	Reroute to avoid Edison Woods Preserve	Data response (March 2016)
112.6	112.9	1,595	Erie	Eliminates a PI prior to the HDD crossing of the Huron River	Prefiling (June 2015)
113.1	113.5	2,113	Erie	Avoid overlap with existing utility easement	Data response (March 2016)
114.2	114.7	2,229	Erie	Avoids an active private shooting range	Prefiling (June 2015)
115.5	117.5	10,475	Erie	Variation avoids powerline and pond, and shifts alignment further from residence	Prefiling (June 2015)
115.8	116.0	780	Erie	Reroute to improve crossing of railroad	Data response (March 2016)
116.0	116.2	1,021	Erie	Avoid overlap with existing utility easement	Data response (March 2016)
116.4	116.5	804	Erie	Avoids a pond drainage system per landowner request	Application (November 2015)
116.7	117.4	3,636	Erie	Realigns HDD and shifts PI to improve constructability	Application (November 2015)
117.5	119.3	9,232	Erie	Colocates route on the south side of a powerline per county request	Application (November 2015)
119.2	120.3	5,292	Erie	Avoids future residential development per landowner request	Application (November 2015)
120.6	121.7	5,168	Erie	Moves further from a residence per landowner request	Application (November 2015)
125.8	126.5	3,227	Erie	Avoids a cultural site and Indiana bat habitat	Application (November 2015)
126.1	126.7	3,138	Erie	Variation avoids passing between two residences while paralleling an existing pipeline ROW	Prefiling (June 2015)
126.9	127.6	3,546	Erie	Variation parallels existing pipeline per landowner request	Application (November 2015)
127.1	129.0	9,749	Sandusky	Creates a right-angle crossing at I-90	Prefiling (June 2015)
127.8	128.3	2,689	Erie	Moves PI away from a stream and ditch and minimizes forest impacts	Application (November 2015)

APPENDIX F-3 (cont.)

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
130.2	130.6	1,232	Erie	Reroute to improve crossing angle of existing pipeline	Data response (March 2016)
133.8	135.3	8,036	Sandusky	Avoids several wetland crossings and improves constructability of creek crossing	Application (November 2015)
134.5	135.0	2,462	Sandusky	Avoids a waste management facility (property has various test wells within its boundaries), avoids paralleling a large stream and minimizes wetland impacts	Prefiling (June 2015)
135.2	137.6	12,440	Sandusky	Reroute maintains proper offset from the First Energy easement	Application (November 2015)
136	137.4	7,561	Sandusky	Reroute to avoid sensitive resource	Data response (March 2016)
136.4	137.9	8,133	Sandusky	Variation avoids an existing bridge and shortens overall alignment	Prefiling (June 2015)
138.8	139.4	3,100	Sandusky	Avoids a forested area	Application (November 2015)
140.2	140.7	2,537	Sandusky	Avoids a forested wetland	Application (November 2015)
140.6	140.9	1,674	Sandusky	Reroute to improve crossing angle of existing pipeline	Data response (March 2016)
143.3	145.2	10,247	Sandusky	Variation removes a PI and shortens overall alignment	Prefiling (June 2015)
143.8	147.4	15,687	Sandusky	Reroute maintains proper offset from the First Energy easement	Application (November 2015)
145.4	146.4	6,141	Sandusky	Reroute to avoid a water well protection area	Data response (March 2016)
148.2	150.1	9,911	Sandusky	Avoids construction workspace in the vicinity of a stream	Application (November 2015)
148.8	149.7	4,709	Sandusky	Avoids Black Swamp Conservancy easement and avoids paralleling small stream for approximately 1,164 linear feet	Prefiling (June 2015)
150.1	150.8	3,822	Sandusky	Avoids Black Swamp Conservatory easement	Prefiling (June 2015)
150.9	152.3	7,069	Sandusky	Avoids Black Swamp Conservatory easement	Prefiling (June 2015)
151.2	151.3	576	Sandusky	Reroute to avoid overlap with existing utility easement	Data response (March 2016)
156.3	157.8	7,740	Sandusky	Avoids crossing over two existing pipelines and minimizes impacts on wetland	Prefiling (June 2015)
157.3	157.8	2,415	Sandusky	Avoids workspace encroachment onto landowner property	Application (November 2015)
160.3	160.5	1,065	Wood	Avoids an electric transmission line tower	Prefiling (June 2015)
161.6	161.9	1,377	Wood	Variation to cross railroad at a 90 degree angle	Prefiling (June 2015)
161.8	162.8	5,391	Sandusky	Rerouted to align with HDD crossing design	Data response (March 2016)
163.7	164.6	4,226	Wood	Avoids workspace encroachment onto landowner property and minimizes forest impacts	Application (November 2015)
166.7	167.0	1,450	Wood	Improves constructability at railroad crossing	Application (November 2015)
167.4	168.5	5,677	Wood	Reroute maintains proper offset from the easement of existing pipelines and reduces pipeline crossings	Application (November 2015)

APPENDIX F-3 (cont.)

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
168.5	168.8	1,634	Wood	Reroute to avoid overlap with existing utility easement	Data response (March 2016)
171.4	171.8	2,284	Wood	Variation shifts alignment further from residences	Prefiling (June 2015)
173.9	175.5	7,967	Wood	Reduces powerline and road crossings and shifts alignment further from residences	Prefiling (June 2015)
175.2	176.7	7,411	Wood	Avoids traversing through an existing electrical substation and future development	Application (November 2015)
175.9	177.5	8,527	Wood, Lucas	Straighten the HDD under the Maumee River.	Prefiling (June 2015)
177.1	178.9	9,469	Wood	Reroute to avoid overlap with existing utility easement	Data response (March 2016)
178.0	179.6	8,330	Lucas	Provides right-angle crossings for Highway 24 and Hertzfeld Road reducing crossing distance	Prefiling (June 2015)
178.9	180.3	6,929	Wood	Variation improves constructability and reduces workspace necessary for HDD	Application (November 2015)
180.1	180.2	605	Wood	Adjusted to align with HDD crossing design	Data response (March 2016)
181.0	195.3	76,929	Lucas, Fulton	Variation avoids multiple OEPA Category III wetlands, road and pipeline crossings, and reroutes around the town of Swanton.	Prefiling (June 2015)
181.9	183.3	7,099	Lucas	Avoids landowner sewer lift station and plans for future development	Application (November 2015)
183.4	183.6	666	Lucas	Adjusted due to modifications at Compressor Station 4	Data response (March 2016)
183.5	184.2	3,650	Lucas	Avoids a PI in close proximity to a creek	Application (November 2015)
185.3	185.9	3,027	Lucas	Avoids forested wetland impacts	Application (November 2015)
187.7	187.9	1,221	Lucas	Avoids PIs under an existing high voltage powerline and minimizes tree clearing	Application (November 2015)
189.9	190.0	566	Henry	Avoids wetland impacts	Data response (March 2016)
190.3	191.3	5,660	Fulton	Minimizes forested impacts and avoids sensitive resource area	Data response (March 2016)
Departs from Removed Section of Former Alignment East of 191.9	Joined at Removed Section of Former Alignment East of 194.9	11,141	Fulton	Avoids residences, creates a right-angle crossing at roads and railroad, avoids electrical substation and avoids 944 linear feet of forested upland	Prefiling (June 2015)
192.1	192.5	2,592	Fulton	Avoids workspace in close proximity to a culvert at Route 3	Application (November 2015)
193.9	200.7	39,179	Fulton	Avoids high density residential development and several Category III wetlands	Application (November 2015)
196.2	196.4	1,318	Fulton	Variation avoids crossing through a residence	Prefiling (June 2015)
196.2	196.4	985	Fulton	Variation moves alignment further from residence	Prefiling (June 2015)

APPENDIX F-3 (cont.)

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
200.6	Joined at Removed Section of Former Alignment East of 201.4	4,487	Fulton	Variation removes two powerline crossings and multiple PIs; shortens overall alignment	Prefiling (June 2015)
Departs from Removed Section of Former Alignment East of 201.4	Joined at Removed Section of Former Alignment East of 202.4	5,353	Fulton	Variation avoids the Metamora Water Facility and two likely TRO land tracts	Prefiling (June 2015)
201.5	201.8	1,468	Fulton	Variation adjusts crossing angle of a powerline	Application (November 2015)
202.4	203.1	4,031	Fulton, OH Lenawee, MI	Avoids powerline crossings and removes a PI	Prefiling (June 2015)
202.7	204.9	11,665	Fulton	Avoids overlap with existing utility easement	Data response (March 2016)
204.4	206.0	8,448	Fulton	Variation avoids residential structure and accommodates workspace for Route 20 bore crossing	Application (November 2015)
208.8	210.1	6,737	Lenawee	Reduces forest clearing adjacent to the Raisin River	Prefiling (June 2015)
209.7	210.4	3,761	Lenawee	Variation allows for crossing of East Mulberry Road and railroad in single bore crossing	Application (November 2015)
209.7	211.1	7,789	Lenawee	Removes PIs and reduces length of the alignment	Prefiling (June 2015)
211.4	211.6	1,083	Lenawee	Avoids a residence	Prefiling (June 2015)
214.6	216.4	9,208	Lenawee	Variation improves constructability of River Raisin HDD	Application (November 2015)
215.6	219.3	19,361	Lenawee	Avoids crossing existing utilities and collocates with existing pipelines	Prefiling (June 2015)
216.8	219.0	11,676	Lenawee	Variation increases distance from residential structures and minimizes forest impacts	Application (November 2015)
219.0	220.1	5,298	Lenawee	Adjusted to eliminate PI	Data response (March 2016)
224.9	226.7	9,346	Lenawee	Minimizes impacts to forested bat habitat	Application (November 2015)
227.3	229.1	8,604	Monroe	Variation crosses railroad at 90° angle and avoids crossing existing pipelines	Prefiling (June 2015)
228.8	229.3	3,150	Lenawee	Reroute to maintain offset from existing pipelines	Data response (March 2016)
231.1	231.2	654	Monroe	Maintain offset from existing utilities	Data response (March 2016)
231.2	232.6	6,784	Washtenaw	Reduces forest clearing adjacent to the Saline River	Prefiling (June 2015)
233.9	236.6	13,961	Monroe	Reroute to avoid sensitive resource areas and maintain offset from existing pipelines	Data response (March 2016)

APPENDIX F-3 (cont.)

NGT Project Incorporated Route Variations

Start MP	End MP	Length of Variation (Feet)	County (or Counties)	Supporting Reason(s) for Variation	Date Reported
234.5	235.1	3,401	Monroe	Variation increases distance from residential structures and accommodates necessary workspace for Mead Road crossing	Application (November 2015)
235.3	236.6	6,468	Monroe	Variation increases constructability over two existing TransCanada pipelines	Application (November 2015)
235.8	236.0	1,067	Washtenaw	Avoids crossing through a residence and a garage	Prefiling (June 2015)
238.2	238.5	1,640	Washtenaw	Variation increases collocation and minimizes foreign pipeline crossings	Application (November 2015)
238.9	239.7	3,821	Washtenaw	Avoids crossing in close proximity to a pond, minimizes wetland impacts and improves constructability of bore	Application (November 2015)
241.0	243.0	13,086	Washtenaw	Avoids residences and waterbodies; avoids street lay adjacent to a school, church, cemetery and several neighborhoods	Prefiling (June 2015)
241.5	242.5	4,643	Washtenaw	Avoids residential structures	Application (November 2015)
243.4	Joined at Removed Section of Former Alignment West of 244.6	6,171	Washtenaw	Avoids street lay constraints associated with existing underground utilities	Prefiling (June 2015)
243.8	245.0	7,141	Washtenaw	Reduces the number of PIs and increases distance from residential structures	Application (November 2015)
244.6	245.6	3,850	Washtenaw	Variation to former alignment and HDD location across the Maumee River to avoid parkland, river crossing, HVAC lines, existing pipelines, water mains, water towers, a dam, and nearby roads.	Prefiling (June 2015)
245.6	246.9	6,093	Washtenaw	Variation minimizes impacts to forested wetlands	Application (November 2015)
246.1	246.2	590	Washtenaw	Minor alteration to avoid existing salvage yard.	Prefiling (June 2015)
249.2	251.4	11,622	Washtenaw	Avoid existing underground utilities	Application (November 2015)
251.1	251.2	662	Washtenaw	Shift to account for HDD exit location	Data response (March 2016)
252.1	252.3	870	Washtenaw	Avoids a high voltage powerline and substation	Application (November 2015)
252.4	255.1	13,226	Washtenaw, Wayne	Avoids existing underground utilities and improves constructability	Application (November 2015)
253.3	255.1	9,654	Washtenaw, Wayne	Reroute per landowner request	Data response (March 2016)

APPENDIX F-4

SUMMARY OF CHANGES TO ATWS ASSOCIATED WITH THE NGT PROJECT

APPENDIX F-4

Summary of Changes to ATWS Associated with the NGT Project

County, State	ATWS ID	Start MP	End MP	New Acreage	Previous Acreage	Change in Acreage
Columbiana, Ohio	ATWS-3700	0.0	0.1	-	0.01	-0.01
Columbiana, Ohio	ATWS-4427	0.7	0.7	-	0.08	-0.08
Columbiana, Ohio	ATWS-2340	0.9	0.9	0.07	-	+0.07
Columbiana, Ohio	ATWS-3040	0.9	0.9	-	0.04	-0.04
Columbiana, Ohio	ATWS-2341	1.0	1.1	0.05	0.01	+0.04
Columbiana, Ohio	ATWS-1106	4.3	4.6	-	0.02	-0.02
Columbiana, Ohio	ATWS-1113	6.5	6.6	<0.01	-	+<0.01
Columbiana, Ohio	ATWS-4684	7.1	7.1	0.01	-	+0.01
Columbiana, Ohio	ATWS-1122	11.9	12.2	-	0.12	-0.12
Summit, Ohio	ATWS-120	13.0	13.1	-	0.01	-0.01
Stark, Ohio	ATWS-4485	13.3	13.4	0.21	0.25	-0.04
Stark, Ohio	ATWS-2006	16.9	17.0	-	0.01	-0.01
Stark, Ohio	ATWS-85	28.2	28.2	-	0.06	-0.06
Stark, Ohio	ATWS-87	30.3	30.3	-	0.08	-0.08
Stark, Ohio	ATWS-2258	33.1	33.1	0.06	<0.01	+0.06
Stark, Ohio	ATWS-3254	33.1	33.1	0.09	<0.01	+0.09
Stark, Ohio	ATWS-2260	33.3	33.3	0.01	<0.01	+<0.01
Stark, Ohio	ATWS-3256	33.3	33.3	-	<0.01	-<0.01
Summit, Ohio	ATWS-2365	35.0	35.0	-	0.02	-0.02
Summit, Ohio	ATWS-3080	35.0	35.1	-	0.14	-0.14
Summit, Ohio	ATWS-4024	36.2	36.2	-	0.16	-0.16
Summit, Ohio	ATWS-4547	36.2	36.2	0.05	-	+0.05
Summit, Ohio	ATWS-2339	36.4	36.5	-	0.21	-0.21
Summit, Ohio	ATWS-3160	36.4	36.4	-	0.11	-0.11
Summit, Ohio	ATWS-4549	36.4	36.4	0.24	-	+0.24
Summit, Ohio	ATWS-3211	36.8	36.8	-	<0.01	-<0.01
Summit, Ohio	ATWS-3268	37.8	37.9	-	0.02	-0.02
Summit, Ohio	ATWS-2315	39.0	39.0	-	0.05	-0.05
Summit, Ohio	ATWS-2274	39.4	39.5	0.12	0.25	-0.13
Summit, Ohio	ATWS-2311	39.4	39.4	-	0.03	-0.03
Summit, Ohio	ATWS-2319	39.4	39.4	-	0.04	-0.04
Summit, Ohio	ATWS-1401	39.5	39.6	-	0.17	-0.17
Summit, Ohio	ATWS-2275	39.5	39.5	-	0.38	-0.38
Summit, Ohio	ATWS-2320	39.5	39.5	-	0.21	-0.21
Summit, Ohio	ATWS-2321	39.5	39.5	0.16	0.13	+0.03
Summit, Ohio	ATWS-4681	39.5	39.5	0.06	-	+0.06
Summit, Ohio	ATWS-4682	39.5	39.6	0.11	-	+0.11
Summit, Ohio	ATWS-577	39.6	39.7	<0.01	0.11	-0.11
Summit, Ohio	ATWS-99	39.8	39.8	-	0.03	-0.03
Summit, Ohio	ATWS-102	40.6	40.6	-	0.33	-0.33

APPENDIX F-4 (cont'd)

Summary of Changes to ATWS Associated with the NGT Project

County, State	ATWS ID	Start MP	End MP	New Acreage	Previous Acreage	Change in Acreage
Summit, Ohio	ATWS-1991	40.6	40.6	-	0.14	-0.14
Summit, Ohio	ATWS-2272	42.1	42.2	-	0.10	-0.10
Summit, Ohio	ATWS-4450	42.2	42.2	-	0.10	-0.10
Summit, Ohio	ATWS-4451	42.2	42.3	-	0.09	-0.09
Summit, Ohio	ATWS-104	42.3	42.3	-	0.20	-0.20
Summit, Ohio	ATWS-4561	42.3	42.4	0.18	-	+0.18
Summit, Ohio	ATWS-3174	42.4	42.5	-	0.11	-0.11
Summit, Ohio	ATWS-3279	42.4	42.3	-	0.09	-0.09
Summit, Ohio	ATWS-4558	42.4	42.5	0.29	-	+0.29
Summit, Ohio	ATWS-4560	42.4	42.4	0.21	-	+0.21
Summit, Ohio	ATWS-3175	42.5	42.5	-	0.11	-0.11
Summit, Ohio	ATWS-3280	42.5	42.5	-	0.10	-0.10
Summit, Ohio	ATWS-4559	42.5	42.5	0.07	-	+0.07
Summit, Ohio	ATWS-106	42.7	42.7	-	0.09	-0.09
Summit, Ohio	ATWS-112	44.0	44.1	-	0.09	-0.09
Summit, Ohio	ATWS-4389	44.2	44.2	-	0.05	-0.05
Summit, Ohio	ATWS-3220	45.0	45.1	-	0.70	-0.70
Summit, Ohio	ATWS-125	48.8	48.9	-	0.02	-0.02
Summit, Ohio	ATWS-128	49.9	50.0	-	0.19	-0.19
Summit, Ohio	ATWS-127	50.0	50.0	-	0.01	-0.01
Summit, Ohio	ATWS-3187	50.3	50.3	-	<0.01	-<0.01
Wayne, Ohio	ATWS-749	51.6	51.6	-	0.11	-0.11
Wayne, Ohio	ATWS-3343	52.9	52.9	-	0.06	-0.06
Wayne, Ohio	ATWS-3754	53.0	53.1	-	0.05	-0.05
Wayne, Ohio	ATWS-2515	53.5	53.5	-	0.21	-0.21
Medina, Ohio	ATWS-4038	57.2	57.2	-	0.01	-0.01
Medina, Ohio	ATWS-3362	60.8	60.8	-	0.05	-0.05
Medina, Ohio	ATWS-151	61.1	61.2	-	0.02	-0.02
Medina, Ohio	ATWS-4044	61.1	61.2	-	0.01	-0.01
Medina, Ohio	ATWS-695	65.3	65.3	0.14	-	+0.14
Medina, Ohio	ATWS-696	65.3	65.3	-	0.10	-0.10
Medina, Ohio	ATWS-161	66.0	66.1	0.29	0.03	+0.26
Medina, Ohio	ATWS-2957	66.0	66.1	0.02	0.12	-0.09
Medina, Ohio [a]	ATWS-654	66.1	66.2	0.15	0.33	-0.18
Medina, Ohio [a]	ATWS-4617	66.1	66.3	0.45	-	+0.45
Medina, Ohio [a]	ATWS-4618	66.1	66.1	0.04	-	+0.04
Medina, Ohio [a]	ATWS-1446	66.3	66.6	-	1.05	-1.05
Medina, Ohio [a]	ATWS-4619	66.3	66.3	0.14	-	+0.14
Medina, Ohio [a]	ATWS-4620	66.4	66.4	0.21	-	+0.21
Medina, Ohio [a]	ATWS-4621	66.4	66.4	0.14	-	+0.14
Medina, Ohio [a]	ATWS-4622	66.4	66.5	0.19	-	+0.19

APPENDIX F-4 (cont'd)

Summary of Changes to ATWS Associated with the NGT Project

County, State	ATWS ID	Start MP	End MP	New Acreage	Previous Acreage	Change in Acreage
Medina, Ohio [a]	ATWS-4624	66.4	66.4	0.09	-	+0.09
Medina, Ohio [a]	ATWS-4654	66.4	66.4	0.12	-	+0.12
Medina, Ohio [a]	ATWS-4623	66.5	66.5	0.14	-	+0.14
Medina, Ohio [a]	ATWS-4625	66.5	66.5	0.22	-	+0.22
Medina, Ohio [a]	ATWS-4627	66.5	67.0	1.45	-	+1.45
Medina, Ohio [a]	ATWS-4652	66.5	66.5	0.12	-	+0.12
Medina, Ohio [a]	ATWS-4653	66.5	66.5	0.11	-	+0.11
Medina, Ohio [a]	ATWS-162	66.6	66.7	-	0.27	-0.27
Medina, Ohio [a]	ATWS-2959	66.6	66.7	-	0.19	-0.19
Medina, Ohio [a]	ATWS-3384	66.6	66.6	-	0.09	-0.09
Medina, Ohio [a]	ATWS-1357	66.7	67.1	-	1.11	-1.11
Medina, Ohio [a]	ATWS-163	66.7	66.7	-	0.28	-0.28
Medina, Ohio [a]	ATWS-2958	66.7	66.7	-	0.22	-0.22
Medina, Ohio [a]	ATWS-4626	67.0	67.1	0.22	-	+0.22
Medina, Ohio [a]	ATWS-4628	67.0	67.1	0.15	-	+0.15
Medina, Ohio [a]	ATWS-4629	67.0	67.0	0.09	-	+0.09
Medina, Ohio [a]	ATWS-4674	67.0	67.1	0.15	-	+0.15
Medina, Ohio [a]	ATWS-164	67.1	67.1	-	0.15	-0.15
Medina, Ohio [a]	ATWS-165	67.1	67.1	-	0.14	-0.14
Medina, Ohio [a]	ATWS-2867	67.1	67.1	-	0.23	-0.23
Medina, Ohio [a]	ATWS-2868	67.1	67.1	-	0.22	-0.22
Medina, Ohio [a]	ATWS-3383	67.1	67.2	-	0.25	-0.25
Medina, Ohio [a]	ATWS-4630	67.1	67.1	0.34	-	+0.34
Medina, Ohio [a]	ATWS-4631	67.1	67.1	0.23	-	+0.23
Medina, Ohio [a]	ATWS-4673	67.1	67.1	0.06	-	+0.06
Medina, Ohio [a]	ATWS-1447	67.2	67.3	-	0.31	-0.31
Medina, Ohio [a]	ATWS-2163	67.2	67.2	-	0.21	-0.21
Medina, Ohio [a]	ATWS-4632	67.2	67.2	0.07	-	+0.07
Medina, Ohio [a]	ATWS-4633	67.2	67.2	0.18	-	+0.18
Medina, Ohio [a]	ATWS-4634	67.2	67.2	0.13	-	+0.13
Medina, Ohio [a]	ATWS-1448	67.3	67.4	-	0.27	-0.27
Medina, Ohio [a]	ATWS-4049	67.3	67.4	-	0.10	-0.10
Medina, Ohio [a]	ATWS-4635	67.3	67.3	0.24	-	+0.24
Medina, Ohio [a]	ATWS-4636	67.3	67.3	0.12	-	+0.12
Medina, Ohio [a]	ATWS-4637	67.3	67.3	0.39	-	+0.39
Medina, Ohio [a]	ATWS-4638	67.4	67.4	0.18	-	+0.18
Medina, Ohio [a]	ATWS-2366	67.5	67.5	-	0.09	-0.09
Medina, Ohio [a]	ATWS-280	67.5	67.5	-	1.16	-1.16
Medina, Ohio [a]	ATWS-4639	67.5	67.5	0.11	-	+0.11
Medina, Ohio [a]	ATWS-4651	67.5	67.5	0.11	-	+0.11
Medina, Ohio [a]	ATWS-4247	67.6	67.7	-	0.44	-0.44

APPENDIX F-4 (cont'd)

Summary of Changes to ATWS Associated with the NGT Project

County, State	ATWS ID	Start MP	End MP	New Acreage	Previous Acreage	Change in Acreage
Medina, Ohio [a]	ATWS-4640	67.6	67.6	0.04	-	+0.04
Medina, Ohio [a]	ATWS-4647	67.6	67.6	0.16	-	+0.16
Medina, Ohio [a]	ATWS-4648	67.6	67.6	0.17	-	+0.17
Medina, Ohio [a]	ATWS-4649	67.6	67.6	0.05	-	+0.05
Medina, Ohio [a]	ATWS-4650	67.6	67.6	0.04	-	+0.04
Medina, Ohio [a]	ATWS-4248	67.7	67.8	-	0.60	-0.60
Medina, Ohio [a]	ATWS-4572	67.7	67.7	0.25	-	+0.25
Medina, Ohio [a]	ATWS-4573	67.7	67.7	0.17	-	+0.17
Medina, Ohio [a]	ATWS-4575	67.7	67.8	0.36	-	+0.36
Medina, Ohio [a]	ATWS-4679	67.7	67.7	0.05	-	+0.05
Medina, Ohio [a]	ATWS-4249	67.8	67.8	-	0.28	-0.28
Medina, Ohio [a]	ATWS-4574	67.8	67.8	0.23	-	+0.23
Medina, Ohio [a]	ATWS-4576	67.8	67.9	0.21	-	+0.21
Medina, Ohio [a]	ATWS-172	67.9	67.9	-	0.09	-0.09
Medina, Ohio [a]	ATWS-4577	67.9	68.4	1.18	-	+1.18
Medina, Ohio [a]	ATWS-4646	67.9	67.9	0.09	-	+0.09
Medina, Ohio [a]	ATWS-2018	68.0	68.0	-	0.22	-0.22
Medina, Ohio [a]	ATWS-3094	68.0	68.1	-	0.22	-0.22
Medina, Ohio [a]	ATWS-1450	68.2	68.3	-	0.95	-0.95
Medina, Ohio [a]	ATWS-803	68.2	68.3	-	0.34	-0.34
Medina, Ohio [a]	ATWS-4677	68.3	68.4	0.67	-	+0.67
Medina, Ohio [a]	ATWS-173	68.4	68.4	-	0.54	-0.54
Medina, Ohio [a]	ATWS-2284	68.4	68.4	-	0.25	-0.25
Medina, Ohio [a]	ATWS-1358	68.5	68.6	-	0.43	-0.43
Medina, Ohio [a]	ATWS-4660	68.6	68.8	1.33	-	+1.33
Medina, Ohio [a]	ATWS-2368	68.7	68.7	-	0.21	-0.21
Medina, Ohio [a]	ATWS-4259	68.7	68.7	-	0.69	-0.69
Medina, Ohio [a]	ATWS-4050	68.8	68.8	-	0.15	-0.15
Medina, Ohio [a]	ATWS-4051	68.8	68.9	-	0.14	-0.14
Medina, Ohio [a]	ATWS-4052	68.8	68.8	-	0.19	-0.19
Medina, Ohio [a]	ATWS-4053	68.8	68.9	-	0.24	-0.24
Medina, Ohio [a]	ATWS-4054	68.8	68.8	-	0.20	-0.20
Medina, Ohio [a]	ATWS-761	68.9	69.1	-	0.50	-0.50
Medina, Ohio [a]	ATWS-4583	68.9	68.9	0.17	-	+0.17
Medina, Ohio [a]	ATWS-4584	68.9	68.9	0.27	-	+0.27
Medina, Ohio [a]	ATWS-4585	68.9	69.1	0.52	-	+0.52
Medina, Ohio [a]	ATWS-4670	68.9	68.9	0.12	-	+0.12
Medina, Ohio [a]	ATWS-175	69.1	69.2	-	0.25	-0.25
Medina, Ohio [a]	ATWS-3388	69.1	69.1	-	0.12	-0.12
Medina, Ohio [a]	ATWS-1451	69.2	69.3	-	0.35	-0.35
Medina, Ohio [a]	ATWS-4537	69.2	69.3	-	0.11	-0.11

APPENDIX F-4 (cont'd)

Summary of Changes to ATWS Associated with the NGT Project

County, State	ATWS ID	Start MP	End MP	New Acreage	Previous Acreage	Change in Acreage
Medina, Ohio [a]	ATWS-4683	69.2	69.2	0.13	-	+0.13
Medina, Ohio [a]	ATWS-3371	69.3	69.3	-	0.46	-0.46
Medina, Ohio [a]	ATWS-4686	69.3	69.4	0.14	-	+0.14
Medina, Ohio [a]	ATWS-4687	69.3	69.3	0.18	-	+0.18
Medina, Ohio [a]	ATWS-3372	69.4	69.5	-	0.85	-0.85
Medina, Ohio [a]	ATWS-3374	69.4	69.5	-	0.86	-0.86
Medina, Ohio [a]	ATWS-4582	69.4	69.4	0.27	-	+0.27
Medina, Ohio [a]	ATWS-4678	69.4	69.4	0.20	-	+0.20
Medina, Ohio [a]	ATWS-281	69.5	69.6	-	1.65	-1.65
Medina, Ohio [a]	ATWS-4641	69.5	69.7	0.42	-	+0.42
Medina, Ohio [a]	ATWS-1452	69.6	69.7	-	1.33	-1.33
Medina, Ohio [a]	ATWS-176	69.7	69.8	-	1.49	-1.49
Medina, Ohio [a]	ATWS-4688	69.7	69.8	0.27	-	+0.27
Medina, Ohio [a]	ATWS-4642	69.9	70.0	0.23	-	+0.23
Medina, Ohio [a]	ATWS-1455	70.0	70.2	-	1.50	-1.50
Medina, Ohio [a]	ATWS-4055	70.0	70.1	-	0.35	-0.35
Medina, Ohio [a]	ATWS-4589	70.0	70.0	0.36	-	+0.36
Medina, Ohio [a]	ATWS-4613	70.0	70.0	0.10	-	+0.10
Medina, Ohio [a]	ATWS-4643	70.0	70.0	0.16	-	+0.16
Medina, Ohio [a]	ATWS-4689	70.0	70.0	0.25	-	+0.25
Medina, Ohio [a]	ATWS-4590	70.1	70.2	0.11	-	+0.11
Medina, Ohio [a]	ATWS-4591	70.1	70.2	0.60	-	+0.60
Medina, Ohio [a]	ATWS-4614	70.1	70.1	0.29	-	+0.29
Medina, Ohio [a]	ATWS-1456	70.2	70.3	-	1.11	-1.11
Medina, Ohio [a]	ATWS-3376	70.3	70.3	-	0.06	-0.06
Medina, Ohio [a]	ATWS-4592	70.3	70.3	0.19	-	+0.19
Medina, Ohio [a]	ATWS-4593	70.3	70.3	0.25	-	+0.25
Medina, Ohio [a]	ATWS-4594	70.3	70.4	0.18	-	+0.18
Medina, Ohio [a]	ATWS-4595	70.4	70.5	0.28	-	+0.28
Medina, Ohio [a]	ATWS-4685	70.4	70.4	0.20	-	+0.20
Medina, Ohio [a]	ATWS-3380	70.5	70.5	-	0.12	-0.12
Medina, Ohio [a]	ATWS-3381	70.5	70.5	-	0.03	-0.03
Medina, Ohio [a]	ATWS-4477	70.5	70.6	-	0.34	-0.34
Medina, Ohio [a]	ATWS-4538	70.5	70.5	-	0.05	-0.05
Medina, Ohio [a]	ATWS-4612	70.5	70.5	0.30	-	+0.30
Medina, Ohio [a]	ATWS-3378	70.6	70.7	-	0.04	-0.04
Medina, Ohio [a]	ATWS-3379	70.6	70.6	-	0.14	-0.14
Medina, Ohio [a]	ATWS-4476	70.6	70.7	-	0.33	-0.33
Medina, Ohio [a]	ATWS-4596	70.6	70.6	0.07	-	+0.07
Medina, Ohio [a]	ATWS-4597	70.6	70.6	0.11	-	+0.11
Medina, Ohio [a]	ATWS-2373	70.7	70.8	-	0.28	-0.28

APPENDIX F-4 (cont'd)

Summary of Changes to ATWS Associated with the NGT Project

County, State	ATWS ID	Start MP	End MP	New Acreage	Previous Acreage	Change in Acreage
Medina, Ohio [a]	ATWS-2845	70.7	70.8	-	0.43	-0.43
Medina, Ohio [a]	ATWS-4615	70.7	70.7	0.12	-	+0.12
Medina, Ohio [a]	ATWS-2374	70.8	70.9	-	0.75	-0.75
Medina, Ohio [a]	ATWS-2846	70.8	70.8	-	0.36	-0.36
Medina, Ohio [a]	ATWS-4657	70.8	70.9	0.47	-	+0.47
Medina, Ohio [a]	ATWS-2375	70.9	71.0	-	0.38	-0.38
Medina, Ohio [a]	ATWS-3095	70.9	70.9	-	0.23	-0.23
Medina, Ohio [a]	ATWS-3382	70.9	71.0	-	0.21	-0.21
Medina, Ohio [a]	ATWS-1360	71.0	71.0	-	0.20	-0.20
Medina, Ohio [a]	ATWS-3385	71.0	71.1	-	1.09	-1.09
Medina, Ohio [a]	ATWS-3387	71.0	71.0	-	0.09	-0.09
Medina, Ohio [a]	ATWS-4599	71.0	71.0	0.12	-	+0.12
Medina, Ohio [a]	ATWS-4600	71.0	71.1	0.45	-	+0.45
Medina, Ohio [a]	ATWS-4601	71.1	71.1	0.21	-	+0.21
Medina, Ohio [a]	ATWS-4602	71.2	71.4	0.57	-	+0.57
Medina, Ohio [a]	ATWS-3687	71.4	71.6	-	0.54	-0.54
Medina, Ohio [a]	ATWS-4056	71.4	71.4	-	1.00	-1.00
Medina, Ohio [a]	ATWS-4661	71.4	71.4	0.18	-	+0.18
Medina, Ohio [a]	ATWS-4662	71.4	71.4	0.15	-	+0.15
Medina, Ohio [a]	ATWS-4663	71.4	71.4	0.09	-	+0.09
Medina, Ohio [a]	ATWS-4664	71.4	71.6	0.53	-	+0.53
Medina, Ohio [a]	ATWS-4669	71.5	71.5	0.14	-	+0.14
Medina, Ohio [a]	ATWS-3685	71.6	71.7	-	0.17	-0.17
Medina, Ohio [a]	ATWS-3686	71.6	71.6	-	0.19	-0.19
Medina, Ohio [a]	ATWS-3689	71.6	71.6	-	0.11	-0.11
Medina, Ohio [a]	ATWS-4665	71.6	71.6	0.31	-	+0.31
Medina, Ohio [a]	ATWS-4668	71.6	71.6	0.05	-	+0.05
Medina, Ohio [a]	ATWS-4671	71.6	71.6	0.25	-	+0.25
Medina, Ohio [a]	ATWS-1361	71.7	71.8	-	0.43	-0.43
Medina, Ohio [a]	ATWS-3688	71.7	71.7	-	0.35	-0.35
Medina, Ohio [a]	ATWS-4666	71.7	71.8	0.21	-	+0.21
Medina, Ohio [a]	ATWS-4667	71.7	71.7	0.21	-	+0.21
Medina, Ohio [a]	ATWS-4672	71.7	71.8	0.33	-	+0.33
Medina, Ohio [a]	ATWS-178	71.8	71.9	-	0.14	-0.14
Medina, Ohio [a]	ATWS-3391	71.8	71.9	-	0.25	-0.25
Medina, Ohio [a]	ATWS-4057	71.8	71.9	-	0.11	-0.11
Medina, Ohio [a]	ATWS-4675	71.8	71.8	0.18	-	+0.18
Medina, Ohio [a]	ATWS-179	71.9	71.9	-	0.20	-0.20
Medina, Ohio [a]	ATWS-3096	71.9	71.9	-	0.26	-0.26
Medina, Ohio [a]	ATWS-3098	71.9	72.0	-	0.23	-0.23
Medina, Ohio [a]	ATWS-3390	71.9	71.9	-	0.50	-0.50

APPENDIX F-4 (cont'd)

Summary of Changes to ATWS Associated with the NGT Project

County, State	ATWS ID	Start MP	End MP	New Acreage	Previous Acreage	Change in Acreage
Medina, Ohio [a]	ATWS-4475	71.9	71.9	-	0.05	-0.05
Medina, Ohio [a]	ATWS-4610	71.9	72.0	0.19	-	+0.19
Medina, Ohio [a]	ATWS-3097	72.0	72.1	-	0.35	-0.35
Medina, Ohio [a]	ATWS-4058	72.0	72.1	-	0.11	-0.11
Medina, Ohio [a]	ATWS-4611	72.0	72.1	0.32	-	+0.32
Medina, Ohio [a]	ATWS-1460	72.1	72.2	-	0.83	-0.83
Medina, Ohio [a]	ATWS-3728	72.1	72.1	-	0.17	-0.17
Medina, Ohio [a]	ATWS-4603	72.3	72.3	0.08	-	+0.08
Medina, Ohio [a]	ATWS-4604	72.3	72.3	0.15	-	+0.15
Medina, Ohio [a]	ATWS-4605	72.3	72.3	0.18	-	+0.18
Medina, Ohio [a]	ATWS-4606	72.3	72.3	0.24	-	+0.24
Medina, Ohio [a]	ATWS-4676	72.3	72.4	0.14	-	+0.14
Medina, Ohio [a]	ATWS-3730	72.4	72.4	-	0.54	-0.54
Medina, Ohio [a]	ATWS-4607	72.4	72.5	0.37	-	+0.37
Medina, Ohio [a]	ATWS-180	72.5	72.6	-	0.05	-0.05
Medina, Ohio [a]	ATWS-181	72.5	72.5	<0.01	0.08	-0.07
Medina, Ohio [a]	ATWS-3392	72.5	72.6	0.02	<0.01	+0.01
Medina, Ohio [a]	ATWS-3393	72.5	72.5	-	0.09	-0.09
Medina, Ohio [a]	ATWS-3729	72.5	72.5	-	0.15	-0.15
Medina, Ohio [a]	ATWS-4608	72.5	72.5	0.29	-	+0.29
Medina, Ohio [a]	ATWS-4609	72.5	72.5	0.02	-	+0.02
Medina, Ohio [a]	ATWS-4655	72.5	72.5	1.64	-	+1.64
Medina, Ohio [a]	ATWS-4656	72.5	72.5	0.74	-	+0.74
Medina, Ohio	ATWS-3733	73.3	73.3	0.01	-	+0.01
Medina, Ohio	ATWS-4557	73.3	73.4	0.11	-	+0.11
Medina, Ohio	ATWS-3737	73.4	73.4	-	0.01	-0.01
Medina, Ohio	ATWS-4555	73.4	73.4	0.02	-	+0.02
Medina, Ohio	ATWS-4556	73.4	73.4	0.12	-	+0.12
Medina, Ohio	ATWS-4494	74.8	75.0	-	0.12	-0.12
Medina, Ohio	ATWS-3099	74.9	74.9	-	0.17	-0.17
Medina, Ohio	ATWS-186	75.0	75.0	-	0.05	-0.05
Medina, Ohio	ATWS-2961	75.0	75.0	-	0.17	-0.17
Medina, Ohio	ATWS-2393	75.3	75.3	-	0.02	-0.02
Medina, Ohio	ATWS-2732	75.4	75.4	-	0.02	-0.02
Medina, Ohio	ATWS-3741	75.4	75.4	-	0.03	-0.03
Medina, Ohio	ATWS-4545	75.4	75.4	0.02	-	+0.02
Medina, Ohio	ATWS-2593	76.3	76.4	-	0.04	-0.04
Medina, Ohio	ATWS-2387	77.7	77.8	-	0.01	-0.01
Medina, Ohio	ATWS-4551	77.7	77.8	0.06	-	+0.06
Medina, Ohio	ATWS-2390	77.8	77.8	-	0.04	-0.04
Medina, Ohio	ATWS-3400	77.8	77.8	-	0.01	-0.01

APPENDIX F-4 (cont'd)

Summary of Changes to ATWS Associated with the NGT Project

County, State	ATWS ID	Start MP	End MP	New Acreage	Previous Acreage	Change in Acreage
Medina, Ohio	ATWS-2598	78.2	78.3	0.36	-	+0.36
Medina, Ohio	ATWS-1481	78.3	78.3	0.22	0.17	+0.04
Medina, Ohio	ATWS-1484	78.3	78.9	0.09	0.93	-0.84
Medina, Ohio	ATWS-4068	78.3	78.4	0.16	0.07	+0.09
Medina, Ohio	ATWS-4570	78.4	78.5	0.28	-	+0.28
Medina, Ohio	ATWS-4571	78.4	78.5	0.11	-	+0.11
Medina, Ohio	ATWS-4569	78.5	78.6	0.19	-	+0.19
Lorain, Ohio	ATWS-768	82.6	82.6	-	0.10	-0.10
Lorain, Ohio	ATWS-289	83.4	83.5	-	0.17	-0.17
Lorain, Ohio	ATWS-3762	83.4	83.4	-	0.07	-0.07
Lorain, Ohio	ATWS-1496	85.9	85.9	0.04	0.04	-<0.01
Lorain, Ohio	ATWS-1497	85.9	85.9	0.06	-	+0.06
Lorain, Ohio	ATWS-3409	85.9	86.0	-	0.15	-0.15
Lorain, Ohio	ATWS-4076	85.9	85.9	0.02	0.01	+0.01
Lorain, Ohio	ATWS-597	85.9	85.9	0.08	0.01	+0.07
Lorain, Ohio	ATWS-1342	86.0	86.1	0.02	0.03	-0.01
Lorain, Ohio	ATWS-1498	86.0	86.0	0.18	0.01	+0.18
Lorain, Ohio	ATWS-3431	89.2	89.2	-	0.09	-0.09
Lorain, Ohio	ATWS-2735	91.3	91.4	-	0.02	-0.02
Lorain, Ohio	ATWS-2445	100.6	100.6	-	0.11	-0.11
Erie, Ohio	ATWS-2790	105.9	106.0	-	0.32	-0.32
Erie, Ohio	ATWS-2818	105.9	106.0	0.26	-	+0.26
Erie, Ohio	ATWS-4461	112.1	112.1	-	0.08	-0.08
Erie, Ohio	ATWS-268	127.7	127.7	-	0.02	-0.02
Erie, Ohio	ATWS-310	130.8	130.8	-	0.08	-0.08
Sandusky, Ohio	ATWS-1251	149.7	150.3	-	0.27	-0.27
Sandusky, Ohio	ATWS-330	150.2	150.3	0.09	-	+0.09
Sandusky, Ohio	ATWS-1659	150.3	150.5	-	0.51	-0.51
Sandusky, Ohio	ATWS-2891	150.3	150.3	<0.01	0.09	-0.09
Sandusky, Ohio	ATWS-331	150.3	150.3	0.10	-	+0.10
Sandusky, Ohio	ATWS-3576	150.5	150.6	0.01	0.10	-0.09
Sandusky, Ohio	ATWS-4280	150.5	150.6	0.08	0.06	+0.02
Sandusky, Ohio	ATWS-886	155.8	155.9	-	0.26	-0.26
Sandusky, Ohio	ATWS-2877	157.6	157.7	-	0.09	-0.09
Sandusky, Ohio	ATWS-1267	163.5	163.6	-	<0.01	-<0.01
Sandusky, Ohio	ATWS-920	163.6	163.7	-	0.16	-0.16
Wood, Ohio	ATWS-4145	168.4	168.5	<0.01	-	+<0.01
Wood, Ohio	ATWS-1919	171.2	172.5	-	0.29	-0.29
Lucas, Ohio	ATWS-3679	183.4	183.4	-	<0.01	-<0.01
Henry, Ohio	ATWS-4173	189.7	189.7	-	0.04	-0.04
Henry, Ohio	ATWS-2648	190.1	190.2	-	0.54	-0.54

APPENDIX F-4 (cont'd)

Summary of Changes to ATWS Associated with the NGT Project

County, State	ATWS ID	Start MP	End MP	New Acreage	Previous Acreage	Change in Acreage
Henry, Ohio	ATWS-4175	190.1	190.2	-	0.14	-0.14
Henry, Ohio	ATWS-2649	190.2	190.2	-	0.15	-0.15
Fulton, Ohio	ATWS-2109	190.5	190.7	0.36	0.37	+0.01
Fulton, Ohio	ATWS-984	190.5	190.5	0.06	-	+0.06
Fulton, Ohio	ATWS-4565	190.6	190.7	0.16	-	+0.16
Fulton, Ohio	ATWS-4566	190.6	190.7	0.13	-	+0.13
Fulton, Ohio	ATWS-1201	190.7	190.9	-	0.38	-0.38
Fulton, Ohio	ATWS-4176	190.7	190.7	0.08	0.18	-0.10
Fulton, Ohio	ATWS-985	190.7	190.7	-	0.29	-0.29
Fulton, Ohio	ATWS-4564	190.7	190.7	0.14	-	+0.14
Fulton, Ohio	ATWS-4567	190.7	190.7	0.09	-	+0.09
Fulton, Ohio	ATWS-4568	190.8	190.8	0.09	-	+0.09
Fulton, Ohio	ATWS-1072	190.9	191.0	-	0.17	-0.17
Fulton, Ohio	ATWS-1073	190.9	190.9	-	0.24	-0.24
Fulton, Ohio	ATWS-4263	190.9	190.9	-	0.15	-0.15
Fulton, Ohio	ATWS-4437	190.9	191.0	0.81	0.13	+0.67
Fulton, Ohio	ATWS-4439	190.9	190.9	-	0.27	-0.27
Fulton, Ohio	ATWS-1197	191.0	191.0	-	0.25	-0.25
Fulton, Ohio	ATWS-2646	193.8	193.8	-	0.24	-0.24
Lenawee, Michigan	ATWS-3025	209.0	209.0	-	0.02	-0.02
Lenawee, Michigan	ATWS-1682	217.1	217.2	-	0.03	-0.03
Lenawee, Michigan	ATWS-1683	217.1	217.1	-	0.02	-0.02
Monroe, Michigan	ATWS-1784	231.4	231.4	-	0.02	-0.02
Monroe, Michigan	ATWS-2098	232.4	232.5	-	0.02	-0.02
Monroe, Michigan	ATWS-3940	233.7	233.7	-	0.02	-0.02
Monroe, Michigan	ATWS-3941	233.7	233.7	-	0.02	-0.02
Washtenaw, Michigan	ATWS-3901	246.3	246.4	-	0.02	-0.02
Washtenaw, Michigan	ATWS-4503	246.6	246.6	-	0.06	-0.06
Washtenaw, Michigan	ATWS-1638	248.0	248.0	-	0.19	-0.19
Washtenaw, Michigan	ATWS-1639	248.0	248.1	0.29	-	+0.29
Washtenaw, Michigan	ATWS-1640	248.0	248.0	0.30	-	+0.30
Washtenaw, Michigan	ATWS-3486	248.0	248.0	-	0.03	-0.03
Washtenaw, Michigan	ATWS-1637	248.1	248.1	-	0.10	-0.10
Washtenaw, Michigan	ATWS-2676	248.1	248.2	-	0.04	-0.04
Washtenaw, Michigan	ATWS-4524	253.8	254.0	<0.01	-	+<0.01
			TOTAL:	**34.28**	**50.92**	**-16.64**

a Identifies ATWS changes on the Chippewa Lake D Route Variation.

APPENDIX F-5

SUMMARY OF CHANGES TO YARDS AND STAGING AREAS
ASSOCIATED WITH THE NGT PROJECT

APPENDIX F-5

Summary of Changes to Yards and Staging Areas Associated with the NGT Project

County, State	Yard/Staging Area ID	MP	New Acreage	Previous Acreage	Change in Acreage
Summit, Ohio	Staging Area-4	35.75	<0.01	-	+<0.01
Medina, Ohio [a]	Staging Area-100	66.11	0.23	-	+0.23
Medina, Ohio [a]	Staging Area-13	66.41	-	0.25	-0.25
Medina, Ohio [a]	Staging Area-101	67.89	0.11	-	+0.11
Medina, Ohio [a]	Staging Area-11	68.41	-	0.19	-0.19
Medina, Ohio [a]	Staging Area-12	68.46	-	0.35	-0.35
Medina, Ohio [a]	Staging Area-10	69.35	-	0.23	-0.23
Medina, Ohio [a]	Staging Area-9	70.76	-	0.15	-0.15
Medina, Ohio [a]	Staging Area-8	70.89	-	0.11	-0.11
Medina, Ohio [a]	Staging Area-7	70.94	-	0.29	-0.29
Lorain, Ohio	Staging Area-89	85.97	-	0.10	-0.10
Wood, Ohio	Staging Area-67	163.88	0.14	0.13	+0.01
Wood, Ohio	Wareyard 3-1b	176.50	-	37.97	-37.97
Wood, Ohio	Wareyard 3-1a	176.71	-	22.44	-22.44
Lucas, Ohio	Wareyard 3-2	186.16	1.11	41.44	-40.34
		TOTAL:	**1.59**	**103.65**	**-102.06**

a Identifies staging area changes on the Chippewa Lake D Route Variation.

APPENDIX F-6

SUMMARY OF CHANGES TO ACCESS ROADS ASSOCIATED WITH THE NGT PROJECT

APPENDIX F-6

Summary of Changes to Access Roads Associated with the NGT Project

County, State	Yard/Staging Area ID	MP	New Acreage	Previous Acreage	Change in Acreage
Columbiana, Ohio	Access Road TWS PAR-7.1	7.1	-	0.02	-0.02
Columbiana, Ohio	Access Road Easement PAR-7.1	7.1	-	0.02	-0.02
Stark, Ohio	Access Road Easement PAR-32.6	32.6	-	0.01	-0.01
Stark, Ohio	Access Road TWS TAR-32.6	32.6	-	0.01	-0.01
Stark, Ohio	Access Road TWS TAR-33.2R	33.2	-	0.02	-0.02
Summit, Ohio	Access Road TWS TAR-40.8R	40.5	0.49	<0.01	+0.49
Summit, Ohio	Access Road TWS TAR-44.1	44.2	0.01	-	+0.01
Wayne, Ohio	Access Road TWS TAR-53.5	53.5	0.20	-	+0.20
Wayne, Ohio	Access Road Easement PAR-57.5	57.6	-	<0.01	-<0.01
Wayne, Ohio	Access Road Easement TAR-57.5	57.6	0.01	-	+0.01
Wayne, Ohio	Access Road TWS PAR-57.5	57.6	0.01	<0.01	+<0.00
Medina, Ohio [a]	Access Road TWS TAR-66.1 C	66.1	-	0.54	-0.54
Medina, Ohio [a]	Access Road TWS TAR-66.4	66.4	0.67	-	+0.67
Medina, Ohio [a]	Access Road TWS TAR-67.3A C	66.7	-	0.22	-0.22
Medina, Ohio [a]	Access Road TWS TAR-67.3B C	67.9	-	0.68	-0.68
Medina, Ohio [a]	Access Road TWS TAR-68.3	68.4	0.41	-	+0.41
Medina, Ohio [a]	Access Road TWS TAR-68.6	68.5	0.74	-	+0.74
Medina, Ohio [a]	Access Road TWS TAR-69.4 C	69.3	-	1.28	-1.28
Medina, Ohio [a]	Access Road TWS TAR-69.6R	69.4	0.66		+0.66
Medina, Ohio [a]	Access Road TWS TAR-70.5 C	70.0	-	0.17	-0.17
Medina, Ohio [a]	Access Road TWS TAR-70.1R	70.2	1.93		+1.93
Medina, Ohio [a]	Access Road TWS TAR-70.8A	70.8	0.18		+0.18
Medina, Ohio [a]	Access Road TWS TAR-70.8B	70.9	0.19		+0.19
Medina, Ohio [a]	Access Road TWS TAR-70.9	70.9	0.30		+0.30
Medina, Ohio [a]	Access Road Easement Par-71.8	71.9	0.29		+0.29
Lorain, Ohio	Access Road TWS TAR-85.9B	86.0	0.18		+0.18
Lorain, Ohio	Access Road TWS TAR-95.7	95.7	0.30	0.29	+0.01
Erie, Ohio	Access Road TWS TAR-115.9R	116.1	0.01	0.05	-0.04
Wood, Ohio, Ohio	Access Road TWS TAR-176.7	176.7	0.04	-	+0.04
Wood, Ohio, Ohio	Access Road TWS TAR-180.1	179.9	-	0.89	-0.89
Lucas, Ohio, Ohio	Access Road TWS TAR-182.1	182.2	-	1.86	-1.86
Lenawee, Michigan	Access Road TWS TAR-228	228.6	0.04	-	+0.04
Lenawee, Michigan	Access Road TWS TAR-228.0	228.6	-	0.03	-0.03

APPENDIX F-6 (cont'd)

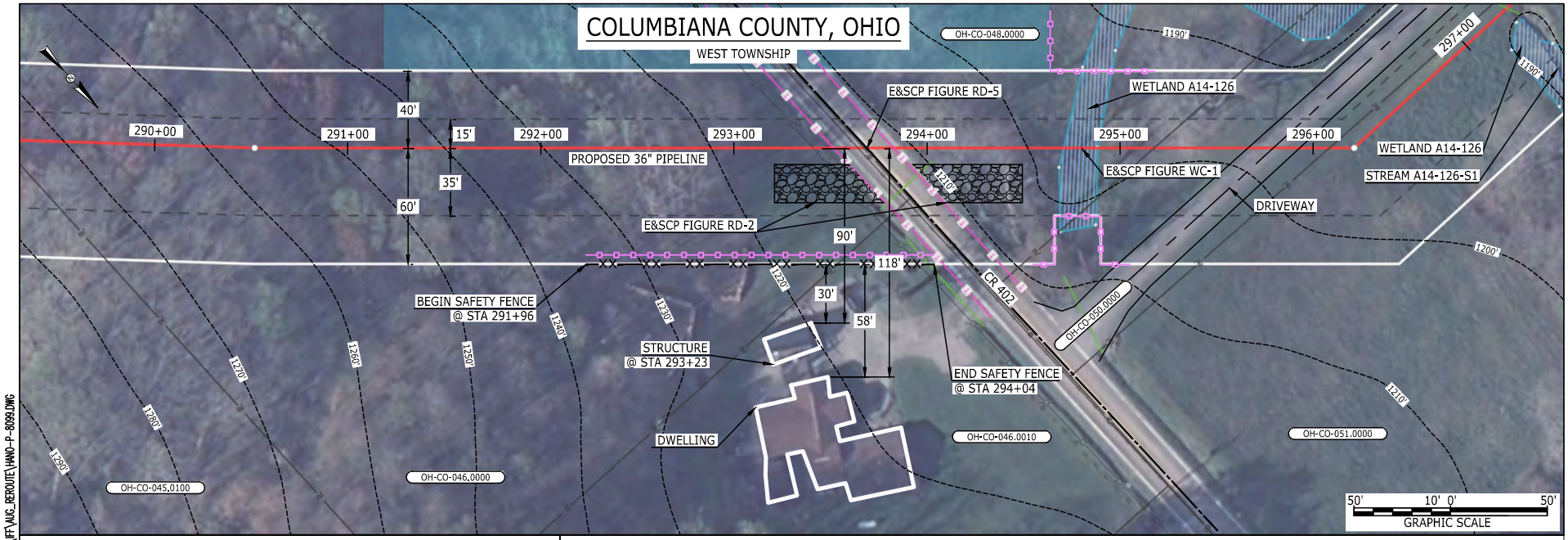
Summary of Changes to Access Roads Associated with the NGT Project

County, State	Yard/Staging Area ID	MP	New Acreage	Previous Acreage	Change in Acreage
Washtenaw, Michigan	Access Road TWS TAR-251.1	251.1	0.90	-	+0.90
Washtenaw, Michigan	Access Road Easement TAR-254.4R	254.4	0.39	-	+0.39

a Identifies access road changes on the Chippewa Lake D Route Variation.

APPENDIX F-7

UPDATED RESIDENTIAL CROSSING PLANS



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 293+23 THERE IS A STRUCTURE LOCATED 30' TO THE RIGHT OF THE CWS AND 90' RIGHT OF THE PROPOSED 36" PIPELINE.

REVISION 0:

STRUCTURE ADDED BASED ON UPDATED FIELD SURVEY.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
0		ISSUED FOR FERC	17AUG16

PROJ. ENG. VP			
CHECKED BY: DOB			
DRAWN BY: RSM			
SCALE: AS SHOWN	DATE		

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 5.48 TO MP 5.63

LOC.: COLUMBIANA COUNTY, OHIO — REV.: 0
YR.: 2017 — W.O. — DWG.NO. HANO-P-8099

NEXUS GAS TRANSMISSION

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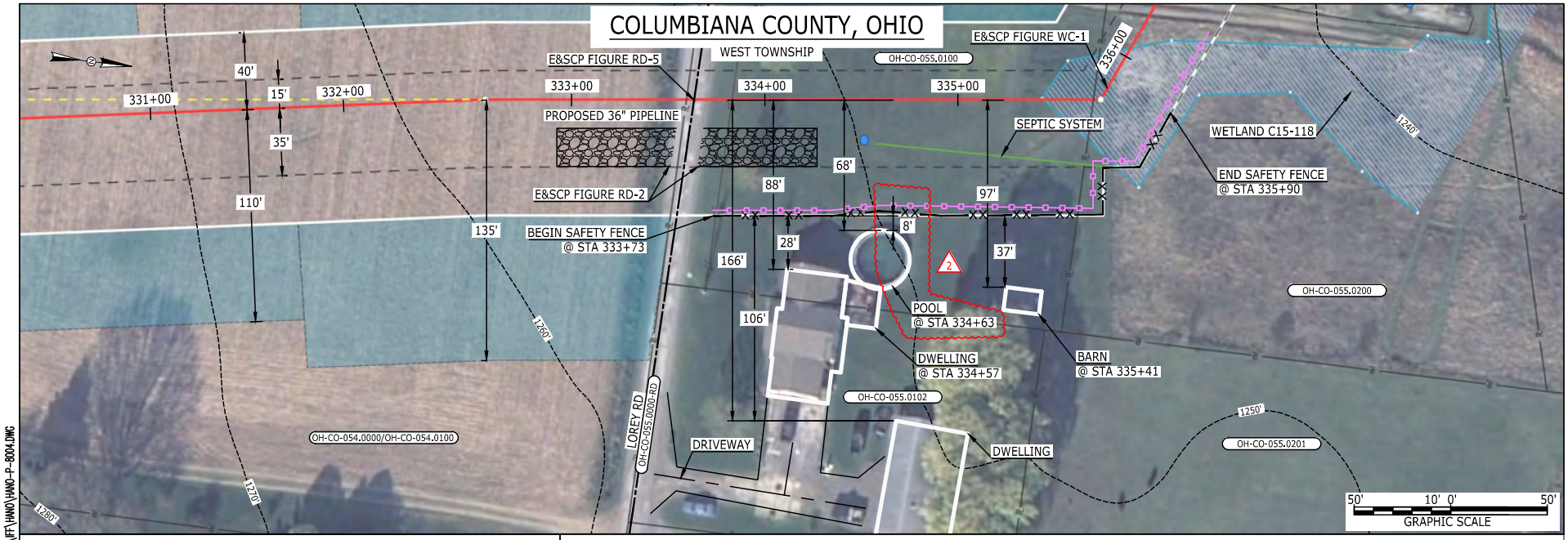

LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 334+57 THERE IS A DWELLING LOCATED 28' TO THE RIGHT OF THE CWS AND 88' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 335+41 THERE IS A BARN LOCATED 37' TO THE RIGHT OF THE CWS AND 97' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 334+63 THERE IS A POOL LOCATED 8' TO THE RIGHT OF THE CWS AND 68' RIGHT OF THE PROPOSED 36" PIPELINE. 2

SPECIAL NOTES :

1. SEE DWG HANO-P-8005 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

UPDATED POOL DIMENSIONS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1B	ISSUED FOR FERC	15MAR16
	1A	ISSUED FOR FERC	26FEB16
	1	ISSUED FOR FERC	23FEB16

PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 6.25R TO MP 6.37

LOC.: COLUMBIANA COUNTY, OHIO REV.:2
YR.: 2017 W.O. DWG.NO. HANO-P-8004

NEXUS GAS TRANSMISSION

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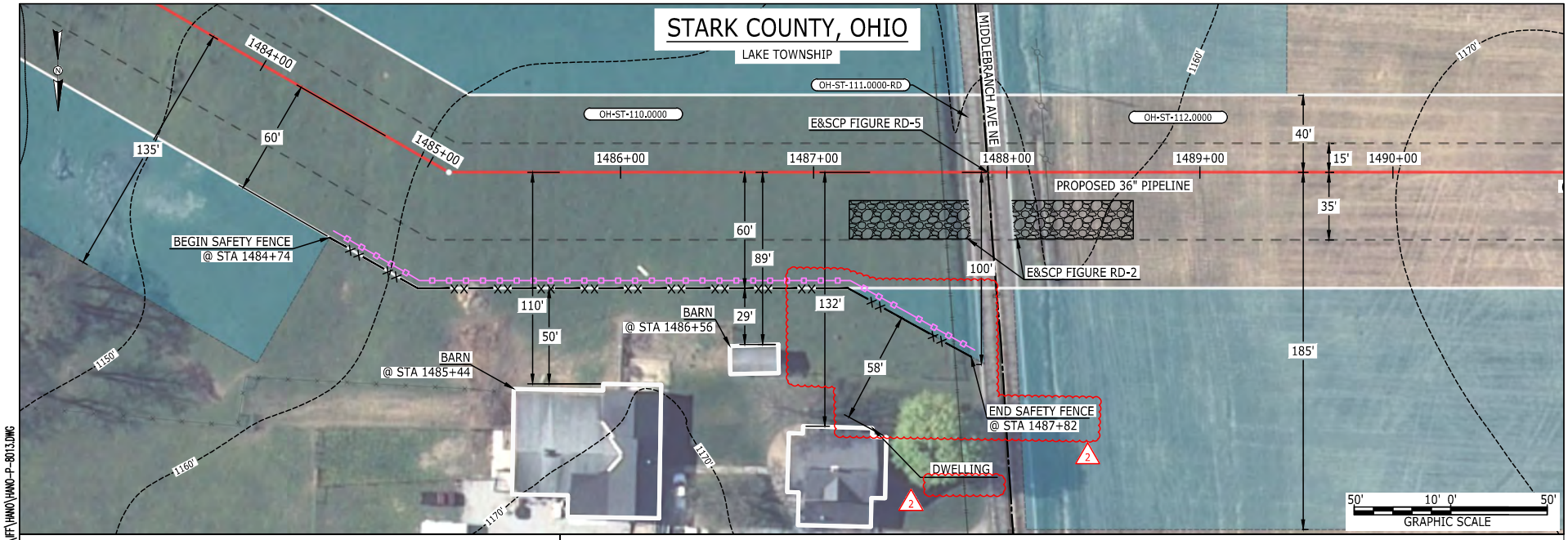
F-7-2



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 1485+44 THERE IS A BARN LOCATED 50' TO THE RIGHT OF THE CWS AND 110' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 1486+56 THERE IS A BARN LOCATED 29' TO THE RIGHT OF THE CWS AND 89' RIGHT OF THE PROPOSED 36" PIPELINE.

2

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCE BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	23OCT15

PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 28.1 TO MP 28.23

LOC.: STARK COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8013

NEXUS GAS TRANSMISSION

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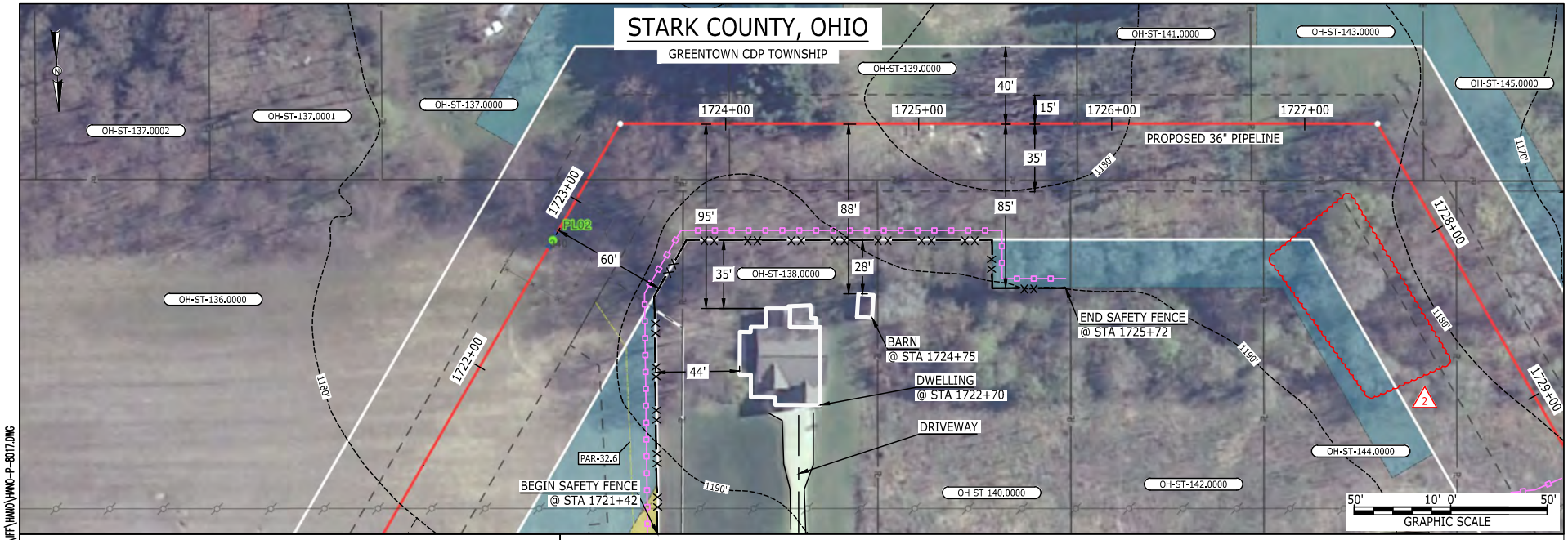

LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 1722+70 THERE IS A DWELLING LOCATED 35' TO THE RIGHT OF THE CWS AND 95' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 1724+75 THERE IS A BARN LOCATED 28' TO THE RIGHT OF THE CWS AND 88' RIGHT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES :

1. SEE DWG HANO-P-8018 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS/TWS ADJUSTED BASED ON UPDATED ENGINEERING DESIGN.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	23OCT15

PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 32.6 TO MP 32.75

LOC.: STARK COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8017

NEXUS GAS TRANSMISSION

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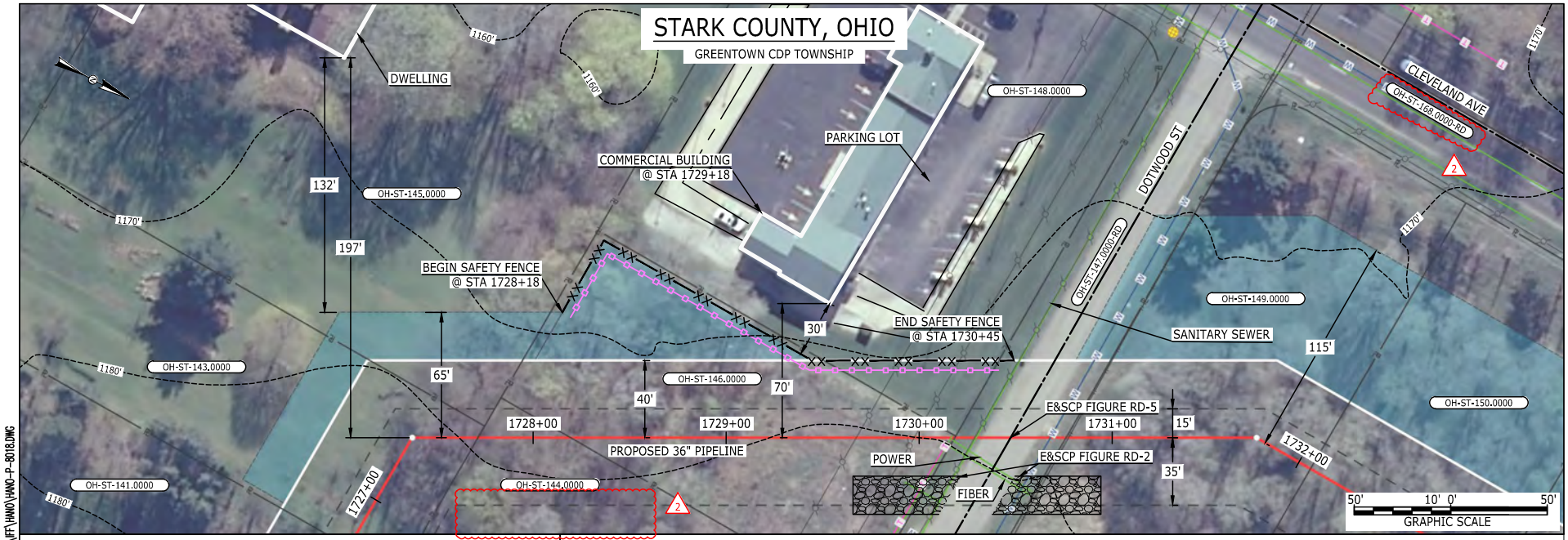


LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 1729+18 THERE IS A COMMERCIAL BUILDING LOCATED 30' TO THE LEFT OF THE CWS AND 70' LEFT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES :

1. SEE DWG HANO-P-8017 & HANO-P-8019 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS/TWS ADJUSTED BASED ON UPDATED ENGINEERING PLAN.
UPDATED WITH ROAD TRACT NUMBER.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	23OCT15

PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

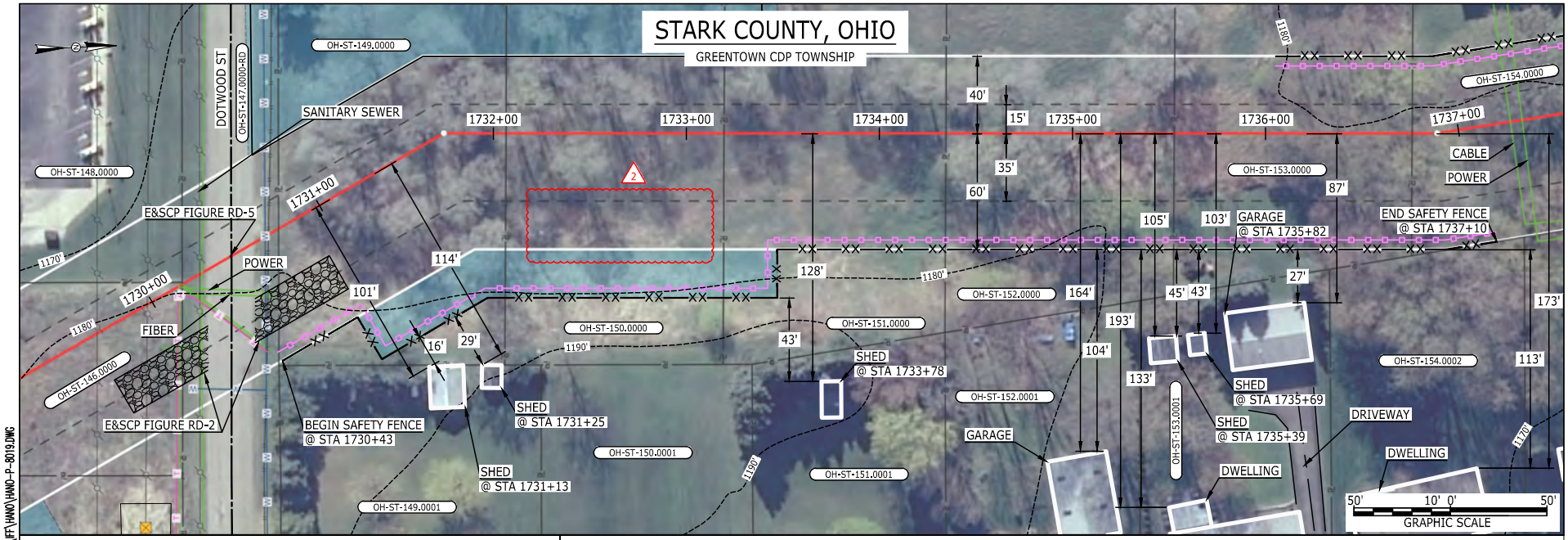
TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 32.71 TO MP 32.81

LOC.: STARK COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. HANO-P-8018

NEXUS GAS TRANSMISSION

MES13858
August 15, 2016 10:23am Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8018.DWG

F-7-5



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 1731+13 THERE IS A SHED LOCATED 16' TO THE RIGHT OF THE CWS AND 101' RIGHT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 1731+25 THERE IS A SHED LOCATED 29' TO THE RIGHT OF THE CWS AND 114' RIGHT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 1733+78 THERE IS A SHED LOCATED 43' TO THE RIGHT OF THE CWS AND 128' RIGHT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 1735+39 THERE IS A SHED LOCATED 45' TO THE RIGHT OF THE CWS AND 105' RIGHT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 1735+69 THERE IS A SHED LOCATED 43' TO THE RIGHT OF THE CWS AND 103' RIGHT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 1735+82 THERE IS A GARAGE LOCATED 27' TO THE RIGHT OF THE CWS AND 87' RIGHT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES :

1. SEE DWG HANO-P-8018 & HANO-P-8020 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS/TWS ADJUSTED BASED ON UPDATED ENGINEERING DESIGN.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	23OCT15

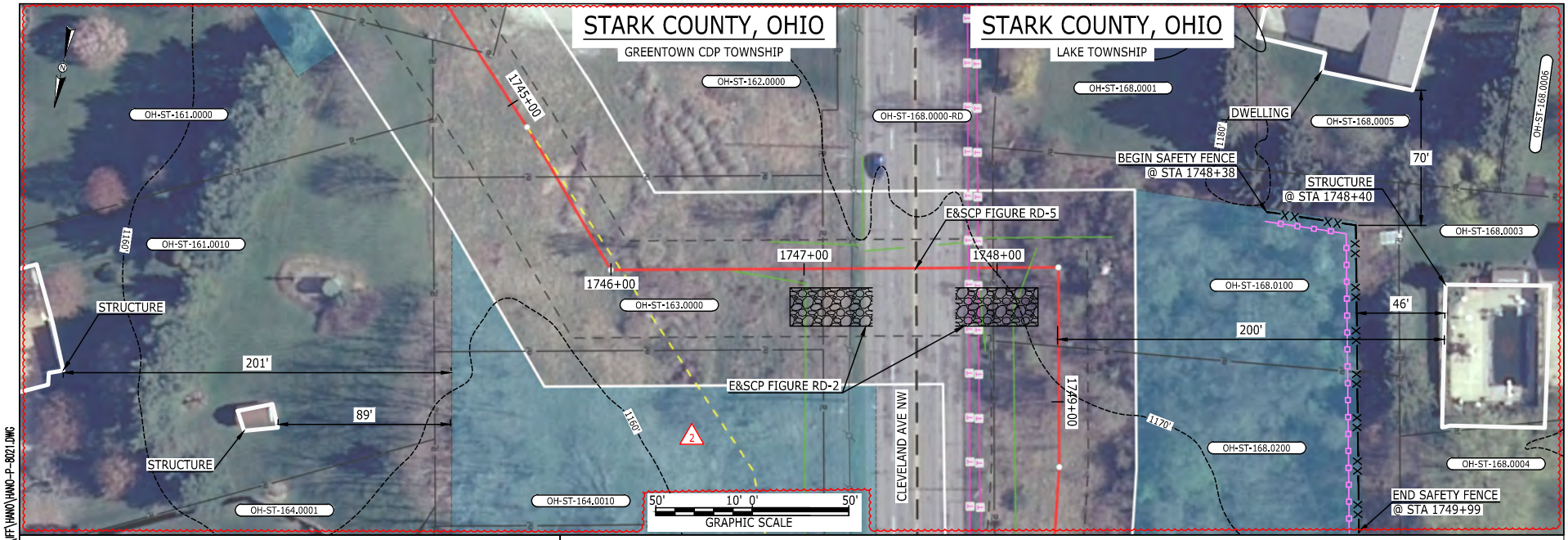
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 32.75 TO MP 32.91

LOC.: STARK COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. HANO-P-8019

NEXUS GAS TRANSMISSION

MES13858
August 23, 2016 12:54pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8019.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - FEB. 2016 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 1748+40 THERE IS A STRUCTURE LOCATED 46' TO THE LEFT OF THE CWS AND 200' LEFT OF THE PROPOSED 36" PIPELINE. 2

SPECIAL NOTES :

1. SEE DWG HANO-P-8022 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

CENTERLINE REROUTED TO AVOID EXISTING UTILITIES TWS/ATWS ADJUSTED ACCORDINGLY.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED TWS/ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	10AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	22OCT15

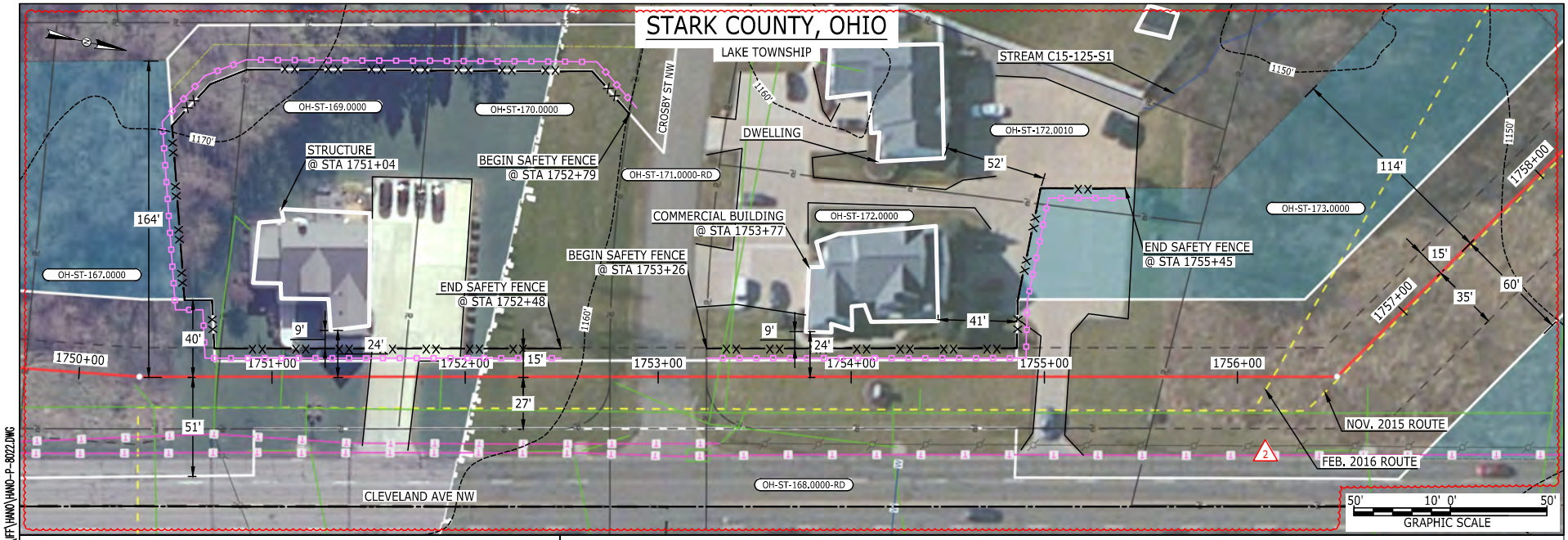
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 33.04 TO MP 33.14R 2

LOC.: STARK COUNTY, OHIO REV.: 2
YR.: 2017 W.O. DWG.NO. HANO-P-8021

NEXUS GAS TRANSMISSION

MES13858
August 16, 2016 5:00pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8021.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - PREVIOUS ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 1751+04 THERE IS A STRUCTURE LOCATED 9' TO THE LEFT OF THE CWS AND 24' LEFT OF THE PROPOSED 36" PIPELINE. 2

AT SURVEY STATION 1753+77 THERE IS A COMMERCIAL BUILDING LOCATED 9' TO THE LEFT OF THE CWS AND 24' LEFT OF THE PROPOSED 36" PIPELINE. 2

SPECIAL NOTES :

1. SEE DWG HANO-P-8021 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

CENTERLINE REROUTED TO AVOID EXISTING UTILITIES. TWS/ATWS ADJUSTED ACCORDINGLY.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED TWS/ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	10AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	22OCT15

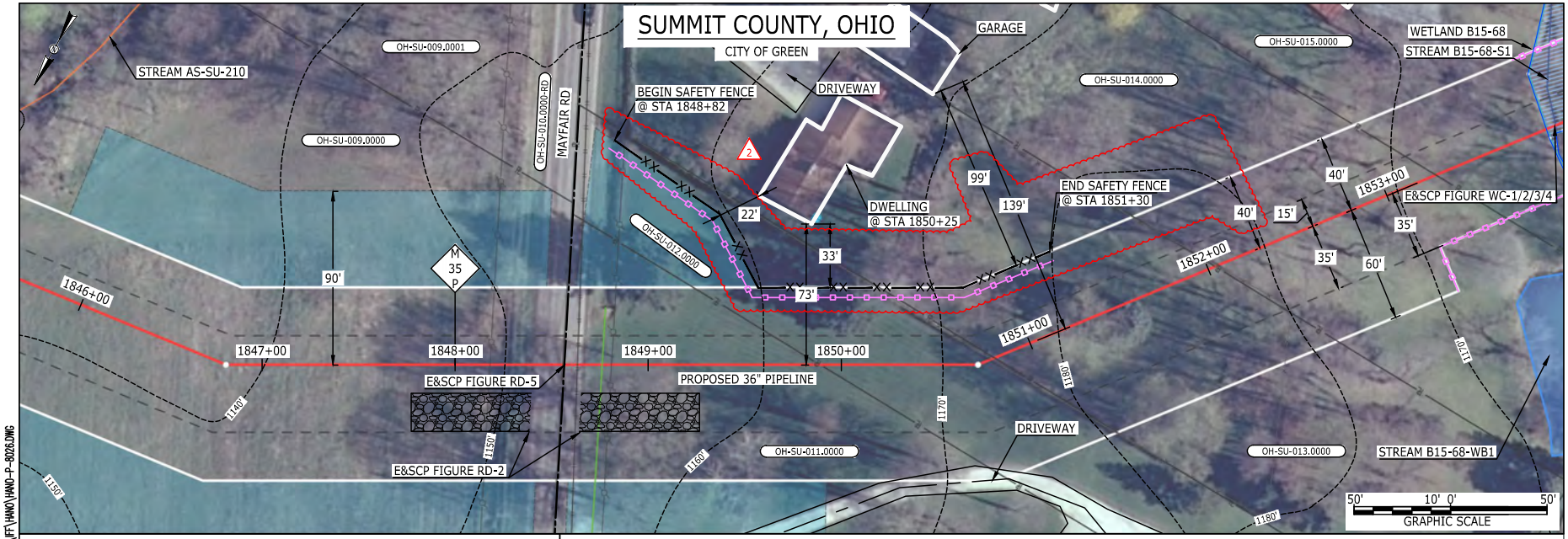
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 33.14R TO MP 33.3R 2

LOC.: STARK COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. HANO-P-8022

NEXUS GAS TRANSMISSION

MES13858
August 16, 2016 2:56pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8022.DWG



LEGEND

PROPOSED NEXUS PIPELINE
PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
INTERCONNECTING PIPELINE
PIPELINE MILEPOST
CONSTRUCTION LIMIT
PERMANENT ROW
ADDITIONAL TEMPORARY WORKSPACE
STAGING AREA
WAREYARD
ROCK ACCESS PAD
PERMANENT ACCESS ROAD
TEMPORARY ACCESS ROAD
DELINEATED WATERBODY BANK
DELINEATED WETLAND BOUNDARY
AGRICULTURAL PEM WETLAND BOUNDARY
DELINEATED WATERBODY CENTERLINE
APPROXIMATE WATERBODY BANK
APPROXIMATE WETLAND BOUNDARY
APPROXIMATE WATERBODY CENTERLINE
STRUCTURES

POWERLINES
CONTOUR LINE
SILT FENCE
STRAW BALE
FOREIGN PIPELINES
TELEPHONE
FENCE
RAILROAD TRACK
ROAD CL
WATER PIPELINE
UTILITY LINE
PROPERTY LINE
SAFETY FENCE
TRACT NUMBER
MUNICIPALITY LINE
WELL: GAS, WATER, OIL, UNKNOWN
MAINLINE VALVE (MLV)
BLOW OFF VALVE
HORIZONTAL DIRECTIONAL DRILLING
LIGHT POLE, FIRE HYDRANT
MICROWAVE TOWER, TOWER
TANK

DESCRIPTION:

AT SURVEY STATION 1850+25 THERE IS A DWELLING LOCATED 22' TO THE LEFT OF THE CWS AND 73' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 2:
ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:
1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	10AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	22OCT15

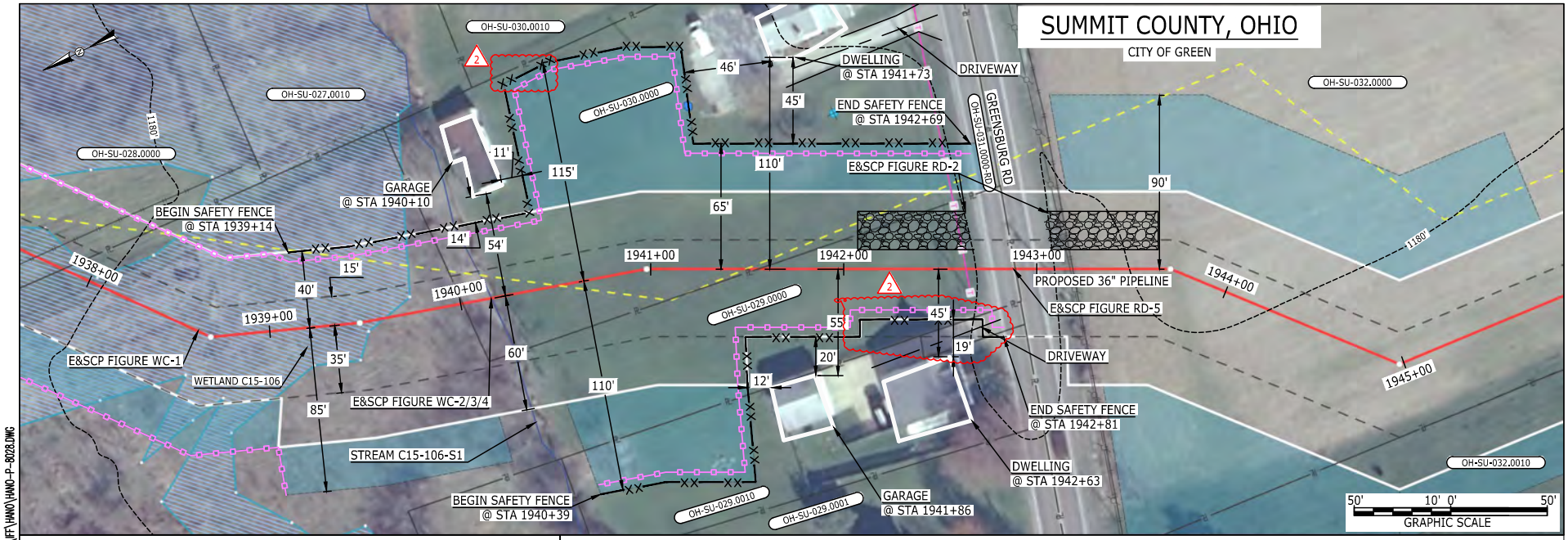
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 34.96 TO MP 35.11

LOC.: SUMMIT COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8026

NEXUS GAS TRANSMISSION

MES13858
August 16, 2016 2:58pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FT\HANO\HANO-P-8026.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST (M 00 P)
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE (1200')
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 1940+10 THERE IS A GARAGE LOCATED 11' TO THE LEFT OF THE CWS AND 54' LEFT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 1941+73 THERE IS A DWELLING LOCATED 45' TO THE LEFT OF THE CWS AND 110' LEFT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 1941+86 THERE IS A GARAGE LOCATED 12' TO THE RIGHT OF THE CWS AND 55' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 1942+63 THERE IS A DWELLING LOCATED 19' TO THE RIGHT OF THE CWS AND 45' RIGHT OF THE PROPOSED 36" PIPELINE. 2

REVISION 2:
TWS ADJUSTED TO REDUCE RESIDENTIAL IMPACT.
ATWS ADJUSTED BASED ON UPDATED CIVIL FIELD SURVEY.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED TWS/ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	22OCT15

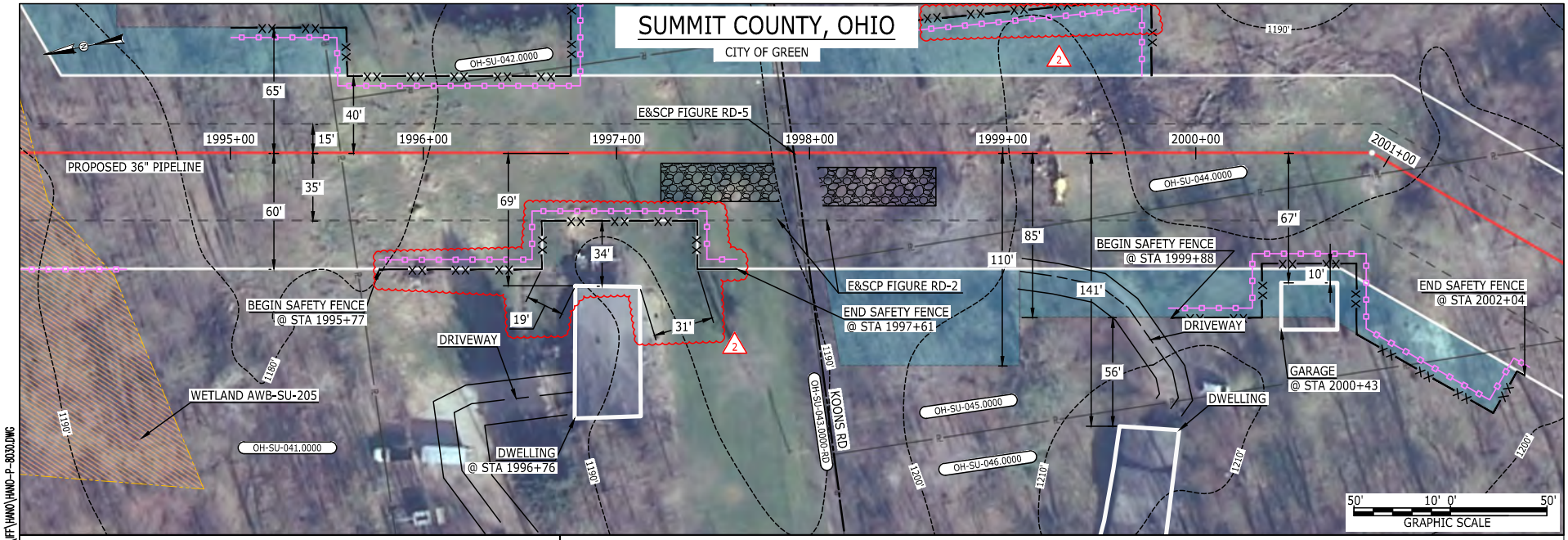
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 36.7R TO MP 36.85R

LOC.: SUMMIT COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. HANO-P-8028

NEXUS GAS TRANSMISSION

MES13858
August 11, 2016 2:15pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8028.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST (M 00 P)
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE (1200')
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 1996+76 THERE IS A DWELLING LOCATED 19' TO THE RIGHT OF THE CWS AND 69' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2000+43 THERE IS A GARAGE LOCATED INSIDE OF THE CWS AND 67' RIGHT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES :

1. FULL WIDTH OF NOMINAL 100-FT ROW HAS BEEN SHOWN DUE TO THE REQUIRED ROAD BORE OF KOONS RD. NO ATWS HAS BEEN PLACED ON THE LAND OWNER WHOSE RESIDENCE IS WITHIN 9-FT OF THE NOMINAL ROW TO REDUCE IMPACTS TO THE LANDSCAPING.
2. NEXUS WILL USE SAFETY FENCING ALONG THE BOUNDARY OF THIS ROW TO ENSURE NO DAMAGE TO THE RESIDENCE.
3. SEE DWG HANO-P-8031 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS/TWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS/TWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	22OCT15

IG.#

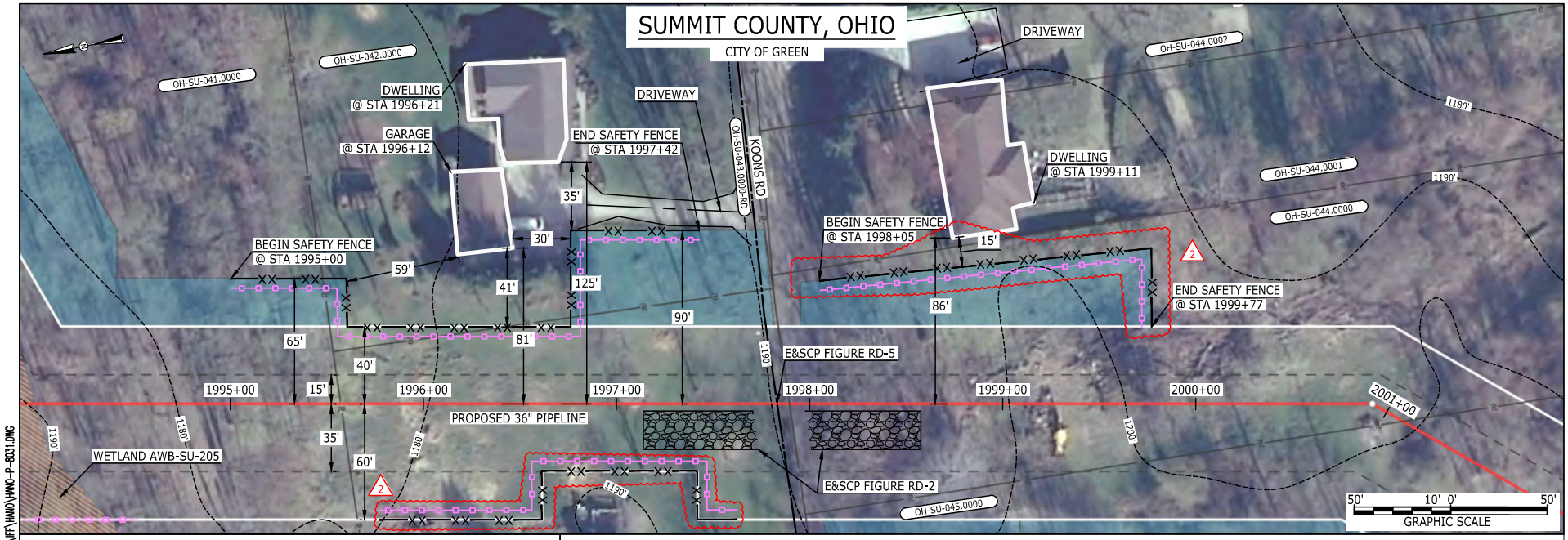
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 37.76 TO MP 37.92

LOC.: SUMMIT COUNTY, OHIO REV.: 2
YR.: 2017 W.O. DWG.NO. HANO-P-8030

NEXUS GAS TRANSMISSION

MES13858
August 11, 2016 2:21pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8030.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 1996+12 THERE IS A GARAGE LOCATED 30' TO THE LEFT OF THE CWS AND 81' LEFT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 1996+21 THERE IS A DWELLING LOCATED 35' TO THE LEFT OF THE CWS AND 125' LEFT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 1999+11 THERE IS A DWELLING LOCATED 15' TO THE LEFT OF THE CWS AND 86' LEFT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTE :

1. ATWS UP TO 10-FT TO THE EDGE OF THE RESIDENCE HAS BEEN SHOWN TO ACCOMMODATE THE KOONS RD BORE.
2. NEXUS WILL USE SAFETY FENCING ALONG THE BOUNDARY OF THIS ROW TO ENSURE NO DAMAGE TO THE RESIDENCE.
3. SEE DWG HANO-P-8030 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS/TWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS/TWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	22OCT15

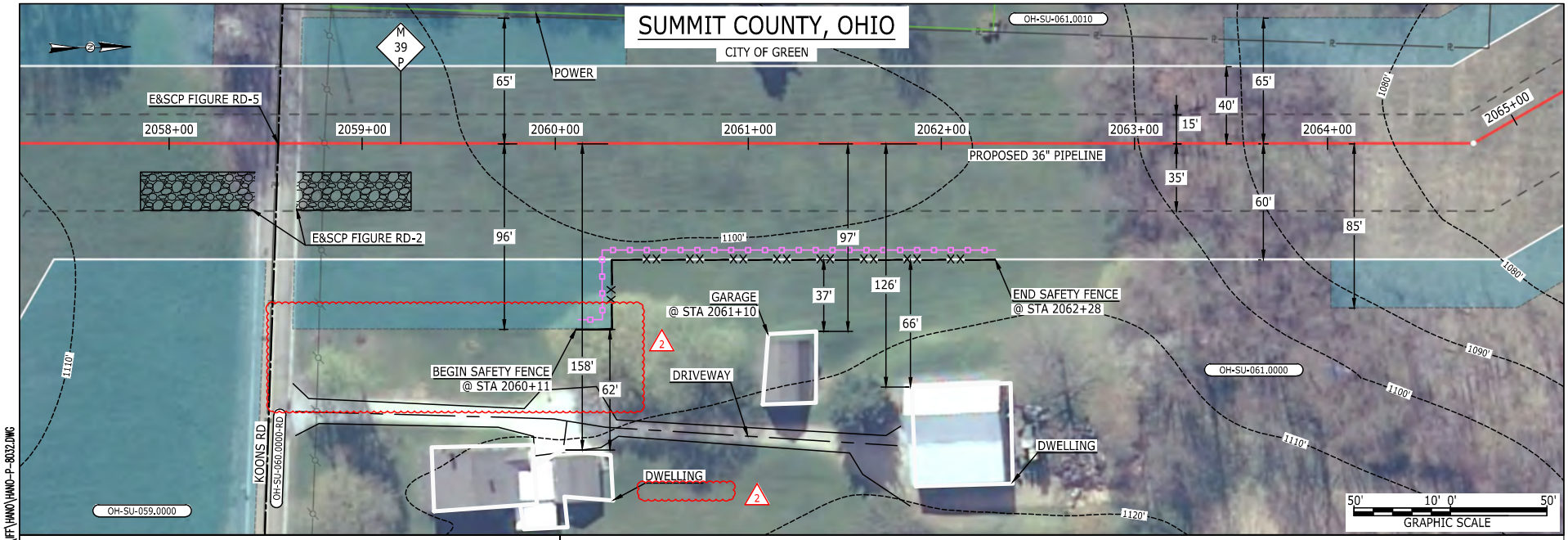
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 37.76 TO MP 37.92

LOC.: SUMMIT COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8031

NEXUS GAS TRANSMISSION

MES13858
August 11, 2016 2:10pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8031.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST (M 00 P)
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE (1200')
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2061+10 THERE IS A GARAGE LOCATED 37' TO THE RIGHT OF THE CWS AND 97' RIGHT OF THE PROPOSED 36" PIPELINE. (2)

REVISION 2:
ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:
1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1B	ISSUED FOR FERC	15MAR16
1A	ISSUED FOR FERC	26FEB16
1	ISSUED FOR FERC	23FEB16

PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

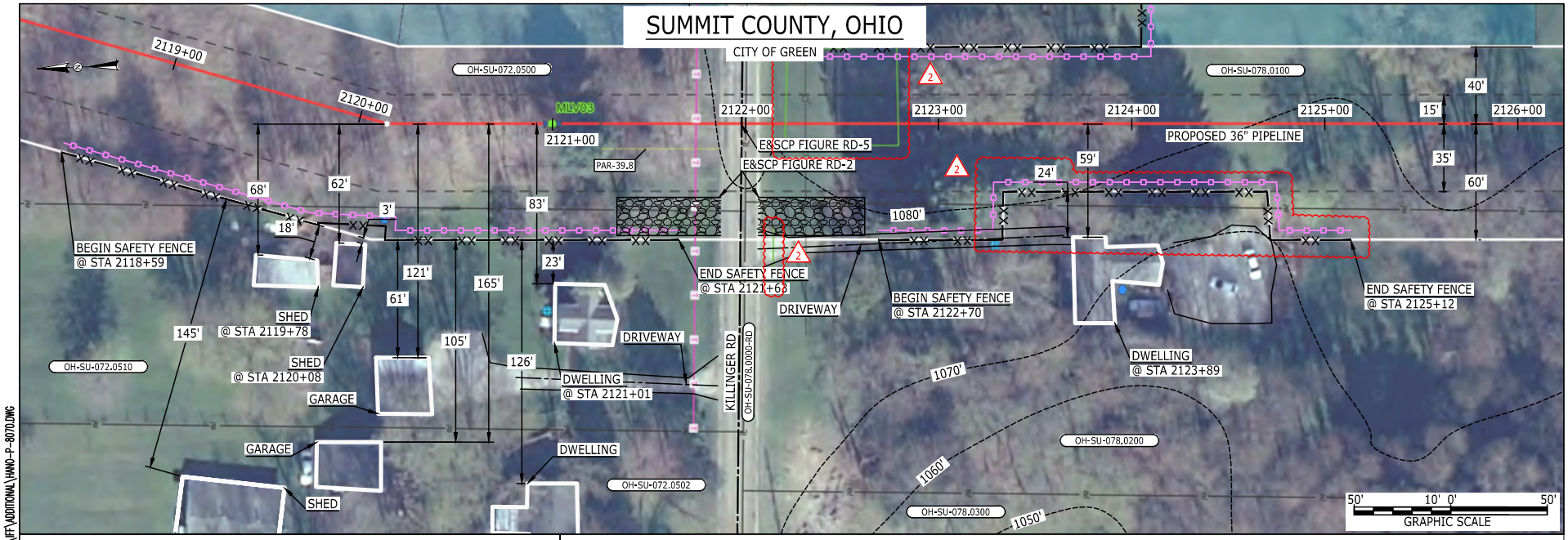
TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 38.96 TO MP 39.11

LOC.: SUMMIT COUNTY, OHIO REV.: 2
YR.: 2017 W.O. DWG.NO. HANO-P-8032

NEXUS GAS TRANSMISSION

MES13858 August 04, 2016 5:45pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8032.DWG

SUMMIT COUNTY, OHIO



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2119+78 THERE IS A SHED LOCATED 18' TO THE RIGHT OF THE CWS AND 68' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2120+08 THERE IS A SHED LOCATED 3' TO THE RIGHT OF THE CWS AND 62' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2121+01 THERE IS A DWELLING LOCATED 23' TO THE RIGHT OF THE CWS AND 83' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2123+89 THERE IS A DWELLING LOCATED 24' TO THE RIGHT OF THE CWS AND 59' RIGHT OF THE PROPOSED 36" PIPELINE. 2

SPECIAL NOTES :

1. SEE DWG HANO-P-8071 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

TWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED TWS.
UPDATED FIELD SURVEY UTILITY LINES.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC	23FEB16

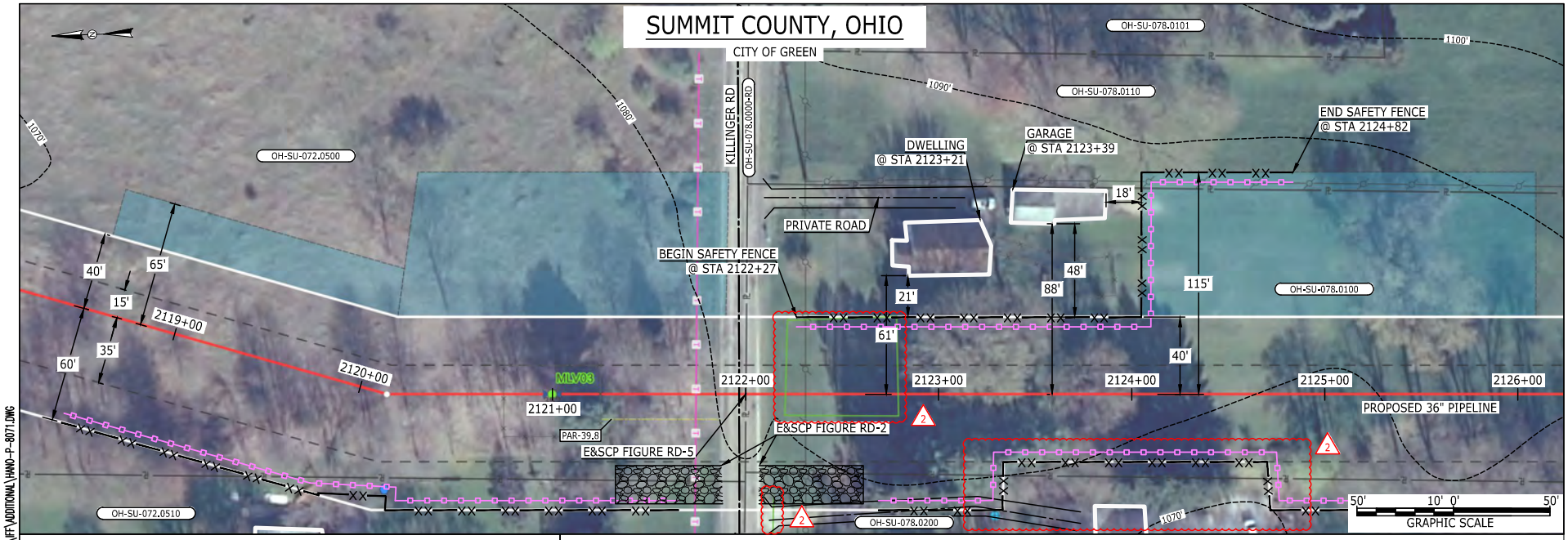
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 40.12R TO MP 40.27R

LOC.: SUMMIT COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. HANO-P-8070

NEXUS GAS TRANSMISSION

MES13858
August 15, 2016 10:46am Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\ADDITIONAL\HANO-P-8070.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2123+21 THERE IS A DWELLING LOCATED 21' TO THE LEFT OF THE CWS AND 61' LEFT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2123+39 THERE IS A GARAGE LOCATED 18' TO THE LEFT OF THE CWS AND 88' LEFT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES :

1. SEE DWG HANO-P-8070 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

TWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED TWS.
UPDATED FIELD SURVEY UTILITY LINES.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC	23FEB16

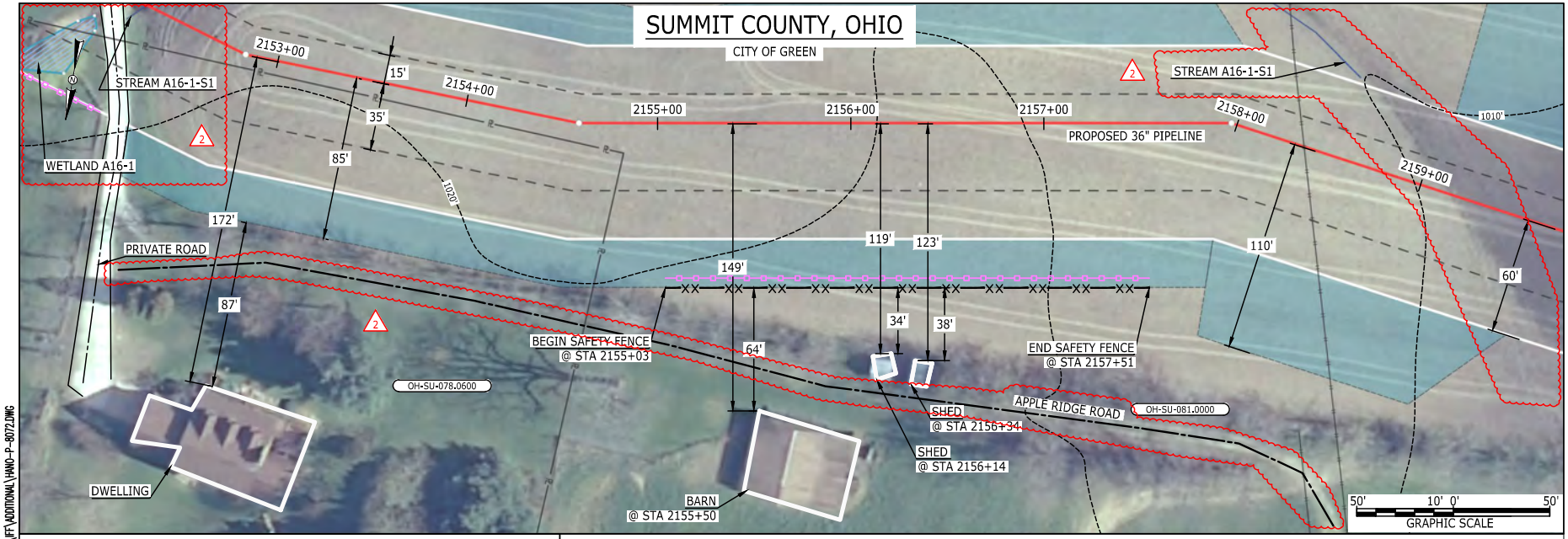
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 40.12R TO MP 40.27R

LOC.: SUMMIT COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. HANO-P-8071

NEXUS GAS TRANSMISSION

MES13858
August 15, 2016 10:52am Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\ADDITIONAL\HANO-P-8071.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, OIL, WATER, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2156+14 THERE IS A SHED LOCATED 34' TO THE RIGHT OF THE CWS AND 119' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2156+34 THERE IS A SHED LOCATED 38' TO THE RIGHT OF THE CWS AND 123' RIGHT OF THE PROPOSED 36" PIPELINE.

REVISION 2:
RESOURCES UPDATED BASED ON WETLAND/WATERBODY FIELD SURVEYS.
UPDATED SILT FENCE BASED ON WETLAND/WATERBODY FIELD SURVEY.

NOTES:
1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC	23FEB16

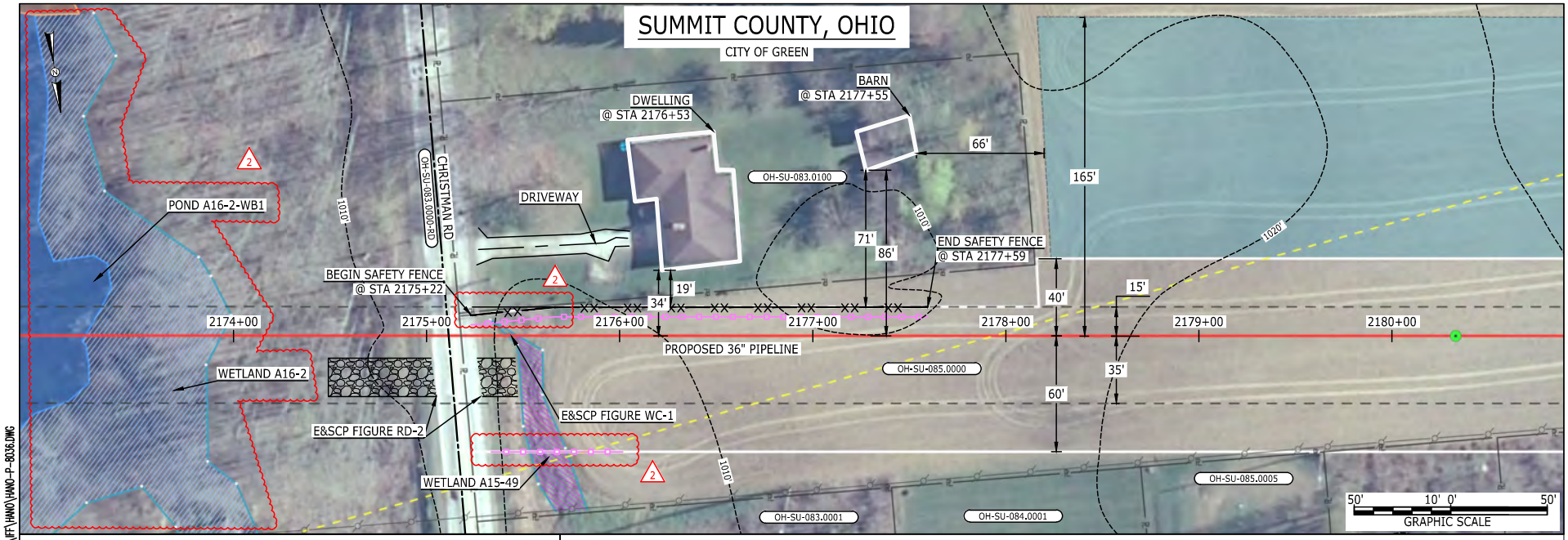
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 40.76R TO MP 40.9R

LOC.: SUMMIT COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. HANO-P-8072

NEXUS GAS TRANSMISSION

MES13858
August 15, 2016 11:02am Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\ADDITIONAL\HANO-P-8072.DWG



LEGEND

PROPOSED NEXUS PIPELINE
PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
INTERCONNECTING PIPELINE
PIPELINE MILEPOST
CONSTRUCTION LIMIT
PERMANENT ROW
ADDITIONAL TEMPORARY WORKSPACE
STAGING AREA
WAREYARD
ROCK ACCESS PAD
PERMANENT ACCESS ROAD
TEMPORARY ACCESS ROAD
DELINEATED WATERBODY BANK
DELINEATED WETLAND BOUNDARY
AGRICULTURAL PEM WETLAND BOUNDARY
DELINEATED WATERBODY CENTERLINE
APPROXIMATE WATERBODY BANK
APPROXIMATE WETLAND BOUNDARY
APPROXIMATE WATERBODY CENTERLINE
STRUCTURES

POWERLINES
CONTOUR LINE
SILT FENCE
STRAW BALE
FOREIGN PIPELINES
TELEPHONE
FENCE
RAILROAD TRACK
ROAD CL
WATER PIPELINE
UTILITY LINE
PROPERTY LINE
SAFETY FENCE
TRACT NUMBER
MUNICIPALITY LINE
WELL: GAS, WATER, OIL, UNKNOWN
MAINLINE VALVE (MLV)
BLOW OFF VALVE
HORIZONTAL DIRECTIONAL DRILLING
LIGHT POLE, FIRE HYDRANT
MICROWAVE TOWER, TOWER
TANK

DESCRIPTION:

AT SURVEY STATION 2176+53 THERE IS A DWELLING LOCATED 19' TO THE LEFT OF THE CWS AND 34' LEFT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTE :
1. CHRISTMAN RD TO BE INSTALLED VIA HORIZONTAL DIRECTIONAL DRILLING.

REVISION 2:
TWS ADJUSTED BASED ON UPDATED CIVIL FIELD SURVEY.
RESOURCES UPDATED BASED ON WETLAND/WATERBODY FIELD SURVEYS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED TWS.

NOTES:
1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	22OCT15

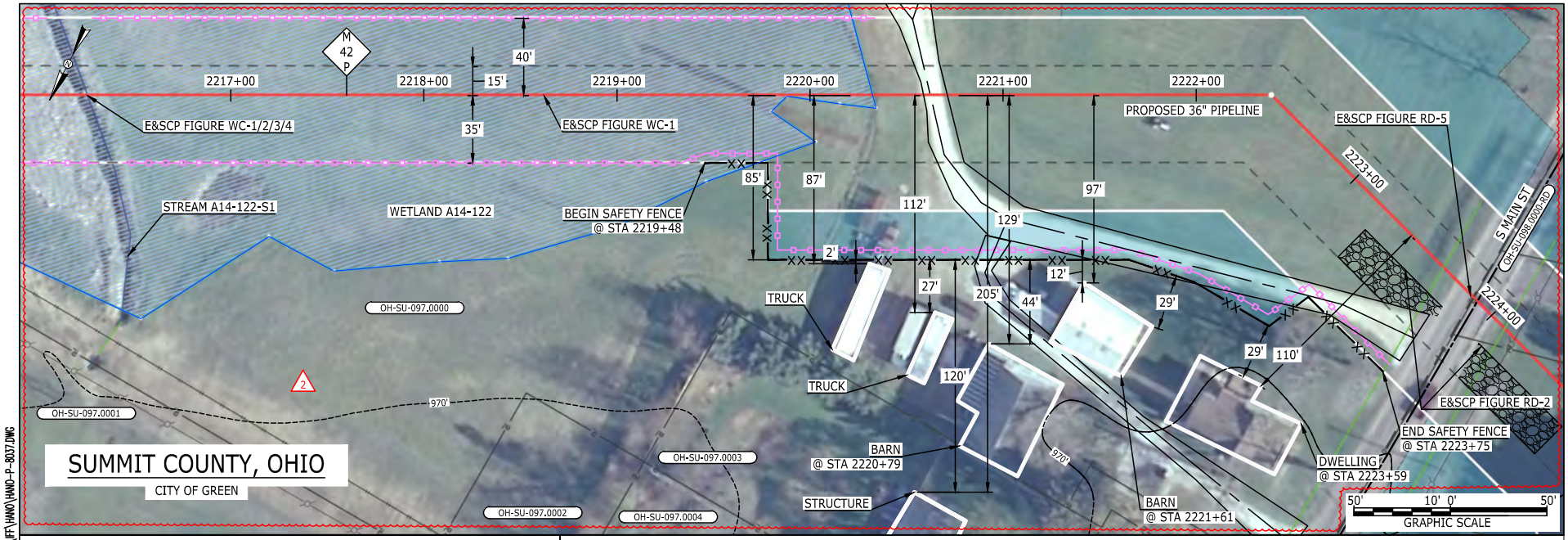
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 41.15R TO MP 41.3R

LOC.: SUMMIT COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8036

NEXUS GAS TRANSMISSION

MES13858
August 11, 2016 2:24pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8036.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST (M 00 P)
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE (1200')
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2221+61 THERE IS A BARN LOCATED 12' TO THE RIGHT OF THE CWS AND 97' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2223+59 THERE IS A DWELLING LOCATED 29' TO THE RIGHT OF THE CWS AND 110' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2220+79 THERE IS A BARN LOCATED 44' TO THE RIGHT OF THE CWS AND 129' RIGHT OF THE PROPOSED 36" PIPELINE. 2

REVISION 2:

REVISED PLAN VIEW ANGLE TO BETTER DEPICT STRUCTURES DISTANCE AND LOCATION. UPDATED ALL DETAILS ACCORDINGLY.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	12AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	22OCT15

IG.#

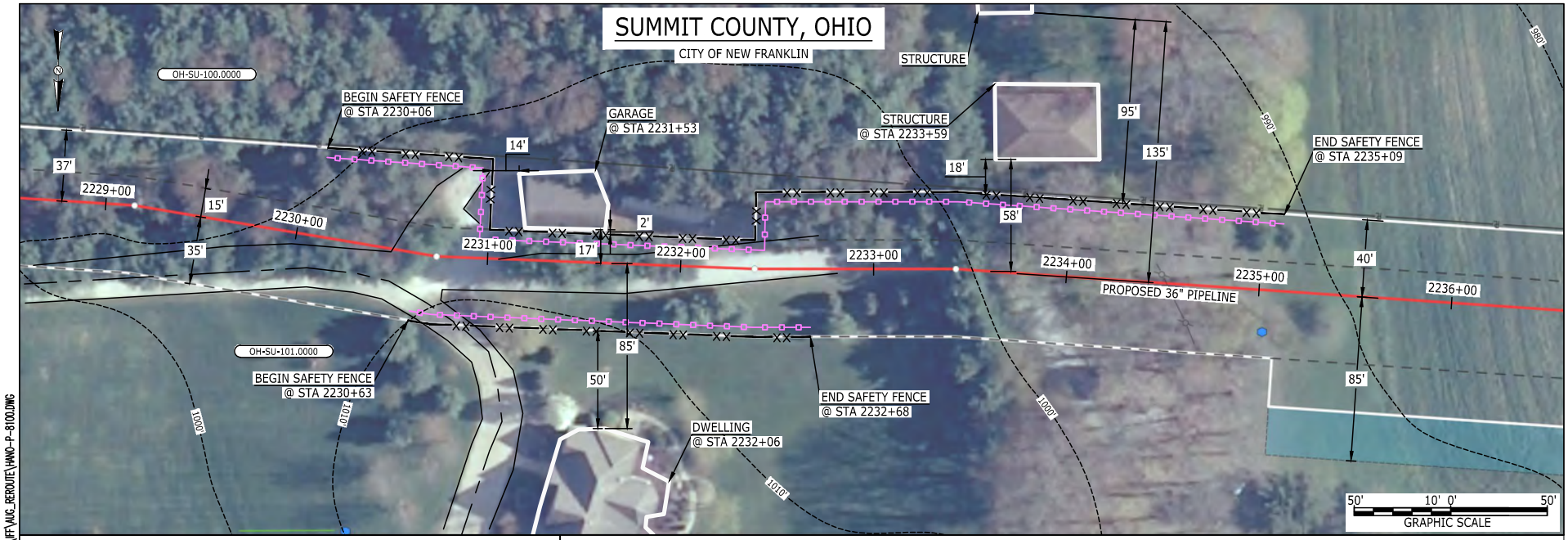
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 41.97 TO MP 42.13 2

LOC.: SUMMIT COUNTY, OHIO REV.: 2
YR.: 2017 W.O. DWG.NO. HANO-P-8037

NEXUS GAS TRANSMISSION

Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8037.DWG 1:01pm August 18, 2016 MES13858



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2231+53 THERE IS A GARAGE LOCATED 2' TO THE LEFT OF THE CWS AND 17' LEFT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2232+06 THERE IS A DWELLING LOCATED 50' TO THE RIGHT OF THE CWS AND 85' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2233+59 THERE IS A STRUCTURE LOCATED 18' TO THE LEFT OF THE CWS AND 58' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 0:

CENTERLINE REROUTED DUE TO STAKEHOLDER INPUT.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
0		ISSUED FOR FERC	17AUG16

PROJ. ENG. VP
CHECKED BY: RMG
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 42.21R TO MP 42.36R

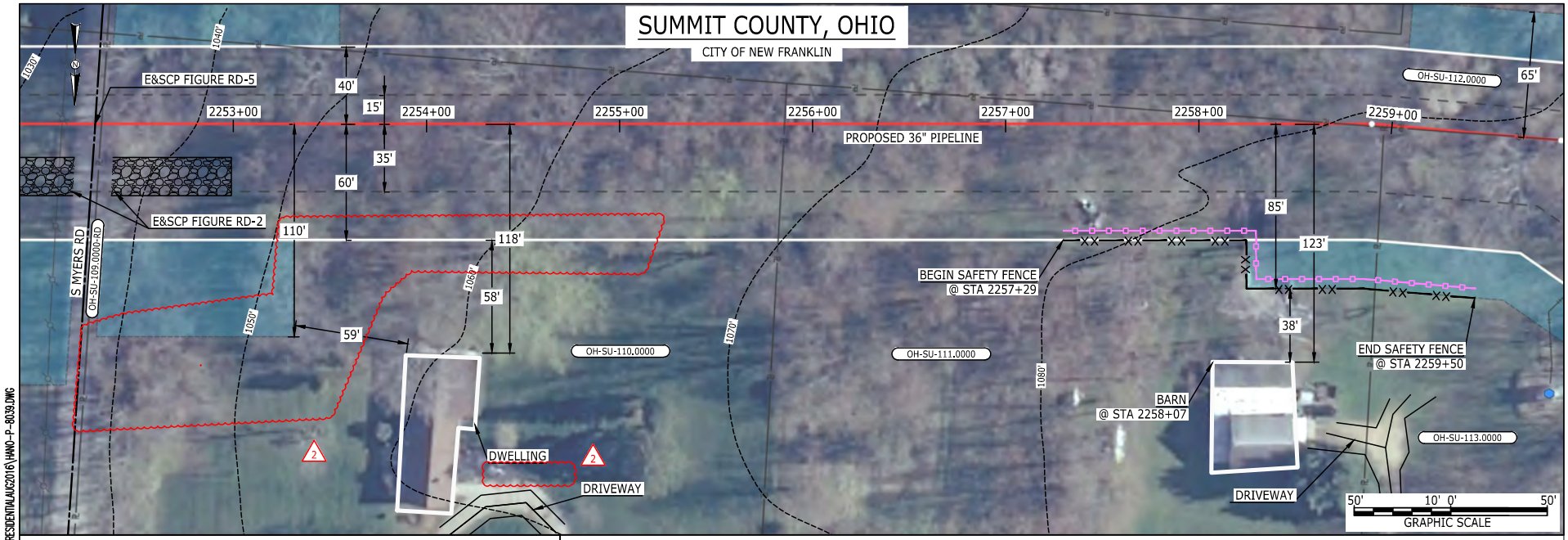
LOC.: SUMMIT COUNTY, OHIO
REV.: 0
YR.: 2017
W.O.
DWG.NO. HANO-P-8100

NEXUS GAS TRANSMISSION

BEL24588
August 19, 2016 10:45am Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\AUG_REROUTE\HANO-P-8100.DWG

SUMMIT COUNTY, OHIO

CITY OF NEW FRANKLIN



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2258+07 THERE IS A BARN LOCATED 38' TO THE RIGHT OF THE CWS AND 123' RIGHT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

ATWS ADJUSTED DUE TO LANDOWNER REQUEST.
REMOVED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS DISTANCE FROM DWELLING.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	15AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	22OCT15

IG.#

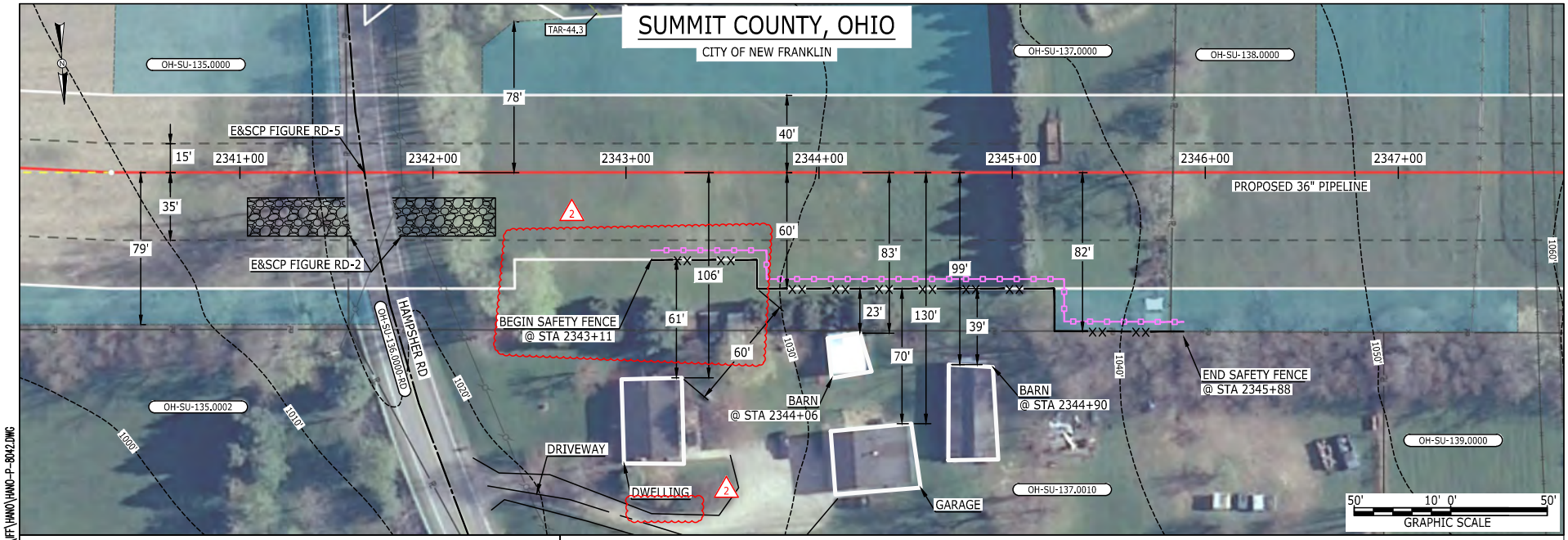
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 42.65 TO MP 42.8

LOC.: SUMMIT COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8039

NEXUS GAS TRANSMISSION

MES13858
August 22, 2016 11:53am Filename: C:\USERS\MES13858\DESKTOP\ALLRESIDENTIALAUG2016\HANO-P-8039.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

2

AT SURVEY STATION 2344+06 THERE IS A BARN LOCATED 23' TO THE RIGHT OF THE CWS AND 83' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2344+90 THERE IS A BARN LOCATED 39' TO THE RIGHT OF THE CWS AND 99' RIGHT OF THE PROPOSED 36" PIPELINE.

REVISION 2:
TWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED TWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1B	ISSUED FOR FERC	15MAR16
	1A	ISSUED FOR FERC	26FEB16
	1	ISSUED FOR FERC	23FEB16

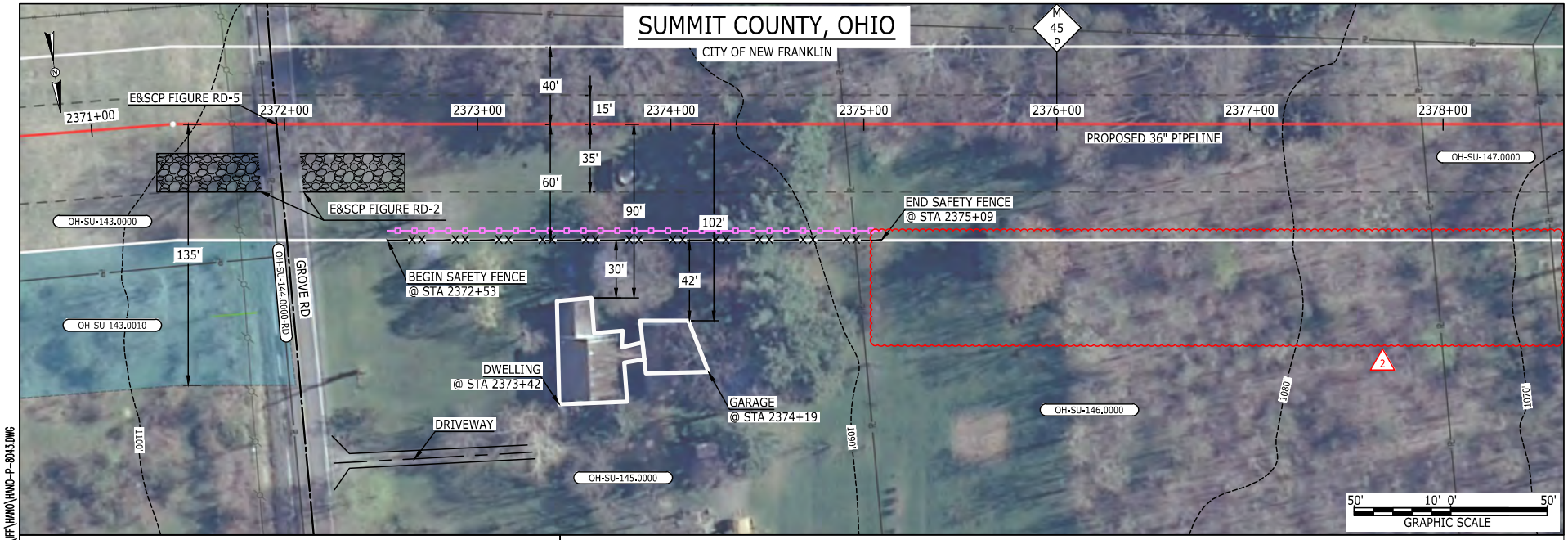
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 44.32R TO MP 44.47

LOC.: SUMMIT COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. HANO-P-8042

NEXUS GAS TRANSMISSION

MES13858
August 11, 2016 2:40pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8042.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST (M 00 P)
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE (1200')
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2373+42 THERE IS A DWELLING LOCATED 30' TO THE RIGHT OF THE CWS AND 90' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2374+19 THERE IS A GARAGE LOCATED 42' TO THE RIGHT OF THE CWS AND 102' RIGHT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

ATWS REMOVED DUE TO UPDATED WETLAND FIELD SURVEY DATA.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	22OCT15

IG.#

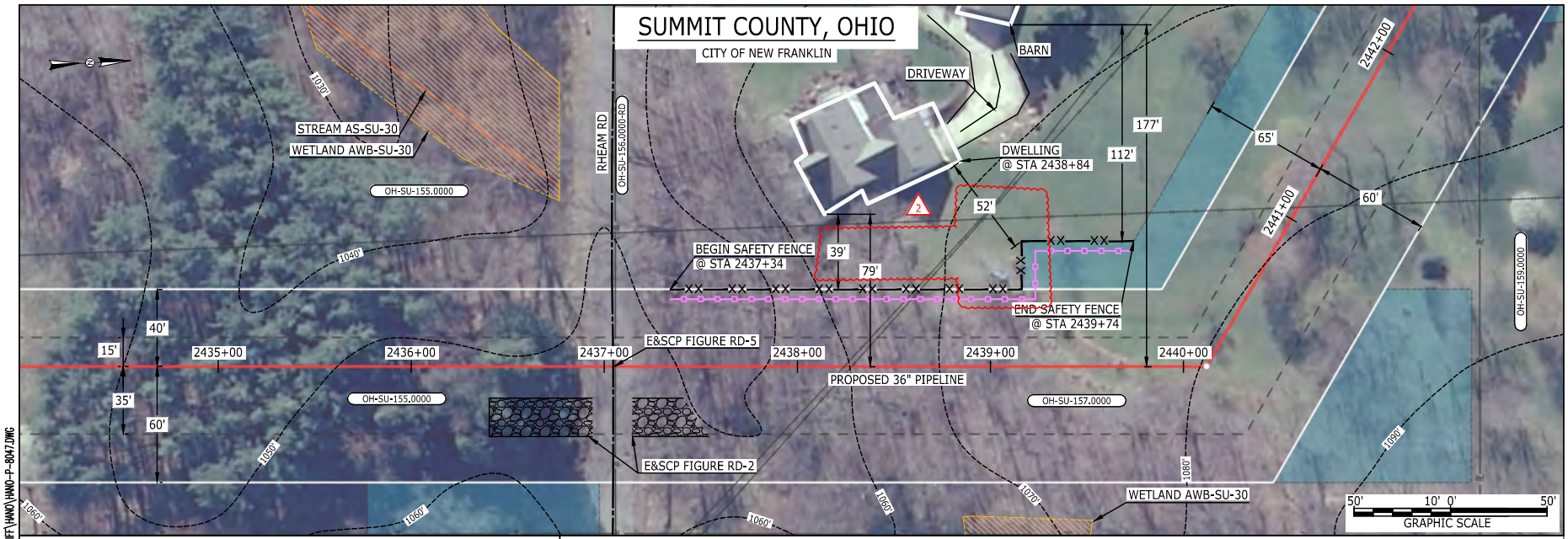
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 44.9 TO MP 45.05

LOC.: SUMMIT COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8043

NEXUS GAS TRANSMISSION

MES13858
August 11, 2016 2:45pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8043.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2438+84 THERE IS A DWELLING LOCATED 39' TO THE LEFT OF THE CWS AND 79' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	22OCT15

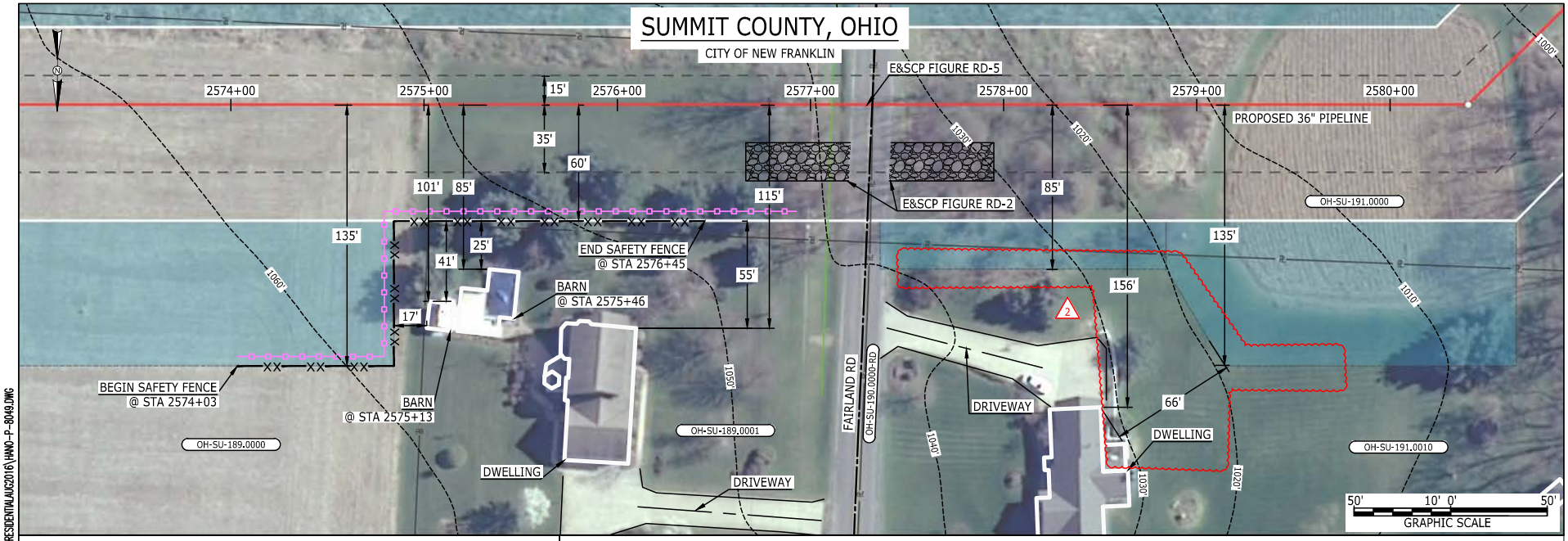
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 46.1 TO MP 46.25

LOC.: SUMMIT COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8047

NEXUS GAS TRANSMISSION

MES13858
August 04, 2016 5:46pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FT\HANO\HANO-P-8047.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2575+13 THERE IS A BARN LOCATED 17' TO THE RIGHT OF THE CWS AND 101' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2575+46 THERE IS A BARN LOCATED 25' TO THE RIGHT OF THE CWS AND 85' RIGHT OF THE PROPOSED 36" PIPELINE.

2

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
REMOVED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	22AUG16
1B	ISSUED FOR FERC	15MAR16
1A	ISSUED FOR FERC	26FEB16
1	ISSUED FOR FERC	23FEB16

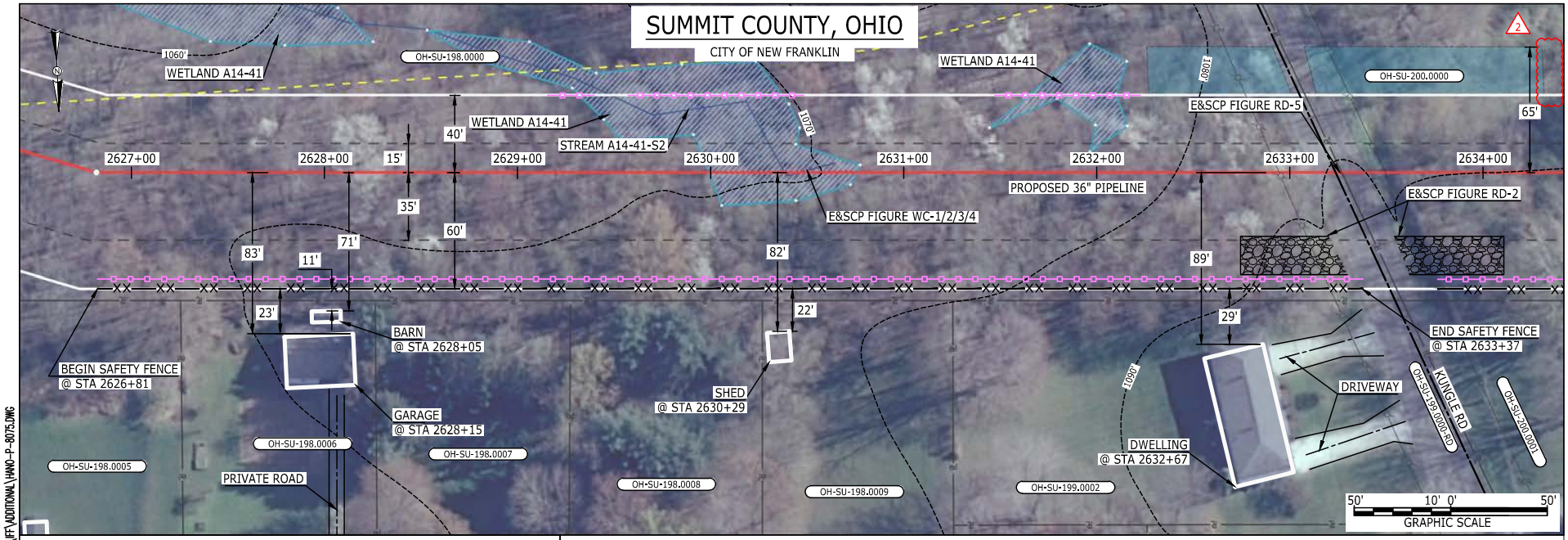
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 48.73 TO MP 48.88

LOC.: SUMMIT COUNTY, OHIO REV.:2
YR.: 2017 W.O. DWG.NO. HANO-P-8049

NEXUS GAS TRANSMISSION

MES13858 August 22, 2016 11:55am Filename: C:\USERS\MES13858\DESKTOP\ALLRESIDENTIALAUG2016\HANO-P-8049.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2628+05 THERE IS A BARN LOCATED 11' TO THE RIGHT OF THE CWS AND 71' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2628+15 THERE IS A GARAGE LOCATED 23' TO THE RIGHT OF THE CWS AND 83' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2630+29 THERE IS A SHED LOCATED 22' TO THE RIGHT OF THE CWS AND 82' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2632+67 THERE IS A DWELLING LOCATED 29' TO THE RIGHT OF THE CWS AND 89' RIGHT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES :

1. SEE DWG HANO-P-8076 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS/TWS AND RESOURCES UPDATED BASED ON WETLAND/WATERBODY FIELD SURVEYS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	10AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC	23FEB16

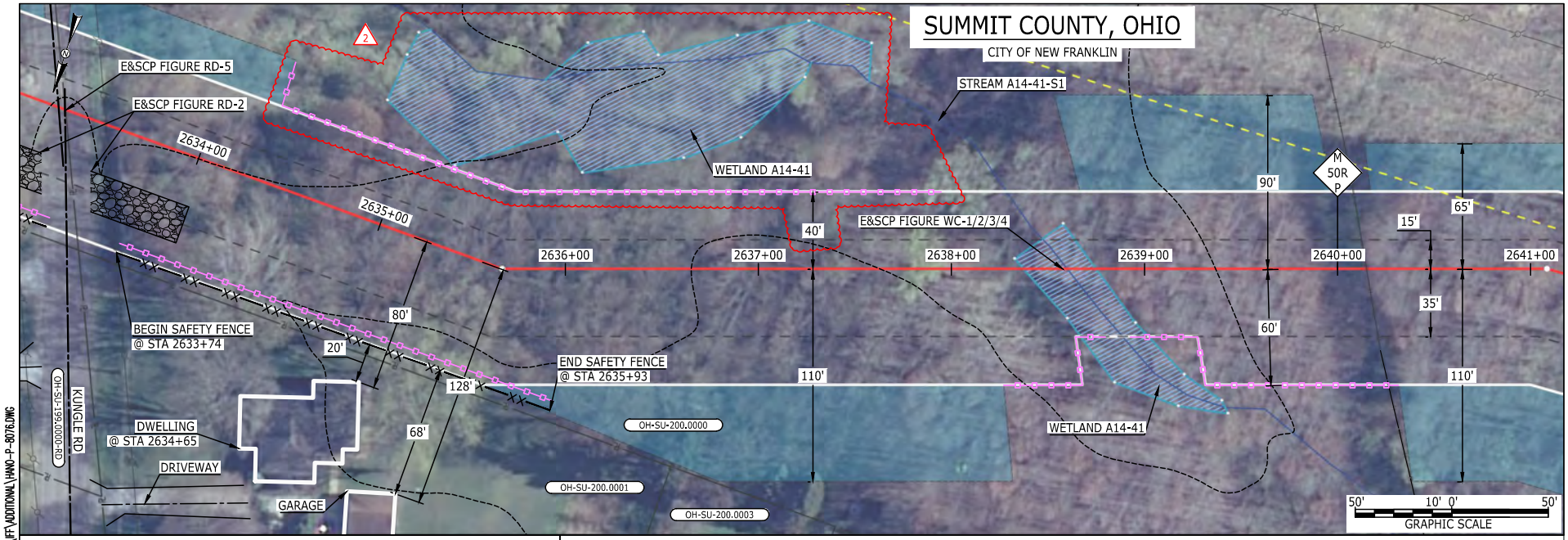
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 49.74R TO MP 49.89R

LOC.: SUMMIT COUNTY, OHIO REV.:2
YR.: 2017 W.O. DWG.NO. HANO-P-8075

NEXUS GAS TRANSMISSION

MES13858 August 22, 2016 4:29pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\ADDITIONAL\HANO-P-8075.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST (M 00 P)
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE (1200')
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2634+65 THERE IS A DWELLING BUILDING LOCATED 20' TO THE RIGHT OF THE CWS AND 80' RIGHT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES:

1. SEE DWG HANO-P-8075 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS/TWS AND RESOURCES UPDATED BASED ON WETLAND/WATERBODY FIELD SURVEYS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC	23FEB16

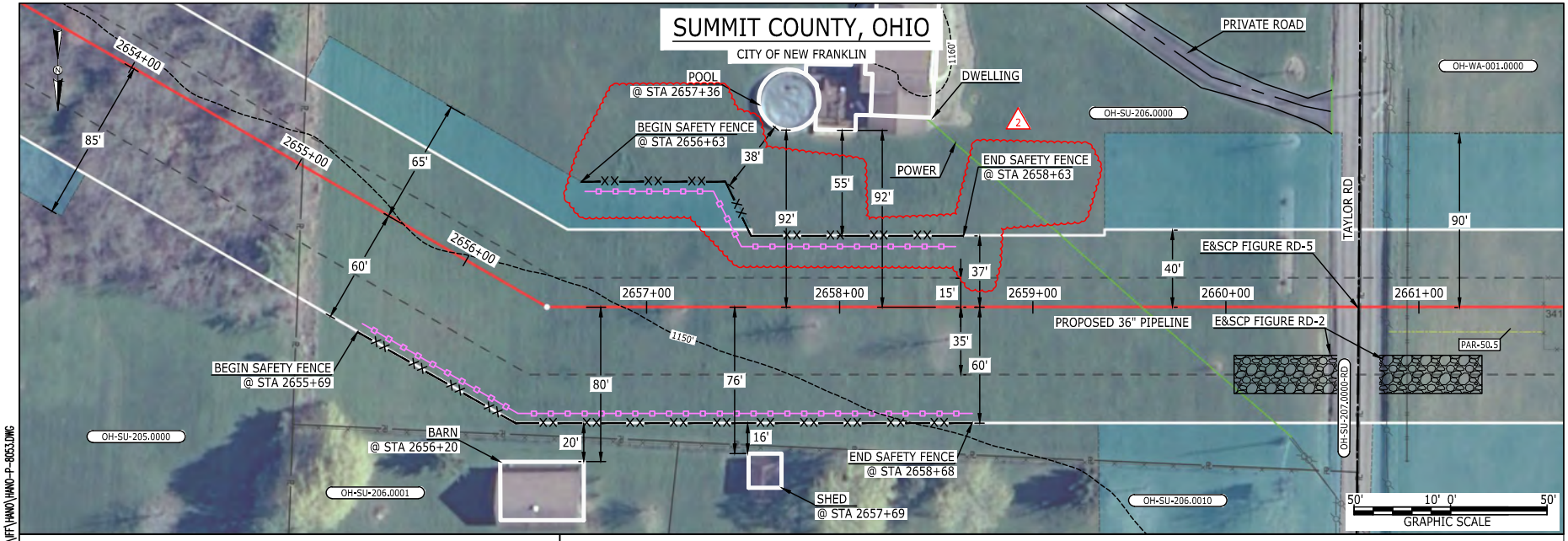
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 49.87R TO MP 50.02R

LOC.: SUMMIT COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. HANO-P-8076

NEXUS GAS TRANSMISSION

MES13858
August 23, 2016 1:25pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\RF1\ADDITIONAL\HANO-P-8076.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2656+20 THERE IS A BARN LOCATED 20' TO THE RIGHT OF THE CWS AND 80' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2657+69 THERE IS A SHED LOCATED 16' TO THE RIGHT OF THE CWS AND 76' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2657+36 THERE IS A POOL LOCATED 38' TO THE LEFT OF THE CWS AND 92' LEFT OF THE PROPOSED 36" PIPELINE. (2)

REVISION 2:

ATWS/TWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS/TWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1B	ISSUED FOR FERC	15MAR16
1A	ISSUED FOR FERC	26FEB16
1	ISSUED FOR FERC	23FEB16

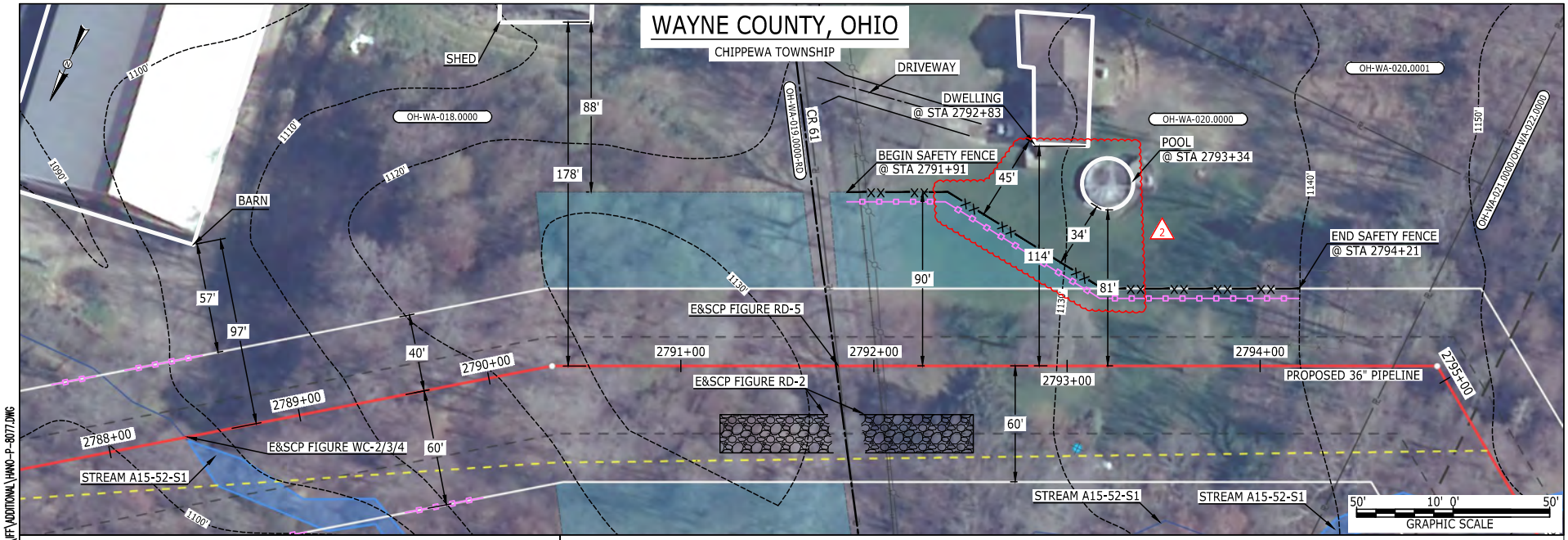
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 50.25 TO MP 50.41

LOC.: SUMMIT COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8053

NEXUS GAS TRANSMISSION

MES13858
August 15, 2016 10:41am Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FT\HANO\HANO-P-8053.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2792+83 THERE IS A DWELLING LOCATED 45' TO THE LEFT OF THE CWS AND 114' LEFT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2793+34 THERE IS A POOL LOCATED 34' TO THE LEFT OF THE CWS AND 81' LEFT OF THE PROPOSED 36" PIPELINE.

2

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACT.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC	23FEB16

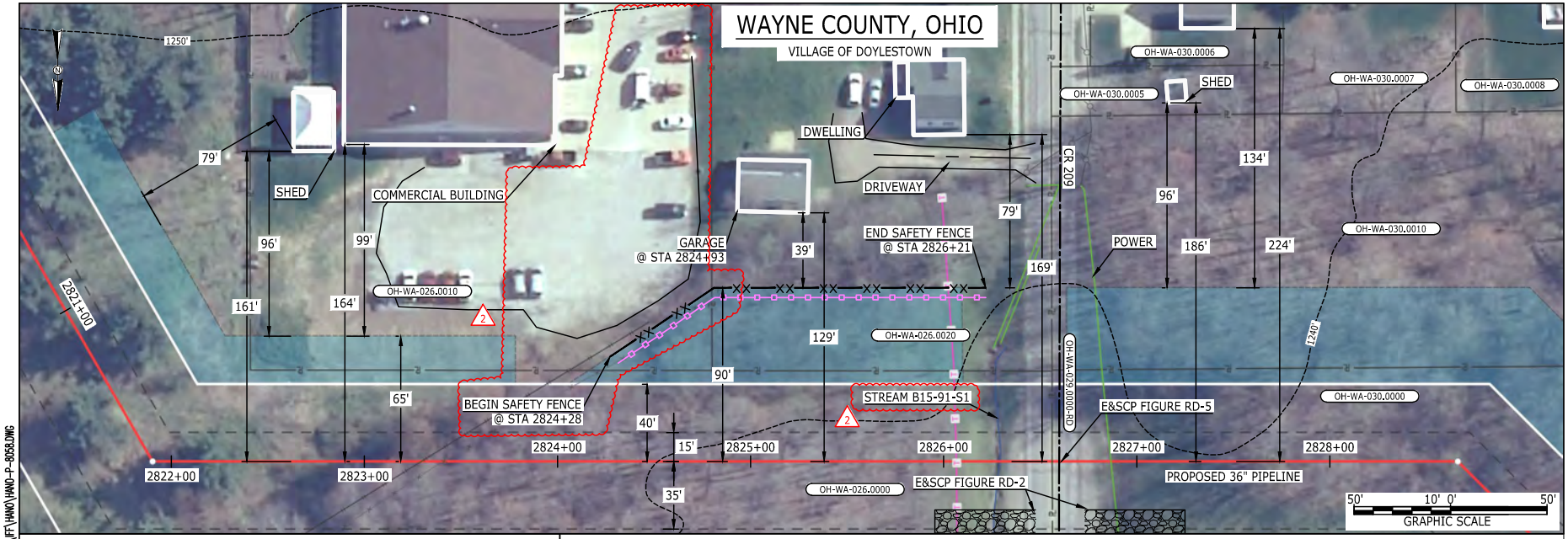
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 52.8R TO MP 52.95

LOC.: WAYNE COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. HANO-P-8077

NEXUS GAS TRANSMISSION

MES13858
August 04, 2016 5:49pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\ADDITIONAL\HANO-P-8077.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, OIL, WATER, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2824+93 THERE IS A GARAGE LOCATED 39' TO THE LEFT OF THE CWS AND 129' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

ATWS ADJUSTED BASED ON TAR REMOVAL TO AVOID IMPACTS TO EXISTING PARKING LOT.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	21OCT15

IG.#

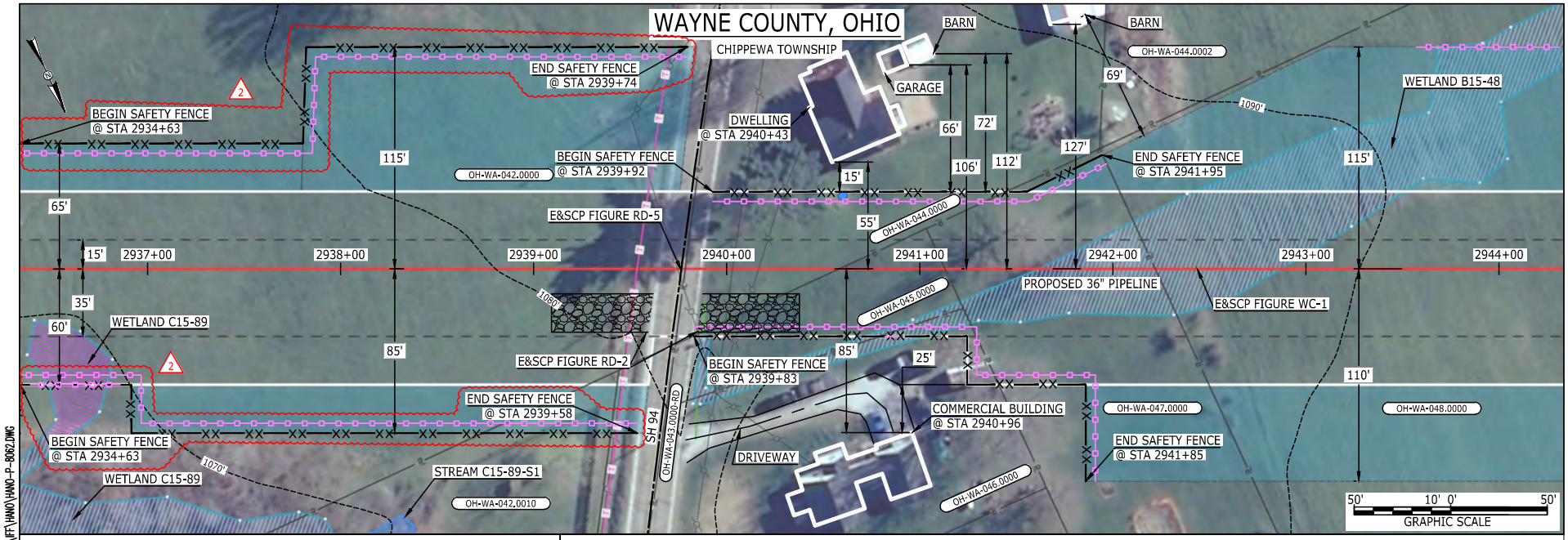
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 53.42 TO MP 53.58

LOC.: WAYNE COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8058

NEXUS GAS TRANSMISSION

MES13858
August 11, 2016 2:56pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8058.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2940+96 THERE IS A COMMERCIAL BUILDING LOCATED 25' TO THE RIGHT OF THE CWS AND 85' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 2940+43 THERE IS A DWELLING LOCATED 15' TO THE LEFT OF THE CWS AND 55' LEFT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTE:
1. SEE DWG HANO-P-8900 FOR ORGANIC FARM CROSSING DRAWING. (2)

REVISION 2:
UPDATED TO REFERENCE ORGANIC FARM CROSSING ON OH-WA-042.0000.
SILT FENCE ADDED FOR EROSION CONTROL MEASURE. SAFETY FENCE UPDATED FOR PROTECTION OF ORGANIC FARM.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	12AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	21OCT15

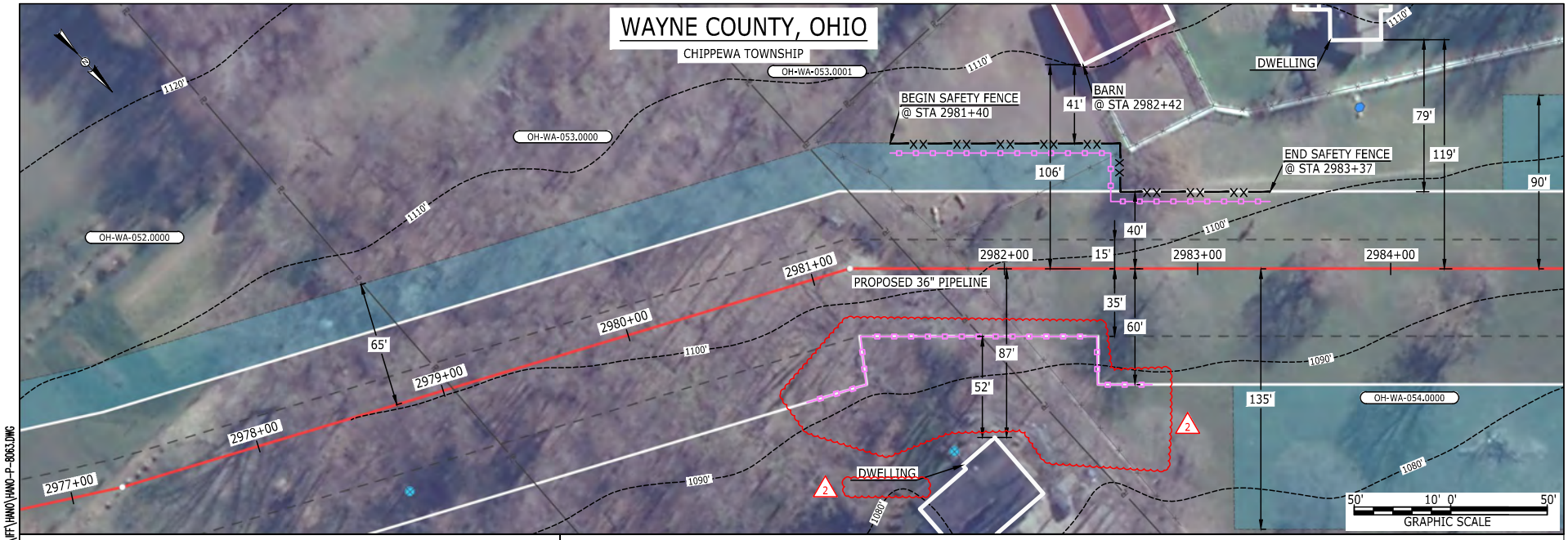
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 55.61 TO MP 55.76

LOC.: WAYNE COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8062

NEXUS GAS TRANSMISSION

MES13858
August 25, 2016 1:33pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8062.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 2982+42 THERE IS A BARN LOCATED 41' TO THE LEFT OF THE CWS AND 106' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 2:
TWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
SAFETY FENCE REMOVED BASED ON THE ADJUSTED TWS.

NOTES:
1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	21OCT15

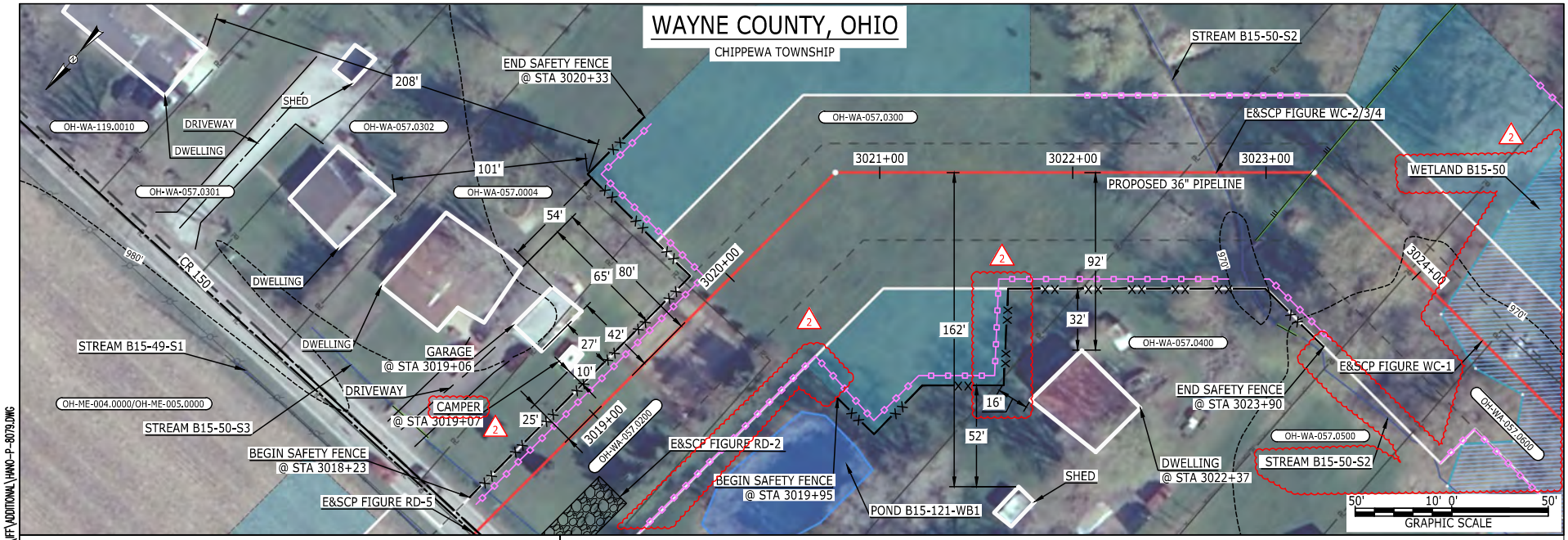
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 56.38 TO MP 56.53

LOC.: WAYNE COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. HANO-P-8063

NEXUS GAS TRANSMISSION

MES13858
August 11, 2016 2:58pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\HANO\HANO-P-8063.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 3019+07 THERE IS A CAMPER LOCATED 10' TO THE LEFT OF THE CWS AND 25' LEFT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 3019+06 THERE IS A GARAGE LOCATED 27' TO THE LEFT OF THE CWS AND 42' LEFT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 3022+37 THERE IS A DWELLING LOCATED 16' TO THE RIGHT OF THE CWS AND 92' RIGHT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.
RESOURCES UPDATED BASED ON WETLAND/WATERBODY FIELD SURVEYS.
EXTENDED SILT FENCE FOR POND PROTECTION.
UPDATED STRUCTURE TYPE.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC	23FEB16

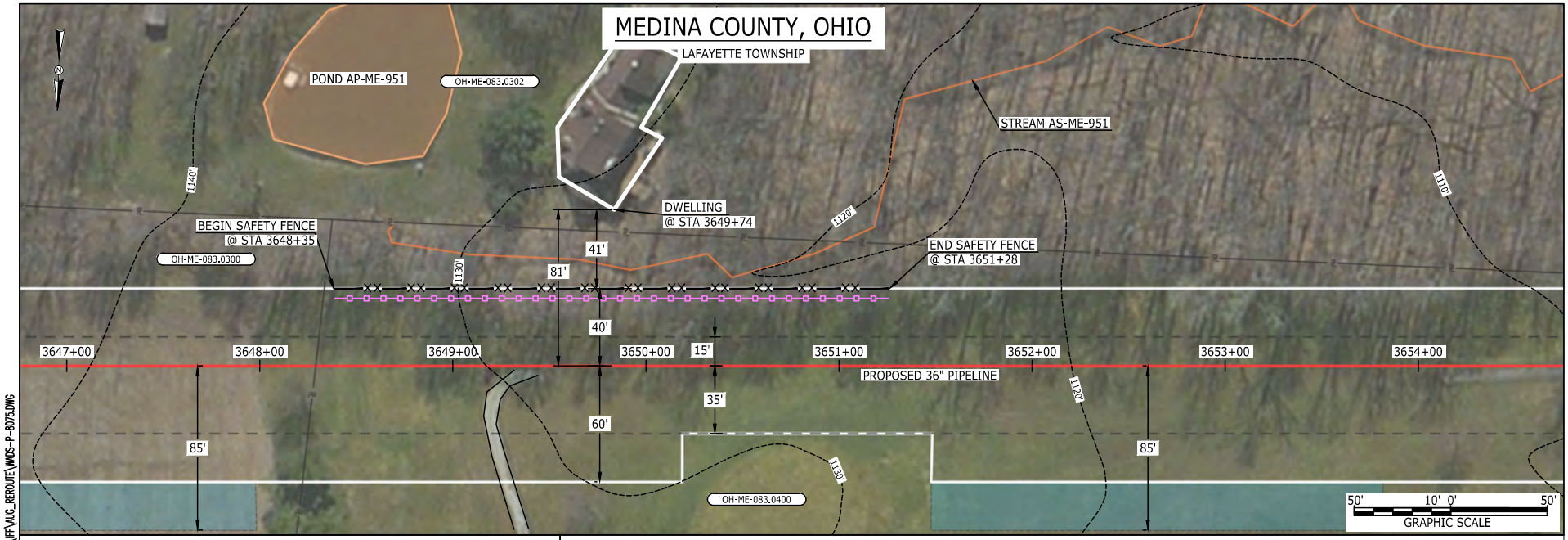
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 57.16R TO MP 57.29R

LOC.: WAYNE COUNTY, OHIO REV.:2
YR.: 2017 W.O. DWG.NO. HANO-P-8079

NEXUS GAS TRANSMISSION

MES13858 August 11, 2016 4:11pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\ADDITIONAL\HANO-P-8079.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 3649+74 THERE IS A DWELLING LOCATED 41' TO THE LEFT OF THE CWS AND 81' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 0:

CENTERLINE REROUTED DUE TO STAKEHOLDER INPUT.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
0	ISSUED FOR FERC	17AUG16

PROJ. ENG. VP
CHECKED BY: RMG
DRAWN BY: RSM
SCALE: AS SHOWN

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 69.07C TO MP 69.22C

LOC.: MEDINA COUNTY, OHIO
REV.: 0
YR.: 2017
W.O.
DWG.NO. WADS-P-8075

NEXUS GAS TRANSMISSION

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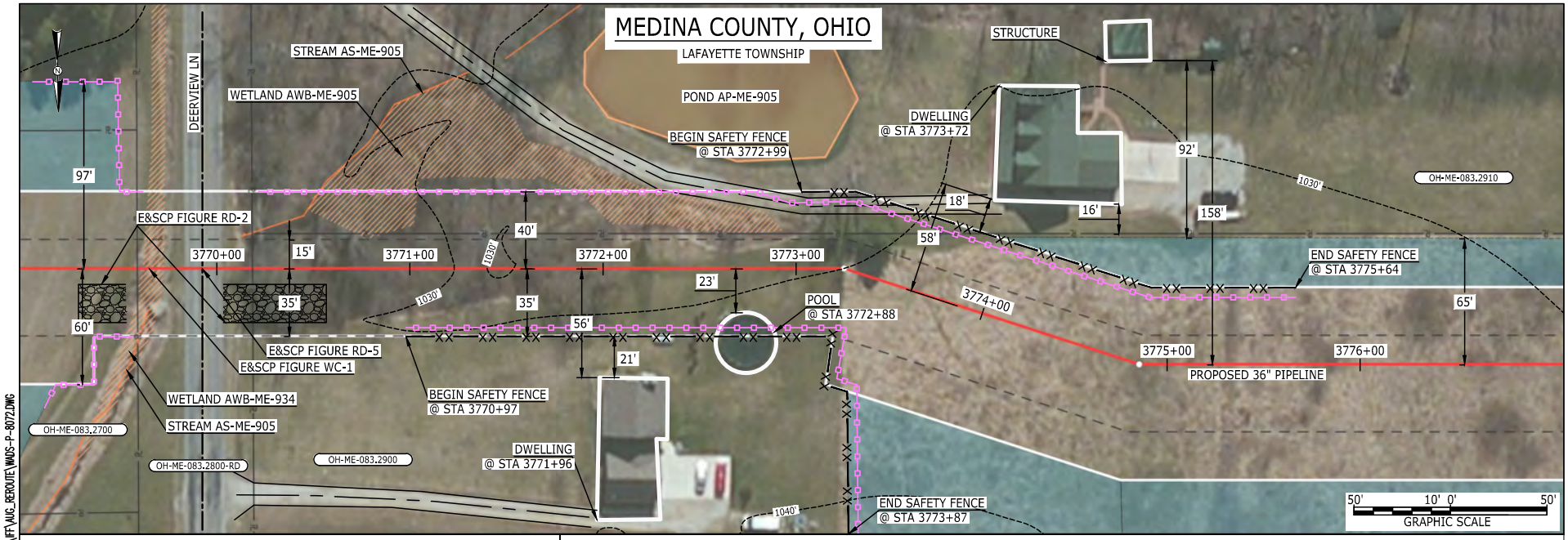
August 19, 2016 7:47am Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\AOC_REROUTE\WADS-P-8075.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 3771+96 THERE IS A DWELLING LOCATED 21' TO THE RIGHT OF THE CWS AND 56' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 3772+88 THERE IS A POOL LOCATED INSIDE OF THE CWS AND 23' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 3773+72 THERE IS A DWELLING LOCATED 16' TO THE LEFT OF THE CWS AND 58' LEFT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTE:
1) BORED METHOD CROSSING WILL AVOID ACTIVE CONSTRUCTION ADJACENT TO DWELLING.

REVISION 0:
CENTERLINE REROUTED DUE TO STAKEHOLDER INPUT.

NOTES:
1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
0	ISSUED FOR FERC	17AUG16

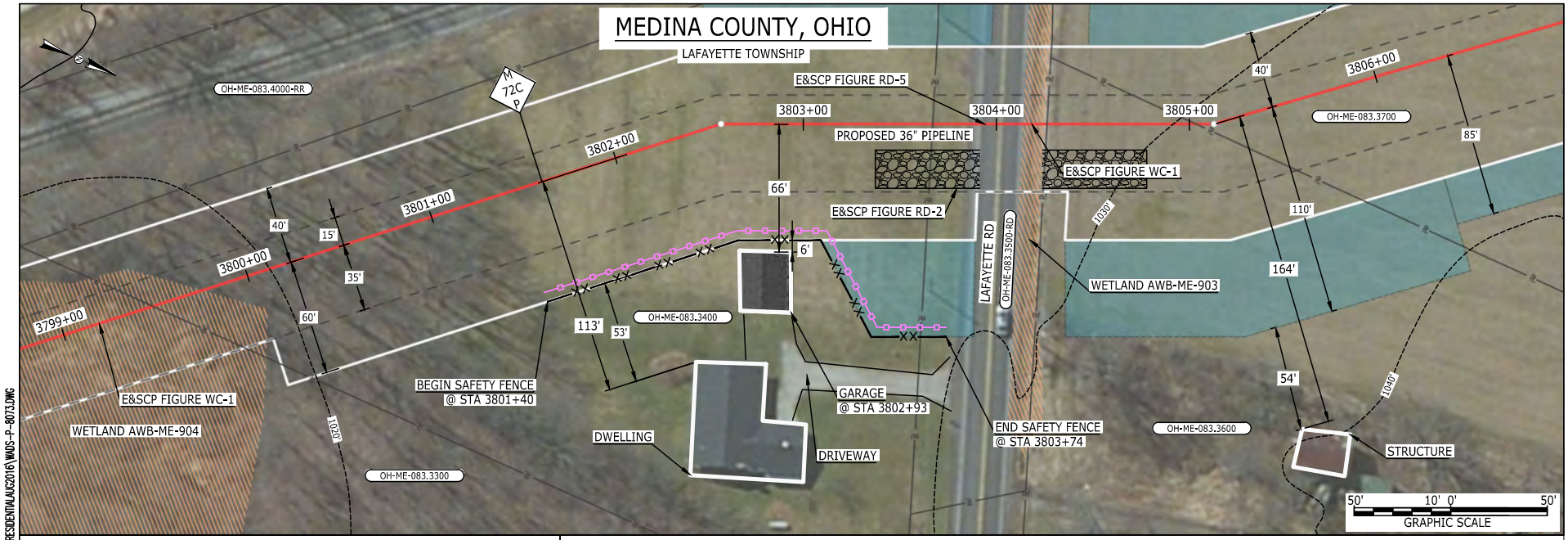
PROJ. ENG. VP
CHECKED BY: RMG
DRAWN BY: RSM
SCALE: AS SHOWN

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 71.38C TO MP 71.53C

LOC.: MEDINA COUNTY, OHIO
REV.: 0
YR.: 2017
W.O.
DWG.NO. WADS-P-8072

NEXUS GAS TRANSMISSION

BEL24588
August 19, 2016 11:08am Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\AOC_REROUTE\WADS-P-8072.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST (M 00 P)
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE (1200')
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 3802+93 THERE IS A GARAGE LOCATED 6' TO THE RIGHT OF THE CWS AND 66' RIGHT OF THE PROPOSED 36" PIPELINE.

REVISION 0:

CENTERLINE REROUTED DUE TO STAKEHOLDER INPUT.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
0	ISSUED FOR FERC	17AUG16

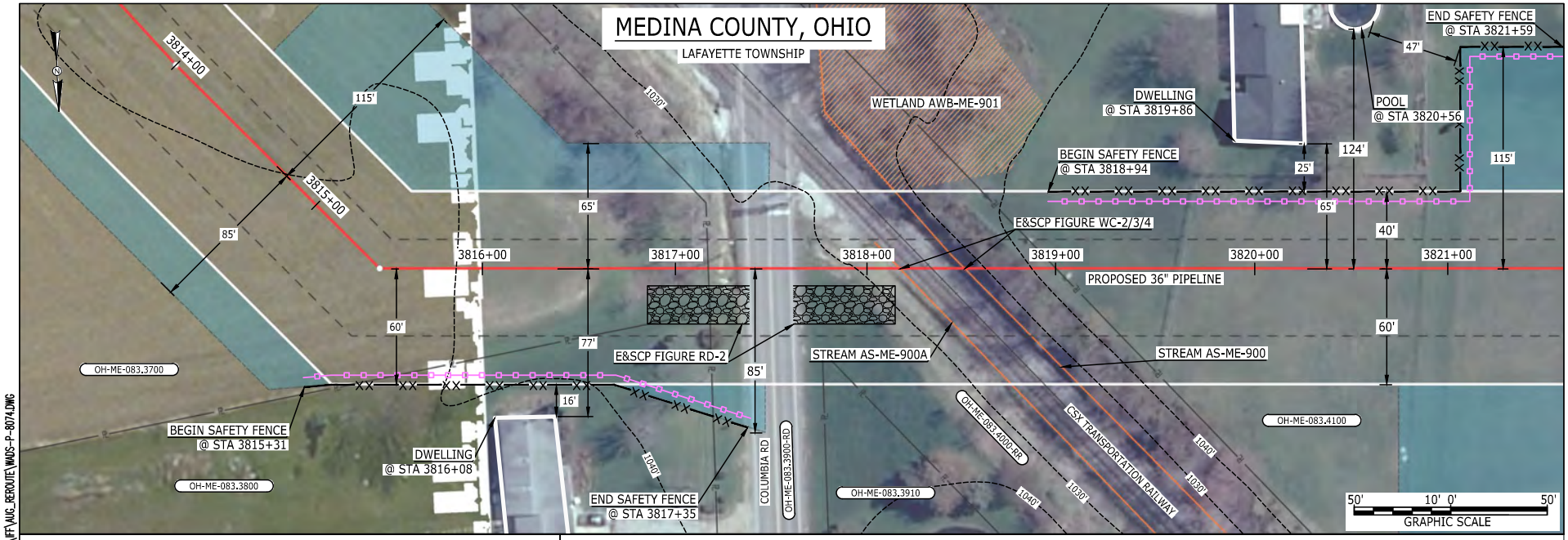
PROJ. ENG. VP
CHECKED BY: RMG
DRAWN BY: RSM
SCALE: AS SHOWN

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 71.95C TO MP 72.1C

LOC.: MEDINA COUNTY, OHIO
REV.: 0
YR.: 2017
W.O.
DWG.NO. WADS-P-8073

NEXUS GAS TRANSMISSION

MES13858
August 22, 2016 12:45pm Filename: C:\USERS\MES13858\DESKTOP\ALLRESIDENTIALAUG2016\WADS-P-8073.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 3816+08 THERE IS A DWELLING LOCATED 16' TO THE RIGHT OF THE CWS AND 77' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 3819+86 THERE IS A DWELLING LOCATED 25' TO THE LEFT OF THE CWS AND 65' LEFT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 3820+56 THERE IS A POOL LOCATED 47' TO THE LEFT OF THE CWS AND 124' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 0:
CENTERLINE REROUTED DUE TO STAKEHOLDER INPUT.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
0	ISSUED FOR FERC	17AUG16

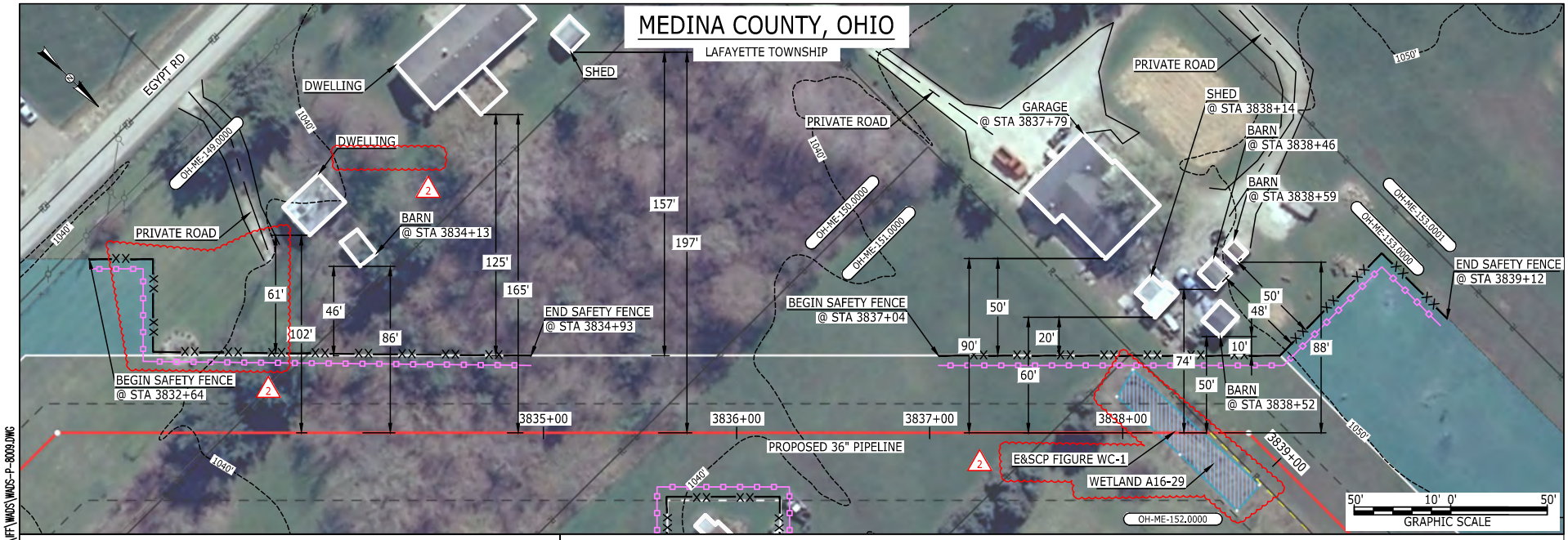
PROJ. ENG. VP
CHECKED BY: RMG
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 72.23C TO MP 72.38C

LOC.: MEDINA COUNTY, OHIO
REV.: 0
YR.: 2017
W.O.
DWG.NO. WADS-P-8074

NEXUS GAS TRANSMISSION

BEL24588
August 19, 2016 11:11am Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\AOC_REROUTE\WADS-P-8074.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 3834+13 THERE IS A BARN LOCATED 46' TO THE LEFT OF THE CWS AND 86' LEFT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 3837+79 THERE IS A GARAGE LOCATED 50' TO THE LEFT OF THE CWS AND 90' LEFT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 3838+14 THERE IS A SHED LOCATED 20' TO THE LEFT OF THE CWS AND 60' LEFT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 3838+52 THERE IS A BARN LOCATED 10' TO THE LEFT OF THE CWS AND 50' LEFT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 3838+46 THERE IS A BARN LOCATED 48' TO THE LEFT OF THE CWS AND 74' LEFT OF THE PROPOSED 36" PIPELINE.
AT SURVEY STATION 3838+59 THERE IS A BARN LOCATED 50' TO THE LEFT OF THE CWS AND 88' LEFT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES :

1. SEE DWG WADS-P-8008 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACT.
RESOURCES UPDATED BASED ON WETLAND FIELD SURVEY.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	21OCT15

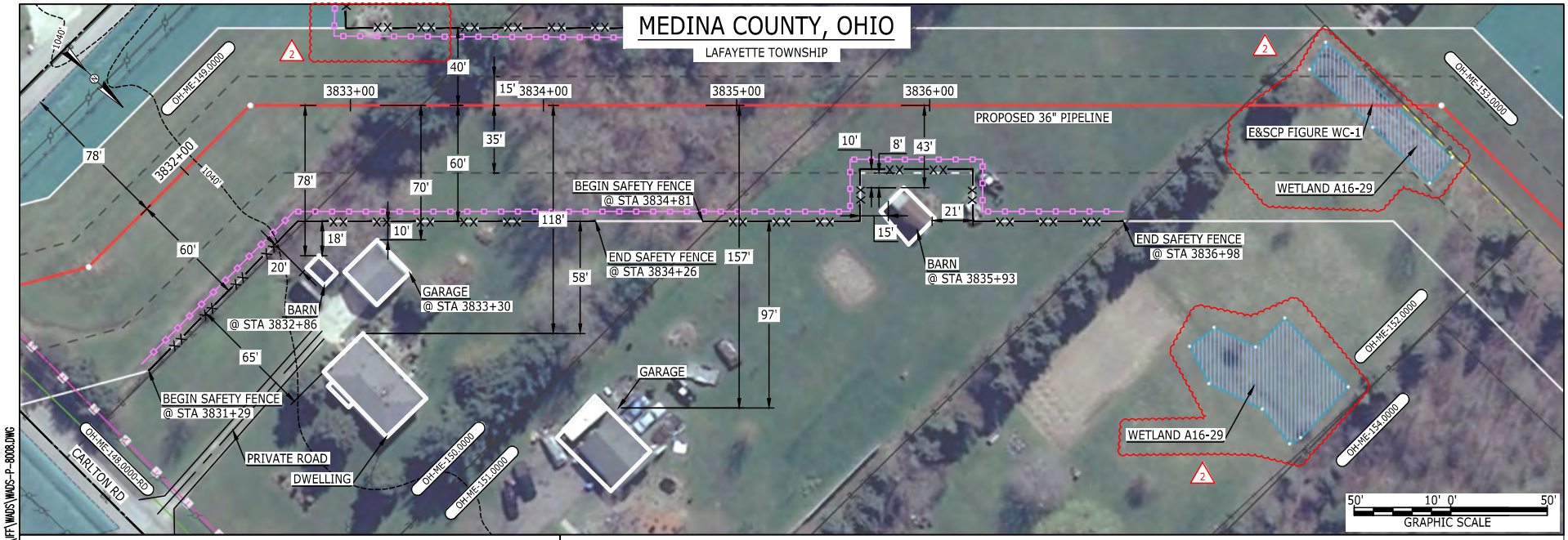
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 72.58 TO MP 72.71R

LOC.: MEDINA COUNTY, OHIO
REV.:2
YR.: 2017
W.O.
DWG.NO. WADS-P-8009

NEXUS GAS TRANSMISSION

MES13858
August 04, 2016 5:50pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\WADS\WADS-P-8009.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 3832+86 THERE IS A BARN LOCATED 18' TO THE RIGHT OF THE CWS AND 78' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 3833+30 THERE IS A GARAGE LOCATED 10' TO THE RIGHT OF THE CWS AND 70' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 3835+93 THERE IS A BARN LOCATED 8' TO THE RIGHT OF THE CWS AND 43' RIGHT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES :

1. SEE DWG WADS-P-8009 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACT.
RESOURCES UPDATED BASED ON WETLAND FIELD SURVEYS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	21OCT15

IG.#

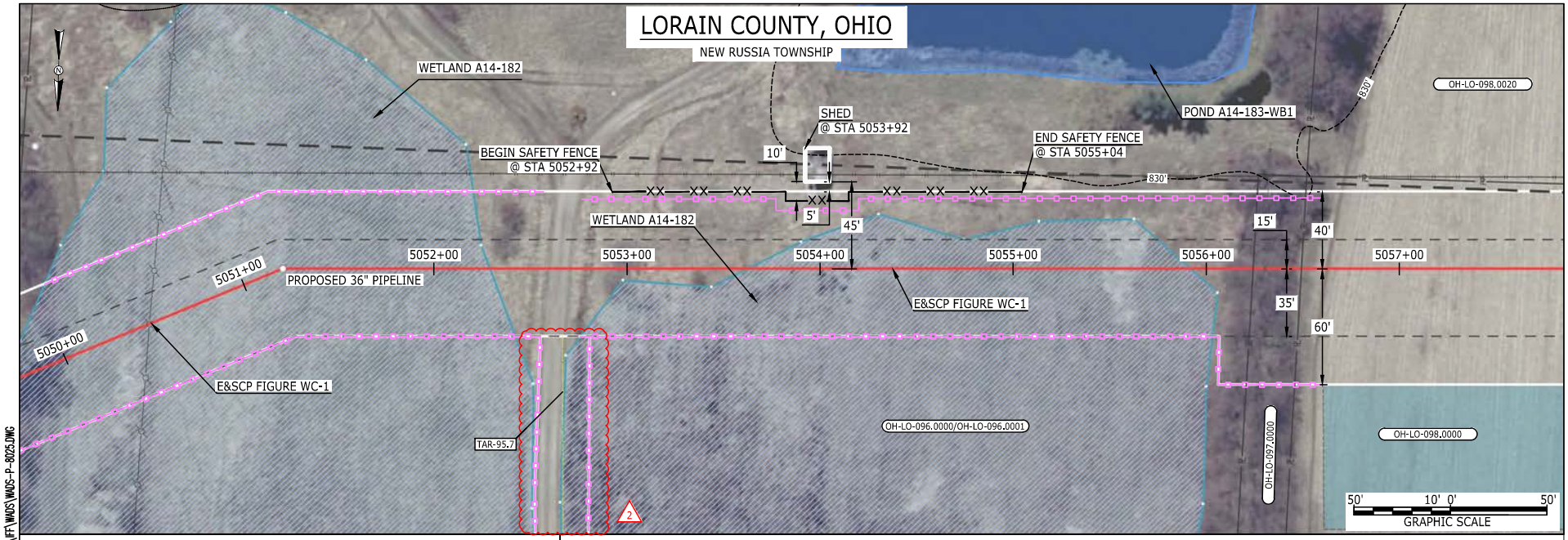
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 72.76 TO MP 72.92R

LOC.: MEDINA COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. WADS-P-8008

NEXUS GAS TRANSMISSION

MES13858
August 04, 2016 5:50pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\WADS\WADS-P-8008.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 5053+92 THERE IS A SHED LOCATED 5' TO THE LEFT OF THE CWS AND 45' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

TAR 95.7 ADJUSTED BASED ON LAND OWNER REQUEST.
UPDATED SILT FENCE BASED ON ADJUSTED TAR 95.7.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	22AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	06NOV15

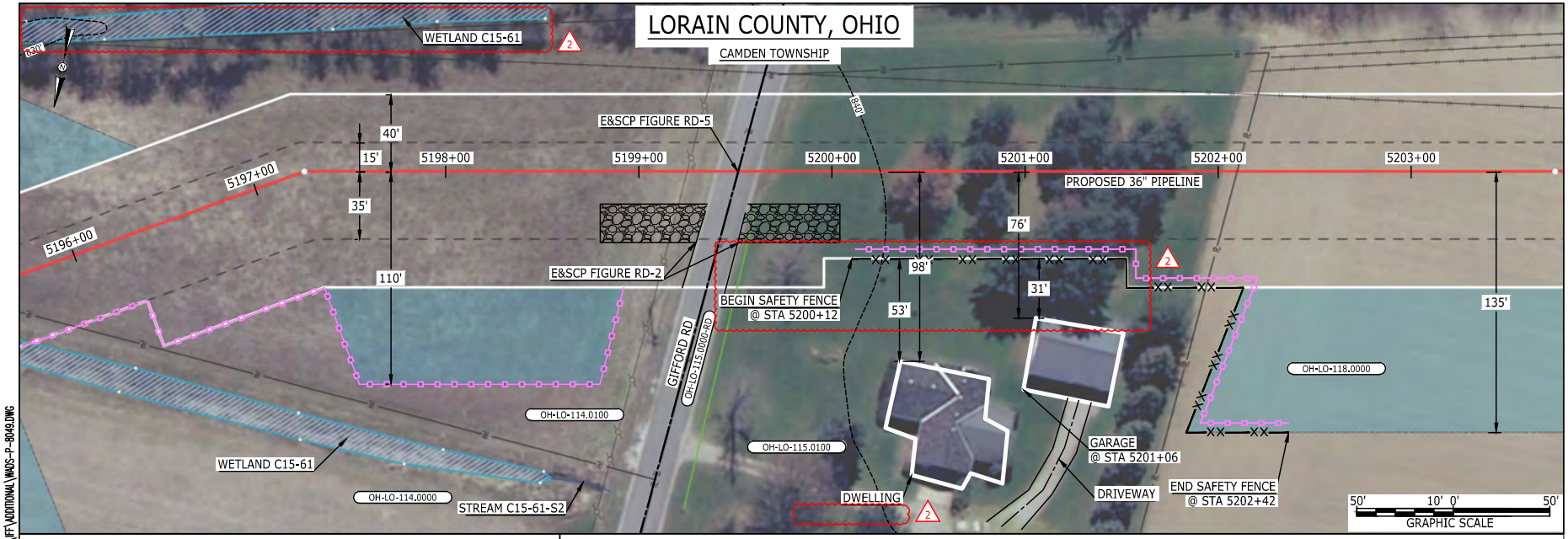
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 95.64 TO MP 95.79

LOC.: LORAIN COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. WADS-P-8025

NEXUS GAS TRANSMISSION

MES13858
August 22, 2016 7:08pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\WADS\WADS-P-8025.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 5201+06 THERE IS A GARAGE LOCATED 31' TO THE RIGHT OF THE CWS AND 76' RIGHT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

TWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED TWS.
RESOURCE UPDATED BASED ON WETLAND FIELD SURVEY.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC	23FEB16

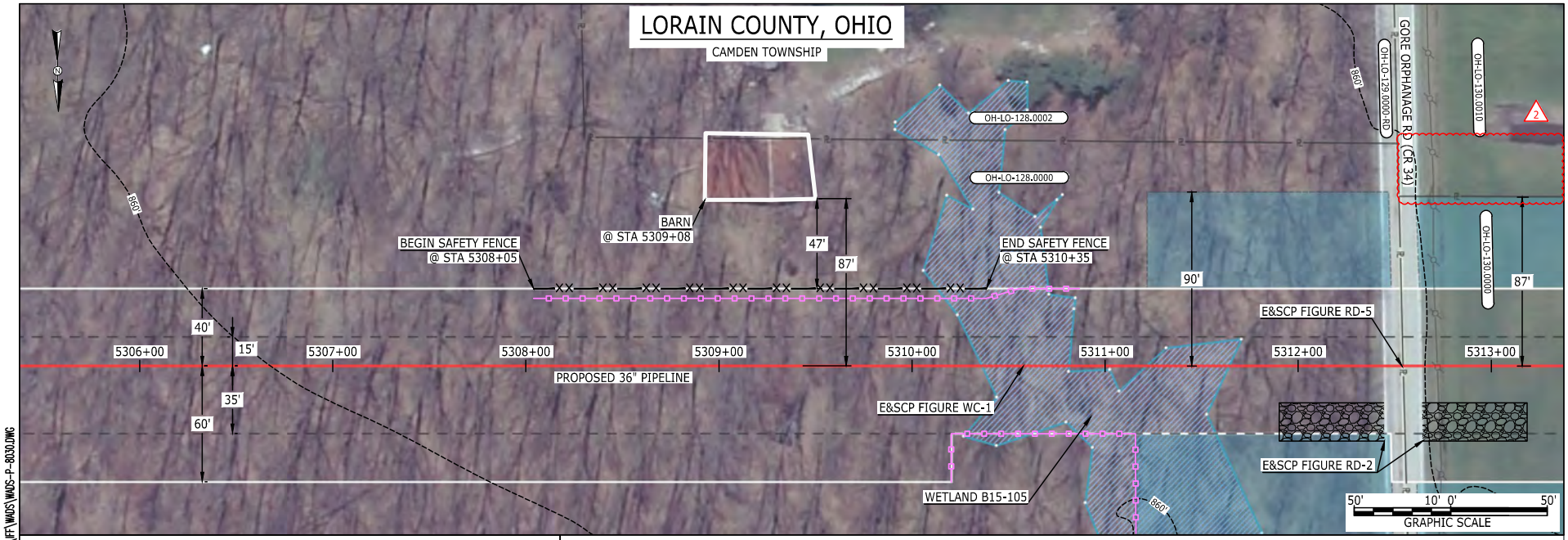
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 98.4R TO MP 98.56R

LOC.: LORAIN COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. WADS-P-8049

NEXUS GAS TRANSMISSION

MES13858
August 12, 2016 2:45pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\ADDITIONAL\WADS-P-8049.DWG



LEGEND

PROPOSED NEXUS PIPELINE
PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
INTERCONNECTING PIPELINE
PIPELINE MILEPOST
CONSTRUCTION LIMIT
PERMANENT ROW
ADDITIONAL TEMPORARY WORKSPACE
STAGING AREA
WAREYARD
ROCK ACCESS PAD
PERMANENT ACCESS ROAD
TEMPORARY ACCESS ROAD
DELINEATED WATERBODY BANK
DELINEATED WETLAND BOUNDARY
AGRICULTURAL PEM WETLAND BOUNDARY
DELINEATED WATERBODY CENTERLINE
APPROXIMATE WATERBODY BANK
APPROXIMATE WETLAND BOUNDARY
APPROXIMATE WATERBODY CENTERLINE
STRUCTURES
PAR-0.0
TAR-0.0
POWERLINES
CONTOUR LINE
SILT FENCE
STRAW BALE
FOREIGN PIPELINES
TELEPHONE
FENCE
RAILROAD TRACK
ROAD CL
WATER PIPELINE
UTILITY LINE
PROPERTY LINE
SAFETY FENCE
TRACT NUMBER
MUNICIPALITY LINE
WELL: GAS
WATER
OIL
UNKNOWN
MAINLINE VALVE (MLV)
BLOW OFF VALVE
HORIZONTAL DIRECTIONAL DRILLING
LIGHT POLE
FIRE HYDRANT
MICROWAVE TOWER
TOWER
TANK

DESCRIPTION:

AT SURVEY STATION 5309+08 THERE IS A BARN LOCATED 47' TO THE LEFT OF THE CWS AND 87' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 2:
ATWS ADJUSTED DUE TO LANDOWNER REQUEST.

NOTES:
1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	21OCT15

IG.#

PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 100.48 TO MP 100.63

LOC.: LORAIN COUNTY, OHIO
REV.: 2
YR.: 2017
W.O.
DWG.NO. WADS-P-8030

NEXUS GAS TRANSMISSION

MES13858
August 04, 2016 5:51pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\RF1\WADS\WADS-P-8030.DWG

ERIE COUNTY, OHIO

BERLIN TOWNSHIP

OH-ER-055.0100
OH-ER-055.0000
OH-ER-056.0000-RD
CR 13
SH 61
STREAM B15-124-S1
STREAM B15-124-S2
DWELLING
BEGIN SAFETY FENCE @ STA 5919+09
SHED @ STA 5920+15
END SAFETY FENCE @ STA 5921+76
OH-ER-059.0100
OH-ER-059.0000
E&SCP FIGURE RD-5
E&SCP FIGURE RD-2
PROPOSED 36" PIPELINE
5916+00
5917+00
5918+00
5919+00
5920+00
5921+00
5922+00
5923+00
710'
700'
690'
680'
670'
90'
66'
21'
19'
131'
25'
65'
40'
15'
35'
60'
GRAPHIC SCALE
50' 10' 0' 50'

LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 5920+15 THERE IS A SHED LOCATED 19' TO THE LEFT OF THE CWS AND 65' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	15AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC	23FEB16

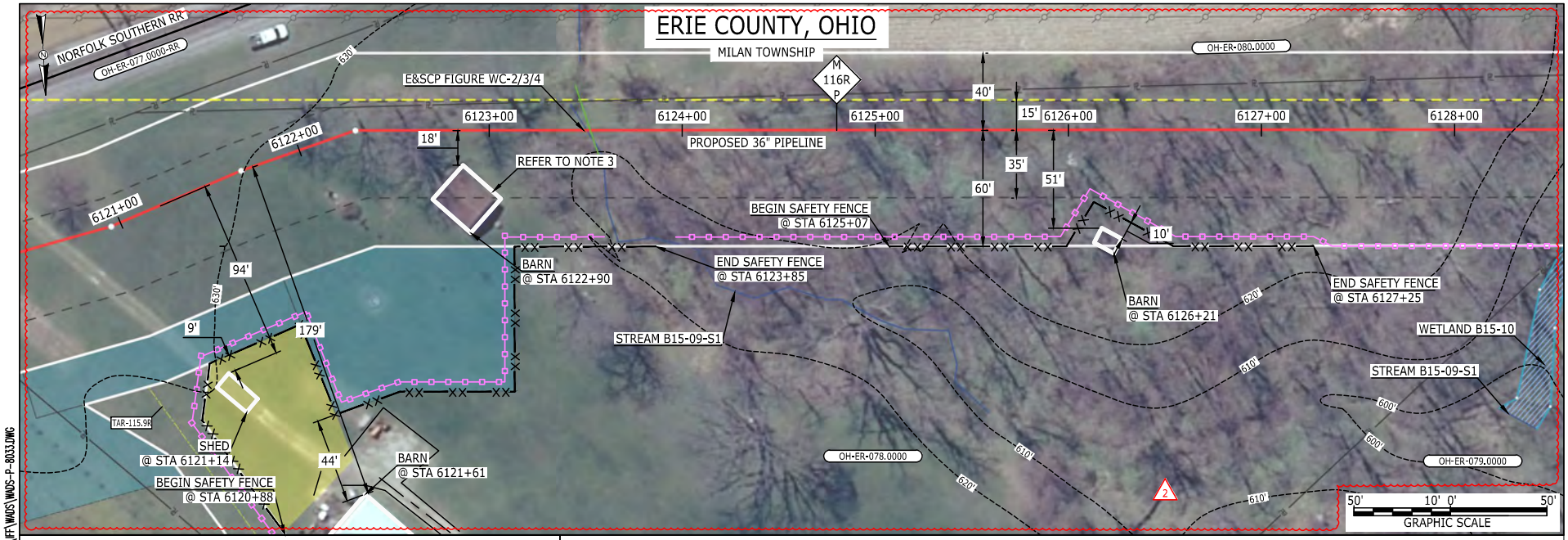
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 112.03R TO MP 112.19R

LOC.: ERIE COUNTY, OHIO REV.:2
YR.: 2017 W.O. DWG.NO. WADS-P-8048

NEXUS GAS TRANSMISSION

MES13858 August 18, 2016 2:11pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\ADDITIONAL\WADS-P-8048.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST (M 00 P)
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE (1200')
- SILT FECES
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 6121+14 THERE IS A SHED LOCATED 9' TO THE RIGHT OF THE CWS AND 94' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 6121+61 THERE IS A BARN LOCATED 44' TO THE RIGHT OF THE CWS AND 179' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 6122+90 THERE IS A BARN LOCATED INSIDE OF THE CWS AND 18' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 6126+21 THERE IS A BARN LOCATED INSIDE OF THE CWS AND 51' RIGHT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

ALIGNED GIS FEATURES AND UPDATED AERIAL IMAGERY.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1B	ISSUED FOR FERC	15MAR16
	1A	ISSUED FOR FERC	03MAR16
	1	ISSUED FOR FERC	23FEB16

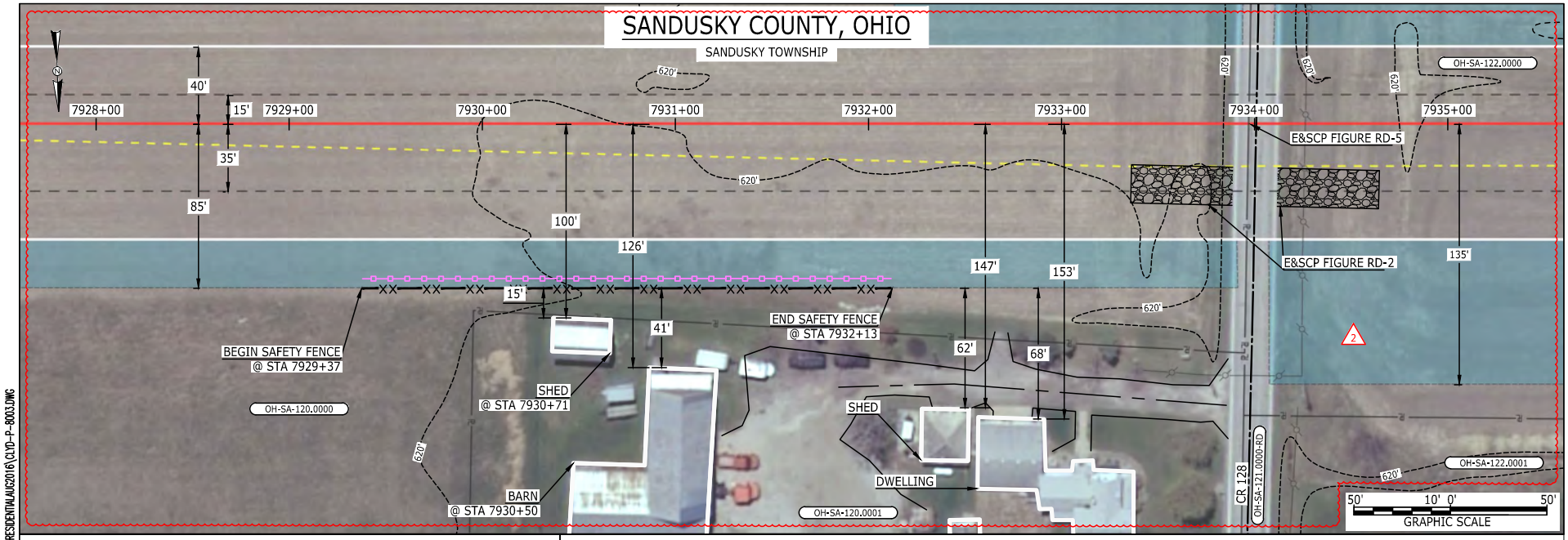
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT RESIDENTIAL DRAWING MP 115.92R TO MP 116.07R

LOC.: ERIE COUNTY, OHIO REV.: 2
YR.: 2017 W.O. DWG.NO. WADS-P-8033

NEXUS GAS TRANSMISSION

MES13858 August 16, 2016 3:20pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\WADS\WADS-P-8033.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 7930+71 THERE IS A SHED LOCATED 15' TO THE RIGHT OF THE CWS AND 100' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 7930+50 THERE IS A BARN LOCATED 41' TO THE RIGHT OF THE CWS AND 126' RIGHT OF THE PROPOSED 36" PIPELINE.

2

REVISION 2:

CENTERLINE REROUTED DUE TO LANDOWNER REQUEST. TWS/ATWS ADJUSTED ACCORDINGLY.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED TWS/ATWS.
PARCEL NUMBER UPDATED.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	10AUG16
	1B	ISSUED FOR FERC	15MAR16
	1A	ISSUED FOR FERC	26FEB16
	1	ISSUED FOR FERC	23FEB16

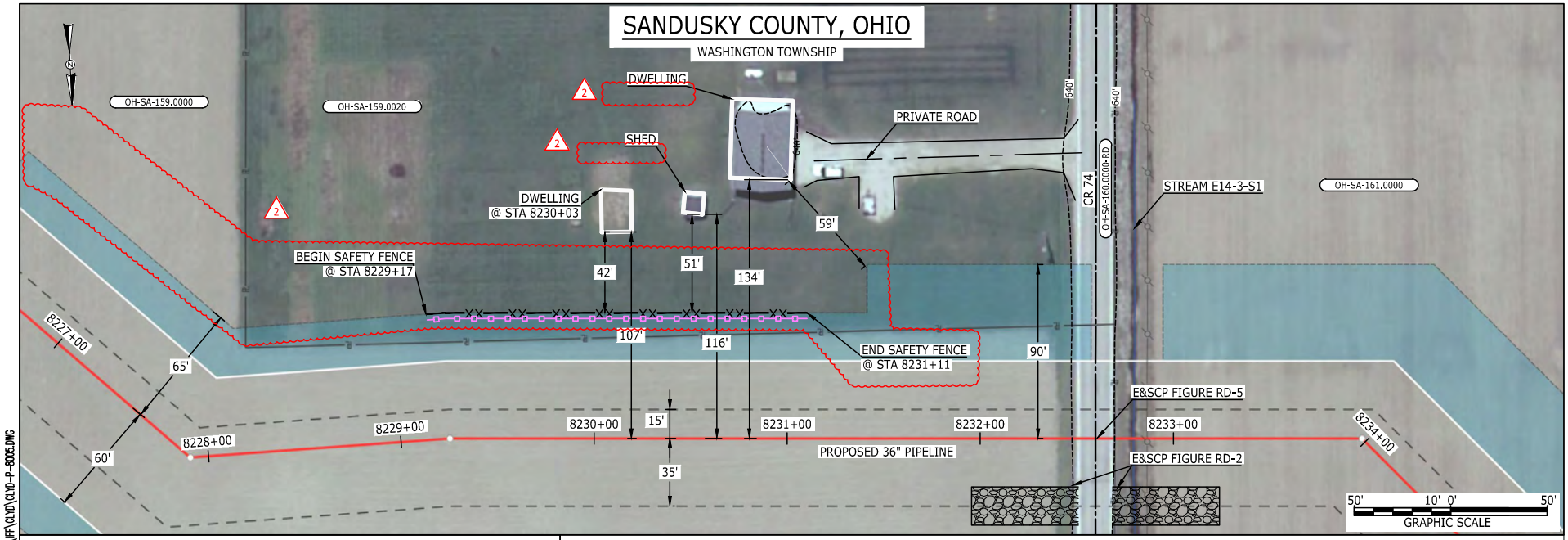
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 150.14R TO MP 150.29R 2

LOC.: SANDUSKY COUNTY, OHIO REV.: 2
YR.: 2017 W.O. DWG.NO. CLYD-P-8003

NEXUS GAS TRANSMISSION

MES13858 August 22, 2016 11:42am Filename: C:\USERS\MES13858\DESKTOP\ALLRESIDENTIALAUG2016\CLYD-P-8003.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 8230+03 THERE IS A DWELLING LOCATED 42' TO THE LEFT OF THE CWS AND 107' LEFT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTE:

1. SEE DWG CLYD-P-8006 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCE BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1B	ISSUED FOR FERC	15MAR16
	1A	ISSUED FOR FERC	26FEB16
	1	ISSUED FOR FERC	23FEB16

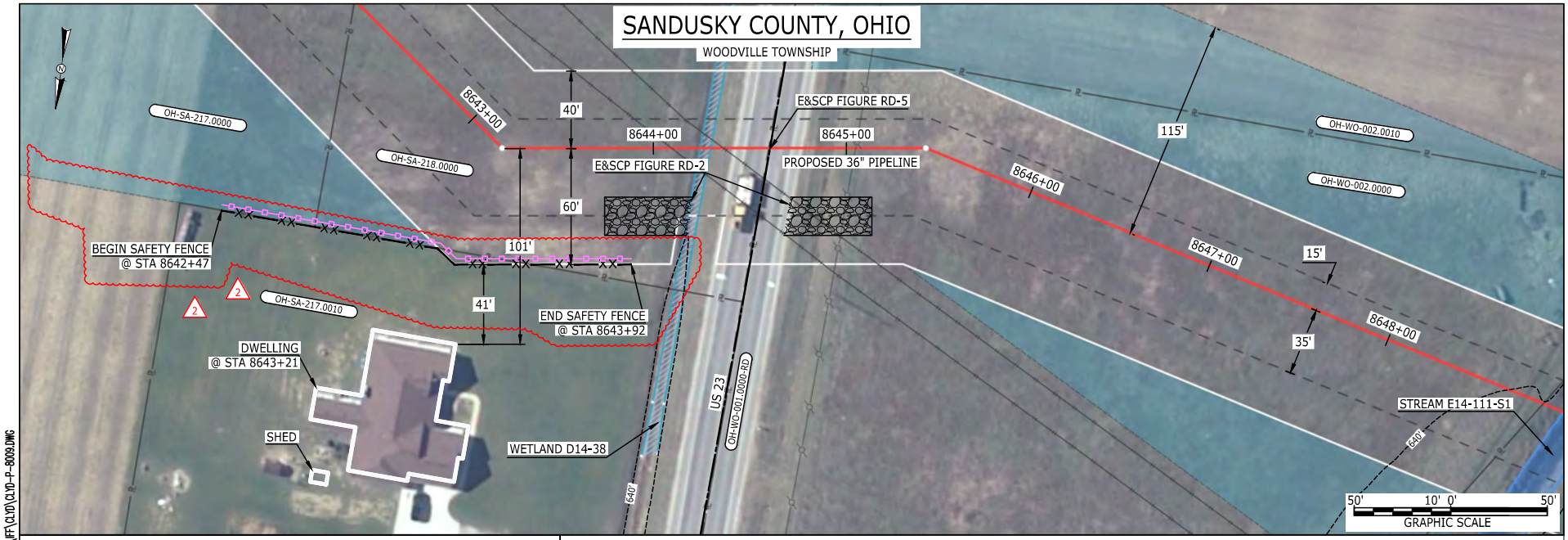
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 155.81 TO MP 155.96

LOC.: SANDUSKY COUNTY, OHIO REV.:2
YR.: 2017 W.O. DWG.NO. CLYD-P-8005

NEXUS GAS TRANSMISSION

MES13858
August 03, 2016 7:15pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\RF1\CLYD\CLYD-P-8005.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 8643+21 THERE IS A DWELLING LOCATED 41' TO THE RIGHT OF THE CWS AND 101' RIGHT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCE BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	23OCT15

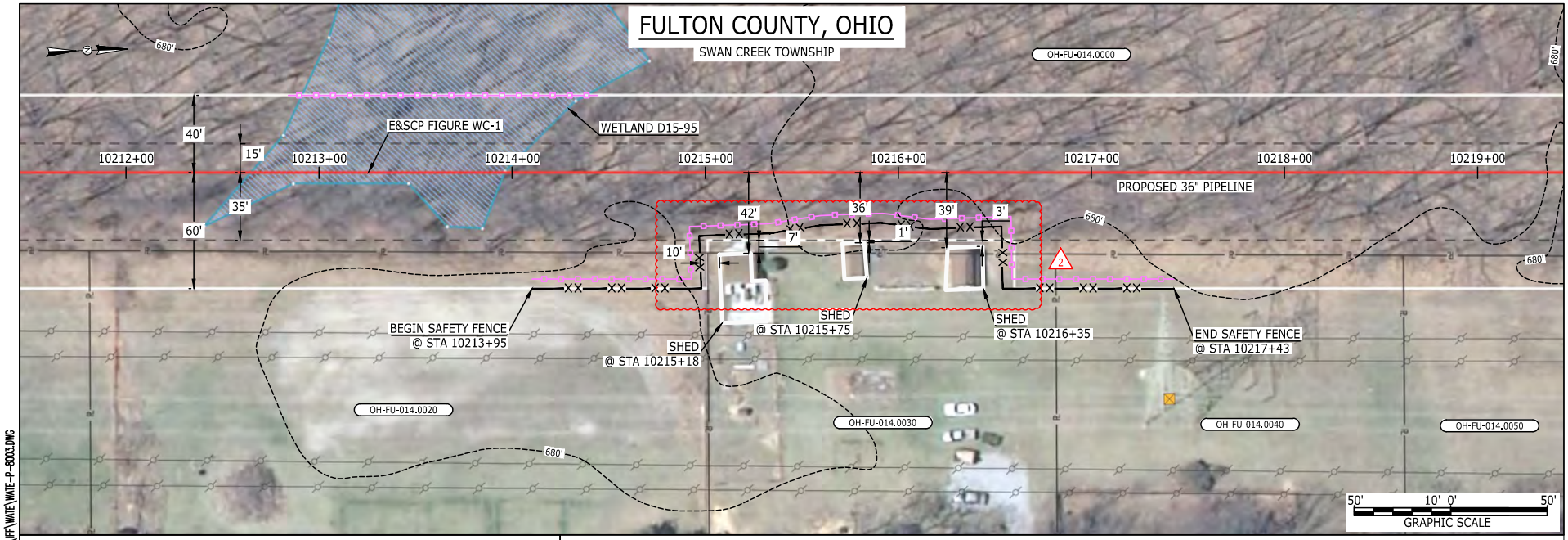
PROJ. ENG.	VP	
CHECKED BY:	DOB	
DRAWN BY:	RSM	
SCALE: AS SHOWN		DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 163.68 TO MP 163.81

LOC.: SANDUSKY COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. CLYD-P-8009

NEXUS GAS TRANSMISSION

MES13858
August 03, 2016 7:15pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\CLYD\CLYD-P-8009.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 10215+18 THERE IS A SHED LOCATED 7' TO THE RIGHT OF THE CWS AND 42' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 10215+75 THERE IS A SHED LOCATED 1' TO THE RIGHT OF THE CWS AND 36' RIGHT OF THE PROPOSED 36" PIPELINE.

AT SURVEY STATION 10216+35 THERE IS A SHED LOCATED 3' TO THE RIGHT OF THE CWS AND 39' RIGHT OF THE PROPOSED 36" PIPELINE.

2

REVISION 2:

TWS ADJUSTED BASED ON LANDOWNER REQUEST.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED TWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	22OCT15

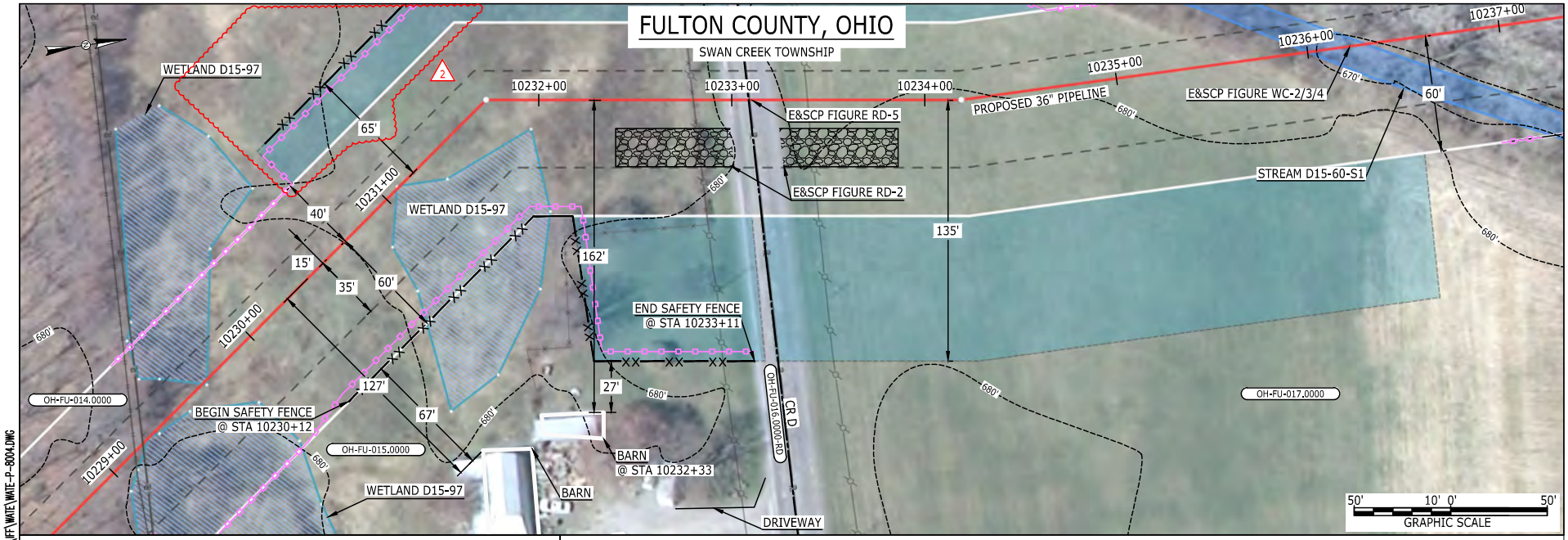
PROJ. ENG.	VP	
CHECKED BY:	DOB	
DRAWN BY:	RSM	
SCALE: AS SHOWN		DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 193.4 TO MP 193.55

LOC.: FULTON COUNTY, OHIO — REV.: 2
YR.: 2017 — W.O. — DWG.NO. WATE-P-8003

NEXUS GAS TRANSMISSION

MES13858
August 23, 2016 1:56pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\WATE\WATE-P-8003.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD (PAR-0.0)
- TEMPORARY ACCESS ROAD (TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE, FIRE HYDRANT
- MICROWAVE TOWER, TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 10232+33 THERE IS A BARN LOCATED 27' TO THE RIGHT OF THE CWS AND 162' RIGHT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES :

1. SEE DWG WATE-P-8005 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1B	ISSUED FOR FERC	15MAR16
	1A	ISSUED FOR FERC	26FEB16
	1	ISSUED FOR FERC	23FEB16

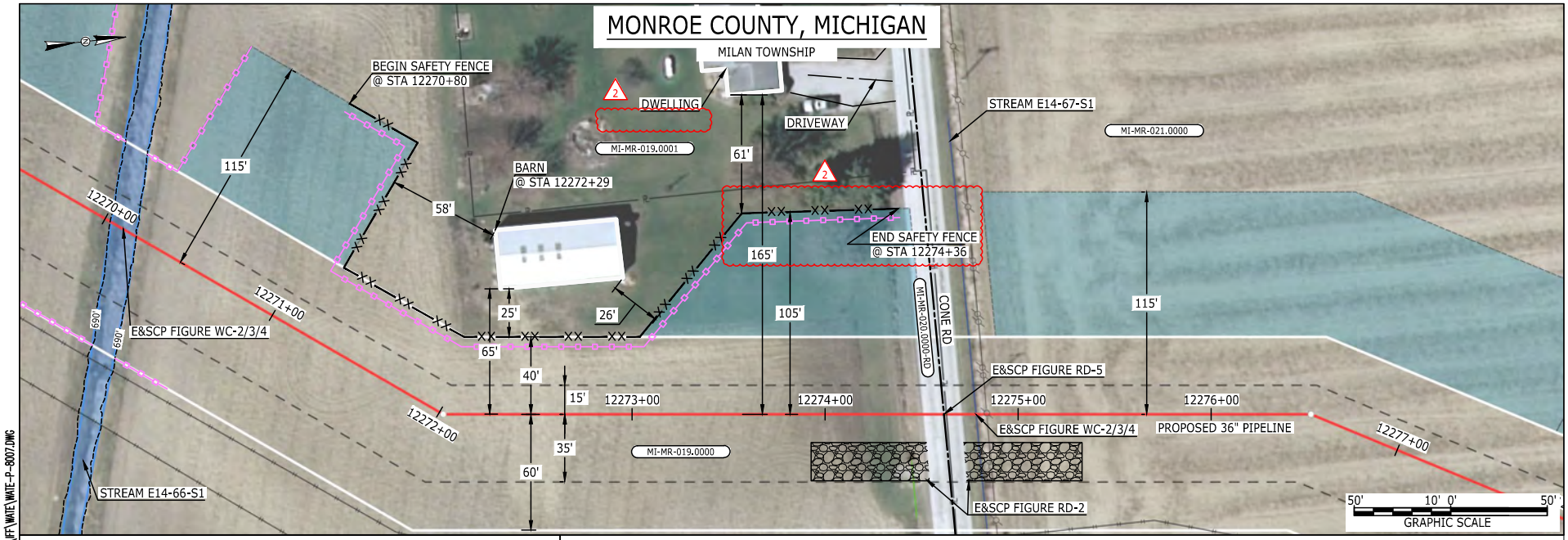
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN — DATE

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 193.72 TO MP 193.89

LOC.: FULTON COUNTY, OHIO — REV.:2
YR.: 2017 — W.O. — DWG.NO. WATE-P-8004

NEXUS GAS TRANSMISSION

MES13858 August 16, 2016 3:24pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\WATE\WATE-P-8004.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - NOV. 2015 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 12272+29 THERE IS A BARN LOCATED 25' TO THE LEFT OF THE CWS AND 65' LEFT OF THE PROPOSED 36" PIPELINE.

REVISION 2:

ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

IG.#	REV.#	DESCRIPTION	DATE
	2	ISSUED FOR FERC	04AUG16
	1A	ISSUED FOR FERC	15MAR16
	1	ISSUED FOR FERC	23FEB16
	0	ISSUED FOR FERC FILING	22OCT15

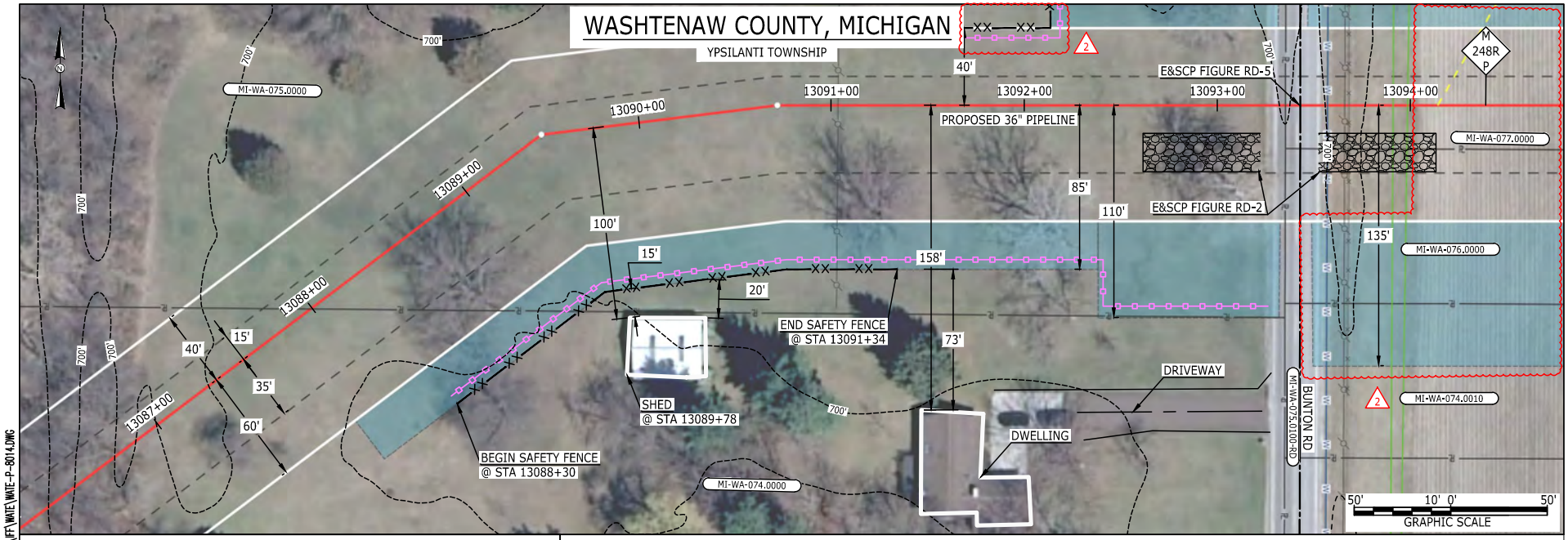
PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN
DATE

TITLE:
NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 232.38 TO MP 232.53

LOC.: MONROE COUNTY, MICHIGAN
REV.: 2
YR.: 2017
W.O.
DWG.NO. WATE-P-8007

NEXUS GAS TRANSMISSION

MES13858
August 16, 2016 3:25pm Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\WATE\WATE-P-8007.DWG



LEGEND

- PROPOSED NEXUS PIPELINE
- PROPOSED NEXUS PIPELINE - FEB. 2016 ROUTE
- INTERCONNECTING PIPELINE
- PIPELINE MILEPOST
- CONSTRUCTION LIMIT
- PERMANENT ROW
- ADDITIONAL TEMPORARY WORKSPACE
- STAGING AREA
- WAREYARD
- ROCK ACCESS PAD
- PERMANENT ACCESS ROAD
- TEMPORARY ACCESS ROAD (PAR-0.0, TAR-0.0)
- DELINEATED WATERBODY BANK
- DELINEATED WETLAND BOUNDARY
- AGRICULTURAL PEM WETLAND BOUNDARY
- DELINEATED WATERBODY CENTERLINE
- APPROXIMATE WATERBODY BANK
- APPROXIMATE WETLAND BOUNDARY
- APPROXIMATE WATERBODY CENTERLINE
- STRUCTURES
- POWERLINES
- CONTOUR LINE
- SILT FENCE
- STRAW BALE
- FOREIGN PIPELINES
- TELEPHONE
- FENCE
- RAILROAD TRACK
- ROAD CL
- WATER PIPELINE
- UTILITY LINE
- PROPERTY LINE
- SAFETY FENCE
- TRACT NUMBER (00-XX-000.0000)
- MUNICIPALITY LINE
- WELL: GAS, WATER, OIL, UNKNOWN
- MAINLINE VALVE (MLV)
- BLOW OFF VALVE
- HORIZONTAL DIRECTIONAL DRILLING
- LIGHT POLE
- FIRE HYDRANT
- MICROWAVE TOWER
- TOWER
- TANK

DESCRIPTION:

AT SURVEY STATION 13089+78 THERE IS A SHED LOCATED 15' TO THE RIGHT OF THE CWS AND 100' RIGHT OF THE PROPOSED 36" PIPELINE.

SPECIAL NOTES :

1. SEE DWG WATE-P-8015 FOR THE CONTINUATION OF THE RESIDENTIAL AREA.

REVISION 2:

CENTERLINE REROUTED TO AVOID EXISTING UTILITIES. TWS/ATWS ADJUSTED ACCORDINGLY.
ATWS ADJUSTED TO REDUCE RESIDENTIAL IMPACTS.
UPDATED SILT AND SAFETY FENCES BASED ON ADJUSTED ATWS.

NOTES:

1. FOR SITE SPECIFIC RESIDENTIAL DRAWING NOTES REFER TO DWG S4NX-P-8036.
2. (CWS) REFERS TO THE CONSTRUCTION WORKSPACE.
3. SAFETY FENCE WILL BE INSTALLED AT THE EDGE OF THE CONSTRUCTION WORK AREA FOR A DISTANCE OF 100 FEET ON EITHER SIDE OF A STRUCTURE WITHIN 50 FEET OF CONSTRUCTION WORKSPACE.
4. STRUCTURES WITHIN CWS WILL BE REMOVED, RELOCATED OR PROTECTED PER LAND OWNER AGREEMENT.
5. SHRUBS, TREES, OTHER LANDSCAPING, FENCES, DRIVEWAYS, STONE WALLS, SIDEWALKS, WATER SUPPLY AND SEPTIC SYSTEMS WITHIN THE CWS WILL BE RESTORED PER AGREEMENT WITH THE LANDOWNER.
6. THE FINAL LOCATION OF EROSION CONTROL DEVICES (ECD's) WILL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION IN ACCORDANCE WITH THE E&SCP AND PROJECT REQUIREMENTS, AND IN CONSULTATION WITH THE ENVIRONMENTAL INSPECTOR AS NEEDED. THE LOCATION OF ECD's DEPICTED ON THIS PLAN ARE INTENDED FOR GUIDANCE PURPOSES ONLY.

REV.#	DESCRIPTION	DATE
2	ISSUED FOR FERC	04AUG16
1A	ISSUED FOR FERC	15MAR16
1	ISSUED FOR FERC	23FEB16
0	ISSUED FOR FERC FILING	22OCT15

PROJ. ENG. VP
CHECKED BY: DOB
DRAWN BY: RSM
SCALE: AS SHOWN

TITLE: NEXUS GAS TRANSMISSION PROJECT
RESIDENTIAL DRAWING
MP 247.84 TO MP 248.01R (2)

LOC.: WASHTENAW COUNTY, MICHIGAN
REV.: 2
YR.: 2017
W.O.
DWG.NO. WATE-P-8014

NEXUS GAS TRANSMISSION

Filename: P:\CAD\295_PIPELINE\RESIDENTIAL\FF\WATE\WATE-P-8014.DWG
4:06pm
MES13858
August 17, 2016

APPENDIX G

GEOLOGY TABLES

APPENDIX G-1

BEDROCK GEOLOGY OF THE NGT AND TEAL PROJECTS

APPENDIX G-1

Bedrock Geology of the NGT and TEAL Projects

Project, State, Component	Milepost	Unit Age	Lithology 1	Lithology 2
NGT PROJECT				
Ohio				
TGP Interconnect Pipeline	0 - 0.9	Pennsylvanian	Siltstone	Shale
Mainline	0 - 1.9	Pennsylvanian	Siltstone	Shale
	1.9 - 2.3	Pennsylvanian	Shale	Siltstone
	2.3 - 4.7	Pennsylvanian	Siltstone	Shale
	4.7 - 5.3	Pennsylvanian	Shale	Siltstone
	5.3 - 5.5	Pennsylvanian	Siltstone	Shale
	5.5 - 5.7	Pennsylvanian	Shale	Siltstone
	5.7 - 6.4	Pennsylvanian	Siltstone	Shale
	6.4 - 6.5	Pennsylvanian	Shale	Siltstone
	6.5 - 7.4	Pennsylvanian	Siltstone	Shale
	7.4 - 7.7	Pennsylvanian	Shale	Siltstone
	7.7 - 8.0	Pennsylvanian	Siltstone	Shale
	8.0 - 8.3	Pennsylvanian	Shale	Siltstone
	8.3 - 9.6	Pennsylvanian	Siltstone	Shale
	9.6 - 12.0	Pennsylvanian	Shale	Siltstone
	12.0 - 12.2	Pennsylvanian	Siltstone	Shale
	12.2 - 12.5	Pennsylvanian	Shale	Siltstone
	12.5 - 13.1	Pennsylvanian	Siltstone	Shale
	13.1 - 34.2	Pennsylvanian	Shale	Siltstone
	34.2 - 39.6	Pennsylvanian	Shale	Siltstone
	39.6 - 39.7	Mississippian	Shale	Siltstone
	39.7 - 40.7	Pennsylvanian	Shale	Siltstone
	40.7 - 41.3	Mississippian	Shale	Siltstone
	41.3 - 45.3	Pennsylvanian	Shale	Siltstone
	45.3 - 45.5	Mississippian	Shale	Siltstone
	45.5 - 47.9	Pennsylvanian	Shale	Siltstone
	47.9 - 48.3	Mississippian	Shale	Siltstone
	48.3 - 48.9	Pennsylvanian	Shale	Siltstone
	48.9 - 49.2	Mississippian	Shale	Siltstone
	49.2 - 50.4	Pennsylvanian	Shale	Siltstone
	50.4 - 51.5	Pennsylvanian	Shale	Siltstone
	51.5 - 52.0	Mississippian	Shale	Siltstone
	52.0 - 52.2	Pennsylvanian	Shale	Siltstone
	52.2 - 52.4	Mississippian	Shale	Siltstone

APPENDIX G-1 (cont'd)

Bedrock Geology of the NGT and TEAL Projects

Project, State, Component	Milepost	Unit Age	Lithology 1	Lithology 2
Mainline (cont'd)	52.4 - 54.9	Pennsylvanian	Shale	Siltstone
	54.9 - 55.6	Mississippian	Shale	Siltstone
	55.6 - 56.0	Pennsylvanian	Shale	Siltstone
	56.0 - 56.5	Pennsylvanian	Shale	Siltstone
	56.6 - 57.2	Mississippian	Shale	Siltstone
	57.2 - 57.7	Mississippian	Shale	Siltstone
	57.7 - 59.5	Mississippian	Shale	Siltstone
	59.5 - 59.8	Pennsylvanian	Shale	Siltstone
	59.8 - 60.1	Mississippian	Shale	Siltstone
	60.1 - 60.5	Pennsylvanian	Shale	Siltstone
	60.5 - 61.8	Mississippian	Shale	Siltstone
	61.8 - 64.6	Pennsylvanian	Shale	Siltstone
	64.6 - 80.5	Mississippian	Shale	Siltstone
	80.5 - 89.8	Mississippian	Shale	Siltstone
	89.8 - 91.0	Devonian	Sandstone	Shale
	91.0 - 91.6	Mississippian	Shale	Siltstone
	91.6 - 95.3	Devonian	Sandstone	Shale
	95.3 - 96.1	Mississippian	Shale	Siltstone
	96.1 - 100.3	Devonian	Sandstone	Shale
	100.3 - 100.7	Devonian	Black shale	Shale
	100.7 - 101.3	Devonian	Sandstone	Shale
	101.3 - 104.7	Devonian	Sandstone	Shale
	104.7 - 109.8	Devonian	Sandstone	Shale
	109.8 - 110.1	Devonian	Black shale	Shale
	110.1 - 112.1	Devonian	Sandstone	Shale
	112.1 - 124.2	Devonian	Black shale	Shale
	124.2 - 125.0	Devonian	Limestone	Dolostone (dolomite)
	125.0 - 125.6	Devonian	Shale	Limestone
	125.6 - 126.1	Devonian	Limestone	N/A
	126.1 - 126.5	Devonian	Shale	Limestone
	126.5 - 128.8	Devonian	Limestone	N/A
	128.8 - 131.5	Devonian	Limestone	Dolostone (dolomite)
	131.5 - 132.1	Devonian	Limestone	Dolostone (dolomite)
	132.1 - 140.1	Silurian	Dolostone (dolomite)	Shale
	140.1 - 148.2	Silurian	Dolostone (dolomite)	Shale
	148.2 - 150.2	Silurian	Dolostone (dolomite)	N/A
	150.2 - 151.2	Silurian	Dolostone (dolomite)	Shale

APPENDIX G-1 (cont'd)

Bedrock Geology of the NGT and TEAL Projects

Project, State, Component	Milepost	Unit Age	Lithology 1	Lithology 2
Mainline (cont'd)	151.2 - 163.4	Silurian	Dolostone (dolomite)	N/A
	163.4 - 163.6	Silurian	Dolostone (dolomite)	Shale
	163.6 - 163.7	Silurian	Dolostone (dolomite)	N/A
	163.7 - 168.7	Silurian	Dolostone (dolomite)	N/A
	168.7 - 170.5	Silurian	Dolostone (dolomite)	Shale
	170.5 - 173.0	Silurian	Dolostone (dolomite)	N/A
	173.0 - 174.1	Silurian	Dolostone (dolomite)	Shale
	174.1 - 178.1	Silurian	Dolostone (dolomite)	N/A
	178.1 - 180.8	Silurian	Dolostone (dolomite)	Shale
	180.8 - 181.5	Silurian	Dolostone (dolomite)	Shale
	181.5 - 182.5	Silurian	Dolostone (dolomite)	Shale
	182.5 - 186.2	Devonian	Dolostone (dolomite)	Evaporite
	186.2 - 187.2	Devonian	Limestone	Dolostone (dolomite)
	187.2 - 187.8	Devonian	Dolostone (dolomite)	Evaporite
	187.8 - 188.5	Devonian	Limestone	Dolostone (dolomite)
	188.5 - 189.3	Devonian	Dolostone (dolomite)	Shale
	189.3 - 190.2	Devonian	Dolostone (dolomite)	Shale
	190.2 - 203.2	Devonian	Shale	Black shale
	203.2 - 208.3	Devonian and/or Mississippian	Shale	Black shale
Hanoverton Compressor Station (CS-1)	1.4	Pennsylvanian	Siltstone	Shale
Wadsworth Compressor Station (CS-2)	63.5	Pennsylvanian	Shale	Siltstone
Clyde Compressor Station (CS-3)	134.0	Silurian	Dolostone (dolomite)	Shale
Waterville Compressor Station (CS-4)	183.5	Devonian	Dolostone (dolomite)	Evaporite
Michigan				
Mainline	208.3 - 210.5	Late Devonian	Shale	Sandstone
	210.5 - 211.8	Late Devonian	Sandstone	Siltstone
	211.8 - 212.8	Mississippian-Devonian	Black shale	N/A
	212.8 - 217.1	Mississippian	Shale	Limestone
	217.1 - 217.6	Mississippian-Devonian	Black shale	N/A
	217.6 - 220.4	Mississippian	Shale	Limestone
	220.4 - 221.2	Mississippian-Devonian	Black shale	N/A
	221.2 - 224.5	Late Devonian	Sandstone	Siltstone
	224.5 - 225.7	Late Devonian	Shale	Sandstone
	225.7 - 227.2	Late Devonian	Black shale	Limestone
	227.2 - 230.4	Middle Devonian	Limestone	Shale
	230.4 - 230.9	Middle Devonian	Limestone	Shale
	230.9 - 233.8	Middle Devonian	Limestone	Dolostone (dolomite)
	233.8 - 235.7	Middle Devonian	Limestone	Shale

APPENDIX G-1 (cont'd)

Bedrock Geology of the NGT and TEAL Projects

Project, State, Component	Milepost	Unit Age	Lithology 1	Lithology 2
Mainline (cont'd)	235.7 - 235.9	Middle Devonian	Limestone	Dolostone (dolomite)
	235.9 - 236.8	Middle Devonian	Limestone	Shale
	236.8 - 247.7	Middle Devonian	Limestone	Shale
	247.7 - 255.0	Late Devonian	Black shale	Limestone
TEAL PROJECT				
Ohio				
Pipeline Loop	0.0 - 4.4 [a]	Permian and/or Pennsylvanian	Mudstone	Shale
Connecting Pipeline	0.0 - 0.3 [a]	Pennsylvania	Siltstone	Shale
Salineville Compressor Station	5.9 [a]	Pennsylvanian	Siltstone	Shale
Colerain Compressor Station	49.9 [a]	Permian and/or Pennsylvanian	Mudstone	Shale

a Line 73 Pipeline milepost designations are used.

Sources: USGS, 2004. Michigan geologic map data. USGS, GIS datalayer. https://mrdata.usgs.gov/geology/state/state.php?state=MI
USGS, 2005. Ohio geologic map data. USGS, GIS datalayer. https://mrdata.usgs.gov/geology/state/state.php?state=OH

APPENDIX G-2

OIL AND GAS WELLS WITHIN 0.25 MILE OF THE NGT AND TEAL PROJECTS

APPENDIX G-2

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
NGT PROJECT		
Active Wells		
Ohio		
Mainline	0.0	201
	0.0	1211
	0.3	60
	1.9	561
	2.0	440
	2.3	49
	2.7	110
	3.5	850
	3.6	1228
	4.2	449
	4.2	7
	4.3	968
	4.4	407
	4.5	79
	4.6	972
	4.8	38
	4.9	1041
	5.0	197
	5.1	553
	5.3	364
	5.5	751
	5.7	197
	5.8	1148
	6.0	1151
	6.0	904
	6.0	240
	6.0	380
	6.1	179
	6.2	953
	6.4	963
	6.5	134
	6.5	834
	6.6	1222
	6.7	141
	6.7	143
	6.9	1100
	6.9	449
	7.3	449
	7.3	100
	7.4	292
	7.5	438
	7.5	1
	7.5	68
	7.5	487
	7.6	86
	7.6	343
	7.6	594
	7.6	615
	7.6	656

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	7.6	769
	7.6	796
	7.6	808
	7.6	897
	7.6	1077
	7.7	1283
	7.8	707
	7.8	929
	7.8	41
	8.0	942
	8.1	502
	8.3	42
	8.4	1019
	8.5	0
	8.6	784
	8.8	658
	9.0	132
	9.1	355
	9.2	849
	9.4	1096
	9.6	159
	9.7	1035
	9.7	1007
	9.9	63
	10.0	1140
	10.2	650
	10.3	1318
	10.3	1113
	10.3	760
	10.3	619
	10.3	1083
	10.3	300
	10.3	21
	10.4	1003
	10.4	950
	10.4	870
	10.4	1141
	10.5	1044
	10.5	1220
	10.5	1188
	10.5	545
	10.6	292
	10.6	269
	10.6	0
	10.8	487
	10.9	1104
	10.9	649
	11.1	1061
	11.1	1219
	11.1	974
	11.1	1307
	11.5	300
	11.9	103
	12.2	1010

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	12.3	174
	12.8	526
	12.8	642
	13.4	32
	13.7	1148
	14.0	132
	14.9	1259
	15.0	156
	15.4	594
	15.5	35
	15.7	676
	16.0	634
	16.1	365
	16.4	462
	16.5	683
	16.7	1214
	16.7	93
	17.3	1244
	17.4	41
	17.6	1296
	17.9	758
	18.8	896
	19.1	288
	19.2	1024
	19.7	600
	19.7	544
	20.0	328
	20.2	860
	20.6	351
	21.5	460
	21.8	978
	21.8	133
	22.0	392
	22.2	309
	22.2	1025
	22.3	903
	22.4	106
	22.5	876
	22.5	1041
	22.6	508
	22.9	840
	22.9	355
	22.9	638
	23.1	58
	23.1	332
	23.2	635
	23.4	443
	23.4	950
	23.6	693
	23.6	313
	23.9	682
	24.1	418
	24.1	421
	24.1	725

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	24.3	896
	24.4	431
	24.5	231
	24.6	860
	24.6	412
	24.8	774
	24.9	327
	24.9	1087
	25.1	556
	25.1	461
	25.2	1149
	25.4	975
	25.4	33
	25.6	325
	25.7	285
	25.7	207
	25.7	776
	25.9	645
	26.1	670
	26.2	41
	26.3	1191
	26.4	872
	26.5	58
	26.6	1204
	26.6	1284
	26.7	113
	26.8	1139
	27.0	404
	27.1	719
	27.3	1143
	27.3	56
	27.5	653
	28.0	377
	28.2	511
	28.5	938
	28.6	191
	28.9	375
	29.4	452
	30.1	136
	30.5	232
	30.7	331
	31.3	867
	31.9	608
	32.2	354
	32.5	123
	33.0	1248
	33.1	87
	33.7	1145
	33.8	78
	34.4	286
	34.7	970
	34.9	138
	35.2	121
	35.2	1194

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	35.2	1079
	35.5	322
	35.8	625
	36.3	66
	36.7	331
	36.9	447
	37.2	250
	41.8	1116
	45.1	755
	45.1	26
	45.4	63
	45.6	833
	46.3	133
	47.9	228
	48.3	58
	48.5	825
	48.6	0
	48.7	1275
	48.7	676
	49.0	519
	49.2	1062
	49.3	32
	49.3	976
	50.0	378
	50.1	1248
	50.2	546
	50.6	835
	50.8	98
	51.0	879
	51.5	654
	51.6	675
	52.4	326
	52.7	1076
	52.8	300
	54.5	636
	54.8	985
	55.2	94
	55.5	343
	56.2	0
	56.7	174
	56.9	80
	57.1	775
	57.3	1102
	57.9	2
	58.2	1258
	58.4	1170
	58.6	135
	58.8	94
	59.0	956
	59.1	1281
	59.5	882
	59.6	113
	60.0	368
	60.2	86

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	60.3	132
	60.3	1090
	60.7	91
	60.8	1136
	61.1	653
	61.2	560
	61.4	265
	61.4	1161
	61.6	66
	61.7	1115
	61.7	957
	61.8	388
	62.1	747
	62.4	11
	62.9	493
	63.1	119
	63.3	727
	63.8	393
	64.0	133
	64.3	0
	64.3	1016
	64.6	5
	64.7	1089
	65.0	485
	65.3	175
	65.4	772
	65.9	89
	66.5	89
	66.6	784
	67.0	1013
	67.1	113
	67.2	86
	67.4	373
	67.5	343
	67.8	171
	67.9	997
	68.1	24
	68.3	876
	68.9	1309
	69.5	1066
	69.8	118
	69.9	404
	70.0	755
	70.3	6
	70.4	494
	70.5	405
	70.7	0
	71.0	382
	71.2	1010
	71.4	1257
	72.0	589
	75.4	57
	77.8	237
	77.8	423

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	77.9	13
	78.9	421
	79.8	995
	82.6	1002
	82.9	920
	83.6	1079
	84.5	1222
	85.9	389
	87.2	655
	88.3	1061
	89.9	166
	90.0	1296
	90.1	613
	90.2	553
	90.7	0
	91.1	1147
	91.8	490
	92.3	215
	93.3	765
	93.5	301
	94.5	1104
	94.7	126
	95.6	194
	101.2	793
	101.2	1253
	102.3	1115
	163.6	1082
	163.8	26
	163.8	167
	163.9	355
	163.9	147
	164.0	826
	164.0	492
	164.0	187
	164.0	540
	164.0	782
	164.1	1229
	164.1	693
	164.1	91
	164.2	0
	164.3	0
	164.3	420
	164.4	440
	164.5	233
	164.5	652
	164.5	944
	164.5	777
	164.6	1040
	164.6	919
	164.6	1165
	164.6	248
	164.7	858
	164.7	667
	164.7	207

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	164.8	1207
	164.8	361
	164.8	1190
	164.8	83
	164.8	499
	164.8	951
	164.9	350
	164.9	1046
	164.9	665
	164.9	272
	165.0	78
	165.0	1070
	165.1	883
	165.1	588
	165.1	560
	165.2	623
	165.2	449
	165.9	1072
	167.1	1102
	167.1	496
	167.1	957
	167.2	184
	167.2	235
	167.3	426
	167.3	1274
	167.3	434
	167.4	250
	167.5	1038
	167.5	1135
	167.5	1302
	167.5	1202
	172.8	61
	172.8	337
	172.8	1300
	172.8	1025
	172.8	1279
	173.0	1197
	173.3	1077
Michigan		
Mainline	230.3	4
	254.8	13
Wadsworth Compressor Station (CS-2)	63.5	1099
	63.5	0
	63.5	1237
	63.5	0
	63.5	739
Clyde Compressor Station (CS-3)	134.0	699
Inactive or Abandoned		
Ohio		
TGP Interconnect	0.0	491
	0.4	400
	0.7	0
Mainline	0.4	624
	0.4	1015

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	1.3	332
	1.9	579
	2.5	1216
	2.6	1111
	3.0	164
	4.0	1227
	4.1	216
	4.1	0
	5.0	0
	5.4	494
	5.5	676
	5.8	309
	5.9	1148
	6.1	816
	6.4	1054
	6.8	309
	7.1	920
	7.1	729
	7.1	858
	7.3	291
	7.4	374
	7.4	30
	7.4	423
	7.5	270
	7.5	139
	7.6	1299
	7.6	1030
	7.6	1079
	7.7	634
	7.8	888
	7.8	651
	7.8	581
	7.8	370
	7.8	704
	8.1	316
	8.1	0
	9.0	141
	9.1	606
	9.1	1309
	9.2	381
	9.2	1307
	9.3	597
	9.3	0
	9.4	1040
	9.4	749
	9.5	1123
	9.6	0
	9.6	928
	9.7	1229
	9.7	1194
	9.8	1301
	9.8	36
	10.1	113
	10.2	0

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	10.3	1072
	10.3	901
	10.3	861
	10.4	1128
	10.4	529
	10.5	1099
	10.5	866
	10.5	993
	10.5	844
	10.5	341
	10.6	800
	10.6	1210
	10.6	591
	10.6	710
	10.7	0
	10.8	882
	10.8	95
	10.8	788
	11.1	1016
	11.2	1068
	11.2	418
	11.5	131
	11.5	436
	11.6	164
	11.6	367
	11.7	466
	11.7	394
	11.7	0
	11.7	828
	11.8	576
	11.8	177
	11.8	578
	11.8	860
	11.8	1077
	11.9	0
	11.9	879
	11.9	579
	11.9	251
	11.9	1084
	11.9	409
	11.9	905
	11.9	156
	11.9	1273
	12.0	1294
	12.0	742
	12.3	1187
	12.3	1212
	12.5	1014
	12.5	1122
	13.0	159
	13.9	352
	14.1	358
	14.5	260
	14.7	1294

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	16.0	1035
	16.9	1257
	17.7	674
	21.8	68
	22.9	614
	23.1	264
	23.6	660
	23.9	554
	23.9	554
	23.9	775
	24.3	1317
	24.5	523
	24.7	1266
	25.4	148
	26.0	527
	27.5	554
	27.7	294
	27.8	782
	28.8	866
	29.1	750
	29.2	185
	29.3	227
	29.3	1175
	29.6	798
	29.6	1012
	29.7	434
	30.4	969
	30.8	809
	31.2	1172
	31.2	867
	31.2	923
	31.5	258
	31.7	149
	31.8	647
	31.9	1170
	32.0	40
	32.8	737
	33.4	533
	33.5	994
	33.5	943
	35.1	1304
	35.8	339
	35.8	758
	35.9	641
	36.0	1240
	36.1	915
	36.6	114
	36.9	629
	38.2	67
	39.0	1189
	39.0	715
	40.7	871
	40.7	45
	40.8	787

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	40.9	244
	40.9	795
	41.3	581
	41.4	0
	41.9	835
	42.0	242
	42.1	1309
	42.4	169
	42.6	1023
	42.6	213
	42.8	42
	42.9	1128
	42.9	887
	43.1	447
	43.2	634
	43.2	795
	43.3	456
	43.4	413
	43.5	521
	43.6	842
	43.7	1283
	43.8	369
	43.8	599
	44.0	25
	44.2	932
	44.2	587
	44.3	379
	44.3	964
	44.4	66
	44.5	824
	44.6	458
	44.8	427
	44.8	0
	45.1	690
	45.1	55
	45.1	803
	45.2	237
	45.2	736
	45.3	635
	45.3	973
	45.4	514
	45.4	504
	45.4	1178
	45.4	205
	45.5	821
	45.5	411
	45.6	457
	46.2	1138
	46.8	524
	47.0	956
	47.8	151
	48.2	867
	48.3	1122
	48.9	882

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	48.9	33
	49.0	535
	49.0	657
	49.3	53
	50.1	153
	51.3	1202
	51.4	571
	51.7	310
	51.8	692
	51.8	673
	51.9	19
	52.0	887
	52.1	942
	52.1	1019
	52.2	544
	52.5	448
	52.6	335
	52.6	392
	52.8	268
	53.1	1066
	53.1	1066
	53.7	555
	53.8	403
	54.0	999
	54.2	142
	54.5	201
	54.7	989
	54.8	107
	55.1	151
	55.1	1275
	55.3	728
	55.5	862
	55.8	70
	55.8	1235
	55.8	319
	55.9	1094
	56.2	10
	56.3	631
	56.7	20
	56.8	500
	56.9	1041
	57.0	0
	57.5	723
	57.7	120
	58.0	1164
	58.1	555
	58.3	486
	58.3	533
	58.3	436
	58.7	1146
	58.9	1208
	59.0	1063
	59.0	271
	59.0	304

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	59.1	408
	59.2	379
	59.2	579
	59.8	489
	60.3	172
	60.6	1139
	61.2	1026
	61.9	432
	62.0	1189
	62.5	547
	62.7	775
	63.2	1079
	63.2	1111
	65.0	1044
	66.2	131
	66.6	272
	67.5	568
	68.2	996
	69.0	1057
	69.1	458
	69.2	67
	69.2	1212
	69.5	1220
	69.5	1264
	69.5	1188
	69.6	852
	70.1	384
	70.2	453
	70.5	93
	70.5	355
	70.5	827
	70.9	1112
	71.1	703
	71.2	1126
	71.2	197
	71.7	409
	71.9	645
	71.9	0
	72.0	696
	72.2	53
	72.5	1239
	72.9	734
	73.1	311
	73.1	986
	73.1	458
	73.2	103
	73.2	956
	73.3	507
	73.4	412
	73.5	334
	73.6	730
	73.7	224
	73.7	1264
	73.8	348

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	73.9	1015
	74.0	512
	74.0	523
	74.0	661
	74.6	325
	74.9	1254
	74.9	150
	74.9	0
	75.1	226
	75.1	879
	75.1	336
	75.1	36
	75.3	310
	75.3	285
	75.3	898
	75.4	0
	75.5	1003
	75.5	346
	75.6	587
	75.7	298
	75.8	434
	75.8	710
	75.8	1111
	75.8	618
	75.8	992
	75.9	763
	75.9	109
	76.0	963
	76.0	112
	76.1	529
	76.2	1186
	76.2	292
	76.2	155
	76.2	439
	76.4	856
	77.1	450
	77.8	703
	77.8	63
	77.8	583
	77.8	580
	77.9	584
	79.1	77
	80.8	992
	81.4	1067
	81.9	116
	83.0	328
	83.8	1248
	84.4	76
	84.4	310
	84.5	161
	84.5	402
	84.5	1042
	84.5	988
	84.5	1134

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	84.5	785
	84.5	861
	84.5	619
	84.5	696
	84.5	443
	84.5	548
	84.5	284
	85.2	625
	85.7	252
	85.8	489
	86.0	763
	86.1	108
	86.2	812
	87.3	805
	87.4	604
	87.9	389
	88.9	1286
	89.9	827
	91.2	282
	91.3	529
	91.4	0
	92.0	886
	92.2	976
	92.3	798
	93.0	1171
	95.4	1065
	95.5	12
	95.5	1174
	95.5	221
	101.0	954
	101.2	1016
	101.2	173
	101.2	332
	101.4	656
	101.7	91
	101.8	1243
	104.0	1259
	104.0	156
	104.2	962
	104.7	572
	105.1	396
	105.2	1290
	105.6	1025
	105.6	57
	106.0	839
	106.4	1113
	106.7	988
	106.8	950
	107.0	652
	107.2	623
	107.5	1151
	107.7	358
	108.4	1294
	108.8	786

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Mainline (cont'd)	126.5	212
	135.1	859
	135.5	816
	138.8	744
	139.0	524
	139.6	790
	139.9	515
	153.5	608
	156.1	764
	156.2	765
	164.2	608
	164.6	1237
	164.7	671
	165.1	953
	165.3	122
	166.1	1273
	167.2	166
	167.5	451
	167.5	925
	167.5	828
	173.2	1006
	173.3	969
	173.4	1047
	174.6	973
	174.7	860
	174.9	0
	174.9	480
	175.0	464
	175.0	80
	175.0	95
	194.9	374
Michigan		
Mainline	218.5	1241
	230.3	4
	230.3	254
	230.4	900
	230.4	370
	231.5	733
	231.8	146
	250.9	791
	254.8	247
Hanoverton Compressor Station (CS-1)	1.4	1000
Wadsworth Compressor Station (CS-2)	63.5	516
	63.5	1000
TEAL PROJECT		
Active or Inactive Wells		
Ohio		
Pipeline Loop	0.3	1212
	0.6	1199
	1.5	1031
	1.7	192
	3.3	1250
Connecting Pipeline	0.0 - 0.3 [a]	768
Colerain Compressor Station	49.9 [a]	106

APPENDIX G-2 (cont'd)

Oil and Gas Wells within 0.25 mile of the NGT and TEAL Projects

Project, Well Status, State, Component	Milepost (mile)	Distance to Project (feet)
Colerain Compressor Station (cont'd)	49.9 [a]	400
	49.9 [a]	610
	49.9 [a]	987
	49.9 [a]	569
	49.9 [a]	849
	49.9 [a]	779
	49.9 [a]	311
	49.9 [a]	1221
	49.9 [a]	271
	49.9 [a]	865
	49.9 [a]	630
	49.9 [a]	7
	49.9 [a]	321
	49.9 [a]	1071
	49.9 [a]	547
	49.9 [a]	950
	49.9 [a]	769
Line 73 Receiver Site	N/A [b]	1125
Line 73 Regulator	N/A [b]	1029

a Line 73 Pipeline milepost designations are used.
b N/A means milepost information is not applicable for these TEAL components.
Sources: USGS, 2004. Michigan geologic map data. USGS, GIS datalayer. https://mrdata.usgs.gov/geology/state/state.php?state=MI
USGS, 2005. Ohio geologic map data. USGS, GIS datalayer: https://mrdata.usgs.gov/geology/state/state.php?state=OH
N/A = not applicable

APPENDIX H

WATER RESOURCES TABLES

APPENDIX H-1

WATER SUPPLY WELLS AND SPRINGS WITHIN 150 FEET OF THE NGT AND TEAL PROJECTS

APPENDIX H-1

Water Supply Wells and Springs within 150 Feet of the NGT and TEAL Projects

Segment	County, State	Supply Type	Approximate Milepost	Approximate Distance from Construction Work Area (feet)
NGT Pipeline				
Mainline	Columbiana, OH	Agricultural/Irrigation Well	2.2	4
Mainline	Columbiana, OH	Domestic Well	2.2	61
Mainline	Columbiana, OH	Private Spring	3.5	97
Mainline	Columbiana, OH	Unspecified Well	7.1	150
Mainline	Columbiana, OH	Domestic Well	8.0	92
Mainline	Columbiana, OH	Domestic Well	10.5	0
Mainline	Columbiana, OH	Domestic Well	11.2	4
Mainline	Columbiana, OH	Private Well	11.4	18
Mainline	Stark, OH	Domestic Well	14.5	13
Mainline	Stark, OH	Domestic Well	18.3	0
Mainline	Stark, OH	Unspecified Well	18.6	7
Mainline	Stark, OH	Unspecified Well	18.6	82
Mainline	Stark, OH	Unspecified Well	19.6	2
Mainline	Stark, OH	Unspecified Well	23.6	117
Mainline	Stark, OH	Domestic Well	26.5	16
Mainline	Stark, OH	Domestic Well	30.3	94
Mainline	Stark, OH	Domestic Well	30.8	0
Mainline	Stark, OH	Domestic Well	30.9	94
Mainline	Stark, OH	Domestic Well	32.1	102
Mainline	Stark, OH	Unspecified Well	33.0	61
Mainline	Summit, OH	Domestic Well	35.0	0
Mainline	Summit, OH	Unspecified Well	36.8	3
Mainline	Summit, OH	Unspecified Well	36.8	65
Mainline	Columbiana, OH	Private Well [1]	36.8	16
Mainline	Summit, OH	Unspecified Well	37.8	1
Mainline	Summit, OH	Unspecified Well	38.3	0
Mainline	Summit, OH	Domestic Well	38.9	145
Mainline	Summit, OH	Unspecified Well	39.0	24
Mainline	Summit, OH	Unspecified Well	39.0	0
Mainline	Summit, OH	Unspecified Well	40.2	140
Mainline	Summit, OH	Private Well	40.2	37
Mainline	Summit, OH	Domestic Well	41.4	124
Mainline	Summit, OH	Domestic Well	41.5	34
Mainline	Summit, OH	Unspecified Well	41.6	117
Mainline	Summit, OH	Domestic Well	42.1	74
Mainline	Summit, OH	Domestic Well	42.2	0
Mainline	Summit, OH	Domestic Well	42.3	147
Mainline	Summit, OH	Unspecified Well	42.9	127
Mainline	Summit, OH	Unspecified Well	43.6	42
Mainline	Summit, OH	Unspecified Well	43.6	0
Mainline	Summit, OH	Unspecified Well	43.6	63
Mainline	Summit, OH	Private Well	43.7	41
Mainline	Summit, OH	Domestic Well	44.8	0
Mainline	Summit, OH	Unspecified Well	44.9	0
Mainline	Summit, OH	Domestic Well	44.9	79

APPENDIX H-1 (cont'd)

Water Supply Wells and Springs within 150 Feet of the NGT and TEAL Projects

Segment	County, State	Supply Type	Approximate Milepost	Approximate Distance from Construction Work Area (feet)
Mainline	Summit, OH	Domestic Well	46.2	25
Mainline	Summit, OH	Unspecified Well	46.2	106
Mainline	Summit, OH	Domestic Well	46.8	75
Mainline	Summit, OH	Unspecified Well	46.8	0
Mainline	Summit, OH	Private Well	48.0	143
Mainline	Summit, OH	Unspecified Well	49.4	90
Mainline	Summit, OH	Domestic Well	50.3	76
Mainline	Summit, OH	Unspecified Well	50.4	0
Mainline	Wayne, OH	Domestic Well	51.4	143
Mainline	Wayne, OH	Agricultural/Irrigation Well	52.0	85
Mainline	Wayne, OH	Private Well	52.9 [1]	0
Mainline	Wayne, OH	Domestic Well	53.0	0
Mainline	Wayne, OH	Domestic Well	53.0	94
Mainline	Wayne, OH	Private Spring	53.1 [1]	116
Mainline	Wayne, OH	Unspecified Well	53.6	0
Mainline	Wayne, OH	Unspecified Well	54.1	68
Mainline	Wayne, OH	Domestic Well	54.3	42
Mainline	Wayne, OH	Domestic Well	54.6	0
Mainline	Wayne, OH	Domestic Well	54.6	104
Mainline	Wayne, OH	Domestic Well	55.7	41
Mainline	Wayne, OH	Unspecified Well	55.7	0
Mainline	Wayne, OH	Unspecified Well	55.7	116
Mainline	Wayne, OH	Unspecified Well	55.7	88
Mainline	Wayne, OH	Unspecified Well	55.7	88
Mainline	Wayne, OH	Unspecified Well	56.5	118
Mainline	Wayne, OH	Unspecified Well	56.5	118
Mainline	Wayne, OH	Unspecified Well	56.5	118
Mainline	Wayne, OH	Unspecified Well	56.5	118
Mainline	Wayne, OH	Private Well	56.5 [1]	35
Mainline	Medina, OH	Domestic Well	56.6	148
Mainline	Wayne, OH	Unspecified Well	57.2	108
Mainline	Wayne, OH	Unspecified Well	57.2	108
Mainline	Wayne, OH	Unspecified Well	57.2	108
Mainline	Wayne, OH	Unspecified Well	57.2	108
Mainline	Wayne, OH	Unspecified Well	57.2	108
Mainline	Wayne, OH	Domestic Well	57.2	108
Mainline	Wayne, OH	Unspecified Well	57.2	31
Mainline	Wayne, OH	Unspecified Well	57.2	31
Mainline	Wayne, OH	Unspecified Well	57.2	31
Mainline	Wayne, OH	Unspecified Well	57.2	31
Mainline	Wayne, OH	Unspecified Well	57.2	31
Mainline	Wayne, OH	Unspecified Well	57.2	31
Mainline	Wayne, OH	Unspecified Well	57.3	136
Mainline	Medina, OH	Domestic Well	62.6	30
Mainline	Medina, OH	Domestic Well	64.2	0
Mainline	Medina, OH	Domestic Well	67.0	54
Mainline	Medina, OH	Domestic Well	67.1	93

APPENDIX H-1 (cont'd)

Water Supply Wells and Springs within 150 Feet of the NGT and TEAL Projects

Segment	County, State	Supply Type	Approximate Milepost	Approximate Distance from Construction Work Area (feet)
Mainline	Medina, OH	Domestic Well	67.3	70
Mainline	Medina, OH	Unspecified Well	68.3	139
Mainline	Medina, OH	Unspecified Well	68.8	121
Mainline	Medina, OH	Unspecified Well	69.3	15
Mainline	Medina, OH	Unspecified Well	72.6	41
Mainline	Medina, OH	Unspecified Well	77.0	0
Mainline	Medina, OH	Unspecified Well	78.1	0
Mainline	Lorain, OH	Private Well	84.4[1]	86
Mainline	Lorain, OH	Private Well	84.5[1]	150
Mainline	Lorain, OH	Unspecified Well	88.2	103
Mainline	Lorain, OH	Private Well	92.6[1]	81
Mainline	Lorain, OH	Private Well	99.3[1]	21
Mainline	Lorain, OH	Private Spring	99.3[1]	25
Mainline	Lorain, OH	Unspecified Well	99.9	69
Mainline	Huron, OH	Unspecified Well	102.4	140
Mainline	Erie, OH	Unspecified Well	111.2	61
Mainline	Erie, OH	Dry/No Water	114.7	124
Mainline	Erie, OH	Dry/No Water	114.7	76
Mainline	Erie, OH	Unspecified Well	115.0	0
Mainline	Erie, OH	Unspecified Well	118.3	124
Mainline	Erie, OH	Unspecified Well	123.2	88
Mainline	Erie, OH	Unspecified Well	125.8	72
Mainline	Erie, OH	Private Well	125.9	93
Mainline	Erie, OH	Unspecified Well	127.7	0
Mainline	Erie, OH	Unspecified Well	128.8	38
Mainline	Erie, OH	Unspecified Well	129.8	0
Mainline	Erie, OH	Unspecified Well	130.7	77
Mainline	Sandusky, OH	Domestic Well	134.1	0
Mainline	Sandusky, OH	Domestic Well	134.1	0
Mainline	Sandusky, OH	Domestic Well	134.1	0
Mainline	Sandusky, OH	Unspecified Well	139.2	82
Mainline	Sandusky, OH	Unspecified Well	145.3	116
Mainline	Sandusky, OH	Unspecified Well	145.3	145
Mainline	Sandusky, OH	Unspecified Well	146.2	135
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	146.5	94

APPENDIX H-1 (cont'd)

Water Supply Wells and Springs within 150 Feet of the NGT and TEAL Projects

Segment	County, State	Supply Type	Approximate Milepost	Approximate Distance from Construction Work Area (feet)
Mainline	Sandusky, OH	Unspecified Well	146.5	94
Mainline	Sandusky, OH	Unspecified Well	147.4	64
Mainline	Sandusky, OH	Domestic Well	147.7	112
Mainline	Sandusky, OH	Unspecified Well	154.8	115
Mainline	Sandusky, OH	Domestic Well	157.5	121
Mainline	Sandusky, OH	Unspecified Well	161.8	38
Mainline	Sandusky, OH	Domestic Well	163.7	132
Mainline	Wood, OH	Unspecified Well	163.7	113
Mainline	Wood, OH	Unspecified Well	167.2	59
Mainline	Lucas, OH	Domestic Well	187.9	0
Mainline	Lucas, OH	Domestic Well	188.4	0
Mainline	Lucas, OH	Domestic Well	188.4	0
Mainline	Lucas, OH	Unspecified Well	188.8	0
Mainline	Lucas, OH	Domestic Well	189.3	117
Mainline	Fulton, OH	Unspecified Well	194.8	149
Mainline	Fulton, OH	Unspecified Well	194.8	131
Mainline	Fulton, OH	Domestic Well	195.6	91
Mainline	Fulton, OH	Domestic Well	195.6	86
Mainline	Fulton, OH	Unspecified Well	196.2	141
Mainline	Fulton, OH	Unspecified Well	196.2	141
Mainline	Lenawee, MI	Unspecified Well	227.6	0
Mainline	Lenawee, MI	Unspecified Well	228.1	0
Mainline	Monroe, MI	Unspecified Well	231.3	102
Mainline	Monroe, MI	Unspecified Well	232.5	124
Mainline	Monroe, MI	Unspecified Well	233.1	69
Mainline	Monroe, MI	Unspecified Well	236.3	126
Mainline	Washtenaw, MI	Unspecified Well	237.6	99
Mainline	Washtenaw, MI	Unspecified Well	239.3	137
Mainline	Washtenaw, MI	Unspecified Well	245.1	0
Mainline	Washtenaw, MI	Unspecified Well	245.2	0
Mainline	Washtenaw, MI	Unspecified Well	245.2	0
Mainline	Washtenaw, MI	Private Well	246.6	43
Mainline	Washtenaw, MI	Unspecified Well	246.6	46
Mainline	Washtenaw, MI	Private Well	247.4	73
Mainline	Washtenaw, MI	Unspecified Well	250.5	0
Mainline	Washtenaw, MI	Unspecified Well	250.5	0
Mainline	Washtenaw, MI	Unspecified Well	250.6	0
Mainline	Washtenaw, MI	Unspecified Well	253.7	0
Mainline	Washtenaw, MI	Unspecified Well	253.9	55
Mainline	Washtenaw, MI	Unspecified Well	253.9	0
Mainline	Washtenaw, MI	Unspecified Well	254.9	62
NGT Aboveground Facilities				
Hanoverton CS	Columbiana, OH	Unspecified Well	1.3	62
Wadsworth CS	Medina, OH	Unspecified Well	63.5	139
Wadsworth CS	Medina, OH	Unspecified Well	63.5	119
Wadsworth CS	Medina, OH	Domestic Well	63.5	61
Clyde CS	Sandusky, OH	Unspecified Well	134.1	0

APPENDIX H-1 (cont'd)

Water Supply Wells and Springs within 150 Feet of the NGT and TEAL Projects

Segment	County, State	Supply Type	Approximate Milepost	Approximate Distance from Construction Work Area (feet)
Clyde CS	Sandusky, OH	Domestic Well	134.1	55
MR04	Washtenaw, MI	Unspecified Well	255.0	0
NGT Contractor Wareyards				
Wareyard 1-1	Stark, OH	Domestic Well	23.0	0
Wareyard 3-1a	Wood, OH	Unspecified Well	176.7	0
Wareyard 3-2	Lucas, OH	Domestic Well	186.6	84
Wareyard 3-2	Lucas, OH	Unspecified Well	186.7	0
Wareyard 4-1	Lenawee, MI	Unspecified Well	228.6	0
Wareyard 4-1	Monroe, MI	Unspecified Well	228.7	88
Wareyard 4-1	Monroe, MI	Unspecified Well	228.8	83
NGT Staging Areas				
Staging Area-57	Stark, OH	Unspecified Well	13.5	115
Staging Area-17	Stark, OH	Unspecified Well	15.3	111
Staging Area-1	Summit, OH	Domestic Well	41.4	125
Staging Area-34	Wayne, OH	Unspecified Well	53.7	84
Staging Area-11	Medina, OH	Unspecified Well	68.4	96
Staging Area-11	Medina, OH	Unspecified Well	68.4	17
Staging Area-93	Sandusky, OH	Unspecified Well	133.3	133
Staging Area-96	Fulton, OH	Unspecified Well	200.8	0
NGT Access Roads				
TAR-7.3	Columbiana, OH	Private Well	7.3	14
TAR-13.5	Stark, OH	Unspecified Well	13.5	61
TAR-15.4	Stark, OH	Unspecified Well	15.4	149
TAR-18.6	Stark, OH	Unspecified Well	18.7	99
TAR-18.6	Stark, OH	Unspecified Well	18.7	85
TAR-18.6	Stark, OH	Unspecified Well	18.7	81
TAR-18.6	Stark, OH	Unspecified Well	18.7	74
TAR-18.6	Stark, OH	Unspecified Well	18.7	72
TAR-18.6	Stark, OH	Unspecified Well	18.7	72
TAR-18.6	Stark, OH	Unspecified Well	18.7	72
TAR-18.6	Stark, OH	Unspecified Well	18.7	53
TAR-18.6	Stark, OH	Domestic Well	18.7	64
TAR-18.6	Stark, OH	Unspecified Well	18.7	64
TAR-18.6	Stark, OH	Domestic Well	18.7	38
TAR-18.6	Stark, OH	Unspecified Well	18.7	42
TAR-18.6	Stark, OH	Unspecified Well	18.7	0
TAR-18.6	Stark, OH	Unspecified Well	18.7	0
TAR-22.9	Stark, OH	Unspecified Well	22.9	125
TAR-33.5 R	Stark, OH	Unspecified Well	33.6	62
TAR-40.8 R	Summit, OH	Unspecified Well	40.5	103
TAR-40.8 R	Summit, OH	Unspecified Well	40.5	31
TAR 43.7 R	Summit, OH	Unspecified Well	43.6	139
TAR 43.7 R	Summit, OH	Unspecified Well	43.6	11
TAR 43.7 R	Summit, OH	Domestic Well	43.6	47
TAR 43.7 R	Summit, OH	Unspecified Well	43.7	0
TAR-43.3	Summit, OH	Private Well	43.7	17
TAR-44.3	Summit, OH	Unspecified Well	44.4	72

APPENDIX H-1 (cont'd)

Water Supply Wells and Springs within 150 Feet of the NGT and TEAL Projects

Segment	County, State	Supply Type	Approximate Milepost	Approximate Distance from Construction Work Area (feet)
TAR-48.5	Summit, OH	Domestic Well	48.5	141
TAR-48.5	Summit, OH	Unspecified Well	48.8	15
TAR-48.5	Summit, OH	Unspecified Well	48.8	17
TAR-53.5	Wayne, OH	Unspecified Well	53.5	3
TAR-56.2	Medina, OH	Unspecified Well	56.2	114
TAR-63.1	Medina, OH	Domestic Well	63.0	108
TAR-66.4	Medina, OH	Unspecified Well	66.4	101
TAR-68.6	Medina, OH	Unspecified Well	68.4	100
TAR-73.1	Medina, OH	Unspecified Well	73.2	30
TAR-76.8a	Medina, OH	Unspecified Well	77.0	120
TAR-92.2	Lorain, OH	Unspecified Well	92.2	11
TAR-92.2	Lorain, OH	Unspecified Well	92.2	46
PAR-128.8	Erie, OH	Unspecified Well	128.8	0
TAR-163.9	Wood, OH	Domestic Well	163.9	63
TAR-173.9	Wood, OH	Unspecified Well	173.9	144
TAR-200.7	Fulton, OH	Unspecified Well	200.6	83
TAR-237.2	Washtenaw, MI	Unspecified Well	237.1	107
TAR-237.2	Washtenaw, MI	Unspecified Well	237.1	145
TEAL Pipeline				
Loopline	Monroe, OH	Private Well	1.3	0
Loopline	Monroe, OH	Private Spring	3	0
Loopline	Monroe, OH	Private Spring	3	40
Loopline	Monroe, OH	Private Spring	3.9	5

Sources: Ohio: ODNR, 2016b; OEPA Source Water Assessment and Protection Program; and field surveys.
Michigan: Michigan Department of Technology, Management, & Budget, 2016; MDEQ MDE Wellhead Protection Program; and field surveys.

APPENDIX H-2

WATERBODIES CROSSED BY THE NGT AND TEAL PROJECTS

APPENDIX H-2

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
NGT PROJECT									
Mainline									
Columbiana County, OH									
B15-17-S3	Tributary to Brush Creek	0.1	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	N/A
B15-17-S2	Tributary to Brush Creek	0.1	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	N/A
B15-17-S4	Tributary to Brush Creek	0.1	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	N/A
B15-28-S1	Tributary to Sandy Creek	0.7	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	2	Wet Cut
B15-29-S1	Tributary to Sandy Creek	1.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
A14-5-S4	Tributary to Sandy Creek	2.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Bore
A14-5-S3	Tributary to Sandy Creek	2.2	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Dry Cut
A14-8-S1	Tributary to Sandy Creek	3.9	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	9	Dry Cut
A14-10-S1	Conser Run	4.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Bore
A14-10-S2	Tributary Conser Run	5.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2	N/A
A14-11-S1	Tributary to Conser Run	5.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
A14-126-S1	Tributary to Conser Run	5.6	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
A14-127-S1	Tributary to Conser Run	5.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
A14-12-S1	Tributary to Conser Run	6.4	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	3	Dry Cut
B15-33-S1	Tributary to Lake Placentia	7.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
A14-196-S1	Tributary to Middle Branch Sandy Creek	9.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
A14-13-S1	Tributary to Middle Branch Sandy Creek	10.1	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2	Wet Cut
A14-15-S1	Tributary to Middle Branch Sandy Creek	10.6	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Dry Cut
C15-65-S1	Tributary to Middle Branch Sandy Creek	11.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	8	Dry Cut
A15-34-S1	Tributary to Middle Branch Sandy Creek	11.2	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Bore
A15-34-S2	Middle Branch Sandy Creek	11.2	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	30	Bore
A14-17-S4	Tributary to Middle Branch Sandy Creek	11.7	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	3	Dry Cut
A14-17-S4	Tributary to Middle Branch Sandy Creek	11.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	3	Dry Cut
A14-165-S2	Tributary to Woodland Lake	12.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Dry Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
A14-165-S1	Tributary to Woodland Lake	12.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Dry Cut
Stark County, OH									
B15-132-WB1	Tributary to Middle Branch Sandy Creek	13.4	Pond	Intermediate	Unknown	Unknown	Unknown	85	N/A
B15-63-S1	Tributary to Middle Branch Sandy Creek	13.4	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Dry Cut
B15-133-WB1	Tributary to Middle Branch Sandy Creek	13.5	Pond	Intermediate	Unknown	Unknown	Unknown	60	N/A
B15-66-S1	Tributary to Middle Branch Sandy Creek	13.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3.5	Wet Cut
A15-47-S1	Tributary to Middle Branch Sandy Creek	13.8	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	Dry Cut
B15-54-S2	Tributary to Middle Branch Sandy Creek	14.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	1.3	Wet Cut
C15-92-S1	Tributary to Beech Creek	15.3	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	N/A
C15-116-S5	Tributary to Beech Creek	16.8	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	N/A
C15-116-S3	Tributary to Beech Creek	16.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Dry Cut
C15-116-S3	Tributary to Beech Creek	17.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Dry Cut
C15-116-S2	Beech Creek	17.1	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
C15-116-S1	Tributary to Beech Creek	17.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
A14-105-S1	Tributary to Beech Creek	17.8	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	Bore
A14-103-S1	Tributary to Beech Creek	18.2	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
C15-87-S1	Tributary to Beech Creek	19.3	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	22	Dry Cut
C15-87-S2	Tributary to Beech Creek	19.4	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
A15-36-S1	Tributary to Red Pine Lake	20.5	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
A15-36-S2	Tributary to Red Pine Lake	20.5	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	4	N/A
A14-25-S1	Middle Branch Nimishillen Creek	21.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
B15-41-S1	Tributary to Middle Branch Nimishillen Creek	22.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3.5	Bore
B15-40-S1	Tributary to Middle Branch Nimishillen Creek	22.2	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	Bore
A14-175-S1	Tributary to Middle Branch Nimishillen Creek	22.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
A14-174-S1	Tributary to Middle Branch Nimishillen Creek	23.0	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	4	Wet Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
A14-27-S1	Tributary to Middle Branch Nimishillen River	24.1	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
A14-161-S1	Tributary to Middle Branch Nimishillen Creek	24.6	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	28	Dry Cut
A14-161-S2	Tributary to Middle Branch Nimishillen River	24.6	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	6	Dry Cut
A14-31-S1	Tributary to Middle Branch Nimishillen Creek	25.7	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
A14-100-S1	Tributary to Nimishillen Creek	26.7	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
B15-75-S1	Middle Nimishillen Creek	26.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	3.8	Dry Cut
B15-45-S1	Tributary to Swartz Ditch	27.7	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Wet Cut
A14-168-S1	Tributary to West Branch Nimishillen Creek	28.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	8	Wet Cut
B15-98-S1	Tributary to West Branck Nimishillen Creek	29.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	Wet Cut
B15-101-S1	Tributary to West Branch Nimishillen Creek	29.3	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
B15-103-S1	Tributary to West Branch Nimishillen Creek	29.6	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	30	Dry Cut
A14-157-S1	Tributary to West Branch Nimishillen Creek	30.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
A14-159-S1	Tributary to West Branch Nimishillen Creek	30.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
A14-158-S1	Tributary to West Branch Nimishillen Creek	30.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
A14-162-S1	Tributary to West Branch Nimishillen Creek	31.4	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
A14-163-S1	Tributary to West Branch Nimishillen Creek	31.6	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Dry Cut
A14-164-S2	West Branch Nimishillen Creek	32.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	16	Dry Cut
A14-164-S1	Tributary to West Branch Nimishillen Creek	32.2	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	22	Dry Cut
A15-68-S1	Tributary to Tuscarawas River	33.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
Summit County, OH									
A15-71-S1	Tributary to Tuscarawas River	34.7	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
AS-SU-210	Tributary to Tuscarawas River [h]	34.9	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
B15-68-S1	Tributary to Tuscarawas River	35.1	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	8	Dry Cut
AS-SU-401	Tributary to Tuscarawas River [h]	36.1	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	18	Dry Cut
C15-106-S1	Tributary to Willowdale Lake	36.7	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
B15-108-WB1	Tributary to Willowdale Lake	36.9	Pond	Intermediate	WWH	AWS and IWS	Primary Contact B	27	N/A
C15-122-S1	Tributary to Willowdale Lake	37.1	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
C15-120-S1	Tributary to Willowdale Lake	37.4	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Dry Cut
C15-113-S1	Tributary to Singer Lake	38.7	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	1	Wet Cut
F15-1-S1	Tributary to Nimisila Reservoir	39.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	7	Dry Cut
A14-112-S1	Tributary to Nimisila Reservoir	39.5	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Dry Cut
A14-112-S1A	Tributary to Nimisila Reservoir	39.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
A16-1-S1	Tributary to Nimisila Reservoir	40.8	Reservoir	Minor	WWH	AWS and IWS	Primary Contact B	8	Wet Cut
A14-120-S2	Tributary to Nimisilla Reservoir	41.0	Reservoir	Minor	WWH	AWS and IWS	Primary Contact B	10	HDD
A16-2-WB1	Nimisilla Resevoir	41.1	Reservoir	Major	WWH	AWS and IWS	Primary Contact B	630	HDD
A14-122-S2	Nimisila Creek	41.7	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	80	Dry Cut
A14-122-S3	Tributary to Nimisila Creek	41.7	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	30	N/A
A14-122-S4	Tributary to Nimisila Creek	41.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	N/A
A14-122-S5	Tributary to Nimisila Creek	41.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Dry Cut
A14-122-S1	Tributary to Nimisila Creek	42.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Wet Cut
AS-SU-18	Tributary to Nimisila Creek [h]	42.5	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	11	Wet Cut
A14-117-S1	Tributary to Nimisila Creek	43.3	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Wet Cut
A15-16-S2	Tributary to Nimisila Creek	43.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	3	N/A
A15-95-S1	Tributary to Nimisila Creek	43.9	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	2.5	Wet Cut
AS-SU-22	Tributary to Nimisila Creek [h]	43.9	Intermittent	Minor	WWH			2.5	Wet Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
C15-102-S1	Tributary to Nimisila Creek	44.1	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	13	Dry Cut
AS-SU-29	Tributary to Tuscarawas River [h]	45.9	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
A14-119-S1	Tributary to Tuscarawas River	46.4	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	2.5	Wet Cut
C15-25-S1	Tributary to Tuscarawas River	46.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Dry Cut
A15-13-S1	Tributary to Tuscarawas River	46.8	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	N/A
A15-14-S1	Tributary to Tuscarawas River	47.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	8	Wet Cut
C15-28-S1	Tuscarawas River	48.1	Perennial	Intermediate	MWH	AWS and IWS	Primary Contact A	83	HDD
A15-18-S1	Pancake Creek	48.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	19	Dry Cut
AS-SU-43	Tributary to Willowdale Lake [h]	49.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
A14-41-S3	Tributary to Pancake Creek	49.6	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4.5	Wet Cut
A14-41-S1	Tributary to Pancake Creek	49.6	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Dry Cut
A14-41-S2	Tributary to Pancake Creek	49.8	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
A14-41-S1	Tributary to Pancake Creek	50.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Dry Cut
A14-42-S2	Tributary to Pancake Creek	50.1	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	2	Wet Cut
A14-42-S1	Tributary to Pancake Creek	50.1	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
Wayne County, OH									
A15-20-S1	Tributary to Pancake Creek	50.5	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
A15-21-S2	Tributary to Silver Creek	51.5	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	N/A
A15-21-S1	Tributary to Silver Creek	51.6	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2	Wet Cut
C15-34-S1	Tributary to Silver Creek	52.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	8	Wet Cut
A14-124-S2	Tributary to Silver Creek	52.6	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	7	Dry Cut
A14-124-S1	Silver Creek	52.6	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Dry Cut
A15-52-S5	Tributary to Silver Creek	52.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	18	Dry Cut
A15-52-S1	Tributary to Silver Creek	52.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	7	Dry Cut
A15-52-S1	Tributary to Silver Creek	52.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	7	Dry Cut
A15-53-S1	Tributary to Silver Creek	53.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Dry Cut
A15-54-S1	Tributary to Silver Creek	53.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	7	N/A
B15-91-S1	Tributary to Silver Creek	53.5	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	3	Bore
B15-47-S1	Tributary to Mill Creek	54.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	17	Dry Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
A15-41-S1	Mill Creek	55.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
Medina County, OH									
B15-49-S1	Tributary to River Styx	57.2	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	Bore
Wayne County, OH									
B15-50-S3	Tributary to River Styx	57.2	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3.5	Bore
B15-50-S2	Tributary to River Styx	57.2	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	3.5	Dry Cut
B15-50-S2	Tributary to River Styx	57.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	3.5	Dry Cut
B15-50-S1	Tributary to Styx River	57.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	8	Bore
B15-51-S1	Styx River	57.6	Perennial	Intermediate	MWH	AWS and IWS	Primary Contact B	28	Dry Cut
Medina County, OH									
B15-53-S1	Tributary to Styx River	57.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	7	Bore
B14-7-S1	Tributary to Styx River	58.4	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
B15-130-WB1	Tributary to River Styx	59.1	Pond	Intermediate	Unknown	Unknown	Unknown	63	N/A
A14-44-S1	Tributary to Styx River	59.3	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	N/A
B15-02-S1	Tributary to Styx River	59.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Dry Cut
A14-39-S1	Tommy Run	60.7	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
A14-40-S1	Tributary to Tommy Run	60.9	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	8	Dry Cut
A14-40-S2	Tributary to Tommy Run	60.9	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	2	Wet Cut
A16-21-S1	Tributary to Hubbard Creek	63.2	Ephemeral	Minor	WWH	Unknown	Unknown	3	Bore
A14-116-S6	Tributary to Hubbard Creek	65.2	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
A14-116-S2	Tributary to Hubbard Creek	65.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
A14-116-S5	Tributary to Hubbard Creek	65.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	4	Wet Cut
B14-4-S1	Tributary to Hubbard Creek	66.2	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
AS-ME-27	Tributary to Chippewa Creek [h]	67.4	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	17	Wet Cut
AS-ME-30	Tributary to Chippewa Creek [h]	67.6	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Wet Cut
AS-ME-31	Tributary to Chippewa Creek [h]	67.6	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
AS-ME-31A	Tributary to Chippewa Creek [h]	67.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
B15-82-S1	Tributary to Chippewa Creek	67.9	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
AS-ME-34	Tributary to Chippewa Creek [h]	68.1	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	21	Dry Cut
A15-3-S1	McCabe Creek	68.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
C15-41-S1	Tributary to The Inlet	69.7	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
C15-6-S2	Tributary to The Inlet	69.9	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	17	Wet Cut
C15-6-S1	Tributary to The Inlet	70.0	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	23	Wet Cut
C15-42-S1	The Inlet	70.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	21	Bore
A15-72-S1	Tributary to The Inlet	70.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Bore
C15-44-S1	Tributary to The Inlet	71.1	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	13	HDD
A14-46-S2	Tributary to The Inlet	71.3	Ephemeral	Intermediate	WWH	AWS and IWS	Primary Contact B	13	HDD
A14-46-S1	Tributary to The Inlet	71.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	13	HDD
B15-86A-S1	Tributary to The Inlet	72.2	Ephemeral	Minor	Unknown	Unknown	Unknown	7	N/A
B15-120-S1	Tributary to Mallet Creek	72.8	Ephemeral	Minor	WWH	Unknown	Unknown	1	Bore
C15-24-S1	Mallet Creek	72.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry Cut
C15-24-S7	Tributary to Mallet Creek	73.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	1.5	Wet Cut
C15-24-S8	Tributary to Mallet Creek	73.3	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	Wet Cut
C15-24-S1-3	Mallet Creek	73.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
AS-ME-56	Tributary to Mallet Creek [h]	73.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Bore
AS-ME-58A	Tributary to Mallet Creek [h]	73.9	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	14	Dry Cut
B15-84-S1	Tributary to Mallet Creek	74.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	11	Dry Cut
B15-84-S2	Tributary to Mallet Creek	74.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	N/A
B14-9-S1	Tributary to Mallet Creek	74.3	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	N/A
B14-10-S1	Tributary to Mallet Creek	75.1	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2.5	Wet Cut
B14-10-S1	Tributary to Mallet Creek	75.4	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2.5	Wet Cut
B15-74-S3	Tributary to Mallet Creek	75.8	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	8	Wet Cut
B15-74-S1	Mallet Creek	76.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	30	Dry Cut
B15-74-S4	Tributary to Mallet Creek	76.3	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
A15-76-S1	Tributary to Mallet Creek	76.9	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
A15-76-S2	Tributary to Mallet Creek	77.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry Cut
A16-23-WB1	Tributary to Mallet Creek	78.4	Pond	Major	WWH	Unknown	Unknown	219	N/A
A16-6-S1	Tributary to West Branch Rocky River	78.9	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Dry Cut
B15-85-S1	Tributary to West Branch Rocky River	79.1	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Bore

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
AS-ME-99	Tributary to West Branch Rocky River [h]	79.5	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
AS-LO-1	Tributary to East Branch Black River [h]	80.3	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	19	Dry Cut
AS-LO-1	Tributary to East Branch Black River [h]	80.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	19	Dry Cut
B15-15-S1	Tributary to East Branch Black River	80.4	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	2	Dry Cut
Lorain County, OH									
A15-28-S1	Tributary to East Branch Black River	81.4	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
A14-59-S1	Tributary to East Branch Black River	82.0	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	2	N/A
A14-69-S6	Tributary to Salt Creek	84.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	N/A
A14-69-S4	Salt Creek	84.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	25	Dry Cut
A15-56-S1	Tributary to East Branch Black River	85.8	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	8	Wet Cut
A15-63-S1	Tributary to East Branch Black River	86.0	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Bore
A14-50-S1	East Branch Black River	86.4	Perennial	Intermediate	WWH	Unknown	Unknown	65	HDD
A14-50-S1	East Branch Black River	86.7	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact A	65	HDD
B15-61-S1	Tributary to Finnegan Ditch	87.1	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	9	Bore
A14-55-S1	Tributary to Dent Ditch	87.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
B15-96-S1	Tributary to Dent Ditch	88.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
B15-97-S1	Tributary to Dent Ditch	88.2	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	Bore
A14-73-S1	King Ditch	88.6	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	7	Dry Cut
A14-128-S1	Tributary to King Ditch	89.2	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	Bore
A14-75-S1	Tributary to King Ditch	89.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	Bore
A14-75-S2	Tributary to King Ditch	89.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	8	Wet Cut
A14-76-S2	Tributary to Kelner Ditch	90.0	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	1.5	N/A
A14-76-S1	Kelner Ditch	90.1	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
A14-131-S3	Tributary to Elk Creek	91.2	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
C15-37-S1	Elk Creek	91.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry Cut
C15-35-S1	Wellington Creek	91.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	50	Dry Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
C15-8-S2	Tributary to West Branch Black River	92.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	9	HDD
C15-8-S3	Tributary to West Branch Black River	92.3	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	55	HDD
C15-8-S4	West Branch Black River	92.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact A	45	HDD
C15-9-S1	Tributary to West Branch Black River	92.6	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	25	Dry Cut
A14-140-S1	Tributary to West Branch Black River	93.4	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2	Bore
A14-141-S1	Plum Creek	96.1	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
C15-57-S1	Tributary to Plum Creek	97.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	2	Wet Cut
C15-61-S1	Tributary to East Fork Vermillion River	98.3	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Wet Cut
A15-85-S1	Tributary to East Fork Vermillion River	98.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
A15-85-S2	Tributary to East Fork Vermillion River	98.9	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2	Wet Cut
C15-66-S1	East Fork Vermilion River	99.3	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	40	Dry Cut
C15-67-S1	Frankenburg Creek	101.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Bore
Huron County, OH									
C15-100-S1	Tributary to East Fork Frankenburg Creek	101.6	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Wet Cut
C15-101-S1	Tributary to East Fork Frankenburg Creek	101.9	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	9	Wet Cut
A15-57-S1	Tributary to East Fork Frankenburg Creek	102.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	8	Wet Cut
C15-88-S1	Tributary to Frankenburg Creek	103.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
C15-56-S1	Tributary to Vermillion River	104.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	8	HDD
C15-56-S4	Vermilion River	104.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact A	66	HDD
C15-56-S4B	Vermilion River	104.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact A	60	HDD
C15-56-S4A	Tributary to Vermillion River	104.5	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	40	HDD
Erie County, OH									
C15-69-S1	Chappel Creek	105.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	34	Dry Cut
B15-115-S1	Tributary to Old Woman Creek	110.3	Ephemeral	Minor	WWH	Unknown	Unknown	6	HDD

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
B15-124-S2	Tributary to Old Woman Creek	112.1	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Bore
B15-124-S1	Tributary to Old Woman Creek	112.1	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Bore
AS-ER-35	Tributary to Old Woman Creek [h]	113.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	Wet Cut
A14-187-S1	Old Woman Creek	113.1	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	28	Dry Cut
A14-188-S2	Tributary to Old Woman Creek	113.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	N/A
A14-188-S1	Tributary to Old Woman Creek	113.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
AS-ER-12	Tributary to Old Woman Creek [h]	113.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	33	Dry Cut
B15-07-S1	Tributary to Old Woman Creek	114.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
C15-14-S1	Tributary to Huron River	115.4	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	4	Wet Cut
C15-15-S1	Tributary to Huron River	115.7	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	30	Dry Cut
B15-09-S1	Tributary to Huron River	116.0	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
C15-17-S1	Tributary to Huron River	116.1	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2	Wet Cut
C15-16-S1	Tributary to Huron River	116.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
A14-156-S2	Tributary to Huron River	116.5	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	N/A
A14-155-S1	Tributary to Huron River	116.5	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Bore
A14-186-S1	Huron River	116.9	Perennial	Major	WWH	AWS and IWS	Primary Contact A	195	HDD
AS-ER-20A	Tributary to Huron River [h]	117.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	HDD
AS-ER-20	Tributary to Huron River [h]	117.1	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	HDD
C15-20-S1	Tributary to Mud Brook	117.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	18	N/A
C15-20-S1	Tributary to Mud Brook	117.6	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	18	Dry Cut
C15-18-S1	Tributary to Mud Brook	118.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	18	Wet Cut
B15-11-S1	Tributary to Mud Brook	118.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Dry Cut
E14-97-S1	Mud Creek	119.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	19	Dry Cut
C15-21-S1	Zorn Beutal Ditch	120.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	18	Dry Cut
C15-22-S1	Sheerer Ditch	120.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	28	Dry Cut
C15-74-S1	Tributary to Sheerer Ditch	120.5	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	Wet Cut
B15-12-S1	Sherer Ditch	120.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	2	Bore
B15-13-S1	Sherer Ditch	122.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Bore

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
AS-ER-205	Tributary to Sawmill Creek [h]	122.1	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Dry Cut
E14-96-S1	Tributary to Sherer Ditch	123.1	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
C15-126-WB1	Tributary to Huron River	123.4	Pond	Intermediate	Unknown	Unknown	Unknown	25	N/A
A15-62-S1	Tributary to Pipe Creek	124.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Dry Cut
C15-23-S1	Tributary to Pipe Creek	125.7	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6.5	Wet Cut
E14-95-S1	Pipe Creek	125.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
E14-49-S1	Tributary to Mills Creek	127.4	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
E14-50-S1	Tributary to Mills Creek	127.9	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
E14-51-S1	Tributary to Mills Creek	128.1	Perennial	Intermediate	WWH	AWS and IWS	Secondary Contact	15	Dry Cut
E14-94-S1	Mills Creek	129.2	Perennial	Intermediate	WWH	AWS and IWS	Secondary Contact	30	Dry Cut
Sandusky County, OH									
D15-74-S1	Scherz Ditch	134.3	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	14	Dry Cut
D14-4-S1	Strong Creek	135.3	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
D14-6-S1	Fuller Creek	136.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	13	Dry Cut
D14-7-S1	Tributary to Fuller Creek	136.4	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Bore
D15-49-S1	Tributary to Fuller Creek	136.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
E14-105-S1	Pickerel Creek	138.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	18	Dry Cut
D14-9-S1	Little Raccoon Creek	138.6	Perennial	Minor	WWH	AWS and IWS	Secondary Contact	10	Dry Cut
D14-10-S1	Tributary to Little Racoon Creek	139.1	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
D14-8-S2	Tributary to Raccoon Creek	139.9	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2	N/A
D14-8-S1	Raccoon Creek	139.9	Perennial	Intermediate	WWH	AWS and IWS	Secondary Contact	30	Dry Cut
E14-103-S1	South Creek	140.5	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	22	Dry Cut
D15-31-S1	Tributary to South Creek	141.2	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	18	Dry Cut
D14-11-S1	Green Creek	141.7	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	35	Dry Cut
D15-115-S1	Tributary to Buehler Creek	142.7	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
E14-36-S1	Tributary to Buehler Ditch	143.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
D15-47-S1	Buehler Ditch	143.3	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry Cut
D14-40-S1	Bark Creek	143.7	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry Cut
E15-41-S1	Sandusky River	145.9	Perennial	Major	WWH	AWS and IWS	Primary Contact A	500	HDD
D15-104-WB	Tributary to Sandusky River	146.4	Pond	Major	WWH	AWS and IWS	Primary Contact B	200	Dry Cut
E15-39-S1	Greesman Ditch	146.7	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
D14-33-S1	Tributary to Muskellunge Creek	147.5	Ephemeral	Intermediate	WWH	AWS and IWS	Primary Contact B	14	Bore
E14-121-S1	Tributary to Sandusky River	147.7	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	9	Wet Cut
D15-34-S1	Tributary to Little Muddy Creek	148.8	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
D15-52-S1	Little Muddy Creek	149.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	30	Dry Cut
D15-87-S1	Tributary to Muddy Creek	152.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	Bore
E14-43-S1	Muddy Creek	153.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	24	Dry Cut
E14-181-S1	Tributary to Muddy Creek	153.8	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	Bore
D15-35-S1	Tributary to Muddy Creek	154.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry Cut
E14-109-S1	Tributary to Muddy Creek	154.7	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	Bore
E14-42-S1	Ninemile Creek	155.2	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	18	Dry Cut
E14-3-S1	Tributary to Ninemile Creek	155.9	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	4	Bore
D15-51-S1	Tributary to Wolf Creek	156.6	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	7	Wet Cut
D15-50-S1	Tributary to Wolf Creek	156.9	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	8	Wet Cut
C15-79-S1	Wolf Creek	157.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	11	Dry Cut
D14-25-S1	Sugar Creek	158.6	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact A	35	Dry Cut
E14-107-S1	Tributary to Victoria Creek	160.8	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	9	Wet Cut
E14-108-S1	Victoria Creek	161.3	Ephemeral	Intermediate	WWH	AWS and IWS	Primary Contact B	13	Wet Cut
D15-26-S1	Portage River	162.5	Perennial	Major	WWH	AWS and IWS	Primary Contact A0	181	HDD
Wood County, OH									
E14-111-S1	Martin Ditch	163.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	17	Dry Cut
D14-31-S1	Tributary to Martin Ditch	164.7	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
E14-85-S1	Tributary to Toussaint Creek	165.6	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	13	Dry Cut
E14-153-S1	Tributary to Toussaint Creek	166.5	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
D14-34-S1	Tributary to Toussaint Creek	166.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Bore
E14-175-S1	Toussaint Creek	167.3	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	24	Dry Cut
E15-22-S1	Tributary to Toussaint Creek	167.8	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	Bore
E14-48-S3	Tributary to Toussaint Creek	168.2	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
E14-48-S4	Tributary to Toussaint Creek	168.3	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
E14-48-S2	Tributary to Toussaint Creek	168.4	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	7	Bore
E14-79-S1	Tributary to Packer Creek	170.4	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	7	Wet Cut
E14-80-S1	Tributary to Packer Creek	170.8	Ephemeral	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
E14-40-S1	Packer Creek	171.1	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	25	Dry Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
D15-62-S1	Tributary to Cedar Creek	174.0	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Bore
E14-35-S1	Tributary to Cedar Creek	174.5	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Bore
E15-32-S1	Tributary to Henry Creek	175.4	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
E15-33-S1	Tributary to Henry Creek	175.6	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
E15-34-S1	Tributary to Henry Creek	176.2	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	Wet Cut
E15-7-S1	Tributary to Maumee River	177.3	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	11	Dry Cut
D14-45A-S1	Tributary to Maumee River	178.1	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	8	Bore
E15-8-S1	Tributary to Maumee River	179.9	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	HDD
D15-101-S1	Tributary to Maumee River	179.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	40	HDD
D15-99-S1	Tributary to Maumee River	180.1	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	HDD
E14-46-S1	Tributary to Maumee River	180.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	Wet Cut
E14-44-S1	Tributary to Maumee River	180.8	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
E14-47-S1	Tributary to Maumee River	181.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2.5	Wet Cut
Wood and Lucas Counties, OH									
E14-55-S1	Maumee River	181.5	Perennial	Major	WWH	AWS and IWS	Primary Contact A	857	HDD
Lucas County, OH									
D15-48-S1	Tributary to Maumee River	181.9	Intermittent	Minor	WWH	Unknown	Primary Contact A	3	HDD
E14-116-S1	Blystone Ditch	182.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
E14-29-S1	Suter Ditch	183.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	9	Wet Cut
E14-1-S1	Whitemeir Ditch	183.6	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
E14-37-S1	Estworthy Ditch	183.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
E14-38-S1	Disher Ditch	184.1	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Dry Cut
E14-39-S1	Harris Ditch	185.3	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	18	Bore
E14-22-S1	Tributary to Ruhm Ditch	186.6	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Wet Cut
E15-21-S1	Doran Ditch	187.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
D15-1-S1	Yawberg Ditch	187.5	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Dry Cut
D15-91-S1	Jeffers Ditch	187.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Wet Cut
E15-9-S1	Laver Ditch	188.1	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
Henry County, OH									
E15-29-S1	Tributary to Harris Ditch	189.5	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
D15-56-S1	Tributary to Aumend Ditch	189.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
D15-7-S2	Tributary to Blue Creek	190.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	9	Dry Cut
D15-7-S1	Tributary to Blue Creek	190.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	6	Bore

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
Fulton County, OH									
E15-14-S1	Blue Creek	190.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	23	Dry Cut
E15-14-S2	Tributary to Blue Creek	191.1	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	4	Wet Cut
E15-45-S1	Tributary to Blue Creek	191.6	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry Cut
D15-110-S1	Tributary to Blue Creek	192.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	9	Dry Cut
D15-111-S1	Tributary to Blue Creek	193.2	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Dry Cut
D15-60-S1	Tributary to Fewless Creek	193.9	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
E15-37-S1	Tributary to Fewless Creek	195.0	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	35	Dry Cut
E15-36-S1	Fewless Creek	195.2	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	37	Dry Cut
D15-61-S1	Tributary to Fewless Creek	195.9	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Wet Cut
D15-17-S1	Swan Creek	196.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Bore
D15-9-S1	Tributary to Swan Creek	197.2	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Wet Cut
D15-98-S1	Tributary to Swan Creek	197.5	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Dry Cut
D15-60A-S1	Tributary to Swan Creek	197.9	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Bore
D15-10-S1	Tributary to Swan Creek	198.6	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Dry Cut
D15-13-S1	Tributary to Swan Creek	199.1	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Bore
E14-4-S1	Ai Creek	200.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	25	Dry Cut
E15-19-S1	Frankfort Ditch	202.1	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Wet Cut
D14-24-S1	Tributary to McNett Ditch	202.7	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	5	Bore
E14-112-S1	McNett Ditch	203.4	Ephemeral	Intermediate	WWH	AWS and IWS	Primary Contact B	11	Wet Cut
D14-44-S1	Tributary to Langenderfer Ditch	203.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
D14-44-S1	Tributary to Langenderfer Ditch	203.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
D14-44-S1	Tributary to Langenderfer Ditch	203.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry Cut
E14-53-S1	Tributary to Langenderfer Ditch	205.2	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	12	Dry Cut
D15-82-S1	Tributary to Langenderfer Ditch	205.6	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Dry Cut
D15-83-S1	Tributary to Langenderfer Ditch	206.0	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Bore
E14-11-S1	Tributary to Schmitz Ditch	206.2	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry Cut
E14-12-S1	Tributary to Tenmile Creek	207.0	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	8	Bore
D14-45-S1	Tenmile Creek	207.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
Lenawee County, MI									
E14-113-S1	Tributary to Tenmile Creek	208.7	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	14	Dry Cut
E14-114-S1	Tributary to Tenmile Creek	209.0	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	11	Bore
D16-1-S1	Tributary to Tenmile Creek	210.0	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	4	Bore
E14-78-S1	Tributary to Tenmile Creek	211.0	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	4	Wet Cut
E14-56-S1	Tributary to Clement Drain	212.0	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	8	Wet Cut
E14-137-S1	Tributary to Clement Drain	213.0	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	8	Dry Cut
E14-138-S1	Tributary to Clement Drain	213.5	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	11	Wet Cut
E14-139-S1	Tributary to Clement Drain	214.0	Perennial	Minor	WWH	AWS and IWS	Partial/Total	8	Dry Cut
E14-140-S1	River Raisin	215.2	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	80	HDD
E14-140-S1	River Raisin	215.7	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	80	HDD
D15-28-S1	Tributary to River Raisin	215.8	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	7	Dry Cut
A16-11-S1	Tributary to River Raisin	216.3	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	15	Dry Cut
E14-58-S1	Goodrich Drain	216.8	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	15	Dry Cut
D16-03-S1	Tributary to Goodrich Drain	217.1	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	5	Bore
E14-59-S1	Tributary to Goodrich Drain	217.5	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	16	Dry Cut
A16-12-S1	Hill Drain	218.1	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	20	Dry Cut
E14-141-S1	Pease Drain	218.5	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	12	Dry Cut
E14-142-S1	Colvin Drain	218.8	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	11	Dry Cut
A16-13-S1	Tributary to Little River Raisin	220.1	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	6	Bore
E14-143-S1	Little River Raisin	220.5	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	18	Dry Cut
E14-64-S1	Fry Drain	220.7	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	13	Dry Cut
E14-69-S1	Isley Drain	222.0	Ephemeral	Intermediate	WWH	AWS and IWS	Partial/Total	15	Dry Cut
E14-76-S1	Swamp Raisin Creek	222.5	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	23	Dry Cut
E14-77-S1	Tributary to Swamp Raisin Creek	222.7	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	11	Dry Cut
E14-145-S1	Spring Brook	223.2	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	20	Dry Cut
E14-171-S1	Schwab Drain	223.8	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	12	Dry Cut
E14-70-S1	Kelly Drain	224.4	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	15	Bore
D15-38-S1	Wilson Drain	225.1	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	20	Dry Cut
E14-146-S1	Tributary to South Branch Macon Creek	225.6	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	13	Dry Cut
E14-147-S1	Dibble Drain	225.8	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	16	Dry Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
E14-127-S1	South Branch Macon Creek	226.4	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	22	Dry Cut
E14-126-S1	Tributary to South Branch Macon Creek	226.6	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	22	Dry Cut
E14-74-S1	Schreeder Brook	226.8	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	10	Dry Cut
E14-75-S1	Tributary to Wahoo Prairie Drain	227.0	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	10	Dry Cut
E14-60-S1	Wahoo Prairie Drain	228.1	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	18	Dry Cut
E14-149-S1	Tributary to Middle Branch Macon Creek	228.8	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	13	Dry Cut
E14-150-S1	Tributary to Macon Creek	229.4	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	14	Dry Cut
E14-87-S2	Tributary to Macon Creek	229.5	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	3	N/A
E14-87-S1	Macon Creek	229.5	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	28	Dry Cut
E14-61-S1	Tributary to Richardson Drain	229.8	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	20	Dry Cut
E14-62-S1	Tributary to Richardson Drain	230.4	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	5	N/A
Monroe County, MI									
E14-63-S1	Tributary to Richardson Drain	230.7	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	16	Dry Cut
A16-14-S1	Richardson Drain	231.4	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	15	Dry Cut
E14-65-S1	Bear Swamp Creek	231.9	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	12	Dry Cut
E14-66-S1	Tributary to Bear Swamp Creek	232.4	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	8	Dry Cut
E14-67-S1	Tributary to Bear Swamp Creek	232.5	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	6	Bore
D15-132-S1	Tributary to Cone Drain	233.1	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	3	Bore
D15-40-S1	Cone Drain	233.3	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	25	Dry Cut
A16-16-S1	Tributary to Center Creek	233.7	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	9	Dry Cut
D15-117-S2	Tributary to Center Creek	234.3	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	2	Bore
D15-117-S1	Center Creek	234.4	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	15	Dry Cut
D15-133-S1	Tributary to North Branch Macon Creek	235.4	Ephemeral	Intermediate	WWH	AWS and IWS	Partial/Total	12	Dry Cut
D15-128-S1	North Branch Macon Creek	236.0	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	20	N/A
D15-134-S1	Tributary to North Branch Macon Creek	236.3	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	5	N/A

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
D15-134-S1	Tributary to North Branch Macon Creek	236.3	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	5	Bore
Washtenaw County, MI									
E14-157-S1	Saline River	237.4	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	60	HDD
E14-157-S1	Saline River	237.6	Perennial	Intermediate	WWH		Partial/Total	60	HDD
E14-159-S1	Tributary to McIntyre Drain	238.2	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	8	Bore
E14-88-S1	McIntyre Drain	239.1	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	7	Dry Cut
E14-89-S1	Tributary to McIntyre Drain	239.2	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	12	Dry Cut
E14-90-S1	Tributary to McIntyre Drain	239.3	Ephemeral	Intermediate	WWH	AWS and IWS	Partial/Total	16	Bore
E14-165-S1	Tributary to McIntyre Drain	239.3	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	8	Bore
E14-91-S1	Tributary to Sugar Creek	239.7	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	15	Dry Cut
E14-92-S1	Sugar Creek	239.8	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	11	Dry Cut
E14-93-S1	Tributary to Buck Creek	240.6	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	10	Dry Cut
E14-128-S3	Tributary to Buck Creek	240.8	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	4	N/A
E14-128-S1	Buck Creek	240.8	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	13	Dry Cut
E14-160-S1	Tributary to Stony Creek	241.5	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	12	Dry Cut
E14-131-S1	Tributary to Stony Creek	242.3	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	6	Wet Cut
E14-132-S1	Stony Creek	242.3	Perennial	Minor	WWH	AWS and IWS	Partial/Total	8	Dry Cut
E14-161-S1	Tributary to McCarthy Drain	243.8	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	10	Dry Cut
E14-135-S1	McCarthy Drain	244.2	Perennial	Minor	WWH	AWS and IWS	Partial/Total	9.5	Dry Cut
E14-162-S1	West Branch Paint Creek	244.7	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	14	Dry Cut
E15-13-S1	Tributary to West Branch Paint Creek	245.0	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	6	Bore
E14-99-S1	Tributary to Bird Drain	245.0	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	5	Wet Cut
A16-17-S1	Tributary to Bird Drain	245.2	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	5	Bore
D15-122-S1	Tributary to Bird Drain	245.8	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	6	N/A
AS-WA-6	Paint Creek [h]	246.3	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	25	Dry Cut
A16-18-S1	Tributary to Paint Creek	246.6	Intermittent	Minor	WWH		Partial/Total	5	Dry Cut
E14-176-S1	Tributary to Paint Creek	246.6	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	7	Dry Cut
D15-30-S1	Tributary to Bradshaw Drain	247.2	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	15	Dry Cut
D15-29-S1	Tributary to North Branch Swan Creek	248.1	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	5	Bore
E15-40-S1	Tributary to North Branch Swan Creek	248.4	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	8	Dry Cut

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
E14-102-S1	Tributary to North Branch Swan Creek	248.9	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	14	N/A
D15-21-S1	Huron River	250.9	Perennial	Major	WWH	AWS and IWS	Partial/Total	200	HDD
D15-58A-WB1	Huron River	251.1	Pond	Major				0	
D15-25-S1	Tributary to Willow Run	251.8	Intermittent	Intermediate	WWH	AWS and IWS	Partial/Total	15	Dry Cut
E15-25-WB	Willow Run	253.4	Pond	Major	WWH	AWS and IWS	Partial/Total	140	Dry Cut
E15-25-WB	Willow Run	253.6	Pond	Major	WWH	AWS and IWS	Partial/Total	140	Dry Cut
D15-77-S1	Tributary to Willow Run	254.8	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	5	N/A
D15-43-WB2	Tributary to Willow Run	254.8	Pond	Major	WWH	AWS and IWS	Partial/Total	330	Dry Cut
D15-43-S2	Tributary to Willow Run	254.9	Perennial	Minor	WWH	AWS and IWS	Partial/Total	6	N/A
D15-43-S1	Tributary to Willow Run	255.0	Perennial	Intermediate	WWH	AWS and IWS	Partial/Total	15	Dry Cut
TGP interconnect									
Columbiana County, OH									
B15-17-S2	Tributary to Brush Creek	0.7	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	N/A
B15-17-S2	Tributary to Brush Creek	0.7	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Dry Cut
Access Roads									
Stark County, OH									
B15-109-S1 (TAR-15.4)	Tributary to Beech Creek	15.5	Intermittent	Intermediate	WWH	AWS and IWS	Primary Contact B	11	Bridge
B15-118-S1 (TAR-23.1)	Unnamed	23.1	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	2.5	Bridge
Summit County, OH									
C15-102-S1 (TAR-44.1)	Tributary to Nimisila Creek	44.1	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	13	Dry Cut
Medina County, OH									
B15-83-S1 (TAR-64.9)	Tributary to Hubbard Creek	65.0	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	3	Bridge
A15-72-S1 (TAR-70.9)	Tributary to The Inlet	70.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Bore
C15-108-S1 (TAR-72.8)	Tributary to Mallet Creek	72.8	Ephemeral	Minor	WWH	AWS and IWS	Primary Contact B	4	Bridge
C15-24-S1-2 (TAR-73.1)	Mallet Creek	73.2	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	14	Bridge
A15-89-S1 (TAR-76.1 R)	Tributary to Mallet Creek	76.2	Perennial	Minor	WWH	Unknown	Unknown	10	Bridge

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
A15-76-S3 (TAR-76.8a)	Tributary to Mallet Creek	77.0	Intermittent	Minor	WWH	Unknown	Unknown	5	Bridge
Erie County, OH									
E14-51-S1 (TAR-128.3)	Tributary to Mills Creek	128.4	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Bridge
E14-51-S3 (TAR-128.3)	Tributary to Mills Creek	128.4	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	Bridge
Wood County, OH									
D15-118-S1 (TAR-171.2)	Tributary to Packer Creek	171.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	4	Bridge
E14-35-S1 (TAR-174.5)	Tributary to Cedar Creek	174.5	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	10	Bore
D15-112-S1 (TAR-176.7)	Tributary to Maumee River	176.7	Perennial	Intermediate	Unknown	Unknown	Unknown	11	N/A
Fulton County, MI									
E15-23-S1 (TAR-200.7)	Tributary to Ai Creek	200.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	11	Bridge
Lenawee County, MI									
D15-126-S1 (TAR-228)	Tributary to Middle Branch Macon Creek	228.0	Intermittent	Minor	WWH	AWS and IWS	Partial/Total	6	Bridge
Washtenaw County, MI									
D15-29-S1 (TAR-248.1)	Tributary to North Branch Swan Creek	248.2	Ephemeral	Minor	WWH	AWS and IWS	Partial/Total	5	Bore
TEAL PROJECT									
Loopline									
Monroe County, OH									
A15-03-S1/ A15-24-S1	Paine Run	0.8	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	20	Dry
A15-04-S1	Trib to Paine Run	0.8	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	6	Open
A15-07-S1	Trib to Paine Run	1.2	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Open
A15-08-S1	Trib to Paine Run	1.6	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4.5	Open
A15-10-S1	Trib to Paine Run	1.9	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	25	Dry
A15-11-S1	Trib to Paine Run	2.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	5	N/A
A15-11-S2	Trib to Paine Run	2.2	Perennial	Intermediate	WWH	AWS and IWS	Primary Contact B	15	Dry
A15-12-S1	Trib to Paine Run	2.4	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	4	Open
A15-14-S1	Trib to Salem Run	2.9	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4.8	Open

APPENDIX H-2 (cont'd)

Waterbodies Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Flow Type [a]	FERC Classification [b]	State Water Quality Classification [c]	State Water Supply Classification [d]	State Recreation Classification [e]	Waterbody Width (feet) [f]	Proposed Construction Method [g]
A15-15-S1	Trib to Salem Run	3.0	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	5	Open
A15-15-S2	Trib to Salem Run	3.0	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3.3	Open
A15-18-S2	Trib to Stillhouse Run	4.2	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	6	Open
A15-18-S1	Stillhouse Run	4.3	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Open
A15-19-S1	Trib to Stillhouse Run	4.3	Intermittent	Minor	WWH	AWS and IWS	Primary Contact B	3	Open
Connecting Pipeline									
Columbiana County, OH									
B15-17-S2	Trib to Brush Creek	0.2	Perennial	Minor	WWH	AWS and IWS	Primary Contact B	4	Open

a Flow types:
Perennial – streams that flow continuously.
Intermittent – streams which flow only at certain times of the year when they receive water from springs or from some surface source such as melting snow in mountainous areas.
Ephemeral – streams that flow only in direct response to precipitation and whose channel is at all times above the water table.

b Minor – waterbodies less than or equal to 10 feet wide; Intermediate = waterbodies greater than 10 feet wide but less than or equal to 100 feet wide; Major = greater than 100 feet wide.

c WWH (Warmwater Habitat) – waters capable of supporting and maintaining a community of warmwater aquatic organisms
MWH (Modified Warmwater Habitat) – modified habitats capable of supporting a warmwater biological community, but fall short due primarily to altered macrohabitats.

d The states of Michigan and Ohio assume that all streams support agricultural and industrial uses. Only water supply designation types that are crossed by the NEXUS Project are defined below:
AWS (Agricultural) – waters suitable for irrigation and livestock watering without treatment.
IWS (Industrial) – waters suitable for commercial and industrial uses, with or without treatment.

e Primary Contact B – waters in Ohio that support, or potentially support, occasional Primary Contact Recreation activities. All surface waters of the state are designated as class B Primary Contact Recreation unless otherwise designated.
Partial – waters in Michigan that support, or potentially support, occasional partial body contact Recreation activities. Partial body recreation activities include paddling, canoeing, kayaking, etc. and are protected in all surface waters year round in Michigan.
Total – waters in Michigan that support, or potentially support, occasional total body contact Recreation activities. Total body contact recreation activities include activities such as swimming, and all surface waters in Michigan are protected from May 1 through October 1 for such activities.

f Waterbody widths estimated based on the average width located within NGT Project study corridor.

g Waterbodies located within the construction workspace but will not be crossed by the pipeline are listed as N/A (not applicable).

h Waterbody was not field delineated.

APPENDIX H-3

SURFACE PUBLIC WATER SUPPLY PROTECTION AREAS CROSSED BY THE NGT AND TEAL PROJECTS

APPENDIX H-3

Surface Public Water Supply Protection Areas Crossed by the NGT and TEAL Projects

Project, Facility	County	Milepost Start	Milepost End	Source	Municipality, County (Original)
NGT PROJECT					
TGP Interconnect					
	Columbiana County, OH	0	0.9	Ohio River	Wellsville, Columbiana Cincinnati, Hamilton East Liverpool, Columbiana Ironton, Lawrence Portsmouth, Scioto Steubenville, Jefferson Toronto, Jefferson
Mainline					
	Columbiana County, OH	0	7.6	Ohio River	Cincinnati, Hamilton Ironton, Lawrence Portsmouth, Scioto Alliance, Stark
				Mahoning River	Sebring, Mahoning Newton Falls, Trumbull Wellsville, Columbiana
		7.6	8.8	Ohio River	Cincinnati, Hamilton East Liverpool, Columbiana Ironton, Lawrence Portsmouth, Scioto Stuebenville, Jefferson Toronto, Jefferson
	Columbiana and Stark Counties, OH	8.8	14.3	Ohio River	Cincinnati, Hamilton Ironton, Lawrence Portsmouth, Scioto
				Mahoning River	Newton Falls, Trumbull Wellsville, Columbiana
	Stark County, OH	14.3	21.2	Ohio River	Cincinnati, Hamilton East Liverpool, Columbiana Ironton, Lawrence Portsmouth, Scioto Stuebenville, Jefferson Toronto, Jefferson
	Stark, Summit, Wayne, and Medina Counties, OH	21.2	73.2	Ohio River	Cincinnati, Hamilton Ironton, Lawrence Portsmouth, Scioto
	Lorain County, OH	91.4	94.7	West Branch of Black River Reservoir	Oberlin, Lorain
	Fulton County, OH	193.7	197.8	Swanton Reservoir	Swanton, Fulton

APPENDIX H-3 (cont'd)

Surface Public Water Supply Protection Areas Crossed by the NGT and TEAL Projects

Project, Facility	County	Milepost Start	Milepost End	Source	Municipality, County (Original)
Aboveground Facilities					
TGP MR01 Station	Columbiana County, OH	0	0.1	Ohio River	Wellsville, Columbiana Cincinnati, Hamilton East Liverpool, Columbiana Ironton, Lawrence Portsmouth, Scioto Steubenville, Jefferson Toronto, Jefferson
TGP MR02 (Kensington)	Columbiana County, OH	0	0.1	Ohio River	Wellsville, Columbiana Cincinnati, Hamilton East Liverpool, Columbiana Ironton, Lawrence Portsmouth, Scioto Steubenville, Jefferson Toronto, Jefferson
MR03 (Texas Eastern)	Columbiana County, OH	0.8	0.9	Ohio River	Cincinnati, Hamilton East Liverpool, Columbiana Ironton, Lawrence Portsmouth, Scioto Steubenville, Jefferson Toronto, Jefferson
Hanoverton Compressor Station (CS1)	Columbiana County, OH	1.3	1.5	Ohio River	Cincinnati, Hamilton Ironton, Lawrence Portsmouth, Scioto
Wadsworth Compressor Station (CS2)	Columbiana County, OH	63.3	63.6	Ohio River	Cincinnati, Hamilton Ironton, Lawrence Portsmouth, Scioto
TEAL PROJECT					
Loopline					
	Monroe County, OH	0.0	4.4	Ohio River	Cincinnati Public Water System, Hamilton Ironton PWS, Lawrence Portsmouth Public Water System, Scioto
Interconnecting Pipeline					
	Columbiana County, OH	0.0	0.3	Ohio River	Cincinnati Public Water System, Hamilton East Liverpool City, Columbiana Ironton PWS, Lawrence Portsmouth Public Water System, Scioto
Aboveground Facilities					
	Jefferson and Belmont Counties, OH	N/A	N/A	Ohio River	Cincinnati Public Water System, Hamilton Ironton PWS, Lawrence Portsmouth Public Water System, Scioto

Sources: OEPA (2016); USGS and MDEQ (2002).

APPENDIX H-4

IMPAIRED SURFACE WATERS CROSSED BY THE NGT AND TEAL PROJECTS

APPENDIX H-4

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
NGT PROJECT			
Mainline			
Columbiana County, OH			
B15-17-S2	Tributary to Brush Creek	0.1	Aquatic Health
B15-17-S3	Tributary to Brush Creek [a]	0.1	Aquatic Health
B15-17-S4	Tributary to Brush Creek [a]	0.1	Aquatic Health
B15-28-S1	Tributary to Sandy Creek	0.7	Human Health, Recreation, Aquatic Health
B15-29-S1	Tributary to Sandy Creek	1.0	Human Health, Recreation, Aquatic Health
A14-5-S4	Tributary to Sandy Creek	2.0	Human Health, Recreation, Aquatic Health
A14-5-S3	Tributary to Sandy Creek	2.2	Human Health, Recreation, Aquatic Health
A14-8-S1	Tributary to Sandy Creek	3.9	Human Health, Recreation, Aquatic Health
A14-10-S1	Conser Run	4.9	Human Health, Recreation, Aquatic Health
A14-10-S2	Tributary Conser Run [a]	5.0	Human Health, Recreation, Aquatic Health
A14-11-S1	Tributary to Conser Run	5.3	Human Health, Recreation, Aquatic Health
A14-126-S1	Tributary to Conser Run [a]	5.6	Human Health, Recreation, Aquatic Health
A14-127-S1	Tributary to Conser Run	5.7	Human Health, Recreation, Aquatic Health
A14-12-S1	Tributary to Conser Run	6.5	Human Health, Recreation, Aquatic Health
B15-33-S1	Tributary to Lake Placentia	7.7	Recreation, Aquatic Health
A14-196-S1	Tributary to Middle Branch Sandy Creek	9.8	Human Health, Recreation
A14-13-S1	Tributary to Middle Branch Sandy Creek	10.1	Human Health, Recreation
A14-15-S1	Tributary to Middle Branch Sandy Creek	10.6	Human Health, Recreation
C15-65-S1	Tributary to Middle Branch Sandy Creek	11.0	Human Health, Recreation
A15-34-S1	Tributary to Middle Branch Sandy Creek	11.2	Human Health, Recreation
A15-34-S2	Sandy Creek	11.2	Human Health, Recreation
A14-17-S4	Tributary to Middle Branch Sandy Creek	11.8	Human Health, Recreation
A14-165-S2	Tributary to Woodland Lake	12.3	Human Health, Recreation
A14-165-S1	Tributary to Woodland Lake	12.3	Human Health, Recreation
Stark County, OH			
B15-63-S1	Tributary to Middle Branch Sandy Creek	13.4	Human Health, Recreation
B15-66-S1	Tributary to Middle Branch Sandy Creek	13.7	Human Health, Recreation
A15-47-S1	Tributary to Middle Branch Sandy Creek	13.9	Human Health, Recreation
B15-54-S2	Tributary to Middle Branch Sandy Creek	14.0	Human Health, Recreation
C15-92-S1	Tributary to Beech Creek [a]	15.3	Recreation, Aquatic Health
B15-109-S1	Tributary to Beech Creek [a]	15.5	Recreation, Aquatic Health
C15-116-S3	Tributary to Beech Creek	16.8	Recreation, Aquatic Health
C15-116-S5	Tributary to Beech Creek [a]	16.8	Recreation, Aquatic Health
C15-116-S2	Beech Creek	17.1	Recreation, Aquatic Health
C15-116-S1	Tributary to Beech Creek	17.2	Recreation, Aquatic Health
A14-105-S1	Tributary to Beech Creek	17.8	Recreation, Aquatic Health
A14-103-S1	Tributary to Beech Creek	18.2	Recreation, Aquatic Health

APPENDIX H-4 (cont'd)

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
C15-87-S1	Tributary to Beech Creek	19.4	Recreation, Aquatic Health
C15-87-S2	Tributary to Beech Creek	19.4	Recreation, Aquatic Health
A15-36-S1	Tributary to Red Pine Lake	20.5	Recreation, Aquatic Health
A15-36-S2	Tributary to Red Pine Lake [a]	20.5	Recreation, Aquatic Health
A14-25-S1	Middle Branch Nimishillen Creek	21.8	Human Health, Recreation, Aquatic Health
B15-41-S1	Tributary to Middle Branch Nimishillen Creek	22.0	Human Health, Recreation, Aquatic Health
B15-40-S1	Tributary to Middle Branch Nimishillen Creek	22.3	Human Health, Recreation, Aquatic Health
A14-175-S1	Tributary to Middle Branch Nimishillen Creek	22.8	Human Health, Recreation, Aquatic Health
A14-174-S1	Tributary to Middle Branch Nimishillen Creek	23.0	Human Health, Recreation, Aquatic Health
B15-118-S1	NA [a]	23.1	Human Health, Recreation, Aquatic Health
A14-27-S1	Tributary to Middle Branch Nimishillen River	24.1	Human Health, Recreation, Aquatic Health
A14-161-S1	Tributary to Middle Branch Nimishillen Creek	24.6	Human Health, Recreation, Aquatic Health
A14-161-S2	Tributary to Middle Branch Nimishillen River	24.6	Human Health, Recreation, Aquatic Health
A14-31-S1	Tributary to Middle Branch Nimishillen Creek	25.8	Human Health, Recreation, Aquatic Health
A14-100-S1	Tributary to Nimishillen Creek	26.7	Human Health, Recreation, Aquatic Health
B15-75-S1	Middle Branch Nimishillen Creek	26.8	Human Health, Recreation, Aquatic Health
B15-75-S1	Middle Branch Nimishillen Creek [a]	26.8	Human Health, Recreation, Aquatic Health
B15-45-S1	Tributary to Swartz Ditch	27.7	Human Health, Recreation, Aquatic Health
A14-168-S1	Tributary to West Branch Nimishillen Creek	28.9	Human Health, Recreation, Aquatic Health
B15-98-S1	Tributary to West Branck Nimishillen Creek	29.0	Human Health, Recreation, Aquatic Health
B15-101-S1	Tributary to West Branch Nimishillen Creek	29.3	Human Health, Recreation, Aquatic Health
B15-103-S1	Tributary to West Branch Nimishillen Creek	29.6	Human Health, Recreation, Aquatic Health
A14-157-S1	Tributary to West Branch Nimishillen Creek	30.3	Human Health, Recreation, Aquatic Health
A14-159-S1	Tributary to West Branch Nimishillen Creek	30.7	Human Health, Recreation, Aquatic Health
A14-158-S1	Tributary to West Branch Nimishillen Creek	30.9	Human Health, Recreation, Aquatic Health
A14-162-S1	Tributary to West Branch Nimishillen Creek	31.5	Human Health, Recreation, Aquatic Health
A14-163-S1	Tributary to West Branch Nimishillen Creek	31.6	Human Health, Recreation, Aquatic Health
A14-164-S2	West Branch Nimishillen Creek	32.0	Human Health, Recreation, Aquatic Health
A14-164-S1	Tributary to West Branch Nimishillen Creek	32.2	Human Health, Recreation, Aquatic Health
A15-68-S1	Tributary to Tuscarawas River	33.8	Human Health, Recreation, Aquatic Health

APPENDIX H-4 (cont'd)

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
Summit County, OH			
A15-71-S1	Tributary to Tuscarawas River	34.7	Human Health, Recreation, Aquatic Health
AS-SU-210	Tributary to Tuscarawas River	34.9	Human Health, Recreation, Aquatic Health
B15-68-S1	Tributary to Tuscarawas River	35.1	Human Health, Recreation, Aquatic Health
AS-SU-401	Tributary to Tuscarawas River	36.1	Human Health, Recreation, Aquatic Health
C15-106-S1	Tributary to Willowdale Lake	36.8	Recreation, Aquatic Health
B15-108-WB1	Tributary to Willowdale Lake [a]	36.9	Recreation, Aquatic Health
C15-122-S1	Tributary to Willowdale Lake	37.1	Recreation, Aquatic Health
C15-120-S1	Tributary to Willowdale Lake	37.5	Recreation, Aquatic Health
C15-113-S1	Tributary to Singer Lake	38.7	Recreation, Aquatic Health
F15-1-S1	Tributary to Nimisila Reservoir	39.4	Recreation, Aquatic Health
A14-112-S1	Tributary to Nimisila Reservoir	39.5	Recreation, Aquatic Health
A14-112-S1A	Tributary to Nimisila Reservoir	39.9	Recreation, Aquatic Health
AP-SU-336	Tributary to Nimisila Reservoir [a]	40.6	Recreation, Aquatic Health
AS-SU-200	Nimisila Reservoir	40.8	Recreation, Aquatic Health
A14-122-S2	Nimisilla Creek	41.7	Human Health, Recreation
A14-122-S4	Tributary to Nimisila Creek [a]	41.7	Human Health, Recreation
A14-122-S3	Tributary to Nimisilla Creek [a]	41.7	Human Health, Recreation
A14-122-S5	Tributary to Nimisila Creek	41.9	Human Health, Recreation
A14-122-S1	Tributary to Nimisila Creek	42.0	Human Health, Recreation
AS-SU-18	Tributary to Nimisila Creek	42.5	Human Health, Recreation
A14-117-S1	Tributary to Nimisila Creek	43.3	Human Health, Recreation
A15-16-S2	Tributary to Nimisila Creek [a]	43.8	Human Health, Recreation
A15-95-S1/AS-SU-22	Tributary to Nimisila Creek	43.9	Human Health, Recreation
C15-102-S1	Tributary to Nimisila Creek	44.1	Human Health, Recreation
AS-SU-29	Tributary to Tuscarawas River	45.9	Human Health, Recreation, Aquatic Health
A14-119-S1	Tributary to Tuscarawas River	46.4	Human Health, Recreation, Aquatic Health
C15-25-S1	Tributary to Tuscarawas River	46.8	Human Health, Recreation, Aquatic Health
A15-13-S1	Tributary to Tuscarawas River [a]	46.8	Human Health, Recreation, Aquatic Health
A15-14-S1	Tributary to Tuscarawas River	47.0	Human Health, Recreation, Aquatic Health
C15-28-S1	Tuscarawas River	48.1	Human Health, Recreation, Aquatic Health
AS-SU-40	Pancake Creek	48.9	Human Health, Recreation, Aquatic Health
AS-SU-43	Tributary to Willowdale Lake	49.2	Human Health, Recreation, Aquatic Health
A14-41-S3	Tributary to Pancake Creek	49.6	Human Health, Recreation, Aquatic Health
A14-41-S2	Tributary to Pancake Creek	49.8	Human Health, Recreation, Aquatic Health
A14-41-S1	Tributary to Pancake Creek	50.0	Human Health, Recreation, Aquatic Health
A14-42-S1	Tributary to Pancake Creek	50.1	Human Health, Recreation, Aquatic Health
A14-42-S2	Tributary to Pancake Creek	50.1	Human Health, Recreation, Aquatic Health

APPENDIX H-4 (cont'd)

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
Wayne County, OH			
A15-20-S1	Tributary to Pancake Creek	50.5	Human Health, Recreation, Aquatic Health
A15-21-S2	Tributary to Silver Creek [a]	51.5	Human Health, Recreation, Aquatic Health
A15-21-S1	Tributary to Silver Creek	51.6	Human Health, Recreation, Aquatic Health
C15-34-S1	Tributary to Silver Creek	52.2	Human Health, Recreation, Aquatic Health
A14-124-S2	Tributary to Silver Creek	52.6	Human Health, Recreation, Aquatic Health
A14-124-S1	Silver Creek	52.6	Human Health, Recreation, Aquatic Health
A15-52-S5	Tributary to Silver Creek	52.8	Human Health, Recreation, Aquatic Health
A15-52-S1	Tributary to Silver Creek	52.8	Human Health, Recreation, Aquatic Health
A15-53-S1	Tributary to Silver Creek	53.0	Human Health, Recreation, Aquatic Health
A15-54-S1	Tributary to Silver Creek [a]	53.0	Human Health, Recreation, Aquatic Health
B15-91-S1	Tributary to Silver Creek	53.5	Human Health, Recreation, Aquatic Health
B15-47-S1	Tributary to Mill Creek	54.9	Human Health, Recreation, Aquatic Health
A15-41-S1	Mill Creek	55.3	Human Health, Recreation, Aquatic Health
Medina County, OH			
B15-49-S1	Tributary to Styx River	57.2	Human Health, Recreation, Aquatic Health
Wayne County, OH			
B15-50-S3	Tributary to Styx River	57.2	Human Health, Recreation, Aquatic Health
B15-50-S2	Tributary to Styx River	57.3	Human Health, Recreation, Aquatic Health
AS-WA-603	NA [a]	57.3	Human Health, Recreation, Aquatic Health
B15-50-S1	Tributary to Styx River	57.4	Human Health, Recreation, Aquatic Health
B15-51-S1	Styx River	57.6	Human Health, Recreation, Aquatic Health
Medina County, OH			
B15-53-S1	Tributary to Styx River	57.7	Human Health, Recreation, Aquatic Health
B14-7-S1	Tributary to Styx River	58.4	Human Health, Recreation, Aquatic Health
A14-44-S1	Tributary to Styx River [a]	59.3	Human Health, Recreation, Aquatic Health
B15-02-S1	Tributary to Styx River	59.9	Human Health, Recreation, Aquatic Health
A14-39-S1	Tommy Run	60.7	Human Health, Recreation, Aquatic Health
A14-40-S1	Tributary to Tommy Run	60.9	Human Health, Recreation, Aquatic Health
A14-40-S2	Tributary to Tommy Run	60.9	Human Health, Recreation, Aquatic Health
B15-83-S1	Tributary to Hubbard Creek [a]	65.0	Human Health, Recreation, Aquatic Health
A14-116-S2	Tributary to Hubbard Creek	65.3	Human Health, Recreation, Aquatic Health
A14-116-S5	Tributary to Hubbard Creek	65.4	Human Health, Recreation, Aquatic Health
AS-ME-24	Tributary to Hubbard Creek	66.0	Human Health, Recreation, Aquatic Health
B14-4-S1	Tributary to Hubbard Creek	66.2	Human Health, Recreation, Aquatic Health
AS-ME-27	Tributary to Chippewa Creek	67.4	Human Health, Recreation, Aquatic Health
AS-ME-30	Tributary to Chippewa Creek	67.6	Human Health, Recreation, Aquatic Health
AS-ME-31	Tributary to Chippewa Creek	67.6	Human Health, Recreation, Aquatic Health
AS-ME-31A	Tributary to Chippewa Creek	67.7	Human Health, Recreation, Aquatic Health
B15-82-S1	Tributary to Chippewa Creek	67.9	Human Health, Recreation, Aquatic Health
AS-ME-34	Tributary to Chippewa Creek	68.1	Human Health, Recreation, Aquatic Health
A15-3-S1	McCabe Creek	68.8	Human Health, Recreation, Aquatic Health
C15-41-S1	Tributary to The Inlet	69.7	Human Health, Recreation, Aquatic Health
C15-6-S2	Tributary to The Inlet	69.9	Human Health, Recreation, Aquatic Health
C15-6-S1	Tributary to The Inlet	70.0	Human Health, Recreation, Aquatic Health
C15-42-S1	The Inlet	70.8	Human Health, Recreation, Aquatic Health
A15-72-S1	Tributary to The Inlet	70.9	Human Health, Recreation, Aquatic Health
C15-44-S1	Tributary to the Inlet	71.1	Human Health, Recreation, Aquatic Health

APPENDIX H-4 (cont'd)

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
A14-46-S2	Tributary to the Inlet	71.3	Human Health, Recreation, Aquatic Health
A14-46-S1	Tributary to the Inlet	71.4	Human Health, Recreation, Aquatic Health
B15-120-S1	NA	72.8	Human Health, Aquatic Health
C15-108-S1	Tributary to Mallet Creek [a]	72.8	Human Health, Aquatic Health
C15-24-S1	Tributary to Mallet Creek	72.9	Human Health, Aquatic Health
C15-24-S7	Tributary to Mallet Creek	73.3	Human Health, Aquatic Health
C15-24-S8	Tributary to Mallet Creek	73.4	Human Health, Aquatic Health
C15-24-S1-3	Mallet Creek	73.4	Human Health, Aquatic Health
C15-24-S1-3	Mallet Creek	73.5 [1]	Human Health, Aquatic Health
AS-ME-56	Tributary to Mallet Creek	73.7	Human Health, Aquatic Health
AS-ME-58A	Tributary to Mallet Creek	73.9	Human Health, Aquatic Health
B15-84-S1	Tributary to Mallet Creek	74.0	Human Health, Aquatic Health
B15-84-S2	Tributary to Mallet Creek	74.0 [1]	Human Health, Aquatic Health
B14-9-S1	Tributary to Mallet Creek	74.3 [1]	Human Health, Aquatic Health
B14-10-S1	Tributary to Mallet Creek	75.4	Human Health, Aquatic Health
B15-74-S3	Tributary to Mallet Creek	75.8	Human Health, Aquatic Health
B15-74-S1	Mallet Creek	76.0	Human Health, Aquatic Health
B15-74-S4	Tributary to Mallet Creek	76.3	Human Health, Aquatic Health
A15-76-S1	Tributary to Mallet Creek	76.9	Human Health, Aquatic Health
A15-76-S2	Tributary to Mallet Creek	77.0	Human Health, Aquatic Health
AS-ME-200	Tributary to Mallet Creek	78.0	Recreation, Aquatic Health
AS-ME-96	Tributary to West Branch Rocky River	78.9	Recreation, Aquatic Health
B15-85-S1	Tributary to West Branch Rocky River	79.1	Recreation, Aquatic Health
AS-ME-98	Tributary to West Branch Rocky River	79.4	Recreation, Aquatic Health
AS-ME-99	Tributary to West Branch Rocky River	79.5	Recreation, Aquatic Health
AS-LO-1	Tributary to East Branch Black River	80.3	Human Health, Recreation, Aquatic Health
B15-15-S1	Tributary to East Branch Black River	80.4	Human Health, Recreation, Aquatic Health
Lorain County, OH			
A15-28-S1	Tributary to East Branch Black River	81.4	Human Health, Recreation, Aquatic Health
A14-59-S1	Tributary to East Branch Black River [a]	82.0	Human Health, Recreation, Aquatic Health
A14-69-S6	Tributary to Salt Creek [a]	84.3	Human Health, Recreation, Aquatic Health
A14-69-S4	Salt Creek	84.4	Human Health, Recreation, Aquatic Health
A15-56-S1	Tributary to East Branch Black River	85.8	Human Health, Recreation, Aquatic Health
A15-63-S1	Tributary to East Branch Black River	86.0	Human Health, Recreation, Aquatic Health
A14-50-S1	East Branch Black River	86.7	Human Health, Recreation, Aquatic Health
B15-61-S1	Tributary to Finnegan Ditch	87.1	Human Health, Recreation, Aquatic Health
A14-55-S1	Tributary to Dent Ditch	87.3	Human Health, Recreation, Aquatic Health
B15-96-S1	Tributary to Dent Ditch	88.0	Human Health, Recreation, Aquatic Health
B15-97-S1	Tributary to Dent Ditch	88.2	Human Health, Recreation, Aquatic Health
A14-73-S1	King Ditch	88.6	Human Health, Recreation, Aquatic Health
A14-128-S1	Tributary to King Ditch	89.2	Human Health, Recreation, Aquatic Health

APPENDIX H-4 (cont'd)

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
A14-75-S1	Tributary to King Ditch	89.3	Human Health, Recreation, Aquatic Health
A14-75-S2	Tributary to King Ditch	89.3	Human Health, Recreation, Aquatic Health
A14-76-S1	Kelner Ditch	90.1	Human Health, Recreation, Aquatic Health
A14-76-S2	Tributary to Kelner Ditch [a]	90.1	Human Health, Recreation, Aquatic Health
AS-LO-402	Tributary to Elk Creek	91.2	Human Health, Recreation, Aquatic Health
C15-37-S1	Elk Creek	91.3	Human Health, Recreation, Aquatic Health
C15-35-S1	Wellington Creek	91.8	Recreation, Aquatic Health
C15-8-S2	Tributary to West Branch Black River	92.3	Human Health, Recreation, Aquatic Health
C15-8-S3	Tributary to West Branch Black River	92.3	Human Health, Recreation, Aquatic Health
C15-8-S4	West Branch Black River	92.4	Human Health, Recreation, Aquatic Health
C15-9-S1	Tributary to West Branch Black River	92.6	Human Health, Recreation, Aquatic Health
A14-140-S1	Tributary to West Branch Black River	93.4	Human Health, Recreation, Aquatic Health
A14-141-S1	Plum Creek	96.1	Human Health, Recreation, Aquatic Health
C15-57-S1	Tributary to Plum Creek	97.3	Human Health, Recreation, Aquatic Health
C15-61-S1	Tributary to East Fork Vermilion River	98.3	Human Health, Aquatic Health
A15-85-S1	Tributary to East Fork Vermillion River	98.9	Human Health, Aquatic Health
A15-85-S2	Tributary to East Fork Vermillion River	98.9	Human Health, Aquatic Health
C15-66-S1	East Fork Vermilion River	99.3	Human Health, Aquatic Health
C15-67-S1	Frankenburg Creek	101.3	Human Health, Aquatic Health
Huron County, OH			
C15-100-S1	Tributary to East Fork Frankenburg Creek	101.7	Human Health, Aquatic Health
C15-101-S1	Tributary to East Fork Frankenburg Creek	101.9	Human Health, Aquatic Health
A15-57-S1	Tributary to East Fork Frankenburg Creek	102.3	Human Health, Aquatic Health
C15-88-S1	Tributary to Frankenburg Creek	103.0	Human Health, Aquatic Health
C15-56-S1	Tributary to Vermillion River	104.2	Human Health, Aquatic Health
C15-56-S4	Vermillion River	104.4	Human Health, Aquatic Health
C15-56-S4B	Vermillion River	104.4	Human Health, Aquatic Health
C15-56-S4A	Tributary to Vermillion River	104.5	Human Health, Aquatic Health
Erie County, OH			
C15-69-S1	Chappel Creek	105.9	Aquatic Health
B15-115-S1	NA	110.3	Aquatic Health
B15-124-S2	Tributary to Old Woman Creek	112.1	Recreation, Aquatic Health
B15-124-S1	Tributary to Old Woman Creek [a]	112.1	Recreation, Aquatic Health
AS-ER-35	Tributary to Old Woman Creek	113.0	Recreation, Aquatic Health
A14-187-S1	Old Woman Creek	113.1	Recreation, Aquatic Health
A14-188-S1	Tributary to Old Woman Creek	113.3	Recreation, Aquatic Health

APPENDIX H-4 (cont'd)

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
A14-188-S2	Tributary to Old Woman Creek [a]	113.3	Recreation, Aquatic Health
AS-ER-12	Tributary to Old Woman Creek	113.8	Recreation, Aquatic Health
B15-07-S1	Tributary to Old Woman Creek	114.3	Recreation, Aquatic Health
C15-14-S1	Tributary to Huron River	115.4	Recreation, Aquatic Health
C15-15-S1	Tributary to Huron River	115.7	Recreation, Aquatic Health
B15-09-S1	Tributary to Huron River	116.0	Recreation, Aquatic Health
C15-17-S1	Tributary to Huron River [a]	116.1	Recreation, Aquatic Health
C15-16-S1	Tributary to Huron River	116.2	Recreation, Aquatic Health
A14-156-S2	Tributary to Huron River [a]	116.5	Recreation, Aquatic Health
A14-155-S1	Tributary to Huron River	116.5	Recreation, Aquatic Health
A14-186-S1	Huron River	116.9	Recreation, Aquatic Health
AS-ER-19	Huron River	116.9	Recreation, Aquatic Health
AS-ER-20A	Tributary to Huron River	117.0	Recreation, Aquatic Health
AS-ER-20	Tributary to Huron River	117.1	Recreation, Aquatic Health
C15-20-S1	Tributary to Mud Brook	117.6	Recreation, Aquatic Health
C15-18-S1	Tributary to Mud Brook	118.4	Recreation, Aquatic Health
B15-11-S1	Tributary to Mud Brook	118.8	Recreation, Aquatic Health
E14-97-S1	Mud Creek	119.0	Recreation, Aquatic Health
C15-21-S1	Zorn Beutal Ditch	120.0	Recreation
C15-22-S1	Sheerer Ditch	120.4	Recreation
C15-74-S1	Tributary to Sheerer Ditch	120.5	Recreation
B15-12-S1	Sherer Ditch	120.9	Recreation
B15-13-S1	Sherer Ditch	122.0	Recreation
AS-ER-205	Tributary to Sawmill Creek	122.1	Recreation
E14-96-S1	Tributary to Sherer Ditch	123.1	Recreation
A15-62-S1	Tributary to Pipe Creek	124.0	Recreation, Aquatic Health
C15-23-S1	Tributary to Pipe Creek	125.7	Recreation, Aquatic Health
E14-95-S1	Pipe Creek	125.9	Recreation, Aquatic Health
E14-49-S1	Tributary to Pipe Creek	127.4	Recreation, Aquatic Health
E14-50-S1	Tributary to Mills Creek	127.9	Recreation, Aquatic Health
E14-51-S1	Tributary to Mills Creek	128.4	Recreation, Aquatic Health
E14-51-S3	Tributary to Mills Creek [a]	128.4	Recreation, Aquatic Health
E14-94-S1	Mills Creek	129.3	Recreation, Aquatic Health
Sandusky County, OH			
D15-74-S1	Scherz Ditch	134.3	Recreation
D14-4-S1	Strong Creek	135.3	Recreation
D14-6-S1	Fuller Creek	136.0	Recreation, Aquatic Health
D14-7-S1	Tributary to Fuller Creek	136.4	Recreation, Aquatic Health
D15-49-S1	Tributary to Fuller Creek	136.9	Recreation, Aquatic Health
E14-105-S1	Pickerel Creek	138.0	Recreation, Aquatic Health
D14-9-S1	Little Raccoon Creek	138.7	Recreation, Aquatic Health
D14-10-S1	Tributary to Little Racoon Creek	139.1	Recreation, Aquatic Health
D14-8-S1	Raccoon Creek	139.9	Recreation, Aquatic Health
D14-8-S2	Tributary to Raccoon Creek [a]	139.9	Recreation, Aquatic Health
E14-103-S1	South Creek	140.5	Recreation, Aquatic Health

APPENDIX H-4 (cont'd)

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
D15-31-S1	Tributary to South Creek	141.2	Recreation, Aquatic Health
D14-11-S1	Green Creek	141.7	Recreation, Aquatic Health
D15-115-S1	Tributary to Buehler Creek	142.7	Aquatic Health
E14-36-S1	Tributary to Buehler Ditch	143.0	Aquatic Health
D15-47-S1	Buehler Ditch	143.3	Aquatic Health
D14-40-S1	Bark Creek	143.7	Aquatic Health
AS-SA-699	Sandusky River	145.9	Aquatic Health
AP-SA-700	NA [a]	146.0	Aquatic Health
D15-104-WB	Tributary to Sandusky River [a]	146.4	Aquatic Health
AS-SA-702	Tributary to Sandusky River	146.4	Aquatic Health
E15-39-S1	Greesman Ditch	146.7	Recreation, Aquatic Health
D14-33-S1	Tributary to Muskellunge Creek	147.5	Recreation, Aquatic Health
E14-121-S1	Tributary to Muskellunge Creek	147.7	Recreation, Aquatic Health
D15-34-S1	Tributary to Little Muddy Creek	148.8	Recreation, Aquatic Health
D15-52-S1	Little Muddy Creek	149.4	Recreation, Aquatic Health
D15-87-S1	Tributary to Muddy Creek	152.7	Human Health, Recreation, Aquatic Health
E14-43-S1	Muddy Creek	153.4	Human Health, Recreation, Aquatic Health
E14-181-S1	Tributary to Muddy Creek	153.8	Human Health, Recreation, Aquatic Health
D15-35-S1	Tributary to Muddy Creek	154.4	Human Health, Recreation, Aquatic Health
E14-109-S1	Tributary to Muddy Creek	154.7	Human Health, Recreation, Aquatic Health
E14-42-S1	Ninemile Creek	155.2	Human Health, Recreation, Aquatic Health
E14-3-S1	Tributary to Ninemile Creek	155.9	Human Health, Recreation, Aquatic Health
D15-51-S1	Tributary to Wolf Creek	156.6	Human Health, Recreation, Aquatic Health
D15-50-S1	Tributary to Wolf Creek	156.9	Human Health, Recreation, Aquatic Health
C15-79-S1	Wolf Creek	157.8	Human Health, Recreation, Aquatic Health
D14-25-S1	Sugar Creek	158.6	Human Health, Recreation, Aquatic Health
E14-107-S1	Tributary to Victoria Creek	160.8	Human Health, Recreation, Aquatic Health
E14-108-S1	Victoria Creek	161.3	Human Health, Recreation, Aquatic Health
D15-26-S1	Portage River	162.5	Human Health, Recreation, Aquatic Health
Wood			
E14-111-S1	Martin Ditch	163.8	Human Health, Recreation, Aquatic Health
D14-31-S1	Tributary to Martin Ditch	164.8	Human Health, Recreation, Aquatic Health
E14-85-S1	Tributary to Toussaint Creek	165.6	Human Health, Recreation, Aquatic Health
E14-153-S1	Tributary to Toussaint Creek	166.5	Human Health, Recreation, Aquatic Health
D14-34-S1	Tributary to Toussaint Creek	166.8	Human Health, Recreation, Aquatic Health
E14-175-S1	Toussaint Creek	167.3	Human Health, Recreation, Aquatic Health
E15-22-S1	Tributary to Toussaint Creek	167.8	Human Health, Recreation, Aquatic Health
E14-48-S3	Tributary to Toussaint Creek	168.2	Human Health, Recreation, Aquatic Health
E14-48-S4	Tributary to Toussaint Creek	168.3	Human Health, Recreation, Aquatic Health
E14-48-S2	Tributary to Toussaint Creek	168.4	Human Health, Recreation, Aquatic Health
E14-79-S1	Tributary to Packer Creek	170.4	Human Health, Aquatic Health
E14-80-S1	Tributary to Packer Creek	170.8	Human Health, Aquatic Health
E14-40-S1	Packer Creek	171.1	Human Health, Aquatic Health
D15-118-S1	Tributary to Packer Creek [a]	171.2	Human Health, Aquatic Health
D15-62-S1	Tributary to Cedar Creek	174.0	Recreation, Aquatic Health
E14-35-S1	Tributary to Cedar Creek	174.5	Recreation, Aquatic Health

APPENDIX H-4 (cont'd)

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
E15-32-S1	Tributary to Henry Creek	175.4	Recreation, Aquatic Health
E15-33-S1	Tributary to Henry Creek	175.6	Recreation, Aquatic Health
E15-34-S1	Tributary to Henry Creek	176.2	Recreation, Aquatic Health
E15-7-S1	Tributary to Maumee River	177.3	Recreation
D14-45A-S1	Tributary to Maumee River	178.1	Recreation
E15-8-S1	Tributary to Maumee River	179.9	Recreation
D15-101-S1	Tributary to Maumee River	180.0	Recreation
D15-99-S1	Tributary to Maumee River	180.1	Recreation
E14-46-S1	Tributary to Maumee River	180.7	Recreation
E14-44-S1	Tributary to Maumee River	180.8	Recreation
E14-47-S1	Tributary to Maumee River	181.0	Recreation
Lucas County, OH			
E14-55-S1	Maumee River	181.4	Recreation
Wood County, OH			
E14-55-S1	Maumee River	181.4	Recreation
Lucas County, OH			
D15-48-S1	Tributary to Maumee River [a]	181.9	Recreation
E14-116-S1	Blystone Ditch	182.7	Human Health, Recreation, Aquatic Health
E14-29-S1	Suter Ditch	183.3	Recreation, Aquatic Health
AS-LU-2	Tributary to Whitemeir Ditch	183.4	Recreation, Aquatic Health
E14-1-S1	Whitemeir Ditch	183.6	Recreation, Aquatic Health
E14-37-S1	Estworthy Ditch	183.7	Recreation, Aquatic Health
E14-38-S1	Disher Ditch	184.1	Recreation, Aquatic Health
E14-39-S1	Harris Ditch	185.3	Recreation, Aquatic Health
E14-22-S1	Tributary to Ruhm Ditch	186.6	Recreation, Aquatic Health
E15-21-S1	Doran Ditch	187.3	Recreation
D15-1-S1	Yawberg Ditch	187.5	Recreation
D15-91-S1	Jeffers Ditch	187.7	Recreation
E15-9-S1	Laver Ditch	188.1	Recreation
Henry County, OH			
E15-29-S1	Tributary to Harris Ditch	189.5	Recreation
D15-56-S1	Tributary to Aumend Ditch	189.7	Recreation
D15-7-S2	Tributary to Blue Creek	190.2	Recreation
D15-7-S1	Tributary to Blue Creek	190.2	Recreation
Fulton County, OH			
E15-14-S1	Blue Creek	190.9	Recreation
E15-14-S2	Tributary to Blue Creek	191.1	Recreation
E15-45-S1	Tributary to Blue Creek	191.6	Recreation
D15-110-S1	Tributary to Blue Creek	192.3	Recreation
D15-111-S1	Tributary to Blue Creek	193.2	Recreation
D15-60-S1	Tributary to Fewless Creek	193.9	Recreation, Aquatic Health
E15-37-S1	Tributary to Fewless Creek	195.0	Recreation, Aquatic Health
E15-36-S1	Fewless Creek	195.2	Recreation, Aquatic Health
D15-61-S1	Tributary to Fewless Creek	195.9	Recreation, Aquatic Health
D15-17-S1	Swan Creek	196.4	Recreation, Aquatic Health
D15-9-S1	Tributary to Swan Creek	197.3	Recreation, Aquatic Health
D15-98-S1	Tributary to Swan Creek	197.5	Recreation, Aquatic Health
D15-60A-S1	Tributary to Fewless Creek	197.9	Recreation, Aquatic Health

APPENDIX H-4 (cont'd)

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
D15-10-S1	Tributary to Swan Creek	198.6	Recreation, Aquatic Health
D15-13-S1	Tributary to Swan Creek	199.1	Recreation, Aquatic Health
E14-4-S1	Ai Creek	200.8	Recreation, Aquatic Health
E15-19-S1	Frankfort Ditch	202.1	Recreation, Aquatic Health
D14-24-S1	Tributary to McNett Ditch	202.7	Recreation, Aquatic Health
E14-112-S1	McNett Ditch	203.4	Recreation, Aquatic Health
D14-44-S1	Tributary to Langenderfer Ditch	203.9	Human Health, Recreation
E14-53-S1	Tributary to Langenderfer Ditch	205.2	Human Health, Recreation
D15-82-S1	Tributary to Langenderfer Ditch	205.6	Human Health, Recreation
D15-83-S1	Tributary to Langenderfer Ditch	206.0	Human Health, Recreation
E14-11-S1	Tributary to Schmitz Ditch	206.2	Human Health, Recreation, Aquatic Health
E14-12-S1	Tributary to Tenmile Creek	207.0	Human Health, Recreation, Aquatic Health
D14-45-S1	Tenmile Creek	207.9	Human Health, Recreation, Aquatic Health
Lenawee County, MI			
E14-140-S1	River Raisin	215.2	Fish Consumption
D15-28-S1	Tributary to River Raisin	215.8	Fish Consumption
AS-LE-5	Tributary to River Raisin	216.3	Fish Consumption
E14-143-S1	Little River Raisin	220.5	Fish Consumption
E14-64-S1	Fry Drain	220.7	Fish Consumption
E14-69-S1	Isley Drain	222.1	Fish Consumption
E14-76-S1	Swamp Raisin Creek	222.5	Fish Consumption
E14-77-S1	Tributary to Swamp Raisin Creek	222.7	Fish Consumption
AS-LE-203	Dibble Drain	225.8	Fish Consumption
AS-LE-202	Tributary to South Branch Macon Creek	225.6	Fish Consumption
AS-LE-204	South Branch Macon Creek	226.4	Fish Consumption
E14-126-S1/ AS-LE-205	Tributary to South Branch Macon Creek	226.7	Fish Consumption
E14-74-S1	Schreeder Brook	226.8	Fish Consumption
E14-149-S1/ AS-LE-12	Tributary to Middle Branch Macon Creek	228.8	Fish Consumption
E14-87-S1	Macon Creek	229.5	Fish Consumption, Aquatic Life and Wildlife
E14-61-S1	Tributary to Richardson Drain	229.8	Fish Consumption
Monroe County, MI			
E14-63-S1	Tributary to Richardson Drain	230.7	Fish Consumption
AS-MO-1	Richardson Drain	231.4	Fish Consumption
E14-65-S1	Bear Swamp Creek	231.9	Fish Consumption
E14-66-S1	Tributary to Bear Swamp Creek	232.4	Fish Consumption
D15-40-S1	Cone Drain	233.3	Fish Consumption
AS-MO-2	Tributary to Center Creek	233.7	Fish Consumption
AS-MO-10A	Tributary to Center Creek	234.3	Fish Consumption
AS-MO-10	Center Creek	234.4	Fish Consumption
AS-MO-4	North Branch Macon Creek	236.0	Fish Consumption

APPENDIX H-4 (cont'd)

Impaired Surface Waters Crossed by the NGT and TEAL Projects

Project, Facility, County, Waterbody ID	Waterbody Name	Milepost	Beneficial Use Impaired
Washtenaw County, MI			
E14-157-S1	Saline River	237.6	Fish Consumption
E14-135-S1	McCarthy Drain	244.2	Aquatic Life and Wildlife
E14-162-S1	West Branch Paint Creek	244.7	Aquatic Life and Wildlife
E15-13-S1	Tributary to West Branch Paint Creek	245.0	Aquatic Life and Wildlife
E14-99-S1	Tributary to Bird Drain	245.0	Aquatic Life and Wildlife
E14-164-S1/AS-WA-6	Paint Creek	246.3	Aquatic Life and Wildlife
E14-176-S1	Tributary to Paint Creek	246.6	Aquatic Life and Wildlife
TGP Interconnect			
Columbiana County, OH			
B15-17-S2	Tributary to Brush Creek	0.7	Aquatic Health
B15-17-S3	Tributary to Brush Creek	0.7	Aquatic Health
TEAL PROJECT			
Connecting Pipeline			
Columbiana County, OH			
B15-17-S2	Tributary to Brush Creek	0.2	Aquatic Health

a Centerline does not cross the waterbody.

Sources: Ohio: OEPA, 2014b

Michigan: Data retrieved from Table 2.3-7 of the November 2015 Resource Report 2

APPENDIX H-5

FEMA FLOOD ZONES CROSSED BY THE NGT PROJECT

APPENDIX H-5

FEMA Flood Zones Crossed by the NGT Project

State, Facility, County	Milepost Enter	Milepost Exit	FEMA Flood Zone [a]
OHIO			
Mainline			
Columbiana	2.0	2.0	A
Columbiana	2.1	2.2	A
Columbiana	4.9	5.0	A
Columbiana	5.0	5.0	A
Columbiana	11.0	11.0	A
Columbiana	11.1	11.2	A
Stark	26.7	26.9	A
Stark	26.7	26.9	A
Stark	32.0	32.0	AE
Stark	32.0	32.0	AE
Stark	32.0	32.0	AE
Stark	32.0	32.0	AE
Stark	32.1	32.2	AE
Stark	32.1	32.2	AE
Stark	33.7	33.8	AE
Stark	33.7	33.8	AE
Stark	33.8	33.9	AE
Stark	33.8	33.9	AE
Stark	33.9	33.9	AE
Stark	33.9	33.9	AE
Stark	34.0	34.0	AE
Stark	34.0	34.0	AE
Stark	34.1	34.2	AE
Stark	34.1	34.2	AE
Summit	41.8	42.1	A
Summit	48.0	48.1	AE
Summit	48.1	48.2	AE
Summit	48.9	48.9	A
Wayne	57.4	57.6	AE
Wayne	57.6	57.7	AE
Medina	57.7	57.9	AE
Medina	60.7	60.7	AE
Medina	60.7	60.7	AE
Medina	68.8	68.8	A
Medina	71.1	71.1	AE
Medina	75.9	76.1	A
Lorain	84.4	84.5	A
Lorain	86.4	86.7	A
Lorain	88.6	88.8	A
Lorain	90.0	90.1	A
Lorain	91.3	91.4	A
Lorain	91.8	91.9	A
Lorain	92.2	92.8	A
Lorain	96.1	96.1	AE
Lorain	96.1	96.1	AE
Lorain	99.3	99.3	A

APPENDIX H-5 (cont'd)

FEMA Flood Zones Crossed by the NGT Project

State, Facility, County	Milepost Enter	Milepost Exit	FEMA Flood Zone [a]
Huron	104.3	104.5	A
Huron	104.5	104.5	A
Erie	105.8	105.9	A
Erie	113.1	113.2	A
Erie	113.8	113.9	A
Erie	114.2	114.3	A
Erie	115.4	115.4	A
Erie	115.7	115.7	A
Erie	116.5	116.5	AE
Erie	116.7	116.8	AE
Erie	116.8	117.0	AE
Erie	117.0	117.0	AE
Erie	117.6	117.6	A
Erie	118.4	118.4	A
Erie	118.8	118.8	A
Erie	119.0	119.0	A
Erie	125.7	125.7	A
Erie	125.8	125.9	A
Erie	129.0	129.4	A
Erie	129.4	129.4	A
Sandusky	131.5	131.7	A
Sandusky	135.3	135.4	A
Sandusky	136.0	136.0	A
Sandusky	137.9	138.1	A
Sandusky	139.8	140.0	A
Sandusky	140.5	140.5	A
Sandusky	141.1	141.2	A
Sandusky	141.5	141.7	A
Sandusky	143.7	143.8	A
Sandusky	145.3	145.4	AE
Sandusky	145.6	145.8	AE
Sandusky	145.8	145.9	AE
Sandusky	145.9	145.9	AE
Sandusky	146.0	146.1	AE
Sandusky	149.4	149.5	A
Sandusky	153.3	153.5	A
Sandusky	153.9	153.9	A
Sandusky	155.2	155.2	A
Sandusky	158.6	158.7	A
Sandusky	162.5	162.6	A
Wood	167.3	167.4	A
Wood	171.1	171.1	A
Wood	181.4	181.4	AE
Wood	181.4	181.4	AE
Lucas	181.5	181.7	AE
Lucas	182.6	182.7	AE
Lucas	182.7	182.8	AE
Lucas	185.3	185.3	AE
Lucas	185.3	185.3	A

APPENDIX H-5 (cont'd)

FEMA Flood Zones Crossed by the NGT Project

State, Facility, County	Milepost Enter	Milepost Exit	FEMA Flood Zone [a]
Fulton	190.8	190.9	AE
Fulton	190.9	191.0	AE
Fulton	195.2	195.3	AE
Fulton	195.3	195.3	AE
Fulton	195.9	196.0	AE
Fulton	196.3	196.3	AE
Fulton	196.3	196.4	AE
Fulton	200.8	200.8	AE
Fulton	200.8	200.9	AE
Fulton	207.9	207.9	AE
Fulton	207.9	207.9	AE
MICHIGAN			
Mainline			
Monroe	232.4	232.4	A
Monroe	233.2	233.4	A
Monroe	234.1	234.1	A
Monroe	234.1	234.2	A
Monroe	234.4	234.5	A
Monroe	236.0	236.1	A
Washtenaw	237.4	237.6	A
Washtenaw	244.7	244.8	AE
Washtenaw	244.8	244.9	AE
Washtenaw	246.2	246.3	AE
Washtenaw	246.3	246.3	AE
Washtenaw	246.3	246.3	AE
Washtenaw	250.8	250.9	AE
Washtenaw	250.9	250.9	AE
Washtenaw	253.4	253.4	A
Washtenaw	253.6	253.6	A

a Flood hazard areas identified on the Flood Insurance Rate Map are identified as a Special Flood Hazard Area, which are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year.

FEMA Flood Zone A – Areas subject to inundation by the 1-percent-annual-chance (100 year) flood event generally determined using approximate methodologies.

FEMA Flood Zone AE – Areas subject to inundation by the 1-percent-annual-chance (100 year). Flood event determined by detailed methods.

Source: FEMA, 2016.

APPENDIX H-6

ATWS WITHIN 50 FEET OF WETLANDS AND WATERBODIES ON THE NGT AND TEAL PROJECTS

APPENDIX H-6

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
NGT PROJECT							
Mainline							
Columbiana County, OH	ATWS-2570	2.0	Yes	Yes	A14-5/A14-5-S4	0/20.1	Road, waterbody and wetland crossing. HWY 30 and waterbody bored crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a wetland. Wetland has been partially classified as AG-PEM.
Columbiana County, OH	ATWS-2618	2.0	Yes	No	A14-5	0	Road, waterbody and wetland crossing. HWY 30 and waterbody bored crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a wetland. Wetland has been partially classified as AG-PEM.
Columbiana County, OH	ATWS-4199	3.9	No	Yes	A14-8-S1/A14-8	47.9/30.4	Waterbody crossing. ATWS in Non-disturbed area and inside 50-ft waterbody buffer. ATWS required at this location due to slope for spoil storage, equipment placement, and dewatering activities associated with an open-cut waterbody crossing.
Columbiana County, OH	ATWS-3050	4.9	Yes	Yes	A14-10 /A14-10-S1/A14-10-S2	0/14.0/16.6	Kettering Road and waterbody bore crossing. ATWS is located in delineated wetland.
Columbiana County, OH	ATWS-3049	4.9	Yes	No	A14-10	0	Road and wetland crossing. Kettering Road and waterbody bored crossing. Also proposed open cut of Weaver Road. ATWS also designed for equipment and material movement. ATWS is located in delineated wetland.
Columbiana County, OH	ATWS-4201	5.0	Yes	Yes	A14-10 /A14-10-S2	0/12.9	Road and wetland crossing. Proposed open cut of Weaver Rd. ATWS is located in delineated wetland.
Columbiana County, OH	ATWS-3694	6.3	Yes	No	C15-118	0	Bend installation and existing pipeline crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a wetland.
Columbiana County, OH	ATWS-2493	11.1	Yes	Yes	A15-34//A15-34-S1/A15-34-S2	0/25.9/14.2	Bend installation, waterbody, rail (bored crossing) and wetland crossing. ATWS is located in delineated wetland.
Columbiana County, OH	ATWS-2635	11.1	Yes	Yes	A15-34/A15-34-S1	0/21.5	Bend installation, waterbody, rail (bored crossing) and wetland crossing. ATWS is located in delineated wetland.

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
Columbiana County, OH	ATWS-2492	11.2	Yes	No	A15-31	0	Bend installation, waterbody, rail (bore crossing) and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a wetland.
Columbiana County, OH	ATWS-2279	11.2	Yes	No	A15-31	0	Bend installation, waterbody, rail (bored crossing) and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a wetland.
Columbiana County, OH	ATWS-2285	11.3	Yes	No	A15-31	0	Homeworth Rd bored crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a wetland.
Stark County, OH	ATWS-3319	13.3	Yes	No	B15-64	0	Bend installation. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a delineated wetland.
Stark County, OH	ATWS-35	14.0	Yes	Yes	B15-54 /B15-54-S2	42.1/12.3	Road, waterbody and wetland crossing. ATWS in Non-disturbed area.
Stark County, OH	ATWS-3726	14.0	No	Yes	B15-54-S2	12.7	Road and waterbody crossing. Salem Church Rd bore crossing. ATWS partially located within 50-ft waterbody buffer.
Stark County, OH	ATWS-550	25.2	No	Yes	A14-28-WB1	40	Extra room for bend/fitting. ATWS located in non-disturbed area.
Stark County, OH	ATWS-4015	27.8	Yes	No	A14-34	0	Topsoil segregation. Rail road bored crossing.
Stark County, OH	ATWS-4017	27.9	Yes	No	A14-34	0	Bend installation.
Stark County, OH	ATWS-735	28.0	Yes	No	A14-34	0	Rail bore crossing, bend installation, existing pipeline and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a wetland.
Stark County, OH	ATWS-500	28.0	Yes	No	A14-34	0	Rail bore crossing, bend installation, existing pipeline and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a wetland.
Stark County, OH	ATWS-2260	33.3	No	Yes	C15-125-S1	36.4	Bend installation and additional room for installation of long bored crossing. ATWS partially located in disturbed land and partially in undisturbed land.
Stark County, OH	ATWS-4021	33.5	No	Yes	B15-67-S1	32.0	Waterbody and wetland crossing. ATWS in non-disturbed area. Long wetland crossing with

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
							waterbodies in wetland. Extra width required to move crews/equipment down row.
Stark County, OH	ATWS-2628	33.7	Yes	No	B15-67-S1	15.9	Waterbody and wetland crossing. ATWS in non-disturbed area. Long wetland crossing with waterbodies in wetland. Extra width required to move crews/equipment down row.
Stark County, OH	ATWS-2629	33.8	Yes	No	B15-73	0	Waterbody and wetland crossing. ATWS in non-disturbed area. Long wetland crossing with waterbodies in wetland. Extra width required to move crews/equipment down row.
Stark County, OH	ATWS-2630	33.8	Yes	Yes	B15-73/A15-68-S1/B15-67-S1	19.4/19.3/11.4	Waterbody and wetland crossing. ATWS in non-disturbed area. Long wetland crossing with waterbodies in wetland. Extra width required to move crews/equipment down row.
Summit County, OH	ATWS-2385	34.3	Yes	No	A15-71	0	Rail bore crossing, wetland crossing and truck turnaround. ATWS located in a wetland.
Summit County, OH	ATWS-2384	34.3	Yes	No	A15-71	0	Rail bore crossing, wetland crossing and truck turnaround. ATWS located in a wetland.
Summit County, OH	ATWS-2386	34.3	Yes	No	A15-71	0	Rail bore crossing, wetland crossing and truck turnaround. ATWS located in a wetland.
Summit County, OH	ATWS-2382	34.3	Yes	No	A15-71	0	Rail bore crossing, wetland crossing and truck turnaround. ATWS located in a wetland.
Summit County, OH	ATWS-3265	34.4	Yes	No	A15-71	0	Pipeline crossing. ATWS in non-disturbed delineated wetland.
Summit County, OH	ATWS-4229	34.4	Yes	No	A15-71/AWB-SU-213	0/0	Long wetland crossing. Extra width required to move crews/equipment down ROW.
Summit County, OH	ATWS-3264	34.4	Yes	No	A15-71	0	Pipeline crossing. ATWS in non-disturbed delineated wetland.
Summit County, OH	ATWS-2359	34.6	Yes	No	A15-71	0	Waterbody and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in delineated wetland.
Summit County, OH	ATWS-94	35.5	Yes	No	AWB-SU-4	16.9	Road and wetland crossing. ATWS in non-disturbed area.
Summit County, OH	ATWS-4231	35.6	Yes	No	AWB-SU-4/A15-90	0/9.9	Wetland crossing and equipment access to I-77 bore crossing. ATWS located in a wetland.
Summit County, OH	ATWS-4024	36.2	Yes	No	AWB-SU-401	12.0	Bend installation. ATWS in non-disturbed area and within 50-ft wetland buffer.

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
Summit County, OH	ATWS-3082	36.6	Yes	No	C15-106	0	Long wetland crossing. Extra width required to move crews/equipment down ROW. ATWS located inside delineated wetland.
Summit County, OH	ATWS-4025	36.7	Yes	Yes	C15-106/C15-106-S1	11.2/17.2	Waterbody crossing. ATWS located partially in disturbed upland area and partially inside 50-ft wetland buffer. ATWS has been reshaped due to route variation filed in the Supplemental Filing.
Summit County, OH	ATWS-2325	37.4	Yes	No	C15-120	11.4	Massillon Rd bored crossing. Waterbody and wetland crossing. ATWS within 50-ft wetland buffer in non-disturbed area.
Summit County, OH	ATWS-2324	37.4	Yes	No	C15-120	10.7	Massillon Rd bored crossing. Waterbody and wetland crossing. ATWS within 50-ft wetland buffer in non-disturbed area.
Summit County, OH	ATWS-4234	38.0	Yes	No	AWB-SU-204	14.5	ATWS within 50-ft wetland buffer in non-disturbed area. This ATWS is required at this location to store the spoil associated with wetland construction, to store the cleared vegetation from the upland area, and also to accommodate additional spoil storage due to the foreign line crossing.
Summit County, OH	ATWS-577	39.6	Yes	No	A14-112	12.2	Wetland crossing. ATWS within 50-ft wetland buffer in non-disturbed area.
Summit County, OH	ATWS-3274	39.8	Yes	No	A14-112	0	Arlington Rd bored crossing and wetland crossing. ATWS located within delineated wetland
Summit County, OH	ATWS-99	39.8	Yes	No	A14-112	0	Arlington Rd bored crossing and wetland crossing. ATWS located within delineated wetland
Summit County, OH	ATWS-4505	39.8	Yes	No	A14-112	21.8	Arlington Rd bored crossing. ATWS in non-disturbed area and within 50-ft wetland buffer.
Summit County, OH	ATWS-3171	39.8	Yes	Yes	A14-112/A14-112-S1A	0/10.9	Arlington Rd bored crossing and wetland crossing. ATWS located within delineated wetland.
Summit County, OH	ATWS-1986	45.3	Yes	Yes	B14-1/B14-1-S1	0/44.3	Bend installation, pipeline and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located within delineated wetland.
Summit County, OH	ATWS-2479	45.4	Yes	No	B14-1	0	Bend/fitting installation and 6 foreign pipeline crossings. Wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in delineated wetland.
Summit County, OH	ATWS-1985	45.4	Yes	No	B14-1	0	Bend/fitting installation and 6 foreign pipeline crossing. Road and wetland crossing. ATWS

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
							partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in delineated wetland.
Summit County, OH	ATWS-3288	45.4	Yes	No	B14-1	0	Road, pipeline and wetland crossing.
Summit County, OH	ATWS-121	46.8	No	Yes	A15-13-S1	11.9	Center Road bore crossing. ATWS partially located in disturbed upland area with a small corner located in non-disturbed upland area. ATWS is within 50-ft waterbody. This ATWS is required to be this size in order to place equipment needed for the road bore, to safely dig the bore pits and to store spoil associated with the road bore.
Summit County, OH	ATWS-3233	49.3	Yes	No	AWB-SU-43	0	Cleveland Massillon Rd bored crossing and bend/fitting installation. Bore pull back string.
Summit County, OH	ATWS-3232	49.3	Yes	No	AWB-SU-43	0	Bend installation. ATWS in non-disturbed area.
Summit County, OH	ATWS-4237	49.3	Yes	No	AWB-SU-43	0	Road and wetland crossing. ATWS in non-disturbed area.
Summit County, OH	ATWS-4535	49.9	Yes	No	A14-41	10.7	Kungle Rd bored crossing. ATWS in non-disturbed area and within 50-ft wetland buffer.
Summit County, OH	ATWS-128	49.9	No	Yes	A14-41-S1	19.8	Road and waterbody crossing. ATWS in non-disturbed area and within 50-ft waterbody buffer
Summit County, OH	ATWS-4536	49.9	Yes	No	A14-41	46.9	Waterbody and wetland crossing. ATWS in non-disturbed area and within 50-ft wetland buffer.
Summit County, OH	ATWS-127	50.0	No	Yes	A14-41-S1	17.6	Waterbody and wetland crossing. ATWS in non-disturbed area and within 50-ft waterbody buffer. This ATWS is required in this location to accommodate pre-installation of the drag section and for the equipment associated with the bend installation, to accommodate additional spoil storage required for the foreign line crossing, and to accommodate additional spoil storage and additional equipment necessary to safely construct the waterbody and wetland crossing.
Summit County, OH	ATWS-3331	50.0	No	Yes	A14-41-S1	36.7	Waterbody and wetland crossing. ATWS in non-disturbed area and within 50-ft wetland and waterbody buffers. This ATWS is required at this location for additional spoil storage associated with the foreign line crossing, and to accommodate additional spoil storage and additional equipment necessary to safely construct the waterbody and

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
							wetland crossing. It cannot be shifted further from the resource as it would then overlap the existing pipeline.
Wayne County, OH	ATWS-3753	52.6	Yes	Yes	A14-124/A14-124-S2/A14-124-S1	0/26.6/41.3	Bend installation, waterbody and wetland crossing. ATWS is located in delineated wetland.
Wayne County, OH	ATWS-2599	52.8	Yes	Yes	A15-52-S1	25.9	Calaboone Road crossing. ATWS located in non-disturbed area and within 50-ft of waterbody buffer.
Wayne County, OH	ATWS-2515	53.5	No	Yes	B15-91-S1	16.5	Waterbody and Gates Rd bored crossing. ATWS in non-disturbed area and within 50-ft waterbody buffer.
Wayne County, OH	ATWS-2930	53.5	No	Yes	B15-91-S1	18.2	Waterbody and Gates Rd bored crossing. ATWS in non-disturbed area and within 50-ft waterbody buffer.
Wayne County, OH	ATWS-3351	55.6	Yes	No	C15-89	9.7	Topsoil segregation. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in non-disturbed area.
Wayne County, OH	ATWS-271	57.3	Yes	No	AWB-WA-400/B15-50	8.4/0	State Hwy 57 and wetland crossing. ATWS located in non-disturbed area and within estimated wetland
Medina County, OH	ATWS-155	62.6	Yes	No	B15-70	0	Greenwich Rd bored crossing and wetland crossing. ATWS located in delineated wetland.
Medina County, OH	ATWS-4247	67.6	Yes	No	AWB-ME-31	0	Waterbody, side slope and steep terrain construction. ATWS located in non-disturbed area and approximated wetland. At the time of this response approximated wetland AWB-ME-31 has not been field delineated. This ATWS located based on terrain and is required for the storage of additional spoil resulting from side slope construction techniques, to accommodate topsoil storage at the wetland, and to accommodate additional spoil storage and additional equipment necessary to safely construct the waterbody crossing.
Medina County, OH	ATWS-4248	67.7	Yes	No	AWB-ME-31	12.8	Wetland and waterbody crossing. At the time of this response approximated Wetland AWB-ME-31 has not been field delineated. This ATWS is required to accommodate topsoil storage at the wetland, and to accommodate additional spoil storage and additional equipment necessary to safely construct the waterbody crossing.

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
Medina County, OH	ATWS-4249	67.8	Yes	No	B15-111	12.0	Waterbody and wetland crossing and side slope construction. ATWS located in non-disturbed area and within 50-ft wetland buffer. This ATWS is required to accommodate topsoil storage, to accommodate additional spoil storage and the additional equipment necessary to safely construct the waterbody and wetlands crossing. This ATWS is also required to due to the side slope construction techniques that will be utilized in this area. The ATWS size has been reduced as much as possible considering these constraints.
Medina County, OH	ATWS-172	67.9	Yes	Yes	B15-82/B15-110-WB1	1.1/17.3	Bend installation. ATWS located in non-disturbed and within 50-ft wetland and waterbody buffers.
Medina County, OH	ATWS-4050	68.8	No	Yes	A15-3-S1	17.6	Waterbody crossing. ATWS in non-disturbed area and within 50-ft waterbody buffer
Medina County, OH	ATWS-4052	68.8	No	Yes	A15-3-S1	12.1	Chippewa Rail Trail and waterbody crossing. ATWS in non-disturbed area and within 50-ft waterbody buffer
Medina County, OH	ATWS-4054	68.8	No	Yes	A15-3-S1/A15-3-S3	15.9/21.3	Chippewa Rail Trail and waterbody crossing. ATWS in non-disturbed area
Medina County, OH	ATWS-281	69.5	Yes	No	C15-40	6.8	Rail and wetland crossing. ATWS located in upland consisting of cultivated or rotated cropland or disturbed land. ATWS located within 10-ft delineated wetland buffer.
Medina County, OH	ATWS-3372	69.4	Yes	No	AWB-ME-701	8.4	Lake Road and railroad and wetland crossing. ATWS located in upland consisting of cultivated or rotated cropland or disturbed land. ATWS located within 10-ft estimated wetland buffer.
Medina County, OH	ATWS-3374	69.4	Yes	No	AWB-ME-701	4.3	Lake Road and railroad and wetland crossing. ATWS located in upland consisting of cultivated or rotated cropland or disturbed land. ATWS located within 10-ft estimated wetland buffer.
Medina County, OH	ATWS-181	72.5	Yes	No	A14-48	0	Carlton Rd bored crossing and bend/fitting installation and wetland crossing.
Medina County, OH	ATWS-3392	72.5	Yes	No	A14-48	0	Carlton Rd bored crossing and bend/fitting installation and wetland crossing.
Medina County, OH	ATWS-3393	72.5	Yes	No	A14-48	0	Bend installation. ATWS located in non-disturbed area and within delineated wetland.
Medina County, OH	ATWS-3729	72.5	Yes	No	A14-48	0	Bend installation. ATWS located in non-disturbed area and within delineated wetland.

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
Medina County, OH	ATWS-2219	73.2	Yes	No	C15-24-W8	0	Bend installation and wetland crossing.
Medina County, OH	ATWS-3735	73.2	Yes	No	C15-24-W8/C15-24-W9	0/0	Bend installation, and wetland crossing.
Medina County, OH	ATWS-3734	73.3	Yes	Yes	C15-24-W8/C15-24-S1-2	0/24.8	Wetland crossing and equipment movement. Extra width required to move crews/equipment down ROW. ATWS in non-disturbed area and within delineated wetland.
Medina County, OH	ATWS-3733	73.3	Yes	Yes	C15-24-W7/C15-24-W8/C15-24-S7	0/0/0	Wetland crossing and equipment movement. Extra width required to move crews/equipment down row. ATWS in non-disturbed area and within delineated wetland
Medina County, OH	ATWS-285	73.7	No	Yes	AS-ME-56	25.4	Road and waterbody crossing. ATWS in non-disturbed area
Medina County, OH	ATWS-2592	76.3	Yes	Yes	B15-74/B15-74-S4	0/18.0	Beck Rd bored crossing, waterbody and wetland crossing. ATWS located in non-disturbed area and located within delineated wetland.
Medina County, OH	ATWS-2591	76.3	Yes	No	B15-74	13.2	Beck Rd bored crossing, waterbody and wetland crossing. ATWS located in non-disturbed area and within 50-ft wetland buffer
Medina County, OH	ATWS-3398	77.0	Yes	Yes	A15-76/A15-76-S1/A15-76-S2	0/8.7/17.1	Waterbody and wetland crossing. ATWS is between two waterbodies and partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located inside non-forested delineated emergent wetland. This ATWS is required at the wetland to accommodate topsoil storage, and to accommodate additional spoil storage and additional equipment necessary to safely construct the waterbody and wetland crossing. Matting will be used in ATWS in emergent wetland to minimize potential temporary disturbance during use.
Lorain County, OH	ATWS-593	82.7	Yes	No	A14-63	0	Law Rd bored crossing and wetland crossing. Extra ATWS needed on the working side due to power line collocation on spoil side. ATWS located in non-disturbed area and delineated wetland area.
Lorain County, OH	ATWS-3764	83.5	Yes	No	A14-68	0	Wetland crossing, Bend installation and equipment movement. ATWS in non-disturbed area and inside delineated wetland.

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
Lorain County, OH	ATWS-771	83.6	Yes	No	A14-67	0	Bend installation. ATWS in non-disturbed area and partially located inside delineated wetland.
Lorain County, OH	ATWS-3768	84.4	Yes	No	A14-69	31.6	Waterbody and wetland crossing. ATWS in non-disturbed area and inside the 50-ft wetland buffer...
Lorain County, OH	ATWS-3770	85.1	Yes	No	A14-71	13.1	Bend installation. ATWS located in upland.
Lorain County, OH	ATWS-3773	87.0	Yes	Yes	A14-52/B15-61-S1	0/16.7	Rail, road, waterbody and wetland crossing. ATWS in non-disturbed area. ATWS was not sited under the existing power line transmission corridor to provide a safe working location.
Lorain County, OH	ATWS-773	87.7	Yes	No	B15-95	0	Bend installation. ATWS located within cultivation but also within delineated wetland.
Lorain County, OH	ATWS-2733	87.8	Yes	No	B15-95	0	Bend installation and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in delineated wetland.
Lorain County, OH	ATWS-209	90.1	No	Yes	A14-76-S1	29.6	Waterbody crossing and Whitehead Rd bored crossing and wetland crossing.
Lorain County, OH	ATWS-4473	92.4	No	Yes	AS-LO-758A/C15-8-S4	12.8/8.5	Access to hydrostatic test water. Workspace parallels waterbody and is within 50-ft buffer of waterbody.
Lorain County, OH	ATWS-4077	93.4	No	Yes	A14-140-S1	16.1	Road and waterbody crossing. ATWS in non-disturbed area
Lorain County, OH	ATWS-1893	94.3	Yes	No	A14-178	12.3	Pipeline. ATWS in non-disturbed area
Lorain County, OH	ATWS-4406	96.3	Yes	No	C15-58	0	Abandoned rail, waterbody and wetland crossing. ATWS in non-disturbed.
Lorain County, OH	ATWS-4405	96.3	Yes	No	C15-58	0	Abandoned rail bored crossing and wetland crossing. ATWS in non-disturbed.
Lorain County, OH	ATWS-2871	96.7	Yes	No	A15-38	0	Quarry Rd bored crossing.
Lorain County, OH	ATWS-2970	100.6	Yes	No	B15-105	43.7	Gore Orphanage Road crossing. ATWS in non-disturbed area and within 50-ft wetland buffer.
Lorain County, OH	ATWS-2432	100.6	Yes	No	B15-105	0	Gore Orphanage Road crossing. ATWS in non-disturbed area and partially located within delineated wetland.
Huron County, OH	ATWS-2781	102.3	No	Yes	A15-57-S1	16.1	Road, and waterbody crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in non-disturbed land. ATWS located partially within 50-ft waterbody buffer.

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
Erie County, OH	ATWS-2819	105.8	Yes	No	C15-70	0	Road and wetland crossing. ATWS located within delineated wetland
Erie County, OH	ATWS-2791	105.8	Yes	No	C15-70	0	Waterbody and Florence Wakemen Rd crossing and wetland crossing. ATWS located within delineated wetland.
Erie County, OH	ATWS-4098	111.4	Yes	No	B15-60	0	Bend installation. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located inside delineated wetland.
Erie County, OH	ATWS-3809	116.5	Yes	Yes	A14-156/A14-156-S2	0/0	Rail /trail and wetland crossing. ATWS in non-disturbed area and within delineated wetland.
Erie County, OH	ATWS-3810	116.5	Yes	Yes	A14-156/A14-155-S1	0/49.1	Rail /trail, waterbody and wetland crossing. ATWS in non-disturbed area and inside delineated wetland and 50-ft wetland buffer
Erie County, OH	ATWS-1554	117.4	No	Yes	C15-20-S1	0	HDD pull back string for Huron River crossing. Spoil will be stored at least 10-ft from water's edge.
Erie County, OH	ATWS-821	120.4	Yes	No	C15-22-W2	0	Road and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a delineated wetland.
Sandusky County, OH	ATWS-3521	138.6	Yes	No	AWB-SA-604/D14-9	14.7/0	N STATE ROUTE 510 bored crossing and wetland crossing. ATWS in non-disturbed area and within delineated wetland.
Sandusky County, OH	ATWS-3522	138.6	Yes	Yes	D14-9/D14-9-S1	0/15.5	Road, waterbody and wetland crossing. ATWS in non-disturbed area and within delineated wetland.
Sandusky County, OH	ATWS-2838	139.2	Yes	No	D15-71	0	Road and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in a delineated wetland.
Sandusky County, OH	ATWS-3859	141.6	Yes	No	D15-32	0	County RD 239 bored crossing and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located within delineated wetland.
Sandusky County, OH	ATWS-2509	141.6	Yes	No	D15-32	0	County RD 239 bored crossing and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located within delineated wetland

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
Sandusky County, OH	ATWS-2472	145.1	Yes	No	AWB-SA-706	0	HDD pull back string. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in estimated wetland.
Sandusky County, OH	ATWS-2474	146.2	Yes	No	AWB-SA-701	0	Wetland crossing. ATWS partially located within estimated wetland.
Sandusky County, OH	ATWS-4353	146.2	Yes	No	AWB-SA-701	0	Wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located within estimated wetland. .
Sandusky County, OH	ATWS-3862	146.3	Yes	Yes	AS-SA-702/AWB-SA-701/AWB-SA-702/D15-104-WB/D15-104-S1/D15-104	22.5/0/4.7/0/8.6/36.9	Waterbody and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located within estimated wetland.
Sandusky County, OH	ATWS-3864	146.4	Yes	Yes	AS-SA-702/AWB-SA-702/D15-104-S1/D15-104	40.3/28.6/40.4/0	Waterbody and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially within delineated wetland.
Sandusky County, OH	ATWS-3863	146.4	Yes	Yes	AWB-SA-701/AWB-SA-702/AS-SA-702	0/13.3/17.8	Waterbody and wetland crossing. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially within estimated wetland.
Sandusky County, OH	ATWS-4125	157.6	Yes	No	D14-41	0	Road and wetland crossing. ATWS in non-disturbed area.
Sandusky County, OH	ATWS-4127	158.1	Yes	No	E14-123/E14-124/D14-42	0/11.4/20.3	N STATE ROUTE 300 bored crossing and wetland crossing. ATWS in non-disturbed area and partially within delineated wetland.
Sandusky County, OH	ATWS-1948	158.1	Yes	No	E14-123/D14-42	0/8.4	N STATE ROUTE 300 bored crossing and wetland crossing. ATWS in non-disturbed area and within delineated wetland.
Sandusky County, OH	ATWS-347	158.2	Yes	No	D14-42/E14-123	0/8.4	Road and wetland crossing. ATWS in non-disturbed area and within delineated wetland.
Sandusky County, OH	ATWS-4128	158.2	Yes	No	D14-42	0	N STATE ROUTE 300 bored crossing and wetland crossing. ATWS located within delineated wetland.
Sandusky County, OH	ATWS-4129	158.6	Yes	Yes	D14-25/D14-25-S1	0/35.4	Waterbody and wetland crossing. ATWS located within delineated wetland.
Wood County, OH	ATWS-2903	166.7	Yes	No	E14-152/D15-62A	0/33.1	Rail and wetland crossing. ATWS partially in disturbed area and partially in non-disturbed area.

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
							ATWS located partially in AG-PEM Wetland and partially within delineated wetland
Wood County, OH	ATWS-4435	181.3	Yes	Yes	D15-107/E14-55-S1	0/0	Access to hydrotest water at Maumee River. Spoil will be stored at least 10-ft from water's edge (if applicable). ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in non-disturbed area.
Henry County, OH	ATWS-4169	189.3	Yes	No	E15-27	0	COUNTY RD 1 bored crossing and wetland crossing and Bend. ATWS located in upland consisting of cultivated or rotated cropland or disturbed land.
Henry County, OH	ATWS-2032	189.8	Yes	No	D15-54	2.3	Wetland and existing pipeline crossing. ATWS located in upland.
Henry County, OH	ATWS-4174	190.0	Yes	No	AWB-HE-400	46.7	Wetland and existing pipeline and rail/trail crossing. ATWS partially located in undisturbed area.
Lenawee County, MI	ATWS-452	209.9	Yes	Yes	AWB-LE-612/AS-LE-607	34.5/0	Railroad, road, waterbody and foreign pipeline crossing. ATWS located in upland consisting of cultivated or rotated cropland or disturbed land. The ATWS is required for the additional equipment and storage of spoil required to safely construct the railroad, road, waterbody, and foreign pipeline crossings. ATWS also to be utilized to gain access to E Mulberry Rd via temporary driveway and culvert installation under permit of local jurisdiction to allow equipment to move around past the railroad.
Washtenaw County, OH	ATWS-4375	237.4	No	Yes	E14-157-S1	0	Access to hydrotest water. Spoil will be stored at least 10-ft from water's edge.
Washtenaw County, OH	ATWS-4390	245.2	Yes	No	E14-167/AWB-WA-4	0/25.9	Road and wetland crossing. ATWS located within delineated wetland.
Washtenaw County, OH	ATWS-2675	245.8	No	Yes	D15-122-S1	27.7	Topsoil segregation, waterbody crossing and bend installation. ATWS partially located in upland consisting of cultivated or rotated cropland or disturbed land and partially located in non-disturbed area within 50-ft waterbody buffer.
Washtenaw County, OH	ATWS-2676	248.1	No	Yes	D15-29-S1	19.1	Road and waterbody crossing. ATWS in non-disturbed area and within 50-ft waterbody buffer.
Washtenaw County, OH	ATWS-1619	250.6	Yes	No	D15-79	15.0	Hydro Park HDD entry workspace. ATWS in non-disturbed area and within 50-ft wetland buffer.

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
Washtenaw County, OH	ATWS-1621	251.1	No	Yes	D15-58A-WB1	0	Access to hydrotest water. Spoil will be stored at least 10-ft from water's edge. ATWS in non-disturbed area and within 50-ft waterbody buffers.
Washtenaw County, OH	ATWS-3873	254.3	Yes	No	D15-77	0	HDD entry location. ATWS in non-disturbed area and within delineated wetland.
Washtenaw County, OH	ATWS-4513	254.3	Yes	No	D15-77	0	HDD entry location. ATWS in non-disturbed area and within delineated wetland.
Washtenaw County, OH	ATWS-2721	254.7	Yes	Yes	D15-77/D15-77-S1	9.4/13.3	Bend installation and existing pipeline and waterbody crossing. ATWS partially located in disturbed area and partially located in non-disturbed area and within 50-ft wetland and waterbody buffers.
Washtenaw County, OH	ATWS-4508	254.5	Yes	No	D15-77	0	Bend installation. ATWS in non-disturbed area and within delineated wetland.
Washtenaw County, OH	ATWS-4539	254.5	Yes	No	D15-77	0	Tie-in location to adjacent HDD entry point and equipment movement/access. ATWS in non-disturbed area and within delineated wetland.
Washtenaw County, OH	ATWS-4541	254.5	Yes	No	D15-77	0	Material/Equipment access. ATWS in non-disturbed area and within delineated wetland.
Washtenaw County, OH	ATWS-4540	254.7	Yes	No	D15-77	0	Material/Equipment access. ATWS in non-disturbed area and partially located within delineated wetland.
Washtenaw County, OH	ATWS-2740	254.8	Yes	Yes	D15-44/D15-43-S1/D15-43-WB2	0/48.5/2.9	Waterbody and wetland crossing. ATWS partially located within delineated wetland.
Washtenaw County, OH	ATWS-4413	255.0	Yes	No	D15-42/D15-41	0/0	Willow Run M&R workspace. Trench spoil will be stored at least 10-ft from water's edge.
TEAL PROJECT							
Loopline							
Monroe County, OH	ATWS-04	0.75	Yes	Yes	A15-03-S1/A15-24-S1/A15-24/A15-03	5/30/10	Access road entry, and wetland and stream(s) crossing. Parking, spoil storage, timber mat storage (for wetlands), prefabricate pipe segment for crossing, and maintain access of pipeline construction equipment and personnel. Severe slope. Prepare level work site, spoil storage (additional area due to minimum of 30% expansion of material once excavated), parking, and maintain access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-08	1.2	Yes	Yes	A15-07-S1/A15-07	10/0	Wetland and stream(s) crossing. Parking, spoil storage, timber mat storage (for wetlands), prefabricate pipe segment for crossing, and maintain

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
							access of pipeline construction equipment and personnel. Severe slope. Prepare level work site, spoil storage (additional area due to minimum of 30% expansion of material once excavated), parking, and maintain access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-10	1.2	Yes	Yes	A15-07-S1/A15-07	10/0	Road, wetland and stream(s) crossing. Parking, spoil storage, timber mat storage (for wetlands), road crossing materials storage, prefabricate pipe segment for crossing, and maintain access of pipeline construction equipment and personnel. Severe slope. Prepare level work site, spoil storage (additional area due to minimum of 30% expansion of material once excavated), parking, and maintain access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-11	1.6	Yes	Yes	A15-08-S1/A15-08	10/5	Wetland and stream(s) crossing. Parking, spoil storage, timber mat storage (for wetlands), prefabricate pipe segment for crossing, and maintain access of pipeline construction equipment and personnel. Severe slope. Prepare level work site, spoil storage (additional area due to minimum of 30% expansion of material once excavated), parking, and maintain access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-12	1.6	Yes	Yes	A15-08-S1/A15-08/A15-09	35/25/20	Wetland and stream(s) crossing. Parking, spoil storage, timber mat storage (for wetlands), prefabricate pipe segment for crossing, and maintain access of pipeline construction equipment and personnel. Severe slope. Prepare level work site, spoil storage (additional area due to minimum of 30% expansion of material once excavated), parking, and maintain access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-13	1.65	Yes	No	A15-09	0	ATWS within 50-ft wetland buffer. This ATWS is required in this location due to the severe slope and side slope. This space is required to make a level work site for spoil storage, segregating agricultural topsoil from subsoil in hay fields and active pasture,

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
							timber mat storage, prefabricating wetland and stream pipe segment, parking, and maintaining through access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-14	1.65	Yes	No	A15-09	30	ATWS within 50-ft wetland buffer. This ATWS is required in this location due to the severe slope and side slope. This space is required to make a level work site for, spoil storage, segregating agricultural topsoil from subsoil in hay fields and active pasture, timber mat storage, prefabricating wetland and stream pipe segment, parking, and maintaining through access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-15	2.05	Yes	No	A15-21	40	Access road entry. Parking, prefabricate access road crossing pipe segment, spoil storage, and maintain access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-16	2.05	Yes	No	A15-21	1	Access road entry. Parking, prefabricate access road crossing pipe segment, spoil storage, and maintain access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-18	2.1	No	Yes	A15-11-S1/A15-11-S2	0/10	Waterbody crossing. ATWS within 50-ft waterbody buffer. This ATWS is required in this location due to severe slope and side slope. This space is required to make a level work site for spoil storage, prefabricate pipe segment for stream crossing, parking, and maintain through access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-19	2.15	No	Yes	A15-11-S2	15	Waterbody crossing. ATWS within 50-ft waterbody buffer. This ATWS is required in this location due to severe slope and side slope. This space is required to make a level work site for spoil storage, prefabricate pipe segment for stream crossing, parking, and maintain through access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-22	2.5	No	Yes	A15-13-S1	5	Road and overhead powerline crossing. Parking, spoil storage, road crossing materials storage, additional construction equipment to install the pipeline segment under overhead powerlines, prefabricate pipe segment to be installed, and maintain access of pipeline construction equipment and personnel.

APPENDIX H-6 (cont'd)

ATWS Within 50 feet of Wetlands and Waterbodies on the NGT and TEAL Projects

Project, Facility, County	ATWS ID	Milepost	Within 50 feet of a Wetland	Within 50 feet of a Waterbody	Feature ID	Distance from Resource Area (feet)	Justification
							Severe slope. Prepare level work site, spoil storage (additional area due to minimum of 30% expansion of material once excavated), parking, and maintain access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-34	4.0	Yes	No	B15-20/B15-21	0/5	Wetland crossing. Parking, spoil storage, timber mat storage, prefabricate wetland and stream pipe segment, and maintain through access of pipeline construction equipment and personnel. Severe slope. Prepare level work site, spoil storage (additional area due to minimum of 30% expansion of material once excavated), parking, and maintain access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-35	4.1	Yes	Yes	A15-18-S21/B15-21	10/0	Wetland and waterbody crossing. ATWS within 50-ft wetland and waterbody buffers. This ATWS is required in this location due to severe slope and side slope. This space is required to make a level work site for spoil storage, prefabricate pipe segment for stream crossing, parking, and maintain through access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-36	4.25	Yes	Yes	A15-18-S2/A15-18-S1/A15-18	10/40/0	Waterbody and wetland crossing. ATWS within 50-ft wetland and waterbody buffers. This ATWS is required in this location due to severe slope and side slope. This space is required to make a level work site for spoil storage, prefabricate pipe segment for stream crossing, parking, and maintain through access of pipeline construction equipment and personnel.
Monroe County, OH	ATWS-37	4.3	No	Yes	A15-19-S1	40	Waterbody crossing. ATWS within 50-ft waterbody buffer. This ATWS is required in this location due to severe slope and side slope. This space is required to make a level work site for spoil storage, prefabricate pipe segment for stream crossing, parking, and maintain through access of pipeline construction equipment and personnel.

APPENDIX I

WETLAND TABLES

I-1: NGT PROJECT WETLAND IMPACTS
I-2: TEAL PROJECT WETLAND IMPACTS

APPENDIX I-1

NGT PROJECT WETLAND IMPACTS

Appendix I-1

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Mainline								
Ohio								
Columbiana	0.1	B15-17	PFO	42.1	0.1	0.1	2	Delineated
Columbiana	0.7	B15-28	PEM	0.0	0.0		2	Delineated
Columbiana	0.7	B15-28	PSS	182.2	0.4	0.2	2	Delineated
Columbiana	1.0	B15-29	PEM	216.6	0.6		2	Delineated
Columbiana	1.2	C15-84	PSS	135.7	0.4	0.1	2	Delineated
Columbiana	1.2	C15-84	PEM	31.5	0.1		2	Delineated
Columbiana	1.2	C15-84	PFO	0.0	0.0	0.0	2	Delineated
Columbiana	2.1	A14-5	PEM	323.6	0.9		N/A	
Columbiana	2.2	A14-5	AG-PEM	361.6	1.3		N/A	
Columbiana	4.9	A14-10	PFO	0.0	0.0	0.4	2	Delineated
Columbiana	4.9	A14-10	PEM	174.9	0.4		2	Delineated
Columbiana	5.0	A14-10	PSS	431.9	1.2	0.5	2	Delineated
Columbiana	5.3	A14-11	PFO	75.0	0.2	0.1	2	Delineated
Columbiana	5.3	A15-25	PFO	0.0	0.0		2	Delineated
Columbiana	5.6	A14-126	PEM	17.5	0.1		1	Delineated
Columbiana	5.7	A14-127	PEM	0.0	0.1		2	Delineated
Columbiana	6.4	C15-118	PEM	142.6	0.4		2	Delineated
Columbiana	6.4	C15-117	PEM	0.0	0.0		1	Delineated
Columbiana	6.4	A14-12	PEM	33.7	0.1		2	Delineated
Columbiana	8.1	B15-31 c	PUB	153.5	0.2		3	Delineated
Columbiana	8.1	B15-31 c	PEM	342.5	0.4		3	Delineated
Columbiana	10.3	A14-14	PEM	167.4	0.5		1	Delineated
Columbiana	11.6	A14-16	PEM	27.3	0.1		2	Delineated
Columbiana	11.0	C15-65	PSS	26.3	0.1	0.0	2	Delineated
Columbiana	11.0	A15-33	PSS	47.8	0.1	0.0	2	Delineated
Columbiana	11.0	A15-33	PEM	69.9	0.2		2	Delineated
Columbiana	11.0	A15-33	AG-PEM	0.0	0.1		2	Delineated
Columbiana	11.2	A15-34	PEM	269.0	0.8		2	Delineated
Columbiana	11.3	A15-31	PEM	89.2	0.3		1	Delineated
Columbiana	11.4	A15-32	PEM	0.0	0.1		1	Delineated
Columbiana	11.7	A14-17	PEM	43.2	0.1		2	Delineated
Columbiana	11.8	A14-17	PFO	24.3	0.0	0.0	2	Delineated
Stark	13.1	A14-108	PEM	435.3	1.2		2	Delineated
Stark	13.3	B15-64	PEM	238.8	0.6		1	Delineated
Stark	13.8	A15-47	PFO	0.0	0.0		2	Delineated
Stark	14.0	B15-55	PEM	0.0	0.0		2	Delineated
Stark	14.8	A14-20	AG-PEM	0.0	0.0		1	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Stark	15.0	A14-21	PEM	73.8	0.2		2	Delineated
Stark	15.1	A14-21	AG-PEM	281.2	0.9		2	Delineated
Stark	15.3	C15-92	PFO	380.2	1.1	0.5	2	Delineated
Stark	15.4	C15-92	PEM	163.3	0.4		2	Delineated
Stark	15.6	A15-64	AG-PEM	0.0	0.0		1	Delineated
Stark	15.8	A15-27	PEM	38.3	0.1		1	Delineated
Stark	16.4	B15-119	AG-PEM	0.0	0.0		2	Delineated
Stark	16.5	B15-119	PEM	216.7	0.6		2	Delineated
Stark	16.8	C15-116	PEM	401.4	1.3		2	Delineated
Stark	17.2	C15-116	PFO	714.2	2.0	0.8	2	Delineated
Stark	17.3	A14-107	AG-PEM	35.3	0.2		1	Delineated
Stark	17.6	A14-106	PSS	85.7	0.2	0.1	2	Delineated
Stark	18.0	A14-104	PEM	16.9	0.0		2	Delineated
Stark	19.0	C15-85	AG-PEM	33.4	0.2		1	Delineated
Stark	19.3	C15-87	PSS	145.8	0.4	0.1	2	Delineated
Stark	20.4	B15-42	PEM	0.0	0.0		1	Delineated
Stark	22.3	B15-40	PEM	101.6	0.3		1	Delineated
Stark	24.3	C15-124	PEM	0.0	0.0		1	Delineated
Stark	24.6	A14-161	PFO	76.3	0.3	0.1	2	Delineated
Stark	25.4	A14-167	PSS	27.0	0.1	0.0	1	Delineated
Stark	26.7	A14-100	PEM	65.9	0.2		1	Delineated
Stark	27.4	B15-46	PEM	28.4	0.1		1	Delineated
Stark	27.9	A14-34	PEM	945.4	2.7		2	Delineated
Stark	28.8	A14-168	AG-PEM	82.2	0.3		2	Delineated
Stark	28.9	A14-168	PFO	131.0	0.4	0.1	2	Delineated
Stark	28.9	A14-168	PEM	26.1	0.0		2	Delineated
Stark	29.3	B15-58	PFO	44.8	0.1	0.1	2	Delineated
Stark	29.9	B15-104	PEM	16.8	0.1		2	Delineated
Stark	30.0	C15-114	PSS	12.5	0.1	0.0	2	Delineated
Stark	30.0	C15-115	PFO	0.0	0.0	0.0	2	Delineated
Stark	31.4	A15-2	PFO	71.4	0.2	0.1	2	Delineated
Stark	32.1	A14-164	AG-PEM	256.6	0.8		2	Delineated
Stark	32.3	A14-164	PEM	231.2	0.6		2	Delineated
Stark	33.5	A15-94	PEM	55.9	0.2		2	Delineated
Stark	33.8	B15-73	PFO	605.4	1.4	0.6	2	Delineated
Stark	34.1	C15-103	AG-PEM	0.0	0.0		1	Delineated
Summit	34.3	A15-71	PEM	415.5	0.9		2	Delineated
Summit	34.4	A15-71	PSS	1465.4	4.2	1.7	2	Delineated
Summit	34.5	AWB-SU-213	PFO	233.1	0.7	0.3	2*	Non-Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Summit	34.7	A15-71	PFO	0.0	0.0	0.0	2	Delineated
Summit	35.1	B15-68	PSS	2.8	0.0	0.0	2	Delineated
Summit	35.1	B15-68	PFO	61.4	0.1	0.0	2	Delineated
Summit	35.3	AWB-SU-3	PFO	200.6	0.6	0.2	2*	Non-Delineated
Summit	35.6	AWB-SU-4	PEMPSS	0.0	0.1		2*	Non-Delineated
Summit	35.6	AWB-SU-4	PFO	210.6	0.7	0.2	2*	Non-Delineated
Summit	35.6	A15-90	AG-PEM	0.0	0.0		2	Delineated
Summit	35.6	A15-90	PEM	31.7	0.1		2	Delineated
Summit	35.9	AWB-SU-400	PEM	0.0	0.2		2*	Non-Delineated
Summit	35.9	A15-91	PFO	45.7	0.5	0.2	2	Delineated
Summit	35.9	AWB-SU-400	PEM	288.7	0.4		2*	Non-Delineated
Summit	36.1	AWB-SU-401	PEM	184.5	0.5		2*	Non-Delineated
Summit	36.2	C15-104	PEM	0.0	0.0		2	Delineated
Summit	36.2	C15-104	PFO	133.5	0.5	0.2	2	Delineated
Summit	36.3	B15-125/C15-104	PSS	353.2	1.2	0.4	2	Delineated
Summit	36.4	B15-125	PEM	31.4	0.2		2	Delineated
Summit	36.4	B15-125/C15-104	PFO	0.0	0.0		2	Delineated
Summit	36.5	C15-104	PSS	190.7	0.5	0.2	2	Delineated
Summit	36.7	C15-106	PSS	210.5	0.6	0.2	2	Delineated
Summit	36.7	C15-106	PEM	338.1	0.8		2	Delineated
Summit	37.1	C15-122	PFO	92.5	0.2	0.1	2	Delineated
Summit	37.1	C15-122	PEM	0.0	0.0		2	Delineated
Summit	37.1	AWB-SU-214	PFO	10.9	0.0	0.0	2*	Non-Delineated
Summit	37.4	C15-120	PFO	336.5	1.0	0.4	2	Delineated
Summit	37.8	AWB-SU-205	PFO	160.3	0.6	0.2	2*	Non-Delineated
Summit	38.0	C15-123	PSS	34.0	0.1	0.0	2	Delineated
Summit	38.1	AWB-SU-204	PFO	528.9	1.5	0.6	2*	Non-Delineated
Summit	38.3	AWB-SU-203	PFO	24.1	0.1	0.0	2*	Non-Delineated
Summit	38.5	AWB-SU-222	PSS	0.0	0.0		2*	Non-Delineated
Summit	38.6	AWB-SU-221	PFO	18.0	0.1	0.0	2*	Non-Delineated
Summit	39.8	A14-112	PSS	603.7	1.8	0.7	2	Delineated
Summit	39.9	A14-112	PEM	166.6	0.5		2	Delineated
Summit	40.0	B15-128	PSS	145.0	0.4	0.2	2	Delineated
Summit	40.0	B15-128	PEM	86.1	0.2		2	Delineated
Summit	40.7	A16-1	PEM	724.5	2.1		2	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Summit	41.0	A16-2	PEM	150.7	0.3		2	Delineated
Summit	41.2	A16-2	PFO	70.4	0.1	0.1	2	Delineated
Summit	41.2	A15-49	AG-PEM	5.2	0.0		1	Delineated
Summit	41.9	A14-122	PSS	780.0	1.9	0.8	2	Delineated
Summit	42.0	A14-122	PEM	720.4	2.2		2	Delineated
Summit	42.3	A14-123	PEM	55.1	0.2		2	Delineated
Summit	43.8	A15-16	PEM	160.3	0.4		2	Delineated
Summit	43.9	A15-95	PEM	0.0	0.0		2	Delineated
Summit	44.0	AWB-SU-21	PEMPSS	0.0	0.0		2*	Non-Delineated
Summit	44.0	A15-95	PFO	0.3	0.1	0.0	2	Delineated
Summit	44.2	C15-102	PEM	178.3	0.6		2	Delineated
Summit	44.7	B15-88	PFO	21.3	0.1	0.0	2	Delineated
Summit	45.3	B14-1	PFO	419.0	1.2	0.5	2	Delineated
Summit	45.4	B14-1	PEM	406.9	1.1		2	Delineated
Summit	45.6	A15-15	PEM	0.0	0.1		2	Delineated
Summit	45.6	A15-15	PFO	0.0	0.1	0.0	2	Delineated
Summit	45.7	AWB-SU-27	PFO	24.0	0.1	0.0	2*	Non-Delineated
Summit	45.7	AWB-SU-27	PEMPSS	105.6	0.3		2*	Non-Delineated
Summit	45.8	AWB-SU-28	PEMPSS	0.0	0.0		2*	Non-Delineated
Summit	45.8	AWB-SU-28	PFO	38.4	0.1	0.0	2*	Non-Delineated
Summit	45.9	AWB-SU-29	PFO	0.0	0.0	0.0	2*	Non-Delineated
Summit	46.4	A14-119	PEM	20.6	0.0		2	Delineated
Summit	46.4	C15-27	PFO	142.3	0.4	0.2	2	Delineated
Summit	46.8	C15-25	PEM	53.4	0.2		1	Delineated
Summit	47.0	A15-14	PEM	0.0	0.0		2	Delineated
Summit	47.8	C15-30	PEM	0.0	0.0		2	Delineated
Summit	48.1	C15-28	AG-PEM	66.9	0.1		1	Delineated
Summit	48.2	B15-56	PEM	18.6	0.0		1	Delineated
Summit	48.9	A15-83	PEM	50.7	0.1		1	Delineated
Summit	49.3	AWB-SU-43	PSS	205.7	0.5	0.2	2*	Non-Delineated
Summit	49.3	AWB-SU-43	PEM	302.9	0.9		2*	Non-Delineated
Summit	49.6	A14-41	PEM	97.9	0.3		2	Delineated
Summit	49.8	A14-41	PFO	76.5	0.2	0.0	2	Delineated
Summit	50.1	A14-42	PSS	184.7	0.6	0.2	2	Delineated
Summit	50.1	A14-42	PEM	17.9	0.1		2	Delineated
Wayne	51.2	A15-23	AG-PEM	54.8	0.2		1	Delineated
Wayne	51.5	A15-21	PEM	109.9	0.2		2	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Wayne	51.6	A15-21	PFO	289.4	0.7	0.3	2	Delineated
Wayne	51.7	A15-21	PEM	0.0	0.1		2	Delineated
Wayne	52.2	C15-34	PSS	25.8	0.0	0.0	2	Delineated
Wayne	52.2	C15-34	PEM	0.0	0.0		2	Delineated
Wayne	52.6	A14-124	PSS	87.9	0.2	0.1	2	Delineated
Wayne	52.6	A14-124	PEM	226.2	0.7		2	Delineated
Wayne	53.0	A15-53	PSS	0.0	0.0		2	Delineated
Wayne	55.3	A15-42	PEM	20.8	0.0		2	Delineated
Wayne	55.3	A15-41	PEM	0.0	0.0		2	Delineated
Wayne	55.5	C15-89	PEM	14.2	0.1		2	Delineated
Wayne	55.6	C15-89	AG-PEM	0.0	0.0		2	Delineated
Wayne	55.7	B15-48	PEM	125.0	0.3		1	Delineated
Wayne	57.3	B15-50	PEM	309.3	0.8		1	Delineated
Wayne	57.4	B15-50	PSS	50.9	0.1	0.0	1	Delineated
Wayne	57.7	B15-52	AG-PEM	51.1	0.1		1	Delineated
Medina	58.3	C15-90	PEM	130.3	0.4		1	Delineated
Medina	58.4	B14-7	PEM	263.3	0.8		2	Delineated
Medina	58.4	B14-7	AG-PEM	21.0	0.1		2	Delineated
Medina	58.9	C15-91	AG-PEM	0.0	0.0		1	Delineated
Medina	59.9	B15-02	PEM	121.2	0.3		2	Delineated
Medina	60.7	A14-39	PFO	1.6	0.0	0.0	2	Delineated
Medina	60.8	A14-40	PFO	16.3	0.0	0.0	2	Delineated
Medina	61.9	C15-107	PEM	18.1	0.0		1	Delineated
Medina	61.9	C15-107	PEM	0.0	0.0		1	Delineated
Medina	62.7	B15-70	PEM	195.7	0.6		1	Delineated
Medina	62.9	B15-23	PEM	206.1	0.6		2	Delineated
Medina	64.6	A14-114	PEM	45.2	0.1		1	Delineated
Medina	64.9	B15-22	PEM	0.0	0.0		2	Delineated
Medina	65.3	A14-116	PFO	0.0	0.1	0.0	2	Delineated
Medina	66.2	B14-4	PSS	0.0	0.0		2	Delineated
Medina	66.2	B14-4	PFO	94.3	0.2	0.1	2	Delineated
Medina	66.6	A14-129	AG-PEM	45.5	0.1		1	Delineated
Medina	67.1	AWB-ME-26	PFO	157.9	0.4	0.1	2*	Non-Delineated
Medina	67.4	AWB-ME-27	PFO	51.4	0.1	0.0	2*	Non-Delineated
Medina	67.5	AWB-ME-29	PFO	0.0	0.0		2*	Non-Delineated
Medina	67.6	AWB-ME-30	PFO	74.1	0.2	0.1	2*	Non-Delineated
Medina	67.7	AWB-ME-31	PEMPSS	9.0	0.1		2*	Non-Delineated
Medina	67.7	AWB-ME-31	PFO	203.9	0.4	0.2	2*	Non-Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Medina	67.8	B15-111	PEM	149.2	0.4		2	Delineated
Medina	67.8	B15-82	PFO	22.9	0.1	0.0	2	Delineated
Medina	67.9	B15-82	PEM	12.5	0.1		2	Delineated
Medina	68.1	AWB-ME-33	PFO	54.3	0.1	0.1	2*	Non-Delineated
Medina	68.5	B15-100	PSS	0.0	0.1	0.0	2	Delineated
Medina	68.5	AWB-ME-35	PEMPSS	126.5	0.3		2*	Non-Delineated
Medina	68.6	AWB-ME-35	PFO	0.0	0.0		2*	Non-Delineated
Medina	68.6	B15-100	PFO	283.4	0.9	0.4	2	Delineated
Medina	69.2	A16-28	PSS	57.4	0.2	0.1	2	Delineated
Medina	69.4	A16-4	PEM	0.0	0.0		2	Delineated
Medina	69.5	C15-40	PEM	40.4	0.2		2	Delineated
Medina	69.8	C15-06-W2	PEM	68.2	0.2		2	Delineated
Medina	69.9	C15-06-W3	PFO	0.0	0.1	0.1	2	Delineated
Medina	70.0	C15-06-W4	PFO	0.0	0.0	0.0	2	Delineated
Medina	70.0	C15-6	PFO	83.2	0.2	0.1	2	Delineated
Medina	70.4	B15-27	PEM	842.0	2.4		2	Delineated
Medina	70.5	B15-27	AG-PEM	0.0	0.0		2	Delineated
Medina	70.6	C15-42	AG-PEM	1029.9	3.4		2	Delineated
Medina	71.2	C15-44 c	PFO	1009.5	1.2	1.2	3	Delineated
Medina	71.6	A15-73	PEM	0.6	0.0		2	Delineated
Medina	72.3	C15-50	PFO	498.4	1.4	0.6	2	Delineated
Medina	72.5	A14-48	PFO	344.3	1.0	0.4	2	Delineated
Medina	72.7	A16-29	PEM	23.9	0.0		1	Delineated
Medina	72.8	B15-120	PSS	0.0	0.0		1	Delineated
Medina	72.8	B15-120	PFO	10.4	0.0	0.0	1	Delineated
Medina	72.8	B15-120	PEM	0.0	0.0		1	Delineated
Medina	73.3	C15-24-W8	PSS	291.1	0.8	0.3	2	Delineated
Medina	73.3	C15-24-W8	PFO	0.0	0.1	0.0	2	Delineated
Medina	73.3	C15-24-W7	PSS	19.5	0.1	0.0	2	Delineated
Medina	73.3	C15-24-W7	PFO	69.1	0.2	0.1	2	Delineated
Medina	73.4	C15-24-W10	PEM	19.9	0.1		1	Delineated
Medina	73.9	AWB-ME-58	PEMPSS	51.8	0.1		2	Non-Delineated
Medina	73.9	C15-54	PFO	24.7	0.1	0.0	1	Delineated
Medina	74.0	B15-84	PEM	12.6	0.0		2	Delineated
Medina	74.0	B14-8	PEM	0.0	0.0		1	Delineated
Medina	74.7	C15-109	PEM	0.0	0.0		2	Delineated
Medina	74.8	C15-111	PEM	9.3	0.2		1	Delineated
Medina	75.0	A16-5	PEM	16.8	0.1		1	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Medina	75.8	B15-74	PFO	62.1	0.2	0.1	2	Delineated
Medina	76.3	B15-74	PEM	110.8	0.3		2	Delineated
Medina	76.9	A15-76	PEM	43.5	0.1		1	Delineated
Medina	77.4	A15-74	AG-PEM	0.0	0.0		2	Delineated
Medina	77.4	A15-74	PEM	233.3	0.6		2	Delineated
Medina	77.7	A15-75	AG-PEM	10.2	0.1		2	Delineated
Medina	77.8	A15-75	PFO	26.8	0.1	0.0	2	Delineated
Medina	77.8	A15-75	PEM	49.5	0.2		2	Delineated
Medina	78.0	AWB-ME-90	PEM	20.8	0.1		1	Non-Delineated
Medina	80.3	AWB-LO-1	PFO	44.1	0.1	0.0	2	Non-Delineated
Medina	80.4	B15-15	PFO	172.4	0.9	0.4	2	Delineated
Medina	80.4	B15-15	PEM	94.4	0.5		2	Delineated
Medina	80.5	B15-15	PSS	132.3	0.3	0.1	2	Delineated
Lorain	81.0	C15-82	PEM	33.2	0.1		1	Delineated
Lorain	81.5	A15-55	PEM	138.1	0.3		1	Delineated
Lorain	81.6	A15-29	PEM	0.0	0.0		1	Delineated
Lorain	82.0	A14-59	AG-PEM	0.0	0.1		2	Delineated
Lorain	82.0	A14-59	PFO	0.0	0.0	0.0	2	Delineated
Lorain	82.0	A14-59	PEM	0.0	0.0		2	Delineated
Lorain	82.6	C15-83	PEM	10.0	0.0		1	Delineated
Lorain	82.6	A14-62	AG-PEM	0.0	0.0		2	Delineated
Lorain	82.7	A14-62	PEM	163.5	0.4		2	Delineated
Lorain	82.8	A14-63	AG-PEM	0.0	0.1		2	Delineated
Lorain	82.9	A14-63	PFO	555.9	1.6	0.7	2	Delineated
Lorain	83.4	C15-4	PEM	57.9	0.2		1	Delineated
Lorain	83.4	C15-2	PFO	69.3	0.2	0.1	2	Delineated
Lorain	83.5	C15-1	PFO	4.6	0.0	0.0	2	Delineated
Lorain	83.5	A14-68	PFO	219.7	0.6	0.3	2	Delineated
Lorain	83.5	A14-68	PEM	0.0	0.0		2	Delineated
Lorain	83.7	A14-67	PEM	110.0	0.3		2	Delineated
Lorain	83.8	A14-67	PFO	754.6	2.1	0.8	2	Delineated
Lorain	84.3	A14-69	PEM	0.0	0.0		2	Delineated
Lorain	84.4	A14-69	PFO	41.8	0.1	0.0	2	Delineated
Lorain	84.5	A15-30	PEM	12.4	0.0		1	Delineated
Lorain	84.5	B15-25	PEM	0.0	0.0		2	Delineated
Lorain	84.5	B15-25	PFO	66.3	0.1	0.0	2	Delineated
Lorain	84.8	B15-90	AG-PEM	0.0	0.0		1	Delineated
Lorain	84.9	A15-51	AG-PEM	54.2	0.2		1	Delineated
Lorain	85.0	A14-71	AG-PEM	0.0	0.0		2	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Lorain	85.1	A14-71	PFO	526.5	1.2	0.6	2	Delineated
Lorain	85.2	A14-71	PEM	0.0	0.1		2	Delineated
Lorain	85.8	A15-56	PFO	94.4	0.3	0.1	2	Delineated
Lorain	86.5	C15-94	AG-PEM	0.0	0.0		2	Delineated
Lorain	86.6	A14-51	AG-PEM	26.2	0.0		2	Delineated
Lorain	86.6	A14-51	PEM	6.9	0.0		2	Delineated
Lorain	86.6	A14-51	PSS	81.4	0.1	0.1	2	Delineated
Lorain	86.6	A14-51	PFO	215.3	0.2	0.2	2	Delineated
Lorain	86.8	A14-52	PEM	284.7	0.3		2	Delineated
Lorain	86.9	A14-52	AG-PEM	58.1	0.1		2	Delineated
Lorain	87.7	B15-95	PFO	374.1	1.0	0.5	2	Delineated
Lorain	87.8	B15-95	PEM	340.7	1.0		2	Delineated
Lorain	88.1	B15-96	PEM	179.6	0.7		1	Delineated
Lorain	88.5	A14-73	PEM	0.0	0.1		2	Delineated
Lorain	88.7	A14-73	PFO	357.8	1.0	0.5	2	Delineated
Lorain	90.0	A14-76	PEM	0.0	0.0		2	Delineated
Lorain	91.3	A16-3	PFO	78.8	0.3	0.1	2	Delineated
Lorain	91.3	A16-3	AG-PEM	272.0	1.1		2	Delineated
Lorain	91.4	C15-37	PEM	0.0	0.0		2	Delineated
Lorain	91.4	C15-37	PSS	26.4	0.1	0.0	2	Delineated
Lorain	91.7	C15-36	PEM	0.0	0.0		1	Delineated
Lorain	92.6	C15-9	PEM	112.9	0.3		2	Delineated
Lorain	92.6	C15-9	PFO	0.0	0.1	0.0	2	Delineated
Lorain	93.9	A14-78	AG-PEM	0.0	0.2		1	Delineated
Lorain	94.2	A14-178	PEM	0.0	0.0		2	Delineated
Lorain	94.2	A14-178	PSS	280.1	0.7	0.3	2	Delineated
Lorain	94.7	B15-57	PEM	0.0	0.0		1	Delineated
Lorain	94.7	B15-57	AG-PEM	185.5	0.7		1	Delineated
Lorain	95.1	A14-179	PEM	0.0	0.0		1	Delineated
Lorain	95.1	A14-179	PSS	0.0	0.1	0.0	1	Delineated
Lorain	95.4	A14-181	PEM	38.4	0.1		2	Delineated
Lorain	95.4	A14-181	AG-PEM	74.1	0.3		2	Delineated
Lorain	95.7	A14-182	PEM	493.8	1.4		2	Delineated
Lorain	96.1	A14-141	AG-PEM	27.6	0.1		2	Delineated
Lorain	96.1	A14-141	PFO	9.5	0.1	0.0	2	Delineated
Lorain	96.1	A14-141	PEM	162.1	0.5		2	Delineated
Lorain	96.3	C15-58	PFO	483.5	1.4	0.6	2	Delineated
Lorain	96.3	C15-58	PEM	43.9	0.3		2	Delineated
Lorain	96.8	A15-38	PSS	0.0	0.0		2	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Lorain	96.8	A15-38	PEM	48.9	0.1		2	Delineated
Lorain	96.8	A15-38	AG-PEM	64.9	0.1		2	Delineated
Lorain	96.9	A15-39	AG-PEM	0.0	0.1		1	Delineated
Lorain	97.3	C15-57	PSS	24.9	0.1	0.0	1	Delineated
Lorain	98.4	C15-61	PEM	19.5	0.1		1	Delineated
Lorain	98.9	A15-85	PSS	0.0	0.0		2	Delineated
Lorain	98.9	A15-85	PEM	0.0	0.0		2	Delineated
Lorain	100.2	C15-63	AG-PEM	125.1	0.4		1	Delineated
Lorain	100.3	C15-99	AG-PEM	101.2	0.2		2	Delineated
Lorain	100.4	C15-99	PEM	11.0	0.0		2	Delineated
Lorain	100.5	C15-99	PFO	6.2	0.1	0.0	2	Delineated
Lorain	100.6	B15-105	PFO	87.9	0.3	0.1	2	Delineated
Lorain	100.9	B15-99	PSS	1029.3	3.0	1.2	2	Delineated
Huron	102.3	A15-57	PEM	6.8	0.0		2	Delineated
Huron	102.3	A15-57	PSS	0.0	0.0		2	Delineated
Huron	104.3	C15-56-W1c	PFO	545.6	0.6	0.6	3	Delineated
Huron	104.5	C15-56-W2c	PEM	124.9	0.1		3	Delineated
Huron	104.5	C15-56-W2c	PFO	298.7	0.3	0.3	3	Delineated
Erie	105.9	C15-70	PEM	217.9	0.6		2	Delineated
Erie	105.9	C15-69	PSS	0.0	0.0		2	Delineated
Erie	106.5	C15-10	PFO	1384.1	3.8	1.5	2	Delineated
Erie	106.8	C15-10	PEM	0.0	0.2		2	Delineated
Erie	109.4	AWB-ER-43	PFO	164.1	0.5	0.2	2	Non-Delineated
Erie	109.8	B15-05	PEM	23.7	0.1		2	Delineated
Erie	109.8	B15-05	PFO	14.5	0.0	0.0	2	Delineated
Erie	110.3	B15-115	PEM	24.9	0.0		1	Delineated
Erie	111.0	C15-12	AG-PEM	0.0	0.0		1	Delineated
Erie	111.4	A14-111	PEM	0.0	0.1		1	Delineated
Erie	111.4	B15-60	PEM	2.4	0.0		1	Delineated
Erie	111.7	B15-38	PFO	21.3	0.1	0.0	2	Delineated
Erie	111.7	B15-39	PEM	29.8	0.1		2	Delineated
Erie	112.8	A14-154	AG-PEM	113.3	0.1		1	Delineated
Erie	112.8	A14-154	PEM	43.7	0.0		1	Delineated
Erie	113.0	AWB-ER-35	PFO	4.2	0.0	0.0	2	Non-Delineated
Erie	113.2	A14-187	PEM	14.2	0.1		2	Delineated
Erie	113.2	A14-188	PFO	162.3	0.4	0.2	2	Delineated
Erie	113.3	A14-188	PEM	0.0	0.3		2	Delineated
Erie	113.3	A14-188	PSS	176.4	0.4	0.1	2	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Erie	113.9	AWB-ER-12	PFO	238.6	0.7	0.3	2	Non-Delineated
Erie	114.3	B15-07	PSS	8.7	0.1	0.0	2	Delineated
Erie	114.3	B15-07	PEM	60.9	0.2		2	Delineated
Erie	114.5	B15-08	PEM	101.7	0.2		1	Delineated
Erie	115.4	C15-14	PFO	33.5	0.1	0.1	2	Delineated
Erie	115.4	C15-14	PEM	39.8	0.1		2	Delineated
Erie	116.1	B15-10	PEM	0.0	0.0		2	Delineated
Erie	116.2	C15-16	PEM	0.0	0.0		1	Delineated
Erie	116.5	A14-156	PEM	55.3	0.1		2	Delineated
Erie	116.5	A14-156	PFO	47.3	0.2	0.1	2	Delineated
Erie	118.2	C15-19	PEM	383.5	1.1		2	Delineated
Erie	120.4	C15-22	PEM	0.0	0.0		2	Delineated
Erie	120.4	C15-22-W2	PEM	13.1	0.0		2	Delineated
Erie	120.5	C15-73	PSS	5.1	0.0	0.0	2	Delineated
Erie	120.5	C15-73	PEM	7.9	0.0		2	Delineated
Erie	120.5	C15-75	PSS	0.0	0.0		1	Delineated
Erie	120.5	C15-75	PEM	9.9	0.0		1	Delineated
Erie	120.5	C15-76	PEM	7.0	0.0		1	Delineated
Erie	120.9	B15-12	PEM	12.8	0.0		1	Delineated
Erie	123.6	C15-80	PEM	36.6	0.1		1	Delineated
Sandusky	133.3	B15-14	PEM	7.3	0.0		1	Delineated
Sandusky	137.3	D15-105	AG-PEM	9.5	0.0		1	Delineated
Sandusky	138.4	E14-163	PFO	317.3	0.8	0.4	2	Delineated
Sandusky	138.6	D14-9	PSS	254.8	0.7	0.3	2	Delineated
Sandusky	139.1	D14-10	PEM	23.3	0.1		2	Delineated
Sandusky	139.3	D15-71	PEM	11.1	0.0		1	Delineated
Sandusky	139.8	D15-69	PSS	58.7	0.2	0.1	1	Delineated
Sandusky	139.9	D14-8	PFO	0.0	0.1	0.1	2	Delineated
Sandusky	139.9	D14-8	PEM	0.0	0.0		2	Delineated
Sandusky	141.6	D15-32	PEM	206.4	0.5		1	Delineated
Sandusky	146.0	D15-103	PSS	427.0	0.5	0.5	2	Delineated
Sandusky	146.2	A16-8	PEM	7.4	0.0		1	Delineated
Sandusky	146.4	D15-104	PEM	178.0	0.6		1	Delineated
Sandusky	146.4	D15-104	PFO	41.7	0.1	0.0	1	Delineated
Sandusky	147.2	B16-9	PEM	14.0	0.0		1	Delineated
Sandusky	151.1	D14-37	PEM	7.9	0.0		2	Delineated
Sandusky	151.3	D15-59	PSS	45.7	0.1	0.0	2	Delineated
Sandusky	151.3	D15-58	PSS	22.4	0.1	0.0	2	Delineated
Sandusky	152.2	E14-73	PEM	0.0	0.0		2	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Sandusky	152.3	E14-73	PFO	143.8	0.4	0.2	2	Delineated
Sandusky	153.4	E14-43	PFO	34.5	0.1	0.0	2	Delineated
Sandusky	154.9	E14-110	PSS	42.8	0.1	0.0	2	Delineated
Sandusky	155.6	D15-89	PSS	0.0	0.1	0.0	2	Delineated
Sandusky	156.3	D15-70	PFO	163.0	0.5	0.2	2	Delineated
Sandusky	157.4	D14-41	PFO	881.8	2.5	1.0	2	Delineated
Sandusky	157.9	E14-122	PEM	0.0	0.0		2	Delineated
Sandusky	157.9	E14-122	PFO	259.5	0.7	0.3	2	Delineated
Sandusky	158.1	E14-123	PEM	0.0	0.0		2	Delineated
Sandusky	158.1	E14-123	PFO	197.3	0.6	0.2	2	Delineated
Sandusky	158.2	D14-42	PEM	0.0	0.0		2	Delineated
Sandusky	158.2	D14-42	PSS	221.7	0.6	0.2	2	Delineated
Sandusky	158.6	D14-25	PEM	15.8	0.1		2	Delineated
Sandusky	158.6	D14-25	PFO	73.3	0.2	0.1	2	Delineated
Sandusky	159.9	D14-49	PFO	319.3	0.8	0.3	2	Delineated
Sandusky	160.1	D14-48	PEM	0.0	0.3		1	Delineated
Sandusky	163.0	E14-33	PFO	700.3	2.0	0.8	2	Delineated
Sandusky	163.0	E14-33	PEM	13.8	0.1		2	Delineated
Sandusky	163.1	D15-75	PEM	0.0	0.0		1	Delineated
Sandusky	163.4	E14-34	PFO	622.8	1.8	0.8	2	Delineated
Sandusky	163.7	D14-38	PEM	5.3	0.0		1	Delineated
Wood	164.8	D14-31	PFO	351.6	1.0	0.4	2	Delineated
Wood	165.1	D15-88	PEM	0.0	0.0		1	Delineated
Wood	165.5	D15-73	PEM	8.3	0.0		1	Delineated
Wood	165.7	E14-84	AG-PEM	0.0	0.1		2	Delineated
Wood	165.7	E14-84	PFO	349.6	0.9	0.3	2	Delineated
Wood	165.8	E14-84	PEM	33.2	0.1		2	Delineated
Wood	166.2	E14-154	PFO	659.7	1.9	0.7	2	Delineated
Wood	166.6	E14-152	PFO	906.8	2.6	1.0	2	Delineated
Wood	166.7	E14-152	PEM	10.7	0.0		2	Delineated
Wood	166.7	E14-152	AG-PEM	230.6	0.8		2	Delineated
Wood	166.8	D15-62A	PEM	14.9	0.0		1	Delineated
Wood	168.7	D14-39	AG-PEM	0.0	0.0		1	Delineated
Wood	170.0	E14-52	PEM	0.0	0.3		2	Delineated
Wood	170.1	E14-52	PFO	490.6	1.2	0.6	2	Delineated
Wood	170.9	E14-41	AG-PEM	0.0	0.1		1	Delineated
Wood	172.6	D15-72	PEM	8.6	0.0		1	Delineated
Wood	173.8	E15-6	PFO	133.8	0.4	0.2	2	Delineated
Wood	173.9	E15-6	PEM	140.6	0.5		2	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Wood	180.7	E14-46	PFO	123.1	0.3	0.1	2	Delineated
Wood	181.3	D15-107	AG-PEM	166.2	0.4		1	Delineated
Lucas	181.8	D15-48	AG-PEM	29.4	0.0		1	Delineated
Lucas	183.3	A16-10	PEM	29.0	0.0		1	Delineated
Lucas	187.9	E15-10	AG-PEM	0.0	0.0		1	Delineated
Lucas	188.5	D15-2	AG-PEM	0.0	0.1		1	Delineated
Lucas	189.0	D15-3	AG-PEM	0.0	0.0		2	Delineated
Lucas	189.1	D15-4	PFO	336.6	0.8	0.4	2	Delineated
Lucas	189.1	D15-4	AG-PEM	27.2	0.0		2	Delineated
Lucas	189.2	D15-5	PEM	327.2	1.0		1	Delineated
Henry	189.3	E15-27	PEM	118.4	0.3		1	Delineated
Henry	189.4	E15-27	AG-PEM	129.7	0.5		1	Delineated
Henry	189.4	E15-28	AG-PEM	78.1	0.2		1	Delineated
Henry	189.5	E15-30	AG-PEM	0.0	0.0		1	Delineated
Henry	189.6	D15-57	PFO	0.0	0.0		2	Delineated
Henry	189.7	A16-31	PFO	0.0	0.0		2	Delineated
Henry	190.0	D15-7	PFO	71.5	0.2	0.1	2	Delineated
Henry	190.1	D15-7	PEM	766.9	2.4		2	Delineated
Fulton	191.5	D15-14	AG-PEM	86.7	0.2		1	Delineated
Fulton	191.6	D15-15	AG-PEM	106.8	0.4		1	Delineated
Fulton	193.3	D15-94	PFO	132.4	0.4	0.1	2	Delineated
Fulton	193.3	D15-94	PEM	0.0	0.0		2	Delineated
Fulton	193.4	D15-95	PFO	131.4	0.3	0.1	2	Delineated
Fulton	193.7	D15-96	PFO	0.0	0.0	0.0	2	Delineated
Fulton	193.7	D15-96/D15-97	PFO	7.4	0.1	0.0	2	Delineated
Fulton	193.7	D15-97	PEM	5.6	0.3		2	Delineated
Fulton	194.8	E15-38	AG-PEM	0.0	0.0		1	Delineated
Fulton	196.6	D15-18	AG-PEM	135.8	0.5		2	Delineated
Fulton	196.7	D15-19	AG-PEM	0.0	0.1		2	Delineated
Fulton	196.7	D15-19	PFO	0.0	0.0		2	Delineated
Fulton	196.7	D15-19	AG-PEM	41.9	0.1		2	Delineated
Fulton	197.8	D15-85	PFO	9.5	0.0	0.0	1	Delineated
Fulton	197.8	D15-85	PEM	0.0	0.0		1	Delineated
Fulton	198.9	D15-11	AG-PEM	149.5	0.5		1	Delineated
Fulton	199.0	D15-12	AG-PEM	133.1	0.3		1	Delineated
Fulton	201.9	E15-16	AG-PEM	0.0	0.1		1	Delineated
Fulton	202.0	E15-18	AG-PEM	0.0	0.1		1	Delineated
Fulton	202.1	E15-17	AG-PEM	69.1	0.2		1	Delineated
Fulton	207.4	E14-13	AG-PEM	0.0	0.1		1	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Michigan								
Lenawee	215.2	D15-100	PFO	162.7	0.2	0.2	N/A	Delineated
Lenawee	223.4	E14-170	PFO	21.4	0.1	0.0	N/A	Delineated
Lenawee	224.9	D15-114	AG-PEM	143.6	0.4		N/A	Delineated
Monroe	230.5	E14-62	PSS	24.5	0.1	0.0	N/A	Delineated
Monroe	236.0	D15-128	PEM	21.7	0.1		N/A	Delineated
Washtenaw	237.2	D15-121	AG-PEM	149.3	0.4		N/A	Delineated
Washtenaw	238.0	E14-158	PFO	0.0	0.0		N/A	Delineated
Washtenaw	239.6	AWB-WA-205	PEM	13.1	0.0		N/A	Non-Delineated
Washtenaw	244.2	E14-135	PFO	605.3	1.7	0.7	N/A	Delineated
Washtenaw	244.6	E15-11	PFO	570.0	1.6	0.7	N/A	Delineated
Washtenaw	244.6	E15-11	AG-PEM	0.0	0.1		N/A	Delineated
Washtenaw	245.0	E15-12	AG-PEM	0.0	0.1		N/A	Delineated
Washtenaw	245.2	E14-167	PEM	14.9	0.1		N/A	Delineated
Washtenaw	246.3	E14-164	PEM	98.0	0.3		N/A	Delineated
Washtenaw	246.3	AWB-WA-6	PEM	36.5	0.1		N/A	Non-Delineated
Washtenaw	248.9	E14-180	PFO	19.8	0.1	0.0	N/A	Delineated
Washtenaw	249.1	D15-39	PEM	100.3	0.2		N/A	Delineated
Washtenaw	249.3	E14-155	PFO	631.5	1.8	0.7	N/A	Delineated
Washtenaw	249.4	E14-156	PEM	237.9	0.6		N/A	Delineated
Washtenaw	249.8	E14-168	PEM	696.5	2.0		N/A	Delineated
Washtenaw	250.4	D15-78	PFO	195.4	0.6	0.2	N/A	Delineated
Washtenaw	250.6	D15-79	PFO	0.0	0.0	0.0	N/A	Delineated
Washtenaw	250.9	D15-80	PSS	20.2	0.1	0.1	N/A	Delineated
Washtenaw	251.0	D15-20	PEM	115.6	0.1		N/A	Delineated
Washtenaw	251.0	D15-22	PEM	198.2	0.2		N/A	Delineated
Washtenaw	251.2	D15-23	PFO	184.4	0.5	0.2	N/A	Delineated
Washtenaw	254.3	D16-04	PSS	65.3	0.1	0.1	N/A	Delineated
Washtenaw	254.5	D15-77	PFO	756.4	2.2	0.8	N/A	Delineated
Washtenaw	254.6	D15-77	PSS	738.9	2.1	0.9	N/A	Delineated
Washtenaw	254.9	D15-44	PFO	132.0	0.3	0.1	N/A	Delineated
Ohio Subtotal					**157.2**	**36.4**		
Michigan Subtotal					**16.2**	**4.7**		
Mainline Subtotal					**173.4**	**41.1**		
TGP Interconnect								
Ohio								
Columbiana	0.7	B15-17	PEM	20.8	0.1		2	Delineated
Ohio Subtotal					**0.1**	**0.0**		
Michigan Subtotal					**0.0**	**0.0**		

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
TGP Interconnect Subtotal					**0.1**	**0.0**		
ATWS								
Ohio								
Columbiana	2.1	A14-5	AG-PEM	0.0	0.9		2	Delineated
Columbiana	2.1	A14-5	PEM	0.0	0.2		2	Delineated
Columbiana	4.8	A14-9	AG-PEM	0.0	0.0		1	Delineated
Columbiana	4.9	A14-10	PFO	0.0	0.0		2	Delineated
Columbiana	4.9	A14-10	PEM	0.0	0.2		2	Delineated
Columbiana	5.0	A14-10	PSS	0.0	0.4		2	Delineated
Columbiana	6.4	C15-118	PEM	0.0	0.0		2	Delineated
Columbiana	11.2	A15-34	PEM	0.8	0.8			Delineated
Columbiana	11.3	A15-31	PEM	0.0	0.1		1	Delineated
Stark	13.3	B15-64	PEM	0.0	0.0		2	Delineated
Stark	14.8	A14-20	AG-PEM	0.0	0.1		1	Delineated
Stark	15.1	A14-21	AG-PEM	0.0	0.1		2	Delineated
Stark	15.6	A15-64	AG-PEM	0.0	0.0		1	Delineated
Stark	16.4	B15-119	AG-PEM	0.0	0.0		2	Delineated
Stark	17.3	A14-107	AG-PEM	0.0	0.1		1	Delineated
Stark	19.0	C15-85	AG-PEM	0.0	0.1		1	Delineated
Stark	22.3	B15-40	PEM	0.0	0.2		1	Delineated
Stark	28.0	A14-34	PEM	0.0	1.2		2	Delineated
Stark	28.8	A14-168	AG-PEM	0.0	0.1		2	Delineated
Stark	32.1	A14-164	AG-PEM	0.0	0.2		2	Delineated
Stark	33.8	B15-73	PFO	0.0	0.1		2	Delineated
Stark	34.0	C15-103	AG-PEM	0.0	0.1		1	Delineated
Summit	34.3	A15-71	PEM	0.0	0.6		2	Delineated
Summit	34.4	A15-71	PSS	0.0	1.2		2	Delineated
Summit	34.5	AWB-SU-213	PFO	0.0	0.1		2*	Non-Delineated
Summit	34.6	A15-71	PSS	0.0	0.5		2	Delineated
Summit	34.6	A15-71	PEM	0.0	0.1		2	Delineated
Summit	35.6	AWB-SU-4	PFO	0.0	0.1		2*	Non-Delineated
Summit	36.2	C15-104	PFO	0.0	0.1		2	Delineated
Summit	36.2	C15-104	PEM	0.0	0.0		2	Delineated
Summit	36.4	B15-125/C15-104	PFO	0.0	0.0		2	Delineated
Summit	36.4	B15-125/C15-104	PSS	0.0	0.1		2	Delineated
Summit	36.7	C15-106	PSS	0.0	0.1		2	Delineated
Summit	36.7	C15-106	PEM	0.0	0.1		2	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Summit	39.8	A14-112	PSS	0.0	0.5		2	Delineated
Summit	40.6	A16-1	PEM	0.0	0.3		2	Delineated
Summit	44.2	C15-102	PEM	0.0	0.0		2	Delineated
Summit	45.4	B14-1	PEM	0.0	0.5		2	Delineated
Summit	49.3	AWB-SU-43	PSS	0.0	0.0		2*	Non-Delineated
Summit	49.4	AWB-SU-43	PEM	0.0	0.3		2*	Non-Delineated
Summit	49.9	A14-41	PEM	0.0	0.0		2	Delineated
Wayne	51.2	A15-23	AG-PEM	0.0	0.0		1	Delineated
Wayne	51.6	A15-21	PFO	0.0	0.0		2	Delineated
Wayne	52.6	A14-124	PSS	0.0	0.0		2	Delineated
Wayne	52.6	A14-124	PEM	0.0	0.1		2	Delineated
Wayne	55.7	B15-48	PEM	0.0	0.1		1	Delineated
Wayne	57.3	B15-50	PEM	0.0	0.5		1	Delineated
Wayne	57.7	B15-52	AG-PEM	0.0	0.1		1	Delineated
Medina	58.9	C15-91	AG-PEM	0.0	0.0		1	Delineated
Medina	60.8	A14-40	PFO	0.0	0.0		2	Delineated
Medina	62.7	B15-70	PEM	0.0	0.1		2	Delineated
Medina	65.3	A14-116	PFO	0.0	0.0		2	Delineated
Medina	67.7	AWB-ME-31	PEMPSS	0.0	0.1		2*	Non-Delineated
Medina	69.2	A16-28	PSS	0.0	0.1		2	Delineated
Medina	69.4	A16-4	PEM	0.0	0.0		2	Delineated
Medina	70.3	B15-27	PEM	0.0	0.0		2	Delineated
Medina	70.5	B15-27	AG-PEM	0.0	0.0		2	Delineated
Medina	70.8	C15-42	AG-PEM	0.0	0.8		2	Delineated
Medina	72.5	A14-48	PEM	0.0	0.0		2	Delineated
Medina	72.5	A14-48	PFO	0.0	0.4		2	Delineated
Medina	73.2	C15-24-W9	PEM	0.0	0.0		2	Delineated
Medina	73.3	C15-24-W8	PSS	0.0	0.1		2	Delineated
Medina	73.3	C15-24-W8	PFO	0.0	0.0		2	Delineated
Medina	73.3	C15-24-W7	PFO	0.0	0.0		2	Delineated
Medina	74.9	C15-111	PEM	0.0	0.0		1	Delineated
Medina	75.0	A16-5	PEM	0.0	0.1		1	Delineated
Medina	76.3	B15-74	PEM	0.0	0.1		2	Delineated
Medina	77.0	A15-76	PEM	0.0	0.0		1	Delineated
Medina	77.7	A15-75	AG-PEM	0.0	0.0		2	Delineated
Medina	77.8	A15-75	PFO	0.0	0.0		2	Delineated
Medina	77.8	A15-75	PEM	0.0	0.0		2	Delineated
Lorain	82.0	A14-59	AG-PEM	0.0	0.0		2	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Lorain	82.8	A14-63	PFO	0.0	0.3		2	Delineated
Lorain	83.4	C15-2	PFO	0.0	0.0		2	Delineated
Lorain	83.5	C15-1	PFO	0.0	0.0		2	Delineated
Lorain	83.5	A14-68	PFO	0.0	0.1		2	Delineated
Lorain	83.7	A14-67	PEM	0.0	0.0		2	Delineated
Lorain	84.8	B15-90	AG-PEM	0.0	0.1		1	Delineated
Lorain	85.0	A15-51	AG-PEM	0.0	0.0		1	Delineated
Lorain	87.0	A14-52	PFO	0.0	0.1		2	Delineated
Lorain	87.8	B15-95	PFO	0.0	0.0		2	Delineated
Lorain	87.8	B15-95	PEM	0.0	0.6		2	Delineated
Lorain	91.3	A16-3	PFO	0.0	0.0		2	Delineated
Lorain	91.2	A16-3	AG-PEM	0.0	0.3		2	Delineated
Lorain	96.3	C15-58	PFO	0.0	0.1		2	Delineated
Lorain	96.3	C15-58	PEM	0.0	0.0		2	Delineated
Lorain	96.7	A15-38	PEM	0.0	0.1		2	Delineated
Lorain	96.8	A15-38	PSS	0.0	0.0		2	Delineated
Lorain	96.8	A15-38	AG-PEM	0.0	0.2		2	Delineated
Lorain	100.2	C15-63	AG-PEM	0.0	0.0		1	Delineated
Lorain	100.3	C15-99	AG-PEM	0.0	0.0		2	Delineated
Lorain	100.6	B15-105	PFO	0.0	0.1		2	Delineated
Erie	105.9	C15-70	PEM	0.0	0.6		2	Delineated
Erie	111.4	B15-60	PEM	0.0	0.0		1	Delineated
Erie	116.5	A14-156	PFO	0.0	0.1		2	Delineated
Erie	116.5	A14-156	PEM	0.0	0.0		2	Delineated
Erie	120.4	C15-22-W2	PEM	0.0	0.0		2	Delineated
Sandusky	137.3	D15-105	AG-PEM	0.0	0.0		1	Delineated
Sandusky	137.5	D15-109	AG-PEM	0.0	0.0		1	Delineated
Sandusky	138.6	D14-9	PSS	0.0	0.3		2	Delineated
Sandusky	139.3	D15-71	PEM	0.0	0.0		1	Delineated
Sandusky	141.6	D15-32	PEM	0.0	0.1		1	Delineated
Sandusky	145.5	A16-7	AG-PEM	0.0	0.2		1	Delineated
Sandusky	146.5	D15-104	PEM	0.0	1.1		1	Delineated
Sandusky	157.6	D14-41	PFO	0.0	0.1		2	Delineated
Sandusky	158.1	E14-123	PFO	0.0	0.3		2	Delineated
Sandusky	158.2	D14-42	PSS	0.0	0.5		2	Delineated
Sandusky	158.6	D14-25	PEM	0.0	0.1		2	Delineated
Wood	166.7	E14-152	PEM	0.0	0.1		2	Delineated
Wood	166.7	E14-152	AG-PEM	0.0	0.2		2	Delineated
Wood	170.9	E14-41	AG-PEM	0.0	0.1		1	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Wood	181.3	D15-107	AG-PEM	0.0	0.0		1	Delineated
Lucas	187.9	E15-10	AG-PEM	0.0	0.2		1	Delineated
Lucas	189.0	D15-3	AG-PEM	0.0	0.1		2	Delineated
Henry	189.3	E15-27	PEM	0.0	0.1		1	Delineated
Henry	189.4	E15-27	AG-PEM	0.0	0.1		1	Delineated
Henry	189.5	E15-30	AG-PEM	0.0	0.0		1	Delineated
Henry	190.2	D15-7	PEM	0.0	1.2		2	Delineated
Fulton	191.6	D15-15	AG-PEM	0.0	0.1		1	Delineated
Fulton	194.8	E15-38	AG-PEM	0.0	0.0		1	Delineated
Fulton	196.6	D15-18	AG-PEM	0.0	0.1		2	Delineated
Fulton	198.9	D15-11	AG-PEM	0.0	0.0		1	Delineated
Fulton	201.9	E15-16	AG-PEM	0.0	0.0		1	Delineated
Fulton	202.1	E15-17	AG-PEM	0.0	0.1		1	Delineated
Michigan								
Lenawee	215.7	D15-123	AG-PEM	0.0	0.0		N/A	Delineated
Lenawee	224.9	D15-114	AG-PEM	0.0	0.1		N/A	Delineated
Washtenaw	237.2	D15-121	AG-PEM	0.0	0.0		N/A	Delineated
Washtenaw	244.7	E15-11	AG-PEM	0.0	0.1		N/A	Delineated
Washtenaw	244.7	E15-11	PFO	0.0	0.1		N/A	Delineated
Washtenaw	245.0	E15-12	AG-PEM	0.0	0.1		N/A	Delineated
Washtenaw	245.2	E14-167	PEM	0.0	0.1		N/A	Delineated
Washtenaw	246.3	AWB-WA-6	PEM	0.0	0.0		N/A	Non-Delineated
Washtenaw	254.5	D15-77	PFO	0.0	2.2		N/A	Delineated
Washtenaw	254.6	D15-77	PSS	0.0	0.7		N/A	Delineated
Washtenaw	254.9	D15-44	PFO	0.0	0.1		N/A	Delineated
Washtenaw	255.0	D15-41	PEM	0.0	0.1		N/A	Delineated
Washtenaw	255.0	D15-42	PEM	0.0	0.0		N/A	Delineated
Ohio Subtotal					**20.8**	**0.0**		
Michigan Subtotal					**3.7**	**0.0**		
ATWS Subtotal					**24.5**	**0.0**		
Access Roads								
Ohio								
Columbiana	7.3	A15-46	AG-PEM	0.0	0.0		1	Delineated
Stark	15.5	B15-109	PEM	0.0	0.0		1	Delineated
Stark	18.6	B15-36	AG-PEM	0.0	0.1		1	Delineated
Wayne	52.8	A14-124	PEM	0.0	0.0		2	Delineated
Medina	66.4	B15-81	AG-PEM	0.0	0.0		2	Delineated
Medina	75.9	A15-88	PEM	0.0	0.0		1	Delineated
Medina	76.2	A15-89	PFO	0.0	0.0		2	Delineated

Appendix I-1 (cont'd)

NGT Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
Medina	77.0	A15-76	PEM	0.0	0.0		1	Delineated
Lorain	95.7	A14-182	PEM	0.0	0.1		1	Delineated
Lorain	95.7	A14-109	PEM	0.0	0.0		1	Delineated
Erie	117.7	C15-20	PEM	0.0	0.0		1	Delineated
Wood	166.7	D15-119	AG-PEM	0.0	0.0		1	Delineated
Wood	181.3	D15-107	PEM	0.0	0.0		1	Delineated
Wood	181.3	D15-107	AG-PEM	0.0	0.0		1	Delineated
Michigan								
Washtenaw	250.4	D15-78	PFO	0.0	0.0		N/A	Delineated
Washtenaw	254.4	D15-77	PFO	0.0	0.1		N/A	Delineated
Ohio Subtotal					**0.4**	**0.0**		
Michigan Subtotal					**0.1**	**0.0**		
Access Road Subtotal					**0.5**	**0.0**		
Ohio Subtotals					**178.4**	**36.4**		
Michigan Subtotals					**20.1**	**4.7**		
Project Totals					**198.4**	**41.1**		

a Wetland classification according to Cowardin et al., (1979): PEM = Palustrine Emergent Wetland; AG-PEM = Agricultural Palustrine Emergent Wetland; PSS = Palustrine Scrub-Shrub Wetland; PFO = Palustrine Forested Wetland.

b Total operational impacts on PEM/PSS and PSS acreage may be less than reflected in the table due to maintenance limit to a 10-foot-wide corridor centered over the pipeline.

c Denotes feature will be crossed via HDD

APPENDIX I-2

TEAL PROJECT WETLAND IMPACTS

APPENDIX I-2

TEAL Project Wetland Impacts

State/County /Facility	Milepost	Wetland ID	Type [a, b]	Crossing Length (feet)	Construction (acres)	Operation (acres)	ORAM Category	Delineation Status
LOOPLINE								
Monroe	0.7	A15-24	PEM	34.3	0.1	0.0	N/A	Delineated
Monroe	0.7	A15-24	PEM	21.2	0.0	0.0	N/A	Delineated
Monroe	0.7	A15-24	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	1.2	A15-07	PSS	70.5	0.0	<0.1	N/A	Delineated
Monroe	1.2	A15-07	PSS	0.0	0.0	0.0	N/A	Delineated
Monroe	1.2	A15-07	PSS	0.0	0.0	0.0	N/A	Delineated
Monroe	1.2	A15-07	PFO	0.5	0.0	<0.1	N/A	Delineated
Monroe	1.2	A15-07	PFO	0.0	0.0	0.0	N/A	Delineated
Monroe	1.6	A15-08	PEM	33.7	0.0	0.0	N/A	Delineated
Monroe	1.6	A15-08	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	1.6	A15-08	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	1.7	A15-09	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	1.9	A15-10	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	2.2	A15-11	PEM	2.2	0.0	0.0	N/A	Delineated
Monroe	2.2	A15-11	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	2.4	A15-12	PEM	40.7	0.0	0.0	N/A	Delineated
Monroe	2.4	A15-12	PEM	35.4	0.0	0.0	N/A	Delineated
Monroe	2.4	A15-12	PEM	13.1	0.0	0.0	N/A	Delineated
Monroe	2.4	A15-12	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	2.4	A15-12	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	3.0	A15-15	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	4.1	B15-21	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	4.1	B15-21	PEM	0.0	0.1	0.0	N/A	Delineated
Monroe	4.2	A15-18	PEM	72.2	0.2	0.0	N/A	Delineated
Monroe	4.2	A15-18	PEM	110.7	0.1	0.0	N/A	Delineated
Monroe	4.2	A15-18	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	4.3	A15-19	PEM	178.1	0.2	0.0	N/A	Delineated
Monroe	4.3	A15-19	PEM	0.0	0.0	0.0	N/A	Delineated
Monroe	4.3	A15-19	PEM	0.0	0.0	0.0	N/A	Delineated
				Pipeline Loop Total	**1.0**	**0.1**		
ATWS ON LOOPLINE								
Monroe	1.2	A15-07	PFO	0.0	<0.1	0.0	N/A	Delineated
Monroe	1.2	A15-07	PFO	0.0	<0.1	0.0	N/A	Delineated
Monroe	1.7	A15-09	PEM	0.0	<0.1	0.0	N/A	Delineated
Monroe	4.0	B15-20	PEM	0.0	<0.1	0.0	N/A	Delineated
Monroe	4.2	A15-18	PEM	0.0	<0.1	0.0	N/A	Delineated
				ATWS Total	**<0.1**	**0.0**		
CONNECTING PIPELINE								
Monroe	N/A	B15-17	PEM	0.0	0.1	0.0	N/A	Delineated
Columbiana	N/A	B15-17	PEM	99.9	0.1	0.0	N/A	Delineated
Columbiana	N/A	B15-17	PEM	0.0	0.1	0.0	N/A	Delineated
				Connecting Pipeline Total	**0.3**	**0.0**		
				TEAL Project Total [c]	**1.3**	**0.1**		

a Wetland classification according to Cowardin et al., (1979): PEM = Palustrine Emergent Wetland; PSS = Palustrine Scrub-Shrub Wetland; PFO = Palustrine Forested Wetland.

b Total operational impacts on PSS acreage may be less than reflected in the table due to maintenance limit to a 10-foot-wide corridor centered over the pipeline

c No wetland impacts will occur within access roads, contractor ware yards, or non-pipeline aboveground facilities

APPENDIX J

PROTECTED SPECIES INFORMATION AND PLANS

J-1: STATE-LISTED SPECIES POTENTIALLY OCCURRING WITHIN OR NEAR THE NGT AND TEAL PROJECTS
J-2: BIOLOGICAL ASSESSMENT
J-3: MIGRATORY BIRD CONSERVATION PLAN

APPENDIX J-1

STATE-LISTED SPECIES TABLE

APPENDIX J-1

State-listed Species Potentially Occurring within or near the NGT and TEAL Projects

Species Name		Federal				
Common Name	Scientific Name	Status	State Status	County	Habitat	Impacts
Amphibians						
Blanchard's cricket frog	*Acris crepitans blanchardi*	Not listed	MI – Threatened	Washtenaw	Open edges of permanent ponds, lakes, floodings, bogs, seeps and slow-moving streams and rivers	No impacts – HDD crossing methods selected to avoid potential habitat
Blue-spotted salamander	*Ambystoma laterale*	Not listed	OH – Endangered	Henry and Lucas	Occurs in damp forested areas with sandy soils. Typically found burrowing under rotting logs.	No impacts – lack of potential habitat
Eastern hellbender	*Cryptobranchus alleganiensis alleganiensis*	Not listed	OH – Endangered	Summit	Habitat is limited to cool and very clean, dissolved-oxygen rich waters with gravel and bedrock substrate. Often occurrences are associated with Ohio River drainages	No Impacts – based on habitat assessments, there is no suitable habitat within Project
Avian						
American bittern	*Botaurus lentiginosus*	Not listed	OH – Endangered	Lucas, Sandusky, and Summit	Occurs in large and undisturbed wetlands with thick vegetative cover and areas with small sections of open water	May impact – the Project avoids potential habitat where practicable
Barn owl	*Tyto alba*	Not listed	OH – Endangered	Columbiana and Wayne	Utilizes hallow trees or man-made sheds, etc. for nesting but are found in areas of large open grasslands.	No impact – NGT would avoid removal of abandoned buildings
Black tern	*Childonias niger*	Not listed	OH – Endangered	Lucas, Erie, and Sandusky	Large, undisturbed inland marshes with fairly dense vegetation and pockets of open water. They nest in various kinds of marsh vegetation, but cattail marshes are generally favored	May impact – the Project avoids potential habitat where practicable
Common tern	*Sterna hirundo*	Not listed	OH – Endangered	Erie, Lorain, and Lucas	Limited to the shores or islands of Lake Erie	No impacts – HDD crossing methods selected to avoid potential habitat
Grasshopper sparrow	*Ammodramus savannarum*	Not listed	MI – Special Concern	Lenawee, Monroe, and Washtenaw	Habitat includes grasslands, cultivated fields, hayfields and old fields	May impact – the Project avoids potential habitat where practicable
Kirtland's warbler	*Setophaga kirtlandii*	Endangered	OH – Endangered	Lorain, Erie, Sandusky, and Lucas	Kirtland's warblers are known to migrate along the Lake Erie shoreline through Ohio in late April-May and late August-early October	No impacts – the Project is situated more than 3 miles from Lake Erie
King rail	*Rallus elegans*	Not listed	OH – Endangered	Lucas and Sandusky	Occurs in freshwater wetland habitats with dense confines of cattails and other marsh vegetation	May impact – the Project avoids potential habitat where practicable
Lark sparrow	*Chondestes grammacus*	Not listed	OH – Endangered	Fulton, Henry, and Lucas	Occupy open grass and shrubby fields along sandy beach ridges	No impacts – avoidance of open natural areas within Oak Openings Region

APPENDIX J-1 (cont'd)

State-listed Species Potentially Occurring within or near the NGT and TEAL Projects

Species Name		Federal				
Common Name	Scientific Name	Status	State Status	County	Habitat	Impacts
Avian (cont'd)						
Northern harrier	*Circus cyaneus*	Not listed	OH – Endangered	Wood	Inhabits large marshes and grasslands	May impact – the Project avoids potential habitat where practicable
Piping plover	*Charadrius melodus*	Endangered	OH – Endangered	Lorain, Erie, Sandusky, Lucas	Beaches along the shorelines of the Great Lakes	No impacts – the Project is situated more than 3 miles for Lake Erie
Sandhill crane	*Grus canadensis*	Not listed	OH – Endangered	Lorain	Dependent on wetland habitats, including large tracts of wet meadow, shallow marsh or bogs for breeding	May impact – the Project avoids potential habitat where practicable
Trumpeter swan	*Cygnus buccinators*	Not listed	OH – Threatened	Sandusky	Occurs in large marshes and lakes (typically 40 to 150 acres). Utilize shallow wetlands with a diverse mix of plenty of emergent vegetation and open water	May impact – the Project avoids potential habitat where practicable
Upland sandpiper	*Bartramia longicauda*	Not listed	OH – Endangered	Erie, Fulton, Lorain, Sandusky, Summit, and Wood	Native prairie and other dry grasslands, including airports and some croplands	May impact – the Project avoids potential habitat where practicable
Fish						
Bigmouth shiner	*Notropis dorsalis*	Not listed	OH – Threatened	Medina and Lorain	Lake Erie drainages; found in pools with sandy substrates	No impacts – stream crossing methods selected to avoid impacts
Channel darter	*Percina copelandi*	Not listed	OH – Threatened	Columbiana, Erie, and Lorain	Occur in large, coarse sand or fine gravel bars in large rivers or along lake shores	No impacts – stream crossing methods selected to avoid impacts
Greater redhorse	*Moxostoma valenciennesi*	Not listed	OH – Threatened	Fulton, Lucas, and Sandusky	Found in clean sand or gravel substrate of medium to large rivers within the Lake Erie drainage	No impacts – stream crossing methods selected to avoid impacts
Iowa darter	*Etheostoma exile*	Not listed	OH – Endangered	Stark and Summit	Found in natural lakes and very sluggish streams or marshes with dense aquatic vegetation and clear waters	No impacts – stream crossing methods selected to avoid impacts
Lake chubsucker	*Erimyzon sucetta*	Not listed	OH – Threatened	Wayne and Summit	Found in natural lakes and very sluggish streams or marshes with dense aquatic vegetation and clear waters	No impacts – stream crossing methods selected to avoid impacts
Lake sturgeon	*Acipenser fluvescens*	Not listed	OH – Endangered	Erie, Lorain, and Lucas	Found in larger rivers and lakes with mud and sand substrates	No impacts – stream crossing methods selected to avoid impacts

APPENDIX J-1 (cont'd)

State-listed Species Potentially Occurring within or near the NGT and TEAL Projects

Species Name		Federal				
Common Name	Scientific Name	Status	State Status	County	Habitat	Impacts
Fish (cont'd)						
Orangethroat darter	*Etheostoma spectabile*	Not listed	MI – Special Concern	Monroe and Washtenaw	Occurs in small creeks to medium-sized streams with substrates of sand or gravel and slow to moderately swift currents, where it is most often found among riffles	No impacts – stream crossing methods selected to avoid impacts
Pugnose minnow	*Opsopoeodus emiliae*	Not listed	OH – Endangered	Summit	Lake Erie in bays and marshes with extremely clear waters and profuse amounts of submerged aquatic vegetation	No impacts – stream crossing methods selected to avoid impacts
Spotted gar	*Lepisosteus oculatus*	Not listed	OH – Endangered	Erie, Lorain, Sandusky, and Lucas	Found in Lake Erie	No impacts – the Project is situated more than 3 miles for Lake Erie
Western banded killfish	*Fundulus diaphanous menona*	Not listed	OH – Endangered	Sandusky and Wood	Occurs in areas with an abundance of rooted aquatic vegetation, clear waters, and substrates of clean sand or organic debris free of silt	No impacts – stream crossing methods selected to avoid impacts
Insects						
Canada darner	*Aeshna canadensis*	Not listed	OH – Threatened	Lucas	Inhabits both terrestrial and freshwater environments, including bogs, beaver ponds, lakes and other freshwater areas	No impacts - avoidance of impacts to potential habitat
Chalk-fronted corporal	*Ladona julia*	Not listed	OH – Threatened	Summit	Nutrient poor lakes, bogs and marshes	May impact – the Project avoids potential habitat where practicable
Elfin skimmer	*Nannothemis bella*	Not listed	OH – Endangered	Summit	Primarily inhabits stagnant pools and marshy places, such as bogs	May impact – the Project avoids potential habitat where practicable
Frosted elfin	*Incisalia irue*	Not listed	OH – Endangered	Lucas	Inhabits oak savannas with blue lupine	No impacts – avoidance of open natural areas within Oak Openings Region
Karner blue butterfly	*Lycaeides melissa samuelis*	Endangered	OH – Endangered MI – Threatened	OH – Lucas MI – Lenawee	Pine barrens and oak savannas on sandy soils and containing wild lupine (*Lupinus perennis*)	No impacts – botanical surveys were conducted and no lupine was identified
Laura's snaketail	*Stylurus laurae*	Not listed	MI – Special Concern	Washtenaw and Wayne	Occurs in shallow, well shaded rivers and streams with cobble, sand or mud substrate	No impacts – stream crossing methods selected to avoid impacts
Marsh bluet	*Enallagma erbium*	Not listed	OH – Threatened	Summit	Occurs at lowland lakes, ponds, and marshes, and has a definite preference for alkaline waters	May impact – the Project avoids potential habitat where practicable

APPENDIX J-1 (cont'd)

State-listed Species Potentially Occurring within or near the NGT and TEAL Projects

Species Name		Federal				
Common Name	Scientific Name	Status	State Status	County	Habitat	Impacts
Insects (cont'd)						
Mitchell's satyr butterfly	*Neonympha mitchelli mitchelli*	Endangered	MI – Endangered	Lenawee, Washtenaw, and Wayne	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs	No impacts – avoidance of impacts to potential habitat proposed
Persius duskywing	*Erynnis persius*	Not listed	OH – Endangered	Lucas	Inhabits oak savannas and blue lupine	No impacts – avoidance of open natural areas within Oak Openings Region
Pipevine swallowtail	*Battus philenor*	Not listed	MI – Special Concern	Lenawee and Washtenaw	Open fields and railroad embankments near oak-hickory woods or in open areas near deciduous woodlands	May impact – the Project avoids potential habitat where practicable
Plains clubtail	*Gomphus externus*	Not listed	OH – Endangered	Erie	Occurs along large, slow flowing and muddy streams and rivers	No impacts – stream crossing methods selected to avoid impacts
Powesheik skipperling	*Oarisma poweshiek*	Endangered	MI – Threatened	Lenawee and Washtenaw	Wet prairies and fens	No impacts – avoidance of impacts to potential habitat proposed
Purplish copper	*Lycaena helloides*	Not listed	OH – Endangered	Lucas	Inhabits a variety of disturbed moist areas, such as fallow fields with poor drainage, sedge meadows, wet prairies, wet ditches and low, damp areas in cultivated fields	May impact – the Project avoids potential habitat where practicable
Racket-tailed emerald	*Dorocordulia libera*	Not listed	OH – Endangered	Summit	Species confined to boggy ponds and lake edges	May impact – the Project avoids potential habitat where practicable
Regal fritiallary	*Speyeria idalia*	Not listed	MI – Endangered	Lenawee and Washtenaw	Prairie or open environments frequently in sandy regions. Meadows, old fields, and floodplain forest openings and edges	No impacts – avoidance of potential habitat proposed
Swamp metalmark	*Calephelis mutica*	Not listed	MI – Special Concern	Lenawee	Occurs in prairie fens and southern wet meadows that support its main host plant, swamp thistle (*Cirsium muticum*)	No impacts – avoidance of potential habitat proposed
Wild indigo dustwing	*Erynnis baptisiae*	Not listed	MI – Special Concern	Monroe, Washtenaw, and Wayne	Commonly occurs in open oak barrens, shrubby fields, prairies and roadsides or areas where its main food source, the wild indigo (*Baptisia australis*) grows	No impacts – avoidance of potential habitat proposed
Mammals						
Black bear	*Ursus americanus*	Not listed	OH – Endangered	All	Primarily inhabit heavily wooded forests, but can thrive in wetlands and swamps to dry coniferous or deciduous forests	No impacts anticipated

APPENDIX J-1 (cont'd)

State-listed Species Potentially Occurring within or near the NGT and TEAL Projects

Species Name		Federal Status	State Status	County	Habitat	Impacts
Common Name	Scientific Name					
Mammals (cont'd)						
Evening bat	*Nycticeius humeralis*	Not listed	MI – Threatened	Lenawee	Inhabits old and mature forests, this species prefers to roost behind loose bark during the nonbreeding season	May impact – two evening bats captured during surveys.
Indiana bat	*Myotis sodalis*	Endangered	OH – Endangered MI – Endangered	All	Inhabits caves and abandoned mines which provide cool and stable temperatures during the winter and then inhabit under loose bark of exfoliating trees or in tree hollows in the summer	May impact – no Indiana bats captured during surveys and no hibernacula identified during portal searches. NGT would only conduct tree clearing during non-active season, October 1 – March 31
Least shrew	*Cryptotis humeralis*	Not listed	MI – Threatened	Washtenaw	Dry upland meadows with dense coverage of grasses and forbs. Nests are found tucked under rocks, logs, discarded lumber, metal sheeting, and hay bales left in fields over winter	No impacts anticipated
Northern long-eared bat	*Myotis septentrionalis*	Threatened	OH – Threatened MI – Threatened	All	Hibernation sites used during the winter (caves, mines) and roosting sites for reproduction (tree cavities) during the summer	May impact –
Mussels						
Black sandshell	*Ligumia recta*	Not listed	OH – Threatened MI – Endangered	OH – Erie, Lorain, Lucas MI- Lenawee, Monroe, Washtenaw	Occupies rivers with strong currents and lakes with a firm substrate of gravel	No impacts – surveys were conducted and one live individual was found in Ohio (Maumee River). This river would be crossed using HDD method
Creek heelsplitter	*Lasmigona compressa*	Not listed	OH – Special Concern	Columbiana, Wayne, Lorain, Huron, Wood, Lucas, and Henry	Most common in headwater streams with firm substrates, but can be found in larger rivers	No impacts – selection of crossing method or relocation efforts prior to construction
Deertoe	*Truncilla truncate*	Not listed	OH – Special Concern MI – Special Concern	OH – Erie, Sandusky, Wood, Lucas, and Henty MI – Lenawee and Monroe	Prefers habitats of firm sand or gravel substrates in rivers and lakes with a moderately swift current	No impacts – selection of crossing method or relocation efforts prior to construction

APPENDIX J-1 (cont'd)

State-listed Species Potentially Occurring within or near the NGT and TEAL Projects

Species Name		Federal Status	State Status	County	Habitat	Impacts
Common Name	Scientific Name					
Mussels (cont'd)						
Eastern pondmussel	*Ligumia nasuta*	Not listed	OH – Endangered MI – Endangered	OH – Lorain, Erie, Sandusky, and Lucas MI – Monroe	Occurs in slow moving streams or ponds/lakes with sandy substrate. Limited to Lake Erie and Lake Erie tributaries	No impacts – species not identified during 2015 surveys
Elktoe	*Alasmidonta marginata*	Not listed	MI – Special Concern	All	Found in clean small to large sized streams and rivers and prefers swifter currents over packed sand and gravel substrates	No impacts – identified in the River Raisin, which would be crossed utilizing HDD method
Ellipse	*Venustaconcha ellipsiformis*	Not listed	MI – Special Concern	Washtenaw	The ellipse occurs in the swift currents of riffles or runs of clear, small to medium sized streams in gravel or sand and gravel substrates	No impacts – species not identified during 2015 surveys
Fawnsfoot	*Truncilla donaciformis*	Not listed	OH – Threatened MI – Threatened	OH – Eric, Lucas, and Sandusky MI – Monroe	Large rivers in compact sand and gravel substrates	No impacts – identified in the Sandusky River (Ohio), which would be crossed utilizing the HDD method
Hickorynut	*Obovaria olivaria*	Not listed	MI – Endangered	Monroe and Washtenaw	Occurs in medium to large streams with silt, sand and gravel substrates	No impacts – species not identified during 2015 surveys
Kidneyshell	*Ptychobranchus fasciolaris*	Not listed	OH – Special Concern MI – Special Concern	OH – None listed MI – Lenawee, Monroe, and Washtenaw	The kidneyshell occurs in high water quality creeks, rivers and lakes with moderate to swift currents and a sand or gravel substrate	No impacts – identified in the Vermillion River, which would be crossed utilizing the HDD method
Lilliput	*Toxolasma parvus*	Not listed	MI – Endangered	Lenawee, Monroe, and Wayne	Small streams with muddy or clay substrates. Occasionally found in large rivers, lakes and impoundments	No impacts – species not identified during 2015 surveys
Northern riffleshell mussel	*Epioblasma torulosa rangiana*	Endangered	MI – Endangered	Lenawee, Monroe, and Wayne	Large streams and small rivers in firm sand of riffle areas; also occurs in Lake Erie	No impacts – species not identified during 2015 surveys
Paper pondshell	*Utterbackia imbecillis*	Not listed	MI – Special Concern	Monroe, Washtenaw, and Wayne	Lakes, ponds, and impoundments with soft mud or sand substrates	No impacts – selection of crossing method or relocation efforts prior to construction
Purple Lilliput	*Toxolasma lvidus*	Not listed	MI – Endangered	Monroe	Small streams with compact sand or gravel substrates	No impacts – species not identified during 2015 surveys

APPENDIX J-1 (cont'd)

State-listed Species Potentially Occurring within or near the NGT and TEAL Projects

Species Name		Federal				
Common Name	Scientific Name	Status	State Status	County	Habitat	Impacts
Mussels (cont'd)						
Purple wartyback	*Cyclonaias tuberculate*	Not listed	OH – Special Concern MI – Threatened	OH – Erie and Lucas MI – Lenawee, Monroe, Washtenaw	Found in medium to large rivers with gravel or mixed sand and gravel substrates	No impacts – species not identified during 2015 surveys
Rainbow	*Vilosa iris*	Not listed	MI – Special Concern	All	The rainbow occurs in coarse sand or gravel in small to medium streams	No impacts – species not identified during 2015 surveys
Rayed bean	*Vilosa fabalis*	Endangered	OH – Endangered MI – Endangered	OH – Lucas MI – Lenawee, Monroe, and Wayne	Small headwater creeks, but they are sometimes found in large rivers	No impacts – identified in the River Raisin, which would be crossed utilizing HDD method
Round hickorynut	*Obovaria subrotunda*	Not listed	MI – Endangered	Lenawee	Found along the shores of medium to large rivers and lakes. The round hickorynut generally is found in sand and gravel substrates in areas with moderate flow	No impacts – species not identified during 2015 surveys
Round pigtoe	*Pleurobema sintoxia*	Not listed	OH – Special Concern MI – Special Concern	OH – Lucas MI – All	Occurs in mud, sand, or gravel substrates of medium to large rivers	No impacts – species not identified during 2015 surveys
Slippershell	*Alasmidonta biridis*	Not listed	MI – Threatened	Lenawee, Monroe, Washtenaw, and Wayne	Found in creeks and headwaters of rivers, but has also been reported in larger rivers and lakes. Typically, this mussel usually occurs in sand, mud or gravel substrates	No impacts – identified in the River Raisin, which would be crossed utilizing HDD method
Snuffbox	*Epioblasma triquetra*	Endangered	OH – Endangered MI – Endangered	Monroe, Washtenaw, and Wayne	Small to medium-sized creeks in areas with swift current and some larger rivers	No impacts – species not identified during 2015 surveys
Threehorn wartyback	*Obliquaria reflexa*	Not listed	OH – Threatened MI – Endangered	OH – Erie, Lucas, Lorain, and Sandusky MI – Monroe	Large rivers in sand or gravel; may be locally abundant in impoundments	No impacts – identified in the Sandusky and Maumee Rivers in Ohio, both of which would be crossed utilizing HDD method

APPENDIX J-1 (cont'd)

State-listed Species Potentially Occurring within or near the NGT and TEAL Projects

Species Name		Federal				
Common Name	Scientific Name	Status	State Status	County	Habitat	Impacts
Mussels (cont'd)						
Wavy-rayed lampmussel	*Lampsilis fasciola*	Not listed	OH – Special Concern MI – Threatened	OH – Lorain and Columbiana MI – Monroe, Lenawee, Washtenaw	Occurs in small to medium sized shallow streams, in and near riffles, with good current. The substrate preference is sand and/or gravel	No impacts – species not identified during 2015 surveys
Plants						
Canadian milk vetch	*Astragalus Canadensis*	Not listed	MI – Threatened	Lenawee, Monroe, and Washtenaw	Dry prairie, moist shores, river banks, marshy ground, and partly shaded ground	No impacts – species not identified during botanical surveys
Compass plant	*Silphium laciniatum*	Not listed	MI – Threatened	Washtenaw	Mostly in southwestern Michigan; adventive along railroads and depauperate prairies	No impacts – species not identified during botanical surveys
Cup plant	*Silphium perfoliatum*	Not listed	MI – Threatened	Washtenaw	Found in river floodplains in forest openings and edges	May impact – identified during botanical surveys in Ohio
David's sedge	*Carex davisii*	Not listed	MI – Special Concern	Lenawee, Monroe, and Washtenaw	First and second bottoms of floodplain forests in southern Lower Michigan, especially in canopy gaps and artificial clearings, including riparian thickets and fields	No impacts – species not identified during botanical surveys
Eastern prairie fringed orchid	*Plantanthera leucophaea*	Threatened	OH – Threatened MI – Endangered	OH – Wayne, Sandusky MI – Monroe, Washtenaw	Wet prairies, sedge meadows, and moist roadside ditches. Typically restricted to sandy or peaty lakeshores or bogs	No impacts – species not identified during botanical surveys
Ginseng	*Panax quinquefolius*	Not listed	MI – Threatened	Monroe and Washtenaw	Rich, swampy hardwoods, especially on slopes or ravines	May impact – identified during botanical surveys in Ohio
Green violet	*Hybanthus concolor*	Not listed	MI – Special Concern	Lenawee, Washtenaw, and Wayne	Found in floodplain forests, usually in lower bottoms, as well as mesic forests and rich hardwoods	No impacts – species not identified during botanical surveys
Hairy angelica	*Angelica venenosa*	Not listed	MI – Special Concern	All	Open, upland oak forests, savanna and prairie remnants and open, sandy woodlots	No impacts – species not identified during botanical surveys
Hairy wild petunia	*Ruellia humilis*	Not listed	MI – Threatened	Washtenaw	Dry to moist prairies and oak openings	No impacts – species not identified during botanical surveys
Lakeside Daisy	*Hymenoxys herbacea*	Threatened	OH – Endangered	Erie	Found in full sun, calcareous sites, and dry prairies	No impacts – species not identified during botanical surveys

APPENDIX J-1 (cont'd)

State-listed Species Potentially Occurring within or near the NGT and TEAL Projects

Species Name		Federal				
Common Name	Scientific Name	Status	State Status	County	Habitat	Impacts
Plants (cont'd)						
Northern monkshood	*Aconitum noveboracense*	Threatened	OH – Endangered	Summit	On sandstone in cool, shaded ravines in close proximity to running water, seeps, talus slopes, rock shelters, vertical cliff faces	No impacts – species not identified during botanical surveys
Pale avens	*Geum virginianum*	Not listed	MI – Special Concern	Lenawee, Washtenaw, and Wayne	Found in openings and banks in woods	No impacts – species not identified during botanical surveys
Purple milkweed	*Asclepias purpurascens*	Not listed	MI – Threatened	Lenawee, Monroe, and Washtenaw	Occurs in dry woodlands (especially oak), dry thickets, shores, and in prairies	No impacts – species not identified during botanical surveys
Twinleaf	*Jeffersonia diphylla*	Not listed	MI – Special Concern	Lenawee, Washtenaw, and Wayne	Found in mesic forests with rich, loamy soils and in floodplain forests	No impacts – species not identified during botanical surveys
Water willow	*Justicia americana*	Not listed	MI – Threatened	Monroe and Washtenaw	Local colonies along the banks of the Huron and Raisin Rivers and nearby lakes and streams	No impacts – species not identified during botanical surveys
Weak Stellate sedge	*Carex seorsa*	Not listed	MI – Threatened	Washtenaw	Found on hummocks in hardwood or hardwood-conifer swamps, margins of bogs, and buttonbush depressions	No impacts – species not identified during botanical surveys
White gentian	*Gentiana flavida*	Not listed	MI – Endangered	Washtenaw	Dry or moist prairies and open oak savanna; nearly extirpated in Michigan	No impacts – species not identified during botanical surveys
White or prairie false indigo	*Baptisia lacteal*	Not listed	MI – Special Concern	Lenawee, Monroe, and Washtenaw	Dry to mesic prairies and savannas, dry open roadsides, along railroads, and in fencerows	No impacts – species not identified during botanical surveys
Reptiles						
Blanding's turtle	*Emydoidea blandingii*	Not listed	OH – Threatened	Erie, Lorain, Henry, and Fulton	Typically found in clean, aquatically diverse areas with muddy substrates. Common systems include ponds, marshes, swamps, bogs, wet prairies, and river backwaters	May impact – Potential suitable habitat avoided where practicable. Habitat suitability is currently being evaluated; potential surveys in 2016
Eastern massasauga	*Sistrurus catenatus catenatus*	Proposed Threatened	OH – Endangered MI – Special Concern	OH – Wayne, Huron, and Sandusky MI – Lenawee, Monroe, Washtenaw, and Wayne	Wet prairies, sedge meadows, and early successional fields, preferred wetland habitats are marshes and fens	May impact – no suitable habitat in Ohio; surveys in Michigan. Fall presence/absence surveys were conducted with no individuals found. Spring emergence surveys will be conducted in 2016

APPENDIX J-1 (cont'd)

State-listed Species Potentially Occurring within or near the NGT and TEAL Projects

Species Name		Federal Status	State Status	County	Habitat	Impacts
Common Name	Scientific Name					
Reptiles (cont'd)						
Spotted turtle	*Clemmys guttata*	Not listed	OH – Threatened MI – Threatened	OH – Summit, Erie, Lorain, and Fulton MI – Lenawee, Washtenaw, and Wayne	Slow-moving bodies of water with muddy or mucky bottoms and some aquatic and emergent vegetation, including shallow ponds, wet meadows, bogs, fends, sedge meadows, shallow cattail marshes, small woodland streams and roadside ditches	May impact – Potential suitable habitat avoided where practicable. Habitat suitability is currently being evaluated; potential surveys in 2016

APPENDIX J-2

BIOLOGICAL ASSESSMENT

Federal Energy Regulatory Commission
Office of Energy Projects
Washington, DC 20426

NEXUS Gas Transmission Project

Biological Assessment

October 2016

Docket No.: CP16-22-000

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LIST OF ACRONYMS

ATWS	additional temporary workspace
BA	Biological Assessment
BGEPA	Bald and Golden Eagle Protection Act
Certificate	FERC Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
cm	centimeter
Dbh	diameter at breast height
DTE	DTE Energy Company (DTE or DTE Energy)
DTE Gas	DTE Gas Company
E&SCP	NEXUS Erosion and Sediment Control Plan
EAS	Effect Analysis Scenarios
EI	environmental inspectors
EO	executive order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FERC Plan	FERC's Upland Erosion Control, Revegetation, and Maintenance Plan
FERC Procedures	FERC's Wetland and Waterbody Construction and Mitigation Procedures
FWS	U.S. Fish and Wildlife Service
g	grams
GIS	Geographic Information Systems
HCA	High Consequence Area
HDD	horizontal directional drill
hp	horsepower
km	kilometer
M&R	metering and regulating
MBCP	migratory bird conservation plan
MBTA	Migratory Bird Treaty Act
MLV	mainline valve
mm	millimeter
MOU	memorandum of understanding
MP	milepost
NEPA	National Environmental Policy Act
NEXUS	NEXUS Gas Transmission, LLC
NGT Project	NEXUS Gas Transmission Project (Project)
NOAA	National Oceanic and Atmospheric Administration
ODNR	Ohio Department of Natural Resources
Project	NEXUS Gas Transmission Project
ROW	right-of-way
SPCC	NEXUS Spill Prevention Control and Countermeasure
Spectra	Spectra Energy Partners, LP
Spectra Energy	Spectra Energy Partners, LP
T&E	threatened and endangered
Texas Eastern	Texas Eastern Transmission, LP
TGP	Tennessee Gas Pipeline Company, LLC
WNS	white-nose syndrome

1.0 INTRODUCTION

The environmental staff of the Federal Energy Regulatory Commission (FERC or Commission) prepared this Biological Assessment (BA) to assess the potential environmental impacts that could result from the construction and operation of the NEXUS Gas Transmission Project (NGT Project) proposed by NEXUS Gas Transmission, LLC (NEXUS). NEXUS is owned by affiliates of Spectra Energy Partners, LP and DTE Energy Company.

On November 20, 2015, NEXUS filed an application with the FERC in Docket No. CP16-22-000 pursuant to Section 7(c) of the Natural Gas Act (NGA), and Parts 157 and 284 of the Commission's regulations. NEXUS is seeking a Certificate of Public Convenience and Necessity (Certificate) to construct, own, and operate a new natural gas to provide for the transportation of 1.5 million dekatherms per day (Dth/d) of shale gas from the Appalachian Basin to consuming markets in Northern Ohio and Southeastern Michigan as well as the Dawn Hub in Ontario, Canada. According to NEXUS, supply also would be able to reach the Chicago Hub in northern Illinois and other Midwestern markets through interconnections with other pipelines.

The NGT Project includes the construction of approximately 255.7 miles of new 36-inch-diameter natural gas transmission mainline pipeline running from Columbiana County, Ohio and connecting to DTE Gas Company (DTE Gas) in Ypsilanti Township, Michigan; as well as approximately 0.9 mile of new 36-inch-diameter interconnecting pipeline connecting to Tennessee Gas Pipeline Company near Hanover Township, Ohio. The NGT Project also includes the installation of 4 new gas turbine compressor stations, 6 new metering and regulating (M&R)[5] stations, 4 new pig[6] launchers and receiver facilities, and 13 new tee-taps.[7] Figure 1-1 provides an overview map of the NGT Project.

NEXUS is also seeking a Certificate to acquire capacity in lease from Texas Eastern in Pennsylvania, West Virginia, and Ohio; from DTE Gas in southeastern Michigan; and from Vector Pipeline, L.P. (Vector) in southeastern Michigan. Outside the United States, NEXUS would use existing capacity on the Vector system in western Ontario, Canada to access the Dawn Hub. This BA is specific to the U.S. portion of the pipeline facilities. The use of facilities in Canada would require approval from the National Energy Board of Canada.

NEXUS is also asking for a blanket Certificate to construct, operate, acquire, and abandon certain facilities as described in Part 157, Subpart F and pursuant to Part 284, Subpart G of the Commission's regulations authorizing NEXUS to provide open-access firm and interruptible interstate natural gas transportation services on a self-implementing basis with pre-granted abandonment for such services.

For actions involving major construction activities with the potential to affect listed species or critical habitats, the lead federal agency must prepare a BA for those species that may be affected. The lead

[5] A metering and regulating station is an aboveground facility that contains the equipment necessary to measure the volume of gas flowing in a pipeline.

[6] A pig is an internal tool that can be used to clean and dry a pipeline and/or to inspect it for damage or corrosion. A pig launcher/receiver is an aboveground facility where pigs are inserted into or received from the pipeline.

[7] A tee-tap typically is an underground fitting installed on a pipeline to facilitate a potential future customer connection, which may or may not include aboveground components at that location at a later date.

federal agency must submit its BA to the U.S. Fish and Wildlife Service (FWS) and, if it is determined that the action may adversely affect a federally listed species, the lead agency must submit a request for formal consultation to comply with Section 7 of the Endangered Species Act of 1973 (ESA). In response, the FWS would issue a Biological Opinion as to whether or not the federal action would likely adversely affect or jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of designated critical habitat. For the NGT Project, we[8] have determined that federally listed species may be affected, and are submitting this BA to the FWS to request concurrence on our determinations of effect and to initiate formal consultation for species that may be adversely affected by the NGT Project.

Although proposed, petitioned, and candidate species and proposed critical habitat do not receive federal protection through the ESA, we considered the potential effects on these species and habitats so Section 7 consultation could be facilitated in the event one or more of these species become listed before or during NGT Project construction. Should a federally listed, proposed, petitioned, or candidate species be identified during construction that has not been previously identified during field surveys or assessed through consultation, and project activities could adversely affect the species, NEXUS would be required to suspend the construction activity and notify the Commission and FWS of the potential affect. The construction activity could not resume until the Commission completes its FWS consultation.

FWS has been actively involved with the NEXUS Project since 2014. As required under Section 7 of the ESA, NEXUS initiated informal consultations with FWS to identify the known locations of federal-listed threatened or endangered species and candidate species that could potentially be affected by construction or operation of the Project. Initial Project introduction letters were sent to the FWS Columbus field office on September 18, 2014 and the East Lansing field office on September 22, 2014. The FWS Columbus field office provided initial comments for the Project on October 9, 2014 and the East Lansing field office provided initial comments on December 3, 2014. The initial letters included a list of federally-listed species within one-mile of the Project, in addition to comments on Migratory Bird Treaty Act (MBTA) and Bald and Golden Eagle Protection Act (BGEPA). Since initial consultation, NEXUS has provided updates to both the Ohio and Michigan field offices in the form of letters, email communications, and update meetings. Staff from both field offices participated in a meeting with NEXUS and FWS Region 3 staff in October 2015. Face to face meetings were held at the Ohio field office in October 2014 and February 2016 and at the Michigan field office in November 2014 and March 2016.

The NEXUS Project is located within FWS Region 3 and initial coordination began on May 21, 2015 when Region 3 staff exchanged phone calls and emails with NEXUS regarding their involvement on the Project. Since the initial consultations, NEXUS has continued collaborations with Region 3 and the Ohio and Michigan field offices. NEXUS has met with Region 3 staff on several occasions to discuss the Project, specifically regarding the MBTA. Meetings with Region 3 staff were held in June 2015, October 2015, January 2016 and May 2016, in addition to regular email and phone communications. All resource reports and survey reports submitted as part of the FERC 7(c) application in November 2015 were provided to FWS Region 3, which provided comments regarding the application to FERC on January 6, 2016.

8 "We," "us," and "our" refer to the environmental staff of the Federal Energy Regulatory Commission's Office of Energy Projects.

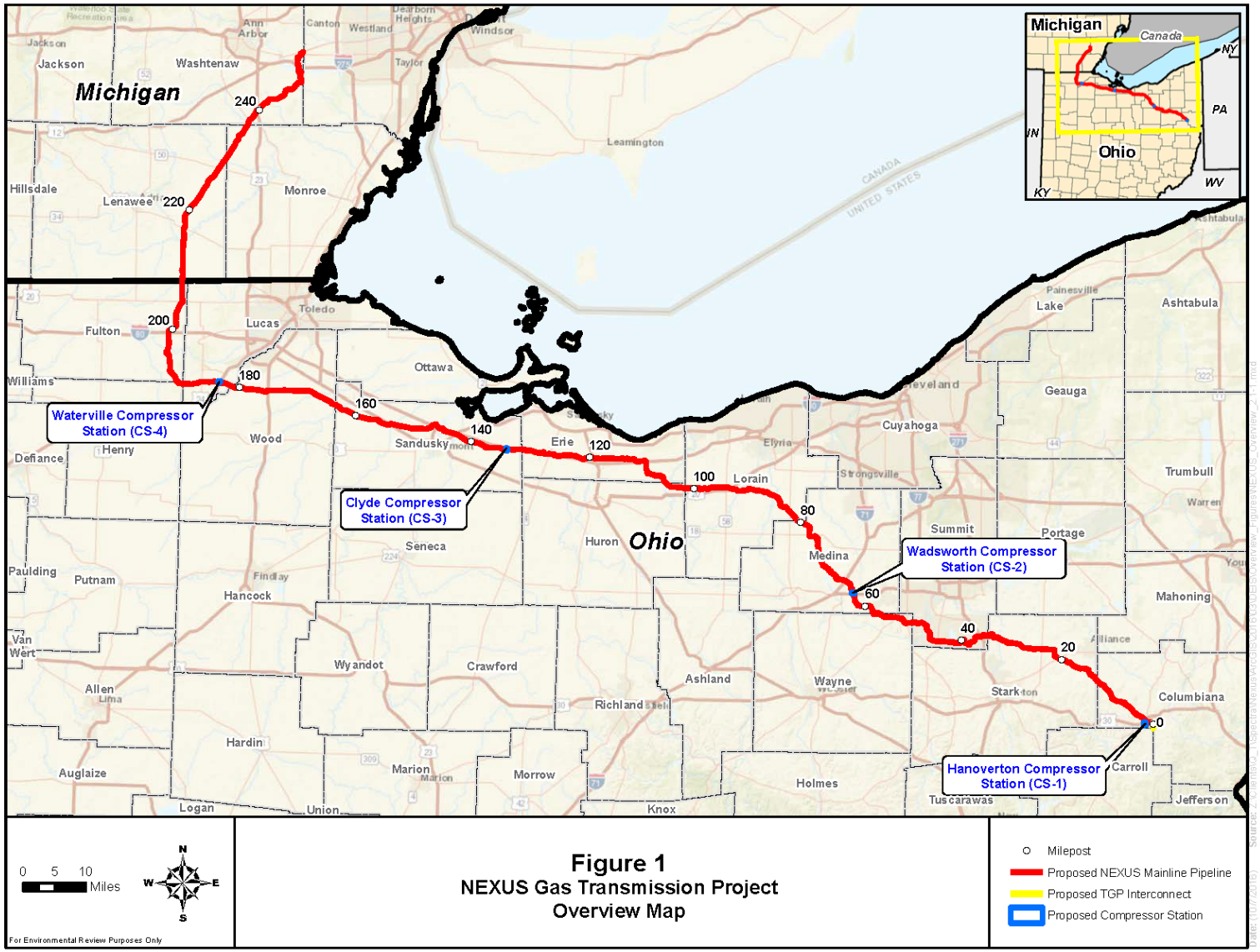

Figure 1: Project Location Map

2.0 DESCRIPTION OF ACTION AND THE ACTION AREA

2.1 Location and Description of the Proposed Project

2.1.1 Pipeline Facilities

The Project includes construction of approximately 256 miles of new 36-inch-diameter natural gas transmission mainline pipeline originating in Columbiana County, Ohio and extending through Ohio and Michigan and connecting with DTE Gas in Ypsilanti Township, Michigan; and approximately 0.9 mile of new 36-inch interconnecting pipeline to Tennessee Gas Pipeline Company, LLC (TGP) depicted in Figure 1. Approximately 44 percent of the proposed pipeline route is co-located with existing overhead electric transmission line, pipeline, or railroad utility corridors, with an additional 48 percent of the route (that is not co-located with existing utilities) crossing agricultural land uses. A resulting 92 percent of the proposed pipeline route was sited to avoid conversion of existing land uses. The following sections more specifically describe the proposed pipeline facilities:

- Greenfield Mainline Route – Originates at the Kensington Processing Plant in Columbiana County, Ohio and extends through Ohio and Michigan to connect with DTE Gas in Ypsilanti Township, Michigan. The proposed mainline route includes approximately:
    - 209 miles of new pipeline in Columbiana, Stark, Summit, Wayne, Medina, Lorain, Huron, Erie, Sandusky, Wood, Lucas, Henry, and Fulton Counties, Ohio; and
    - 47 miles of new pipeline in Lenawee, Monroe, and Washtenaw Counties, Michigan.
- Interconnecting Pipeline to TGP – approximately 0.9 mile of new 36-inch-diameter pipeline connecting the proposed metering and regulating (M&R) station at the TGP mainline to the NEXUS mainline near the Utica East Ohio Midstream, LLC's Kensington Processing Plant (Hanover Township, Ohio).

2.1.2 Aboveground Facilities

NEXUS proposed aboveground facilities include four new compressor stations; six new M&R stations; 16 remote controlled mainline valves (MLV); and other appurtenant facilities described in more detail in the following sections.

2.1.2.1 New Compressor Stations

The NGT Project includes construction and operation of four new compressor stations in Ohio, as shown on figure 1. Below is a summary of proposed compressor station sites.

Hanoverton Compressor Station

The proposed Hanoverton Compressor Station (Compressor Station 1) is located in Hanover Township, Columbiana County, Ohio and would be comprised of two gas turbine-driven compressor packages totaling 52,000 horsepower (hp).

Wadsworth Compressor Station

The proposed Wadsworth Compressor Station (Compressor Station 2) is located in Guilford Township, Medina County, Ohio and would be comprised of a single gas turbine-driven compressor package totaling 26,000 hp.

Clyde Compressor Station

The proposed Clyde Compressor Station (Compressor Station 3) is located in Townsend Township, Sandusky County, Ohio and would be comprised of a single gas turbine-driven compressor package totaling 26,000 hp.

Waterville Compressor Station

The proposed Waterville Compressor Station (Compressor Station 4) is located at in Waterville Township, Lucas County, Ohio and would be comprised of a single gas turbine-driven compressor package totaling 26,000 hp.

2.1.2.2 New Meter Stations

NEXUS would construct six (6) new M&R stations. Three of the new M&R stations are proposed in Columbiana County, Ohio (MR01, MR02, and MR03); one is proposed in Erie County Ohio (MR05); one is proposed in Sandusky County, Ohio (MR 06); and one is proposed in Washtenaw County, Michigan (MR04).

2.1.2.3 Additional Aboveground Facilities

Additional aboveground facilities include pig launcher and receivers, mainline valves, communications towers, and customer connections and are described as follows:

Launchers/Receivers

Pig launcher and receiver facilities are proposed at Wadsworth Compressor Station in Medina County, Ohio; and at Waterville Compressor Station in Lucas County, Ohio. One launcher facility is proposed at the TGP Interconnecting Pipeline at the tie-in to the TGP mainline; one launcher facility is proposed at the Kensington M&R Station (MR02); one receiver is proposed at the Texas Eastern Transmission LP (Texas Eastern) M&R Station (MR03); and one receiver facility is proposed at Willow Run M&R Station (MR04). A pipeline pig is an inline inspection device used to clean or inspect the pipeline. A pig launcher/receiver is an aboveground facility where pipeline pigs are inserted or retrieved from the pipeline.

Mainline Valves

NEXUS is proposing construction and operation of 16 remote controlled MLVs as part of the Project. These MLVs would be installed within areas already disturbed by pipeline construction and would be primarily located within the permanent operational right-of-way.

Communications Towers

The Project would include construction and operation of five (5) communications towers located along the Project route. The towers would support licensed Very High Frequency Mobile Radio transmission equipment for voice communications. NEXUS has evaluated the FWS, *Interim Guidelines for Recommendations on Communications Tower Siting, Construction, Operation, and Decommissioning*

(FWS, 2016b). These Guidelines were used in the evaluation and development of the engineering designs and siting for NEXUS communications towers.

Confirmed Market Connections

NEXUS has signed agreements that require installation of multiple connection points located along the proposed Project route to delivery gas in Ohio. These facilities would include installation of tee-taps for connecting with customer delivery systems.

2.1.2.4 Permanent Access Roads

In order to minimize impacts to land, existing public and private road crossings along the Project pipeline route would be used, to the extent practicable, as the primary means of accessing the Project right-of-way. NEXUS would also use existing public and private roads to the extent practicable to access the aboveground facilities. NEXUS would require permanent access roads for the life of the pipeline to access permanent facilities such as compressor stations, MLV, M&R stations, and cathodic protection sites. Generally, access roads would be up to 25-feet wide to accommodate vegetation clearing setbacks, pull offs, and road shoulder/stormwater management features.

The majority of the existing access roads proposed for use would require minor improvements (tree trimming, addition of gravel, back blading, etc.) to allow for passage of construction vehicles. Existing access roads are generally built on fill materials and have previously been developed for other uses. It is the intention of NEXUS to avoid high quality natural areas including wetland impacts and forest impacts associated with the creation of, or upgrades to, permanent access roads.

2.1.3 Temporary Workspace Required for Construction

2.1.3.1 Temporary Access Roads

Temporary access roads would be restored to their preconstruction condition. Generally, access roads would be up to 25 feet wide to accommodate vegetation clearing setbacks, pull offs, and road shoulder/stormwater management features. It is the intention of NEXUS to avoid high quality natural areas including wetland impacts and forest impacts associated with the creation of, or upgrade to, temporary access roads.

2.1.3.2 Additional Temporary Workspace

Many conditions must be taken into consideration when determining the amount of construction workspace needed to build the pipeline including agricultural land, drain tiles, proximity to existing residences, roads, railroads, transmission line structures and wires, existing pipeline crossings, topography, soils, bedrock and presence of trees, wetlands, and waterbodies. As a result, in many locations additional temporary workspace (ATWS) will be needed outside the nominal 100-foot construction corridor to manage these conditions.

2.1.3.3 Contractor Ware Yards and Staging Areas

NEXUS has identified eight contractor ware yards for use during construction of the Project. The contractor ware yards would be used for equipment, pipe, and material storage, as well as temporary field offices and pipe preparation/field assembly areas. All of the proposed contractor ware yards consist of previously disturbed areas and are mainly comprised of agricultural land or previous industrial land uses.

Upon completion of the Project, these pipe/contractor ware yards and staging/storage areas would be restored or allowed to regenerate to preconstruction conditions.

NEXUS would avoid and minimize impacts to natural areas, including wetland, waterbodies, and forested areas to the extent practicable when using these sites.

2.1.3.4 Hydrostatic Test Waters

After cleaning, the pipeline would be pressure tested in accordance with 49 Code of Federal Regulations (CFR) part 192 subpart J and NEXUS' requirements to confirm its integrity for the intended service and operating pressures. The pipeline is hydrostatically tested with water. The water is normally obtained from water sources crossed by the pipeline, including available municipal supply lines. It is pumped from the water source into the pipeline. The water propels a (pipeline cleaning) pig through the pipeline in a manner that displaces the air from the line and completely fills the pipeline with water. Test pressure is obtained by adding water to the test section with a high-pressure pump. At the completion of the hydrostatic test, the pressure is removed from the section and the water is released from the test section, via approved methods, by propelling the pig with air, which forces the water from the pipeline. All water would be discharged in accordance with state and federal requirements. Additional drying pig runs are made, if necessary, to remove any residual water from the pipeline.

2.2 Land Requirements

The NGT Project would require a nominal 100-foot wide construction right-of-way with ATWS where required for site-specific construction techniques. Within wetlands, the construction right-of-way is reduced to 75 feet wide, which conforms to the FERC's *Wetland and Waterbody Construction and Mitigation Procedures* (FERC Procedures, May 2013 version).

2.2.1 Land Ownership

2.2.1.1 Private Lands

Proposed new Project facilities would affect portions of thirteen (13) counties in Ohio and three (3) counties in Michigan. The proposed Project's footprint would have approximately 1,718 total affected landowner tracts along the pipeline portion of the Project.

2.2.1.2 Public Lands

USGS topographic maps, aerial photographs, internet searches, personal interviews with federal, state and local agencies, and field reconnaissance were used to identify parks, recreation areas, scenic areas, and other specially-designated areas at the federal, state, and local level in the vicinity of NGT Project facilities.

2.2.2 General Land Use Cover Types Crossed

Land use classifications in the Project action area were performed using land use categories identified by the FERC in its guidance document for preparing Certificate applications, *Preparation of Environmental Reports for Natural Gas Act Section 7 Applications* (FERC, 2015). Mapping of land use was based on information gathered and observations made during field surveys, discussions with landowners, and through interpretation of recent (2015) high quality aerial photographs and LiDAR imagery. General land use types within the Project area include:

- Open Land: Utility rights-of-way, open fields, vacant land, pasture, herbaceous and scrub-shrub uplands, non-forested lands, emergent wetland, scrub-shrub wetland, golf courses, and open land portions of municipal, county, state, and federal lands and recreational areas.
- Agricultural: active hayfields, cultivated land, and specialty crops.
- Forest/Woodland: upland and wetland forest.
- Industrial/Commercial: manufacturing or industrial plants, paved areas, auto salvage and scrap yards, quarries, electric power or natural gas utility facilities, developed areas such as airport runways, roads, railroads and railroad yards, and commercial or retail facilities.
- Residential: existing developed residential areas and planned residential developments. This may include large developments, low, medium, and high density residential neighborhoods, urban/suburban residential, multi-family residences, and residentially zoned areas that have been developed or short segments of the route at road crossings with homes near the route alignment.
- Open Water: water crossings greater than 100-feet wide and streams visible on aerial photography but less than 100-feet in width.

2.3 Existing Vegetation Types

The types of vegetation along the proposed NGT Project are generally common plant communities found in Ohio and Michigan. Many of the vegetative communities traversed by the proposed Project have been considerably altered by forest conversion and fragmentation and the historic draining of saturated areas primarily for agricultural purposes. Only small areas of undisturbed forest tracts still remain in Ohio (Widmann et al., 2006). The proposed NEXUS pipeline would impact a total of approximately 317.8 acres of forested land (upland forest and forested wetland) during construction and would permanently convert approximately 149.9 acres of forested land (upland forest and forested wetland) to either a scrub-shrub or herbaceous vegetative type during operation of the pipeline.

The proposed NGT Project has been designed to minimize impacts to existing natural vegetation. Approximately 44 percent of the proposed pipeline route is co-located with existing overhead electric transmission line, pipeline, or railroad utility corridors; with an additional 48 percent of the route (that is not co-located with existing utilities), crossing agricultural land uses, resulting in 92 percent of the proposed pipeline route being sited to avoid conversion of existing land uses. The natural vegetation communities that do occur within the Project area are generally characterized as small fragmented forests (less than 20 acres in size), abandoned agricultural land in various degrees of succession ranging from open fields to shrub lands; and emergent, scrub-shrub, and forested wetlands.

2.4 Presence of Wildlife Habitat

Through ongoing consultations with FWS, it was determined that the land use and vegetation calculations performed in accordance with FERC guidance (FERC, 2015), could be refined to better quantify the various habitat types that may be present within the Project action area. Specifically, the woodland and open land categories were refined to include the habitat types listed below.

- Forested areas: isolated woodlots edges, forested wetlands, and varied age forest complexes. The forested areas have been classified into mature (80-150 years), intermediate (45-75 years), and young (20-40 years), as defined through FWS consultation.
- Riparian areas: scrub-shrub, forested, or mixed buffers along large streams or rivers. These vegetated buffer areas are typically less than 50 feet in width adjacent to the waterbody and are generally isolated by surrounding agriculture.
- Forested/Riparian: riparian areas that are part of a larger forested complex or directly abutting a woodlot.
- Pasture: un-improved land lacking woody vegetation, young fallow fields, active pastures, and open areas with occasional maintenance.
- Scrub-Shrub: early to mid-successional fallow fields, forest edges, and young riparian buffers. These areas are defined by FWS to be less than 20 years of age.
- Treeline/Hedgerow: isolated hedgerows and/or wind breaks surrounded by active agricultural land.
- Hedge/Ditch: thin treeline/hedgerows found along small waterbodies.
- Mowed Native Grasslands: upland areas with native grasses present. Semi-regular maintenance, mowing once or twice a year, prevent woody vegetation growth.
- Open Water: ponds, reservoirs and large rivers.
- Developed: fragmented habitat within utility and transportation corridors and industrial or commercial areas that have occasional maintenance.

2.4.1 General Impacts to Common Wildlife

Temporary effects expected on common wildlife are those associated with disturbance to habitats during construction, while permanent effects are those associated with conversion of forested habitats to scrub-shrub and emergent habitats, resulting from periodic vegetation maintenance within the permanent right-of-way. Indirect wildlife effects associated with construction noise and increased activity would be temporary and could include abandoned reproductive efforts, displacement, and avoidance of work areas. Direct mortality to small mammals, reptiles, and amphibians that are less mobile could occur during clearing and grading operations.

Conversion of forested habitats creates potential to reduce the area of habitat available for woodland amphibians such as the spotted salamander (*Ambystoma maculatum*) and wood frog (*Lithobates sylvatica*); however, this effect is expected to be minimal, given the linear nature of the Project and the relatively small amount of forested vegetation that would be affected over the entire 256-mile length of the Project.

In addition, regionally, maintained utility rights-of-way can provide early successional habitats for several important game species including white-tailed deer and wild turkey. The permanent right-of-way proposed for the NEXUS pipeline would be 50 feet wide. Right-of-way corridors may function as travel corridors for some generalist species and provide edge habitat along large forested areas. Rights-of-way revegetated with herbaceous and shrub cover would provide food, cover, and breeding habitat for those species that utilize open habitats.

Construction activities within wetland habitats would temporarily affect wildlife using the area. Disturbances to wetland-dependent wildlife would be similar to those described for terrestrial wildlife species. The alteration and conversion of habitat may displace some species which prefer forested wetlands. Existing nest sites and burrows along stream banks could also be disturbed. Some individuals may relocate to similar forested wetland habitat beyond the limits of work; however, a small overall reduction in carrying capacity for forest dwelling species is expected.

Following construction, stabilization, and establishment of vegetative cover, temporarily disturbed areas would be allowed to revegetate naturally. There would be minimal permanent loss of vegetation that would occur within the permanent rights-of-way, which would be maintained in an early successional stage by mowing and periodic tree removal if it is determined that roots have the potential to compromise the integrity of the pipeline coating. Temporary construction workspaces would be allowed to naturally revegetate via natural succession and would result in no loss of vegetation. This natural revegetation process would gradually develop a stratified vegetative cover between the right-of-way and adjacent habitats. Overall, construction and operation of the proposed pipeline facilities is not expected to adversely affect the distribution or regional abundance of common wildlife species given the linear configuration of the Project and the amount and distribution of similar habitat types available in the Project area.

2.4.2 Significant or Sensitive Wildlife Habitat

Significant or sensitive wildlife habitats include wildlife management and refuge areas, or other known wildlife resources not specific to threatened and endangered (T&E) species. Federally-listed T&E wildlife species and their habitats are described in section 3.0. The NGT Project would cross one special wildlife life management area, the Missionary Island State Wildlife Preserve, an island within the Maumee River that is managed by the Ohio Department of Natural Resources (ODNR). Because NEXUS is proposing to cross the Maumee River, and consequently, the Missionary Island State Wildlife Preserve using the horizontal directional drill (HDD) construction method, no direct impacts to the preserve or wooded buffers located along the Maumee River are anticipated.

2.5 Covered Activities

2.5.1 Construction

The NGT Project would be constructed in compliance with applicable federal regulations and guidelines, and the specific requirements of necessary permits. Key federal requirements and guidelines include:

- 18 CFR Part 380.15 – Siting and Maintenance Requirements;
- 18 CFR Part 380 – Guidelines to be Followed by Natural Gas Pipeline Companies in the Planning, Clearing and Maintenance of right-of-way and the Construction of Aboveground Facilities;
- 49 CFR Part 192 – Transportation of Natural Gas and Other Gas by Pipeline: Minimum Federal Safety Standards; and
- The Federal Energy Regulatory Commission *Upland Erosion Control, Revegetation, and Maintenance Plan* (FERC Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (FERC Procedures), May 2013 versions.

NEXUS has also created several Project-specific construction plans to ensure compliance with regulatory agency requirements and guidelines.

- The NEXUS Erosion and Sediment Control Plan (E&SCP) Rev1;
- The NEXUS Spill Prevention Control and Countermeasure (SPCC) Plan;
- The NEXUS Blasting Plan Rev1;
- The NEXUS Drain Tile Mitigation Plan;
- The NEXUS Fugitive Dust Plan;
- The NEXUS Winter Construction Plan;
- The NGT Project HDD Monitoring and Inadvertent Return Contingency Plan;
- The NEXUS Invasive Plant Species Management Plan; and
- The NEXUS Migratory Bird Conservation Plan (MBCP).

The Project facilities would be constructed and maintained in accordance with the FERC Plan and FERC Procedures. The following list identifies the general construction procedures for routine pipeline construction, as well as the specific construction techniques that would be utilized in environmentally sensitive areas for the NGT Project.

- Clearing - herbaceous vegetation and ground cover
- Clearing - trees and shrubs
- Vegetation Clearing - tree side trimming
- Grading, erosion control devices
- Trenching (digging, blasting, dewatering, open trench, sedimentation)
- Pipe Stringing - bending, welding, coating, padding and backfilling
- Hydrostatic Testing (water withdrawal and discharge),
- Re-grading and Stabilization - restoration of corridor
- Access Roads
    - upgrading existing roads, new roads temp and permanent - grading, graveling, culvert
- Equipment Crossing Structures for Streams
- Stream Crossings
    - wet crossing
    - dry crossing
        - flume pipe
        - dam & pump
    - conventional bore
    - HDD

2.5.2 Operation and Maintenance

Operation and maintenance of newly constructed pipeline and aboveground facilities would be conducted in the same manner used on existing FERC regulated pipeline systems. The list below and the following sections provide details on standard operations and maintenance procedures for erosion controls,

periodic pipeline and right-of-way patrols, typical vegetation maintenance, and typical operations and maintenance at aboveground facilities.

- Vegetation Management
    - mowing
    - chainsaw and tree clearing
    - herbicides - hand, vehicle mounted, aerial applications
    - tree side trimming
- Right-of-way repair, regrading, revegetation - in stream stabilization and/or fill
- Access Road Maintenance
    - grading, graveling
    - culvert replacement
- Inspection Activities and Routine Pipeline Maintenance

2.5.2.1 Erosion Control

Evidence of post-construction soil erosion or sedimentation on the pipeline right-of-way or at aboveground facilities would be reported to the local operations supervisor. These reports may originate from NEXUS personnel performing routine patrols or from landowners. Prompt corrective measures would be performed as needed in accordance with NEXUS operations and maintenance procedures.

2.5.2.2 Pipeline and Right-of-way Patrols

During periodic pipeline and right-of-way patrols, permanent erosion control devices installed during construction would be inspected to confirm that they are functioning properly. In addition, attention would be given to:

- Erosion and wash-outs along the right-of-way;
- Settling, undermining, or degradation of repaired ditch line in streets or parking lots;
- Performance of water control devices such as diversions;
- Condition of banks at stream and river crossings;
- Third-party activity along the pipeline right-of-way; and
- Any other conditions that could threaten the integrity of the pipeline.

The applicable local operations supervisors would be notified of any conditions that need attention. Significant conditions would be reported to the pipeline owners. Corrective measures would be performed in accordance with applicable regulations and standards.

2.5.2.3 Typical Right of Way Vegetation Maintenance

Regular right-of-way vegetation maintenance would be performed to facilitate sufficient ground visibility for proper inspection of the right-of-way by aerial and ground patrols and to ensure the integrity of the pipeline coating is not affected by roots of large trees. An environmental permits database would be

maintained to track required environmental permit conditions or notifications that are required for right-of-way maintenance activities. In wetlands, maintenance of woody vegetation over the full width of the permanent easement is prohibited pursuant to the FERC Procedures. An area 10 feet wide centered over the pipeline would be maintained in an early successional stage of vegetation in accordance with the FERC Procedures. In forested wetlands, tree clearing would be limited to selectively clearing trees within 15 feet of the pipeline with roots that could compromise the integrity of the pipeline coating. Trees and shrubs that become reestablished beyond 15 feet (on both sides of the pipeline) would not be cut unless they present a safety hazard. Typically mowing and vegetation maintenance is performed once every 3 years, however this varies due to local conditions and right-of-way needs.

2.5.2.4 Pipeline Integrity Inspections and Cleaning

Integrity assessments are prioritized based on the risk assessment, and are conducted to find pipeline defects before they become a threat. The integrity assessment method for each pipeline segment is selected based on the types of potential integrity threats applicable to that segment. The integrity assessment methods could include:

- In-line inspection – an assessment method that uses an internal inspection tool (commonly referred to as a smart pig) that is capable of identifying and classifying pipe defects, including metal loss, dents, gouges, and other types of defects. The smart pig is inserted into the pipeline and is typically pushed by the flow of natural gas in the pipeline. Cleaning pigs are operated similarly only they function to clean the interior of the pipeline.
- Direct assessment – an assessment method that uses a systematic approach to identifying potential defects through data review, indirect assessments, and targeted hands-on inspections.
- Pressure testing – an assessment method where the pipeline is filled with an inert substance (typically water) and is tested to a pressure that is well above the normal operating pressure to validate the strength of the pipe and identify any smaller defects long before they could become a threat.

These data would be used by NEXUS to monitor the integrity of the pipeline.

2.5.2.5 Aboveground Facilities Operational Maintenance

The following operations and maintenance activities would be performed at new aboveground facilities:

- Planned blowdowns are the venting of natural gas from pipeline and related facilities usually in preparation for pipeline maintenance activities. NEXUS would notify local officials and landowners 48 hours in advance of planned gas releases and then again within 1 hour of the event.
- Unplanned blowdowns occur at a compressor stations when an automated station operating system detects an abnormal condition and engages the designed safety features of the facility. Unplanned blowdowns are rare. In either case, the process includes evacuating the pressurized gas within the piping being isolated, normally in less than 3 minutes.
- Painting of aboveground facilities is performed on a periodic basis, as needed, based on site specific conditions and the effect of the elements on the paint condition. Painting of aboveground facilities is typically performed about every 15 years.

- Valve maintenance is typically performed at least once a year, which consists of lubrication and ensuring the valves are operating property.

2.6 Avoidance and Conservation Measures

NEXUS employed conservation measures during the siting phase of the Project to avoid, minimize, and mitigate potential adverse effects on fisheries, wildlife, aquatic and terrestrial habitats, and existing land uses. NEXUS would also implement conservation measures during the construction and operation phases of the Project to avoid or minimize potential adverse effects on these resources. These conservation measures are described in the following sections.

2.6.1 Project Routing

The NEXUS pipeline route was sited to maximize co-location with existing already disturbed and maintained utility rights-of-way or existing actively cultivated agricultural land to the extent practicable. Deviations from these co-locations were made where potential impacts to residential structures, screening, environmental, or construction issues warrant or at the request of stakeholders.

NEXUS has routed the proposed pipeline to minimize disruptions to T&E species by avoiding preferred habitats where practicable, including wetland areas, waterbodies, and associated riparian vegetation, as well as intact forested areas. Undisturbed upland areas that may be utilized for nesting, such as large open grasslands and shrubland, were also avoided to the extent practicable. Several of the deviations of the route were created to avoid unnecessary impacts to woodlots located adjacent to existing rights-of-way, reducing the overall percent of co-location while increasing the percentage of active agricultural impact. As such, the majority of the pipeline is located within active agricultural land use, accounting for approximately 79 percent of the Project area. Additionally, approximately 44 percent of the pipeline is co-located with existing utility corridors. In total, over 92 percent of the proposed pipeline avoids land use conversion due to either co-location with a utility or being located within active agricultural land. The pipeline facilities also traverse or are adjacent to urban and developed lands; therefore, the majority of vegetative communities in the area reflect previous anthropogenic disturbance. Consequently, the NGT Project crosses a small percentage of relatively intact, less disturbed natural communities along the pipeline. The NEXUS has further avoided potential impacts to T&E species by designing the temporary and permanent access roads and aboveground facilities within mainly active agricultural land.

The routing to avoid high quality resources has led to zero fragmentation of natural areas by the proposed Project, determined by analyzing the route for fragmentation of forested areas, as defined by FWS.

2.6.2 Waterbody Crossing Methods

This section describes measures that would be implemented to minimize effects to aquatic resources within the Project corridor. Proposed crossing methods include wet crossing, dry crossing, conventional bore, and HDD. Proposed crossing methods are dependent on several factors, including waterbody width and potential presence of fishery and aquatic wildlife resources. Minor waterbodies are defined by FERC as 0- to 10-foot bank width, intermediate waterbodies are greater than ten feet and less than 100-feet bank width, and major waterbodies are greater than 100-foot bank width.

The wet open cut method would involve excavation of the pipeline trench across the waterbody, installation of the pipeline, and backfilling of the trench, with all equipment working from the banks of the

waterbody. Water is not diverted around the construction area, but is allowed to pass through the trench. Dry open cut crossing methods would include installation of flume pipes and/or dam and pump to divert water around the construction area. The FERC Procedures require that all in-stream construction activities for open cut crossings of minor waterbodies (including trenching, pipe installation, backfill, and restoration of the streambed contours) be completed within 24 hours [except when blasting and other rock breaking activities are required] and within 48 hours for intermediate streams. Stream banks and unconsolidated streambeds may require additional restoration after this time period. The conventional bore method and HDD methods allow installation of the pipeline underneath the waterbody without requiring in-stream construction. The majority of the highest quality habitat areas along the Project that could not be routed around have been avoided through the implementation of HDD crossing methods. HDD methods have been designed specifically to avoid large, complex wetlands, particularly forested wetlands, in addition to large stream/river crossings and associated riparian vegetation. Major waterbody crossings and crossings of federal and state-designated waterbodies are proposed to be crossed using the HDD crossing method to avoid in-stream disturbance and to minimize tree clearing at stream banks along these sensitive waters. NEXUS has developed a HDD Monitoring and Inadvertent Return Contingency Plan for the potential risk of inadvertent release or loss of drilling fluid when certain adverse subsurface conditions are encountered.

Dry cut, conventional bore, or HDD would be used for crossing all waterbodies identified as having fisheries or aquatic wildlife of concern. Wet cut crossings would not be used in waterbodies with known resources of concern, therefore, no in-stream impacts to fisheries are expected using wet cut methods. Additionally, no impacts to fisheries are expected with conventional bore or HDD crossings as no in-stream work is required to employ these methods.

The majority of minor or intermediate waterbodies would be dry cut. Successful implementation of this technique would substantially avoid impacts on resources. Dry cut construction impacts on resources may include direct contact by construction equipment, increased sedimentation and water turbidity immediately downstream of the construction work area, alteration or removal of aquatic habitat cover, introduction of pollutants, impingement or entrainment of fish and other biota attributed to the use of water pumps at dam and pump crossings, and downstream scouring associated with use of those same pumps. Temporary erosion control devices (sediment barriers) would be installed and maintained adjacent to the waterbody and within the construction work area, as needed to further minimize the potential for sediment runoff. Pump intake hoses would be screened appropriately to prevent the entrainment of fish and wildlife and minimize the potential for impingement. Fish and wildlife passage during dam and pump crossings would be temporarily restricted during the installation of the new pipeline and would be restored immediately after the pipeline is installed and backfilled. The in-stream activities would be completed within 24 to 48 hours (depending on stream size) in accordance with the FERC Procedures. The short term and localized interruption of fish and wildlife passage is not anticipated to affect the success of fish migration within the stream systems. To minimize potential impacts, waterbodies would be crossed as quickly and safely as possible. Additionally, efforts would be made to plan work during dry conditions for intermittent and ephemeral channels, where practicable. Adherence to the construction procedures would ensure that adequate stream flow would be maintained throughout construction to reduce temporary impacts on the aquatic biota.

2.6.3 Stream Crossing Structures and Temporary Workspaces

To minimize long-term impacts to streams caused by installation of temporary bridges, bridges and associated supports would be removed as part of the restoration process. ATWS would be located at least 50 feet away from the waterbody edge, topographic, and other site specific conditions permitting and except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. If conditions do not permit a 50-foot setback where required, NEXUS would request a variance from the FERC's Procedures.

2.6.4 Erosion and Siltation/Sedimentation Controls

To reduce the effects of erosion and siltation that could occur with trench de-watering, trench water would be discharged into an energy dissipation/sediment filtration device, such as a geotextile filter bag or straw bale/geotextile structure located away from the water's edge to prevent silt-laden water from flowing directly into the waterbody in accordance with the Project E&SCP and applicable permits. Monitoring would be conducted to ensure that all flow from the structure is infiltrating into the underlying soil.

A 50-foot-wide herbaceous strip is left on the approach until immediately before construction to provide a natural sediment filter that helps minimize the potential for erosion immediately adjacent to the waterbody and sedimentation from cleared upland areas. With the exception of stream buffers and forested wetlands, stumps are typically removed over the width of the permanent right-of-way. Initial grading of the herbaceous strip is limited to what is needed to install the equipment bridge and, where a large grade cut is needed, to the extent necessary to safely implement the construction activity. After clearing and prior to grading activities, temporary erosion control devices (sediment barriers) would be installed and maintained adjacent to the waterbody and within the construction work area, as needed to further minimize the potential for sediment runoff.

Consistent with the FERC's Procedures, NEXUS plans to complete construction activities, except for blasting and other rock breaking measures, within 24 hours at minor wet open cut crossings and within 48 hours at intermediate wet open cut crossings. Adherence to measures outlined for open wet cut crossings in the Project E&SCP. Use of equipment operating in the waterbody would be limited to that needed to construct the crossing. Material excavated from the trench would be kept to a minimum and would be stockpiled in the construction right-of-way at least 10 feet from the water's edge or in ATWS (located at least 50 feet from the water's edge), material excavated from the trench would be used as backfill, any excess material would be removed from the waterbody; and the waterbody bottom would be returned to its original contour.

Erosion control devices, such as silt fences and other best management practices, would be placed at the downslope edges of the spoil piles to prevent sediment from entering the waterbody. Spoil removed during the trenching would be stored away from the water's edge and protected by sediment containment structures. Pipe strings would be pre-fabricated into one continuous section on one bank and either pulled across the trench to the opposite bank, carried into place and lowered into the trench, or floated across the isolated portion of the stream if the trench is inundated. Where these methods are employed, ATWS areas would be required for assembly of the pipe strings and spoil storage. Consistent with the FERC Procedures, NEXUS plans to complete construction activities within 24 hours at minor dry cut waterbody crossings and within 48 hours at intermediate dry cut crossings. A minimum cover depth of 5 feet would be maintained over the pipeline for all designated waterbodies crossed using a dry crossing method. NEXUS may choose

to use mainline construction procedures across minor waterbodies where the wet cut crossing method is proposed. In these instances, a flume pipe would be installed immediately after trenching is completed. The flume pipe would remain in place until the lowering-in process. The flume pipe would be removed just prior to lowering in the pipeline. The 24-hour restoration timeframe starts as soon as the flume is removed.

2.6.5 Blasting

Waterbodies identified as having confirmed rare species would be crossed using the HDD pipeline installation method and, therefore, would not be impacted by blasting. For waterbodies proposed for open cut crossings, rock drills or test excavations may be performed to evaluate subsurface conditions along the ditch-line. The results of these investigations would allow better planning for blasting activity within waterbodies. If it is determined that subsurface rock is unrippable, blasting for ditch excavation may be necessary. In these areas, care would be taken to prevent damage to underground and aboveground structures, as well as to springs, water wells, or other surface water resources. For testing and any subsequent blasting operations, stream flow would be maintained through the site during blasting operations. Blasting would be performed in accordance with the NGT Project Blasting Plan.

When blasting is required, FERC timeframes for completing in-stream construction begin when the removal of blast rock from the waterbody is started. The excavation of the test pit or rock drilling is not included in the time window requirements for completing the crossing. For testing and any subsequent blasting operations, stream flow would be maintained through the site. If, after removing the blast rock, additional blasting is required, a new timing window would be determined through consultation with the Environmental Inspector (EI). If blasting impedes the flow of the waterbody, the contractor can use a backhoe to restore the stream flow without triggering the timing window. During blasting operations, the contractor shall comply with the waterbody crossing procedures specified in the NGT Project E&SCP as well as any Project-specific permit conditions. Blasting is not expected to impact fishery and wildlife resources beyond what is described for normal construction activities.

2.6.6 Hydrostatic Testing

Proposed sources of water for hydrostatic testing of proposed pipeline facilities have been identified for aboveground facilities, mainline pipe, and proposed HDD pipeline segments. Discharge locations would be sited within well vegetated upland areas within the same watersheds, where practicable. If local water sources are used for hydrostatic testing, withdrawal intake hoses would be fitted with intake screen devices to prevent the entrainment of small fish or wildlife during water withdrawal. Discharge would comply with regulatory permit conditions and would be controlled to prevent scour and sedimentation, flooding, or the introduction of foreign or toxic substances into existing aquatic systems. Erosion and sediment control measures described in the Project E&SCP would be implemented to minimize the potential for downstream sedimentation and streambed disturbance with the potential to impact fish and macroinvertebrates. Hydrostatic test water appropriations and discharges are not expected to result in entrainment of fish and wildlife, loss of habitat, or adverse effects to water quality.

2.6.7 Spill Prevention, Control and Countermeasures

Accidental spills of construction-related fluids (i.e., oil, gasoline, or hydraulic fluids) on the landscape or directly into waterbodies could result in water quality effects affecting fish and other organisms. Effects to fisheries would depend on the type and quantity of the spill, and the dispersal and attenuation characteristics of the waterbody. To reduce the potential for surface water contamination, the

NEXUS SPCC Plan would be in place prior to construction for required implementation by the contractor(s).

To minimize spill risk, refueling or other handling of hazardous materials within 100 feet of wetland and waterbody resources would be restricted. If the 100-foot setback cannot be met, these activities would be performed under the supervision of an EI in accordance with the SPCC Plan and following the issuance of a variance by FERC. The SPCC Plan also specifies that routine inspections of tank and storage areas would be conducted to help reduce the potential for spills or leaks of hazardous materials.

2.6.8 Riparian Zone Construction

Riparian zones include all vegetated areas within 100 feet of the banks of waterbodies (U.S. Environmental Protection Agency [EPA], 2014). Clearing activities would involve the removal of all trees and brush from the 100-foot-wide nominal construction right-of-way. Woody vegetation along the 50-foot permanent easement is cleared to the edge of the waterbody; however, where available, a 50-foot-wide herbaceous strip is left on the approach until immediately before construction to provide a natural sediment filter that helps minimize the potential for erosion immediately adjacent to the waterbody and sedimentation from cleared upland areas.

Riparian zone construction would include the removal of trees from the edges of waterbodies at the crossing, which may reduce shading of the waterbody, diminish escape cover, and potentially result in locally elevated water temperatures. Elevated water temperatures can, in turn, lead to reductions in levels of dissolved oxygen, which can negatively influence habitat quality and the fish and wildlife populations that occupy these habitats. These potential impacts are expected to be temporary, as the majority of the construction right-of-way would be allowed to restore fully to previous conditions. FERC Procedures dictate that a 25-foot-wide riparian strip adjacent to waterbodies would be revegetated utilizing native plant seed mixes. Limited vegetation management and clearing would allow vegetation to restore along the waterbody banks. A 10-foot-wide area centered on the pipeline would be maintained with herbaceous vegetation to facilitate periodic pipeline corrosion/leak surveys. Trees would be allowed to grow within the 50-foot permanent easement, however any trees within 15 feet of the pipeline that have roots that could compromise the integrity of the pipeline coating or impact safety, may be cut and removed from the right-of-way during maintenance activities.

Implementing NEXUS' construction, restoration, and mitigation procedures may result in limited, short-term impacts to fishery and wildlife resources and the aquatic habitats upon which these fish and wildlife resources depend. Over the long term, invertebrate populations would recolonize the crossing area and all temporary work areas would revert to their original condition, including re-establishment of riparian cover. Furthermore, operation and routine maintenance of the pipeline rights-of-way and aboveground facilities, which would be restricted to clearing and mowing vegetation on the permanent right-of-way, are not expected to have any noticeable impact on fishery resources in the Project area.

2.6.9 Vegetation Clearing

Vegetative clearing would be required for construction of proposed pipeline facilities that traverse forested or shrub-scrub habitats. The limits of clearing would be identified and flagged in the field prior to clearing operations. Initial clearing operations would include the removal of vegetation within the pipeline permanent easement and the temporary construction workspace either by mechanical or hand cutting. In wetlands, trees and brush would either be cut with rubber-tired and/or tracked equipment, or hand-cut.

Unless grading is required for safety reasons, wetland woody vegetation would be cut off at ground level leaving existing root systems intact outside of the area excavated for the trench. The aboveground vegetation would be removed from the wetlands for chipping or disposal. In uplands, tree stumps and rootstock would be left in the temporary workspace wherever possible to encourage natural revegetation. Brush and tree limbs would be chipped and removed from the right-of-way.

The cleared width within the temporary construction workspaces would be kept at 100 feet where possible, with additional temporary workspace in areas that would require more space for all other activities required to safely construct the pipeline. Following construction, the entire pipeline right-of-way would be revegetated, and the minimum right-of-way width necessary (maximum of 50 feet) for operation would be maintained by NEXUS. The temporary workspace areas used during construction would be seeded and allowed to revegetate with no further maintenance or disturbance associated with the pipeline. In accordance with the FERC Plan, all disturbed areas would be monitored to determine the post-construction revegetative success for two growing seasons following construction, or until revegetation is successful.

2.6.10 Environmental Training for Construction

Consistent with FERC guidelines, environmental training would be given to NEXUS' personnel and to contractor personnel whose activities may impact the environment during pipeline and aboveground facility construction (training protocol and content are outlined in the Project E&SCP). The level of training would be commensurate with the type of duties of the personnel. All construction personnel from the chief inspector, EI, craft inspectors, and contractor job superintendent to loggers, welders, equipment operators, and laborers would be given the appropriate level of environmental training. The training would be given prior to the start of construction and throughout the construction process, as needed. The training program would cover the FERC Plan and FERC Procedures, Project-specific permit conditions, company policies, cultural resource procedures, T&E species restrictions, the Project E&SCP, the SPCC Plan, and any other pertinent information related to the Project. As part of the training all workers would be alerted to the possible presence of rare species and would be instructed to communicate any findings within the work area directly with the EIs who would coordinate with Project biologists. In addition to the EIs, all other construction personnel are expected to play an important role in maintaining strict compliance with all permit conditions to protect the environment during construction.

2.7 Mitigation

2.7.1 Impacts on Threatened and Endangered Species

During consultation, FWS stated that habitat utilized by federally-listed T&E species, specifically Indiana bat and northern long-eared bat, may require mitigation. NEXUS and FWS have executed a Memorandum of Understanding (MOU) committing to mitigation for federally-listed T&E species habitat impacts. Mitigation for occupied bat habitat focuses on assigning ratios to the impact area to determine mitigation acreages depending on quality of habitat, as discussed in section 2.7.2. Mitigation ratios within occupied Indiana bat habitat may be different than the ratios calculated for migratory birds. NEXUS has ongoing communications with FWS to determine the mitigation required for Indiana bat and northern long-eared bat habitat potentially impacted by the Project.

2.7.2 Potential Migratory Bird Habitat Impacts

Migratory birds are defined as species which nest in the United States and Canada during summer months, and migrate south to the tropical regions of Mexico, Central or South America, and the Caribbean for the non-breeding season. These migratory birds are protected under the MBTA (16 U.S. Code 703-711). Additionally, bald eagles and golden eagles are protected under the BGEPA (16 U.S. Code 668-668d). Executive Order (EO) 13186 (66 Federal Register 3853, January 17, 2001) directs federal agencies to identify areas where unintentional take is likely to have a measurable negative effect on migratory bird populations. This EO also promotes conservation of migratory birds through enhanced collaboration with the FWS. EO 13186 states that emphasis should be placed on species of concern, priority habitats, and key risk factors. Particular focus should be given to addressing population-level impacts.

A MOU was created between FERC and FWS in 2011 to implement the EO with a primary intention to avoid and minimize impacts to migratory birds. The obligations of FERC include, as appropriate, requiring applicants to mitigate negative impacts on migratory birds and their habitats by proposed actions, in compliance with and/or supporting the intent of the MBTA, EO 13186, BGEPA, ESA, and other applicable statutes. The 2011 MOU defines mitigation as a) avoiding the impact altogether by not taking a certain action or parts of an action, b) minimizing impacts by limiting the degree or magnitude of the action and its implementation, c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment, d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action, or e) compensating for the impact by replacing or providing substitute resources or environments.

NEXUS avoided impacts to natural areas wherever practicable, particularly in potential nesting areas for migratory birds. The NEXUS MBCP was created to identify migratory bird habitat that may be utilized by sensitive bird species within the Project area. Through the creation and adherence to the MBCP, no direct impacts to migratory birds are expected, as the nesting periods for birds included in the plan would be avoided by seasonal clearing restrictions. In addition to compliance with this MBCP, a MOU agreement has been executed between NEXUS and FWS to compensate for unavoidable potential migratory bird impacts.

Tree inventory surveys and extensive desktop analyses were conducted for the forested areas within the Project corridor to determine forest composition and structure. This information is being used by FWS – Region 3 to quantify forested impacts and to determine mitigation ratios for mature forest, intermediate forest, young forest, and scrub-shrub open land. The methodology used for these assessments is referred to as a Habitat Equivalency Analysis, which is a metric based on the total number of years that habitat is lost or degraded due to temporary or permanent conversions (National Oceanic and Atmospheric Administration [NOAA], 2015). Mitigation totals are estimated by utilizing growth factors of dominant tree species to determine the recovery time of impacted habitat to the pre-construction conditions. By creating an MOU with FWS, NEXUS has committed to compensatory mitigation for lost habitat.

As discussed with FWS, mitigation for migratory bird habitat would not overlap with mitigation for habitat occupied by federally-listed species.

2.7.3 Forested Wetland Impacts

Mitigation for forested wetlands impacted by the Project would be under the jurisdiction of the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act in Ohio and the Michigan Natural Resources and Environmental Protection Act implemented by the Michigan Department of Environmental Quality in Michigan. These regulatory agencies require that impacts to state and federally jurisdictional wetland and waterbody resources be avoided where possible, minimized when avoidance is not possible, and require compensation for unavoidable impacts. Mitigation requirements for wetland and waterbody impacts would be based on the final Project facilities configurations, estimated Project impacts, and mitigation requirements identified by applicable regulatory agencies. Similar to migratory bird habitat, impacts within wetlands would be mitigated for separately and independently of NEXUS' MOU agreement with the FWS.

3.0 ANALYSIS OF IMPACTS ON LISTED SPECIES AND DESIGNATED CRITICAL HABITAT THAT MAY BE AFFECTED BY THE PROJECT

Table 3.0-1 provides the listed and candidate species that may occur and designated critical habitat that is present in the counties crossed by the Project. For species and critical habitat that may be affected by the Project, an analysis of potential impacts due to the Project and a proposed ESA determination are detailed in the following sections.

TABLE 3.0-1
Federally Listed Species, Candidate Species, and Designated Critical Habitat in Counties Crossed by Proposed Project [a]

Scientific Name	Common Name	ESA Status	State: Counties
Setophaga kirtlandii	Kirtland's warbler	Endangered	OH: Erie, Lorain, Lucas, Sandusky
Lycaeides melissa samuelis	Karner blue butterfly	Endangered	OH: Lucas MI: Monroe
Neonympha mitchellii mitchellii	Mitchell's satyr	Endangered	MI: Washtenaw
Oarisma poweshiek	Poweshiek skipperling	Endangered	MI: Lenawee, Washtenaw
Oarisma poweshiek	Poweshiek skipperling	Critical habitat	MI: Lenawee, Washtenaw
Myotis sodalis	Indiana bat	Endangered	All Counties
Myotis septentrionalis	Northern long-eared bat	Threatened with 4(d) Rule	All Counties
Epioblasma torulosa rangiana	Northern riffelshell mussel	Endangered	MI: Monroe
Villosa fabalis	Rayed bean mussel	Endangered	OH: Fulton, Lucas
Epioblasma triquetra	Snuffbox mussel	Endangered	MI: Washtenaw
Platanthera leucophaea	Eastern prairie fringed orchid	Threatened	OH: Lucas, Sandusky MI: Monroe, Washtenaw
Sistrurus catenatus catenatus	Eastern massasauga	Threatened	OH: Columbiana, Erie, Huron, Lucas, Sandusky MI: Lenawee, Washtenaw

[a] FWS 2016a

These species are listed under the ESA and were identified by the FWS in a letter dated January 6, 2016 submitted to the FERC under docket number CP16-22-000 in response to the Notice of Application for the NGT Project. Based on the information provided, the FWS identified 10 federally-listed species and one species proposed for listing (i.e., the eastern massasauga rattlesnake) as within the range of, and that may be affected by, construction and operation of the proposed Project. The eastern massasauga has since been listed as threatened. These species along with their habitats, distributions, and threats are described in the following sections.

3.1 Kirtland's warbler

3.1.1 Species' Description and General Habitat Requirements

The Kirtland's warbler is a federally-listed endangered species. In adults, upperparts are blue-gray (brownish in fall and winter), streaked with black; underparts are yellow with black streaks on the sides; white eye ring is broken by black lores and eye line; whitish wing bars are indistinct; and the female is duller than the male, with brownish upperparts (NatureServe, 2015). This small songbird requires areas with small, scrubby jack pines for nesting and breeding. Specifically, the Kirtland's warbler is found in low scrub, thickets, and deciduous woodland (FWS, 2012a).

3.1.2 Distribution and Threats

Until 1995, the breeding range was nearly confined to the northern Lower Peninsula of Michigan, with relatively few nesting or summer records in Minnesota, Wisconsin, southern Ontario, and Quebec. While Michigan's Lower Peninsula is still the primary nesting range, as of 2012, the known nesting range also includes much smaller areas in Michigan's Upper Peninsula. The Kirtland's warbler arrives to breed in May, and is a breeding resident in five counties in Wisconsin, as well as 20 counties in Michigan (Alcona, Baraga, Chippewa, Clare, Crawford, Delta, Grand Traverse, Iosco, Kalkaska, Luce, Marquette, Missaukee, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, Schoolcraft, and Wexford Counties) (NatureServe, 2015).

This warbler migrates through Ohio in the spring and fall, traveling between breeding grounds in north-central North America and wintering grounds in the Bahamas. While migration occurs in a broad front across the entire state, approximately half of all observations in Ohio are within 3 miles of Lake Erie. During migration, individual birds usually forage in scrub-shrub or forested habitats and only stay in the area for a few days. During migration, Kirtland's warbler have been observed in a variety of habitats, including woodlands, scrub, fencerows, and vegetated yards, but prefer dense vegetation less than 1.5 meter in height. Kirtland's warbler enters and leaves the U.S. along the coast of North and South Carolina. Extreme wintering dates are between mid-November to late April, with the earliest arrivals reaching the Bahamas in August. Although, many adults may remain in the nesting range into late September and not pause in migration until at or near the destination (FWS, 1999a). In winter, the species occurs primarily in the Bahama Islands, including Grand Bahama, Abaco, Berry Islands, Andros, New Providence, Eleuthera, Cat Island, San Salvador, Green Cay, and the Turks and Caicos Islands, with reports of solitary individuals in Mexico, Dominican Republic, Cuba, and Bermuda (FWS, 2012a).

Kirtland's warblers face two significant threats: lack of young jack pine (*Pinus banksiana*) forest habitat and the parasitic brown-headed cowbird (*Molothrus ater*). Their nesting requirements, as well as cowbird parasitism, have caused drastic decreases in population levels, and led the FWS to list the Kirtland's warbler as an endangered species in 1967 (FWS, 2012a). A single pair of Kirtland's warblers requires at least 8 acres of dense young jack pine forest to nest, but often 30 to 40 acres is needed to raise their young. Kirtland's warblers nest only on the ground, near the lower branches in large stands of young jack pines that are 5- to 20-feet tall and 6 to 22 years old. Biologist's hypothesize the tree's age is crucial to nesting locations for these warblers, as the birds need low branches near the ground to help conceal their nests. Before the trees are 6 years old, the lower branches are not large enough to hide the nest. After 15 years, these lower branches begin to die.

The second greatest threat to Kirtland's warbler survival is the brown-headed cowbird. In a process known as nest parasitism, the cowbird lays eggs in other bird's nests, leaving the unsuspecting hosts to incubate and care for the young cowbirds. When a female cowbird lays its egg in a nest, it often removes one of the host's eggs. The cowbird egg hatches a day before the others, getting a head start on growth. The number of Kirtland's warbler fledglings produced per pair, per year is 2.2 in a good year, but varies. The probability of survival from egg to fledging is 0.32 under ideal conditions (i.e.,without cowbird parasitism). Adult survivorship from year to year has been estimated at 65 percent, with the average lifespan for adult birds of 2 years (FWS, 2012a).

3.1.3 Presence of Species in the Action Area

The Kirtland's warbler may occur in Erie, Lorain, Lucas and Sandusky Counties in Ohio (table 3.0-1).

3.1.4 Analysis of Potential Effect on Species

3.1.4.1 Effect on Critical Habitat

Critical habitat has not been designated for the Kirtland's warbler.

3.1.4.2 Effect on Species

FWS recommends clearing and construction timing restrictions to be applied to areas within 3 miles of Lake Erie to avoid impacts to the Kirtland Warbler. The current location of the proposed Project is further than 3 miles from Lake Erie, even at its closest location to the lake in Erie County. As such, Kirtland's warbler are not expected to occur within the Project area. Consequently, the proposed construction activities described in this BA are not anticipated to have any direct or indirect effects on the Kirtland's warbler.

3.1.5 Avoidance and Minimization Efforts

See section 2.6 for all conservation measures to be implemented by NEXUS to avoid and minimize impacts to avian species.

3.1.6 Determination of Effect under ESA

The proposed activities are expected to have ***no effect*** on the Kirtland's warbler. This determination was based on the avoidance of suitable habitat within the NGT Project corridor, the distance between the Project and Lake Erie, and FWS consultation.

Because no critical habitat has been designated, the Project would have ***no effect*** on designated critical habitat for the Kirtland's warbler.

3.2 Karner blue butterfly

3.2.1 Species' Description and General Habitat Requirements

The Karner blue butterfly is a federally-endangered species. The male and female of this small (wingspan of about one inch) butterfly are different in appearance. The topside of the male is silvery or dark blue, with narrow black margins. The female is grayish brown dorsally, especially on the outer portions of the wings, to blue on the topside, with irregular bands of orange crescents inside the narrow black border. The ventral side of both sexes is slate gray, with a continuous band of orange crescents along the edges of both wings, and scattered black spots circled with white (FWS, 2008; NatureServe, 2015).

Karner blues have four stages in its life cycle; the egg, larva, pupa, and adult. There are two generations per year, the first adults appearing in late May to mid-June. The second brood adults, emerging in mid-July to early August, lay their eggs singly in dried lupine seed pods or near the ground on the lupine stems. Eggs of the second brood hatch the following May. Additionally, although the Karner blue adults are nectar-feeders, the larvae are highly specialized, and feed exclusively on the leaves of wild lupine. Without lupine, the butterfly populations would not survive (FWS, 2008).

3.2.2 Distribution and Threats

In Michigan, the Karner blue butterfly is distributed in Allegan, Ionia, Kent, Lake, Mason, Mecosta, Monroe, Montcalm, Muskegon, Newaygo, and Oceana Counties. In Ohio, the species has been observed in Lucas County. Typically, relatively sedentary adults may sometimes move at least 2 kilometers, and possibly more. Most would likely never move beyond 100 to 200 meters from place of emergence. Some evidence shows that dispersal is most likely where habitat quality is declining or where nectar is scarce (NatureServe, 2015).

Habitat throughout the range of the Karner blue butterfly has been lost as a result of land development and lack of natural disturbance, such as wildfire and grazing by large mammals. Such disturbance helped to maintain the butterfly's habitat by preventing forest encroachment, encouraging lupine and flowering plant growth (FWS, 2008). Large population declines were documented in the 1970s and 1980s at most of the larger occurrences, often of 90 percent or more. The extirpation rate was high for populations that fell below one thousand (1,000) in the July brood. These declines led to the subspecies being federally-listed as endangered, and it has stabilized substantially as a result.

The Karner blue is extirpated in Maine, New Hampshire (but reintroduced), Massachusetts, Pennsylvania, Ohio (but likely to be reintroduced), and Ontario. However, there are still several substantial protected metapopulation occurrences in Michigan and Wisconsin, at least one in Indiana, and a few potentially viable smaller occurrences in these and other states, notably Minnesota, and at least one large population in New York. The Karner blue butterfly has become management dependent in all parts of its range, and would be unlikely to persist more than a decade or two if management were to cease. This subspecies was usually found in uncommon and declining natural communities, such as inland pine barrens and oak savannas, or in artificial habitats, like airports, where such communities formerly existed (NatureServe, 2015).

3.2.3 Presence of Species in the Action Area

The Karner blue butterfly may occur in Lucas County, Ohio, and Monroe County, Michigan (table 3.0-1).

3.2.4 Analysis of Potential Effect on Species

3.2.4.1 Effect on Critical Habitat

Critical habitat has not been designated for the Karner blue butterfly.

3.2.4.2 Effect on Species

The Karner blue butterfly is federally-listed as endangered. The species is state-listed as endangered in Ohio, and as threatened in Michigan. In Ohio, no impacts to this species are anticipated per the March 3, 2015 FWS response letter. FWS identified this species as potentially occurring near the proposed Project

areas in Michigan. NEXUS completed botanical surveys and confirmed that neither intact oak savanna nor wild lupine is located within the proposed Project corridor.

Based on FWS consultation and environmental surveys conducted in these areas, it would be unlikely that the Karner blue butterfly would be impacted by the Project. No direct or indirect effects are anticipated, due to the avoidance of oak savanna communities.

3.2.5 Avoidance and Minimization Efforts

See section 2.6 for all conservation measures to be implemented by NEXUS to avoid and minimize impacts to insect species.

3.2.6 Determination of Effect under ESA

The proposed activities are expected to have ***no effect*** on the Karner blue butterfly. This determination was based on the avoidance of suitable habitat within the NGT Project corridor and FWS consultation.

Because no critical habitat has been designated, the Project would have ***no effect*** on designated critical habitat for the Karner blue butterfly.

3.3 Mitchell's satyr butterfly

3.3.1 Species' Description and General Habitat Requirements

Mitchell's satyr is a federally-listed endangered species. This butterfly is medium sized, with a 1.75-inch wingspan, and an overall rich brown color. A distinctive series of orange-ringed, black circular eyespots, with silvery centers, are located on the lower surfaces of both pairs of wings for the male and female (FWS, 1999b; NatureServe, 2015). This butterfly inhabits prairie fens, which are geologically and biologically unique wetland communities. Hydrological processes are critical in maintaining the vegetative structure and ultimately the habitat for this species of butterfly. In addition to alteration of the hydrology and elimination of this fen habitat, invasion of woody plant vegetation reduces populations of suitable host plants for the Mitchell's satyr butterfly and its caterpillars. As the suitable prairie fen habitat is continually disrupted or lost, the species' distribution is limited, occurring at only nineteen (19) sites in southern Michigan and two (2) counties in north Indiana (FWS, 1999b).

3.3.2 Distribution and Threats

Mitchell's satyr butterfly has been extirpated from Ohio and New Jersey, is critically imperiled in Indiana, and at least imperiled in Michigan. There are estimated to be less than twenty (20) viable populations in the world. In Michigan, Mitchell's satyr butterfly has been observed in Barry, Berrien, Branch, Cass, Jackson, Kalamazoo, Lenawee, St. Joseph, Van Buren, Washtenaw, and Wayne Counties (NatureServe, 2015). As stated in the March 3, 2015 FWS response letter to TRC, the Ohio portion of the Project falls outside the species' range.

The Mitchell's satyr is restricted to rare, calcareous sedge wetlands. They occur in either true fens or, occasionally, sedge meadows in fen complexes, which are low nutrient systems that receive carbonate-rich ground water from seeps and springs (FWS, 1999b). The species may have originally dispersed along streams, but now few individuals leave their habitats, which are usually a few acres within large wetland complexes.

Threats and causes for decline historically have included filling of wetland habitats, over collection in New Jersey, off-road-vehicles in Michigan, and possibly spraying for mosquito control. Today, threats to the species include the development of upland areas, which may alter hydrology of adjacent wetland habitat. Beavers can impact and destroy fens and create or destroy sedge meadows. Invasion by purple loosestrife and/or phragmites can also alter species composition in suitable habitat. Excess deer herbivory can reduce or eliminate nectar sources, although it is not known whether deer could seriously damage the food plants or consume many larvae. Since almost all occurrences of subspecies *mitchellii* are now completely isolated, there is a high risk of extirpation of smaller populations due to natural processes (i.e., storms, drought) and a strong probability for a loss of genetic variability in some populations.

3.3.3 Presence of Species in the Action Area

The Mitchell's satyr may occur in Washtenaw County, Michigan (table 3.0-1).

3.3.4 Analysis of Potential Effect on Species

3.3.4.1 Effect on Critical Habitat

Critical habitat has not been designated for the Mitchell's satyr.

3.3.4.2 Effect on Species

Mitchell's satyr has historic occurrences in Washtenaw County, Michigan, and FWS identified this species as potentially occurring near the proposed Project Areas in Michigan. NEXUS completed botanical surveys and confirmed that no Michigan prairie fens or large undisturbed grasslands remain with the Project Area.

Based on FWS consultation and environmental surveys conducted in these areas, it would be unlikely that the Mitchell's satyr would be impacted by the Project. No direct or indirect effects are anticipated, due to the avoidance of due to the avoidance of suitable habitat within the NGT Project corridor.

3.3.5 Avoidance and Minimization Efforts

See section 2.6 for all conservation measures to be implemented by NEXUS to avoid and minimize impacts to insect species.

3.3.6 Determination of Effect under ESA

Proposed Project activities are expected to have ***no effect*** on the Mitchell's satyr butterfly. This determination was based on avoidance of suitable habitat within the NGT Project area and FWS consultation.

Because no critical habitat has been designated, the Project would have ***no effect*** on designated critical habitat for the Mitchell's satyr butterfly.

3.4 Poweshiek skipperling

3.4.1 Species' Description and General Habitat Requirements

The Poweshiek skipperling is a federally-listed endangered species. The Poweshiek skipperling is a small butterfly, with a wingspan of about 1 inch. It is dark brown above, with some light orange along the wing margins and a lighter orange head. The underside of the wings, which can be seen when at rest, are dark to light brown, with very prominent white veins that may make the wing look striped (FWS, 2014a).

3.4.2 Distribution and Threats

In Michigan, the Poweshiek skipperling has been observed in Jackson, Kent, Lenawee, Livingston, Oakland, and Washtenaw Counties. This butterfly lives in high quality prairie habitats and is typically found in select upland or wet tallgrass prairies. In Michigan, the skipperling has been found mainly in prairie fen habitats. Adult butterflies would feed on nectar from various prairie flowers, including purple coneflower (*Echinacea angustifolia*), blackeyed susan (*Rudbeckia hirta*) and palespike lobelia (*Lobelia spicata*). It is thought that the larval stage of the skipperling utilizes native, fine-stemmed grasses and sedges, such as little bluestem (*Schizachyrium scoparium*) and prairie dropseed (*Sporobolus heterolepis*). The Poweshiek skipperling populations have disappeared across much of its historic range, and now only a few known populations remain in the Midwest (FWS, 2014a; NatureServe, 2015).

Approximately 4 percent of the original tallgrass native prairie in the U.S. remains. Much of what is left is in small, isolated sites; as such, dispersal from site to site is limited. If the Poweshiek skipperling is extirpated at a site, there are often no populations nearby to contribute to recolonization. In addition to the loss of large blocks of contiguous prairie, the native grasslands that remain are often not managed in ways that can support Poweshiek skipperling populations. Historically, wildfire helped maintain the treeless nature of prairies; today, grazing, haying, and prescribed burns may replicate that effect. However, grazing or burning that is too intense, too frequent or conducted during the wrong time of the year may not create conditions suitable for the butterfly or may potentially kill too many of the butterflies to sustain the population (NatureServe, 2015).

3.4.3 Presence of Species and Critical Habitat in the Action Area

The Poweshiek skipperling may occur in Lenawee and Washtenaw Counties, Michigan (table 3.0-1).

Critical habitat for the Poweshiek skipperling has been designated in Lenawee and Washtenaw Counties, Michigan (table 3.0-1)

3.4.4 Analysis of Potential Effect on Species

3.4.4.1 Effect on Critical Habitat

The Project is not located within FWS designated critical habitat for the Poweshiek skipperling.

3.4.4.2 Effect on Species

The Poweshiek skipperling is federally-listed as endangered and state-listed as threatened in Michigan. The FWS noted occurrence records for Washtenaw County, Michigan. The majority of the route in Michigan is within active agriculture, commercial, or industrial land uses. NEXUS completed botanical surveys and confirmed that no Michigan prairie fens or large undisturbed grasslands remain with the proposed Project corridor.

Based on FWS consultation and environmental surveys conducted in these areas, it would be unlikely that the Poweshiek skipperling would be impacted by the Project. No direct or indirect effects are anticipated, due to the avoidance of due to the avoidance of suitable habitat within the NGT Project corridor.

3.4.5 Avoidance and Minimization Efforts

See section 2.6 for all conservation measures to be implemented by NEXUS to avoid and minimize impacts to insect species.

3.4.6 Determination of Effect under ESA

The proposed activities are expected to have ***no effect*** on the Poweshiek skipperling. This determination is based on avoidance of suitable habitat within the NGT Project area and FWS consultation.

Because no critical habitat is present with the action area, the Project would have ***no effect*** on designated critical habitat for the Poweshiek skipperling.

3.5 Indiana bat

3.5.1 Species' Description and General Habitat Requirements

The Indiana bat is a medium-sized, temperate, insectivorous, migratory bat species, approximately 5 centimeters (cm) in length, with a wingspan of 24 to 27 cm, and a weight of approximately 7 to 8 grams. The pelage is gray-brown and the nose pinkish (Michigan Natural Features Inventory [MNFI], 2007). The toes of the Indiana bat are covered in short, fine hairs which do not extend beyond the tips of the toes. Indiana bats have a keeled calcar (the cartilage that extends from the ankle), which helps to support the uropatagium (tail membrane) (FWS, 2002b). The Indiana bat closely resembles the little brown bat (*Myotis lucifugus*) and the northern long-eared bat, but can be identified by its long and pointed, symmetrical tragus and dull coloration (FWS, 2007). During winter, Indiana bats are restricted to suitable underground hibernacula, such as caves and abandoned mines. In summer, they mainly occupy roost sites under exfoliating bark of dead or living trees in forested habitats (FWS, 2007). Select caves and mines have been designated as critical habitat for the Indiana bat. The species was listed as federally-endangered in 1973 (FWS, 2007).

The Indiana bat occurs in forests and caves from the east coast to Midwestern U.S., primarily inhabiting regions in the Midwest (FWS, 2006). The Indiana bats utilize limestone caves during the winter and forested areas during the fall, spring, and summer. The forested areas are utilized differently during each season. A typical summer habitat roosting area consists of large-diameter, standing dead trees, with direct exposure to sunlight. Known tree species used by Indiana bats are ash, elm, hickory, maple, poplar, and oak.

3.5.1.1 Fall Habitat

During the fall, from August through October, Indiana bats migrate from summer roosting areas and congregate at hibernation sites (hibernaculum) where bats engage in mating activities. Timing of migration, however, may vary by sex, age, and reproductive condition. Indiana bats can arrive at their hibernacula in preparation for mating and hibernation as early as late July. Adult males and nonproductive females make up most of the early arrivals. The number of Indiana bats active at hibernacula increases through August, and peaks in September and early October (FWS, 2007). During this time, bats also forage the surrounding areas to build fat reserves needed for hibernation (FWS, 2006). Fall swarming for both species begins mid-August around caves, mines, cliffs, and rock outcroppings. Swarming continues through October in most years, followed by hibernation in suitable hibernacula (FWS, 2007).

3.5.1.2 Winter Habitat

From October through April, Indiana bats hibernate, preferring cool, humid caves with stable temperatures under 50°F. Indiana bats tend to hibernate in the same cave or mine at which they swarm; however, some bats may move from traditional hibernacula to occupy manmade hibernacula (e.g., mines),

as these become available (FWS, 2007). Indiana bats usually hibernate in large, dense clusters, with around 400 bats per square foot, but may also form smaller clusters. Indiana bats have been known to hibernate with other bat species, including the northern long-eared bat (FWS, 2007). There are known hibernacula located within Ohio and Michigan, and this species may be present within all of the counties crossed by this proposed Project (FWS, 2006).

3.5.1.3 Spring Habitat

Indiana bats emerge from hibernacula between mid-April and late-May, and forage in areas typically within ten miles of the hibernaculum. After emerging, females depart for their summer roosting areas and are pregnant via delayed fertilization by the time they reach their destination. The majority of Indiana bats are expected to be in their summer range by mid-May. In general, the peak spring emergence of female Indiana bats is mid-April (most males are still hibernating at this time). Peak emergence of males occurs in early May, although a few may still be hibernating in mid-May. Spring migration surveys conducted in Pennsylvania, New Jersey, and New York indicate that Indiana bats typically emerge from hibernacula on the first unseasonably warm night in mid-April (FWS, 2007). Indiana bats have a strong fidelity to their roost trees, foraging areas, and commuting corridors, and would often travel hundreds of miles to return to areas used in previous years. Male and non-reproductive female Indiana bats may stay near the hibernacula, or travel to summer habitat, in spring.

3.5.1.4 Summer Habitat

The following sections describe the types of summer habitat that may be utilized by Indiana bats.

Maternity Roost Habitat

Small maternity colonies are formed under exfoliating bark for the duration of the summer months (FWS, 2006). Roost trees commonly include mixed mesophytic hardwoods and mixed hardwood-pine stands (FWS, 2015a). According to the FWS, potential roosting habitats are those with at least 16 suitable trees per acre. Suitable trees are over nine inches in diameter at breast height (dbh); dead, dying, or damaged trees of any species, over 9 inches dbh, with at least 10 percent exfoliating bark; dead trees, broken trees, or stumps over 9 inches dbh and over 9 feet in height; or live trees of any species over 26 inches dbh (FWS, 2006).

The Indiana bat is highly specific when selecting trees for maternity roosts. Trees used as maternity roosts by Indiana bats are almost exclusively trees with exfoliating bark or open cavities larger than a fist. Shagbark hickory is commonly cited as the classic maternity roost tree for this species, but large oak snags and eastern cottonwoods (*Populus deltoides*) are also frequently used, possibly for the thickness and tenacity of exfoliating bark on dead or damaged trees (Gardner, Garner, & Hofmann, 1991). Indiana bats exhibit a degree of roost fidelity to maternity trees. In addition, maternity roost trees need to be exposed to sunlight, so as to provide thermoregulatory conditions necessary for the rapid development of young (Humphrey, Richter, & Cope, 1977). The Indiana bat usually chooses trees at the edge of streams or in beaver ponds, standing alone in fields, along fence-rows, or in forest clearings, as they tend to receive more sunlight than a tree in the middle of dense woods or forest. Female bats often identify and utilize secondary and tertiary roost trees within proximity although the primary roost is usually the most suitable (Britzke, Harvey, & Loeb, 2003).

Non-Maternity Roost Habitat

Summer habitat for non-reproductive females and males includes small to medium river and stream corridors, with well-developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests (FWS, 2007). They can also be found in adjacent and interspersed non-forested habitats, such as emergent wetlands and edges of agricultural fields or pasture. Some males and non-reproductive females may roost in smaller trees (less than 5 inch dbh); however, they would stay in close range to woodlands with larger diameter trees and snags.

Foraging Habitat

Indiana bats often forage in riparian and upland forests, as well as cropland borders and wooded fencerows. Preferred habitat includes streams and associated floodplain forests, and impounded bodies of water, including ponds and reservoirs. Indiana bats search for flying insects at or near the canopy at night, and similar to other bat species, utilize openings in the forest, such as stream corridors and rights-of-way, to feed (FWS, 2006). Indiana bats typically forage within 2.5 miles of their roost trees.

3.5.2 Distribution and Threats

Indiana bats are found in the Northeastern and Midwestern U.S., specifically within New York, West Virginia, Virginia, New Jersey, Pennsylvania, Vermont, North Carolina, Alabama, Arkansas, Tennessee, Kentucky, Indiana, Missouri, Illinois, Ohio, and Michigan. The largest populations of the Indiana bat are found in Indiana, Missouri, Kentucky, and Illinois (FWS, 2015b). The Ohio populations of known hibernating Indiana bats are currently less than 5,000 individuals, a 48.1 percent decrease in population from the estimated 9,300 population in 2013. All counties in Ohio are within the range of the Indiana bat. There are 20 known Indiana bats hibernating in Michigan, which appears to be constant since the 1980s. The current range of the Indiana bat in Michigan is limited to the southern half of the state, including the three counties crossed by the Project, Lenawee, Monroe and Washtenaw.

The Indiana bat has seen marked decline in population sizes since 1981. There are many things that factor into the Indiana bats decline. These include, but are not limited to, disease, specifically white-nose syndrome (WNS); winter and summer habitat destruction and degradation; and wind turbine farms.

Since 2006, WNS has emerged as a serious threat to Indiana bats. WNS affects hibernating bats as the fungus thrives in cold and humid conditions, such as those in the bat hibernacula. The fungus invades living tissues, causing epidermal erosions and ulcers, which in turn interrupts physiological functions (FWS, 2007). WNS is primarily transmitted through bat-to-bat contact, but may be spread between caves through humans, via clothing and gear.

Other major threats to Indiana bats include the destruction and degradation of hibernation habitat. Modifications to caves that affect the thermal regime of the cave compromise the ability of the cave to support Indiana bats. Such modifications are commonly made to accommodate tourists, create doors and gates, improve cave access, and for mining purposes. The combined facts that bats congregate in large numbers in a few hibernacula and that caves have been over-utilized for commercial, recreational, scientific, or educational purposes makes Indiana bats particularly vulnerable to hibernacula habitat degradation. Collapse of mines and recent mining or quarry activities are also a threat to the winter habitat of Indiana bats. Generally, however, threats to the integrity of hibernacula have decreased since the time that Indiana bats were listed as endangered (FWS, 2007).

The Indiana bat is also susceptible to loss and degradation of summer, migration, and swarming habitats. Tree clearing decreases the amount of summer habitat available to Indiana bats; however, Indiana bats are known to occupy woodland habitats ranging from completely forested to highly fragmented forest (FWS, 2007). Thus, forest cover cannot be a completely reliable predictor of where Indiana bat colonies would exist. However, it is easy to determine annual locations of bat maternity colonies, as Indiana bats have a strong fidelity to roost trees used in past years. When, and if, a traditional maternity roost normally utilized by Indiana bats is lost or degraded, it is unknown how long and far the bats would search for new roosts. It can be assumed, however, that this stressor is detrimental to the bats energy demands and potential offspring. In one study of big brown bats, the loss of a past summer habitat resulted in a 56 percent decline in reproductive status that year (FWS, 2007). It is reasonable to conclude that Indiana bats reproductive rates would be affected by habitat alterations; however, the effects of landscape-level changes in summer habitat on Indiana bats is unclear. Research has demonstrated that Indiana bats tend to congregate in larger densities in temperate old growth forests (>160-year-old trees). However, in the core maternity range of the Indiana bat in the Midwest, old growth forest has been virtually eliminated (FWS, 2007).

An emerging risk to Indiana bats is the recent increase in the number of wind energy projects which construct and operate wind turbines. As of 2014, seven Indiana bat fatalities had been documented and confirmed at wind energy facilities (FWS, 2014b). More research needs to be done on wind facilities to determine the long-term effects on the Indiana bat.

Other less-studied threats to Indiana bats include rabies disease, parasites, predation at hibernacula (ex. raccoons) natural disasters, exposure to environmental contaminants (ex. pesticides and insecticides), and a decrease in water quality in streams and rivers (FWS, 2007).

3.5.3 Presence of Species and Critical Habitat in the Action Area

The Indiana bat may occur in all counties crossed by the Project (table 3.0-1).

Critical habitat has been designated for the Indiana bat, but is not present in Ohio or Michigan.

3.5.4 Analysis of Potential Effect on Species

3.5.4.1 Effect on Critical Habitat

The Project is not located within FWS designated critical habitat for the Indiana bat.

3.5.4.2 Effect on Species

The entire Project area is within the range of the Indiana bat. The FWS identified four areas along the Project where the route intersects with the buffers of known Indiana bat records in Summit, Medina, and Erie Counties, Ohio. These buffers were created to identify summer habitat that may be utilized by Indiana bats. FWS did not identify any known Indiana bat hibernacula within the vicinity of the Project area.

Section 3.7.1 describes the forested areas within the Project area that are proposed to be impacted. Discussion of the potential impacts to the Indiana bat are found in section 3.7.1.1, as well as in table A-1.

3.5.5 Avoidance and Minimization Efforts

Section 3.8 describes the conservation measures NEXUS would employ to minimize impacts to protected bat species.

3.5.6 Determination of Effect under ESA

The Project is ***likely to adversely affect*** Indiana bats and the species' suitable habitat. The primary impact to Indiana bats would be from the removal of suitable summer habitat and increased predation. Specifically, any summer clearing of suitable roosting habitat within occupied areas may harm, harass, or cause the mortality of individual Indiana bats. Direct impacts would be avoided by prioritizing clearing within the winter months, to the extent possible. NEXUS would prioritize clearing as outlined in the Clearing Contingency Plans (CCPs) in section 3.8.1. The alternate clearing restrictions outlined in this BA would only be used in areas that have not received authorizations to clear in the winter months, mainly due to schedule delays or landowner access restrictions.

Because no critical habitat is present within the action area, the Project would have ***no effect*** on designated critical habitat for the Indiana bat.

3.6 Northern long-eared bat

3.6.1 Species' Description and General Habitat Requirements

The northern long-eared bat is a federally-listed threatened species. Northern long-eared bats are a medium-sized bat approximately 8.75 cm in length, with a wingspan of 23 to 26 cm, and a weight of approximately 6 to 9 grams (MNFI, 2007). The northern long-eared bat is characterized by a medium to dark brown pelage on the back, and a gray to tawny brown pelage underneath. The ears of the northern long-eared bat extend at least 3 millimeter (mm) beyond the tip of the nose when flattened. The northern long-eared bat is distinguished from other *Myotis* species by a long, pointed tragus and a longer tail (Wisconsin Department of Natural Resources [WDNR], 2016).

The northern long-eared bat is a temperate, insectivorous, migratory bat that hibernates in mines and caves in the winter, and spends summers in wooded areas (FWS, 2016c). They prefer a wide variety of forested/woodland habitats in order to roost, forage, and travel. They can also be found using interspersed, non-forested habitats, such as emergent wetlands and edges of agricultural fields and pastures. The wooded areas may be dense or loose congregations of trees, with variable amounts of canopy closure. Northern long-eared bats roost in cavities, beneath bark, and in crevices of live or dead trees. Isolated trees may be considered suitable habitat when they exhibit the same characterizations of suitable roost trees and are less than 1,000 feet from the nearest suitable tree, woodlot, or wooded fencerow. Typically, spring migration occurs between mid-March to mid-May. Young are born in maternity colonies in June and July, and can fly by late July. Fall migration begins in mid-August and can last until mid-October (FWS, 2016c).

3.6.1.1 Fall Habitat

In the fall, upon arrival at the hibernacula, northern long-eared bats participate in a behavior called swarming, where large numbers of bats fly in and out of cave entrances during the day. At this time, mating occurs, and female bats enter directly into hibernation. Female bats do not necessarily hibernate at the same hibernacula where they have mated. Bats of both sexes would be in hibernation by the end of November.

3.6.1.2 Winter Habitat

Northern long-eared bats spend winter hibernating in caves and mines. This species typically utilizes large caves or mines, with large passages and entrances, stable temperatures, high humidity, and no air currents. Within hibernacula, surveyors find the bats in small crevices or cracks, often with only the

nose and ears visible. Northern long-eared bats display more winter activity than other cave species, and individuals have been known to move between hibernacula. Northern long-eared bats are short-distance migrants and would typically hibernate within 40 to 50 miles of their summer habitat (FWS, 2016c).

3.6.1.3 Spring Habitat

After hibernation ends (late March to early April), the northern long-eared bats would migrate to summer roosts. Females emerge from the hibernaculum prior to males, and forage to increase fat stores. They leave the hibernaculum for their summer roost areas and will be pregnant via delayed fertilization upon arrival.

3.6.1.4 Summer Habitat

During summer, northern long-eared bats roost singly or in colonies, underneath bark, in tree cavities, or in crevices of live or dead trees, typically greater than 3 inch dbh. Males and non-reproductive females may also roost in cooler places, like caves and mines, in the summer. Upon arrival at their summer roosting areas, females form maternity colonies and exhibit fission-fusion behavior (constant formation and reformation of large and smaller groups). Due to this behavior, northern long-eared bats switch tree roosts often, typically every 2 to 3 days. Like the Indiana bat, northern long-eared bats show a degree of fidelity to a maternity roost area and will return annually. Male northern long-eared bats can be found with females in the maternity roost.

The northern long-eared bat utilizes crevices and loose bark on trees for roosting, and is believed to typically be less selective of roost trees than the Indiana bat (FWS, 2015c). Wing morphology of the northern long-eared bat suggests that they adapted to fly in cluttered habitats; thus, isolated woodlots may not be suitable for foraging or roosting, unless the lots are connected by a wooded corridor. Rarely, this species has been found roosting in man-made structures, such as barns and sheds. Northern long-eared bats emerge at dusk to forage on moths, flies, leafhoppers, caddisflies, and beetles within the understory of forested hillsides and ridges. They capture prey while in flight using echolocation, as well as by gleaning for motionless insects on vegetation and water surfaces.

3.6.2 Distribution and Threats

The range of the northern long-eared bat includes much of the eastern and north central U.S., and all Canadian provinces from the Atlantic Ocean, west to the southern Yukon Territory, and eastern British Columbia. Presently, their range covers all counties in Ohio and Michigan (FWS, 2015d). This species was historically found statewide in Ohio and Michigan, with a range similar to that of the Indiana bat.

The most severe and immediate threat to the northern long-eared bat is WNS. Population numbers of northern long-eared bats have declined by 99 percent in the northeast U.S. The disease is expected to spread throughout the entire range of the northern long-eared bat, and is responsible for increasing the bat's vulnerability to other environmental stressors. The fungus is responsible for reducing fitness, including creating wing damage and forcing the northern long-eared bats to burn through winter fat reserves more quickly, which makes migration and foraging more challenging (FWS, 2015c).

Deforestation of known summer roost sites, staging and swarming areas, and migration and foraging habitats also pose a threat to the northern long-eared bat. Impacts from tree removal to individuals or colonies can range from indirect impacts, to minor impacts, to significant impacts, depending on the

amount of forest and landscape removal (FWS, 2015c). Northern long-eared bats affected by WNS will be significantly impacted by habitat loss, degradation, and fragmentation.

Finally, the recent surge of construction of wind turbines may be impacting bats, including the northern long-eared bat. Mortality rates of northern long-eared bats have been documented and confirmed at multiple wind farm operations. FWS is currently working with wind farm operators to avoid and minimize incidental take of bats, and to assess the magnitude of the threat (FWS, 2015c).

3.6.3 Presence of Species in the Action Area

The northern long-eared bat may occur in all counties crossed by the Project (table 3.0-1).

3.6.4 Analysis of Potential Effect on Species

3.6.4.1 Effect on Critical Habitat

Critical habitat has not been designated for the northern long-eared bat.

3.6.4.2 Effect on Species

The entire Project area is within the range of the northern long eared bat. The FWS identified five areas along the NGT Project where the route intersects with the buffers of known northern long-eared bat records in Columbiana, Stark, Summit, Wayne, Erie and Sandusky Counties, Ohio. These buffers were created to identify summer habitat that may be utilized by northern long-eared bats. FWS did not identify any known northern long-eared bat hibernacula within the 1 mile of the Project area.

Section 3.7.1 discusses the presence of potential habitat for both species of bats within the Project area, and identifies where unoccupied habitat has been located from NEXUS mist-net survey efforts. Discussion of the potential impacts to the northern long-eared bat are found in section 3.7.1.2, as well as in table A-1.

3.6.5 Avoidance and Minimization Efforts

Section 3.8 describes the conservation measures NEXUS would employ to minimize impacts to protected bat species.

3.6.6 Determination of Effect under ESA

The Project is ***likely to adversely affect*** individual northern long-eared bats if summer clearing is conducted. Any clearing of suitable roosting habitat within occupied areas in summer may harm, harass, or cause the mortality of individual Indiana bats. Direct impacts would be avoided by prioritizing clearing within the winter months, to the extent possible. NEXUS would prioritize clearing as outlined in the CCPs in section 3.8.1. The alternate clearing restrictions outlined in this BA would only be used in areas that have not received authorizations to clear in the winter months, mainly due to schedule delays or landowner access restrictions. The Project would decrease the total amount of suitable roosting habitat; however, the northern long-eared bat is considered a generalist in term of roost selection. The reduction of suitable summer habitat is not expected to adversely affect the species. Due to the lack of potential hibernacula in the Project area, proposed activities are not expected to harm or harass northern long-eared bats during swarming, migration, emergence, or hibernation.

3.7 Effects on Mammal Species

NEXUS has considered impacts to both Indiana bats and northern long-eared bats, and their associated suitable habitat throughout the proposed Project area.

3.7.1 Direct Effects on Mammal Species

The Indiana bat and northern long-eared bat utilize caves and mines in the winter for hibernacula, and trees as roosts during the rest of the year. This section describes the presence of potential habitat within the Project area, regardless of presence of federally-listed species.

Presence of Portals

Ohio and Michigan *Myotis* spp. hibernate in underground voids, including natural caves and constructed mines. If these areas are used by hibernating bats, they become known as hibernacula. Hibernacula are critical to the life cycle of the bat species that utilize them. As such, it is important to identify any hibernacula that are in close proximity to the NGT Project.

A desktop analysis using geographic information systems (GIS) data of previous mining activity, including, but not limited to, known entrances, vents, extents of underground mines, karst geology, and soils information, was conducted to identify any potential portals within 300 feet of the pipeline centerline. A 1-mile buffer was drawn around the identified areas to capture any errors in the reported resources, as well as to capture any previously undocumented portals. This resulted in a GIS layer identifying areas with high potential portals. A field search for portals was conducted at all locations where this layer intersected the 300-foot survey corridor, centered on the pipeline centerline. This area was further reviewed by a qualified biologist using topographic maps, and aerial photos, in conjunction with notes from previous surveys, to eliminate residential and agricultural areas and further refine the search area. The Project area primarily consists of developed and agricultural areas, which have low potential for possible portals, significantly reducing the identified search area. The identified search areas were located between mileposts (MPs) 7.7 to 7.9, 46.8 to 47.1, 47.5 to 47.9, and 53.6 to 54.0.

Areas identified as high potential during the desktop review were walked and visually searched by qualified bat biologists to identify portals within the NGT Project survey corridor. The majority of the surveyed area was typified by agricultural land or early-to-mid successional forests, with relatively flat topography and the occasional hillside; few rocky outcroppings were observed. The surveyed area also crossed several active cattle pastures. No portals were encountered during the course of this investigation; therefore, subsequent presence/absence surveys were not required. The FWS Columbus Field Office and the East Lansing Field Office approved the portal survey protocol described herein on May 20, 2015 and May 26, 2015, respectively.

Presence of Forested Areas

Forested areas (as discussed previously in section 2.3: Existing Vegetation Types) were further refined to specifically reflect the forested areas that may be utilized by federally-protected bat species. The acreages discussed herein reflect the forested areas, as available for bats. The NGT Project is proposed to impact approximately 299.9 acres of upland forest and 43.2 acres of wetland forest during construction; 169.0 and 16.6 acres of which, respectively, would be allowed to revegetate to preexisting conditions. The remaining 130.9 and 26.6 acres, respectively, would be regularly maintained as part of the permanent 50-

foot wide pipeline easement. The entire NGT Project would require approximately 5,010.7 acres of land during construction. Therefore, approximately 6.8 percent of the NGT Project is classified as forested and would require tree removal activities.

Utilizing the information from the field forest inventories, aerial imagery, landscape position, proximity to a field inventory, and ecoregion, a forest community type and age class was assigned to all forested areas within the proposed Project corridor. Specifically, biologists utilized current aerial imagery to compare crown size and shape, and stand stocking with known forest inventory areas. NEXUS has categorized the community types and age classifications of mature, intermediate, and young forested areas proposed to be impacted along the Project (see table 3.7-1).

All forested areas along the entire Project were classified into the following categories: Appalachian Highlands Dry-Mesic Oak, Appalachian Highlands Mixed Mesophytic Cove, Dry-Mesic Southern, Early Successional, Mesic Southern, Midwestern Dry and Dry-Mesic Oak, Midwestern Mesic Hardwood, Midwestern Mesic Oak and Oak-Maple, Midwestern Riverfront Floodplain, or Mixed Evergreen.

Additionally, the forested areas were determined to be either mature, intermediate, or young, based on the FWS recommended age groups:

- Old Growth: Greater than 160 years
- Mature: 80-150 years
- Intermediate: 45-75 years
- Young: 20-40 years
- Scrub-shrub: Less than 20 years

Table 3.7-1 Potential Bat Habitat Located within the proposed NEXUS Project Area [a]			
Age Class	**Temporary Impact [b] (acres)**	**O&M Impact [c] (acres)**	**Total Impacts [d] (acres)**
Ohio			
Old Growth	0	0	0
Mature	47.8	45.2	93
Middle	92.3	82.4	174.7
Young	13.9	11.8	25.7
Scrub	41.8	32.1	73.9
Ohio Subtotal	*195.8*	*171.5*	*367.3*
Michigan			
Old Growth	0	0	0
Mature	2.9	2.5	5.4
Middle	6.6	4.2	10.8
Young	4.4	3.8	8.2
Scrub	14.5	6.6	21.1
Michigan Subtotal	*28.4*	*17.1*	*45.5*
Totals	***224.2***	***188.6***	***412.8***

[a] Bat habitat areas include the following habitat types: Forested, Riparian, Forested/Riparian, Treeline, Hedge/Ditch and Scrub-shrub. Both upland and wetland areas are represented in this table.
[b] Temporary impact reflects all areas that would be allowed to revegetate post-construction.
[c] O&M acres is the operation and maintenance area of the Project that may maintained as part of the permanent easement of the Project.
[d] Total acres is the area of the Project that would be cleared for construction and operation. This includes both temporary and O&M impacts.

Presence of Federally Protected Bats

FWS provided the locations of known Indiana bat and northern long-eared bat capture records with buffers intersecting with the proposed Project, which account for approximately 63 miles of the proposed 256 mile pipeline route. The Indiana bat record buffers span approximately 33 miles along the Project route and approximately 30 miles for the northern long-eared bat. Therefore, the majority (i.e., approximately 192 miles) of the proposed pipeline is outside of known occupied federally-listed bat habitat, as identified by FWS.

NEXUS evaluated the route for suitable habitat and conducted mist-net surveys where suitable habitat was present along the entire route; 155-kilometer (km) blocks were surveyed during the 2015 mist-net effort, and an additional 109 km blocks were surveyed in 2016. A total of 264 km blocks were surveyed over the course of two seasons. During this effort, no Indiana bats were captured and eight northern long-eared bats were captured. For the purpose of this BA, NEXUS is presuming absence of Indiana bats and northern long-eared bats where there are no known records of previous captures and where no captures occurred during the NEXUS mist-net surveys.

The areas where surveys were conducted were mainly within disjointed woodlots along a highly fragmented landscape. The survey results and ongoing discussion with FWS allow NEXUS to presume absence of occupied Indiana bat roosts. If a colony of bats were utilizing the area, captures of individuals

would likely have occurred. The relative amount of nearby foraging habitat was typically minimal; therefore, if a colony were in the Project area, the bat biologists would likely have captured individuals leaving roosts or participating in foraging activities. The surveys provide insight into the population levels of bats utilizing the area, if the Indiana bat or northern long-eared bat populations are too low to quantify, then the likelihood of take would be little to nonexistent in those areas.

Three 1-km blocks were not accessible for mist-net survey; however, these three survey areas are located within known Indiana bat buffers. Therefore, presence/absence surveys have been completed along the NEXUS route. If access becomes available within the required bat mist-net survey window, mist-net surveys will be conducted on the remaining 3-km blocks to further evaluate the use of the Project area by Indiana bats. Indiana bats and northern long-eared bats will be assumed to be currently utilizing areas where surveys are not conducted.

The following sections discuss the overall impact to the federally protected bats, evaluating the potential impact to each species. Section 3.7.1.1 discusses the potential impacts on Indiana bats and section 3.7.1.2 discusses the potential impact on northern long-eared bats.

3.7.1.1 Indiana Bat

Presence of Species

As discussed above, all areas outside of the 33-mile known occupied Indiana bat habitat (223 miles of the route) have presumed absence of Indiana bats through the negative findings of individuals during mist-netting efforts and are considered unoccupied.

For the purpose of this BA, occupied habitat is defined as suitable habitat within known Indiana bat record buffers. The forested areas within the known Indiana bat record buffers are described in more detail in the following sections. Proposed Project activities within occupied habitat may result in adverse effects to Indiana bats from direct take or harm of individuals or the loss of suitable habitat.

Previous Capture Records

As described, FWS provided known Indiana bat capture records with buffers intersecting the proposed Project area, which account for approximately 33 miles of the route. Within the 33 miles, the known capture buffers were created based on results from telemetry, where bats were radio-tracked during previous survey efforts. Target bat species captured during mist-net surveys are fitted with a radio transmitter to allow for tracking post-release. There are four separate Indiana bat records with buffers that intersect with the proposed Project: two are results from acoustic surveys, one is a male bat roost tree, and one is a maternity roost. In total, there are 90.5 acres of forest proposed to be impacted by the NGT Project within previous capture record buffers. See table 3.7-2 for the summary information of the forest located within each record type.

Acoustic Survey Record

Two of the four known Indiana bat buffers originate from previous acoustic surveys. One known buffer area is located between MPs 119.7 and 129.7 in Erie County, accounting for 1.2 acres of forested area proposed to be impacted. The general forest types, as determined using the methods described previously, are entirely composed of Midwestern Dry and Dry-Mesic Oak, with both mature and intermediate age classes present. All of the forested areas within the first acoustic record buffer are

considered non-maternity roost habitat located on existing edges, with regular edge disturbances, such as transmission line corridors and agricultural practices.

The second area is located between MPs 42.0 and 53.7 in Summit and Wayne Counties. This record overlaps with the maternity roost record; therefore, for the purpose of this BA, this entire area will be considered as the maternity roost record, discussed below.

Male Roost Record

One Indiana bat record buffer was created from a confirmed male roost tree, identified through telemetry. The male record buffer intersects the Project area between MPs 64.1 and 75.7 in Medina County. The Project would impact approximately 26.0 acres of forest within this record buffer, 8.1 acres of maternity roost habitat, 13.9 acres of non-maternity roost habitat, and 4.0 acres of foraging habitat. The forest composition is mainly composed of Midwestern Dry and Dry-Mesic Oak, Early Successional, Midwestern Mesic Hardwood, and Midwestern Riverfront Floodplain community. Within the male roost record buffer, 55 percent of the forested area proposed to be impacted is considered edge habitat.

Maternity Roost Record

One Indiana bat record buffer was created from a confirmed female roost tree, specifically a post-lactating female. The maternity roost buffer overlaps with an Indiana bat acoustic reading, and is located between MPs 42.0 and 53.7 in Summit and Wayne Counties. For the purposes of this BA, the acoustic record will be considered a confirmation of the maternity roost, hereby discussed solely as the maternity record. There are 63.3 acres of forest within the maternity roost record and the community types are mainly Midwestern Dry, Dry-Mesic Oak, Midwestern Mesic Oak, and Oak-Maple, with a few stands of Mixed Evergreen. The forested areas were found to have 8.8 acres of maternity roost habitat, 39.9 of non-maternity roost habitat, and 14.6 acres of foraging habitat. Within the maternity roost record buffer, 85 percent of the forested area proposed to be impacted is considered edge habitat.

Indiana Bat Surveys within Known Occupied Forest

Through ongoing consultations, FWS staff recommended that NEXUS evaluate the Indiana bat and northern long-eared bat species independently, particularly due to variance in stressors caused by the Project and the different nature of the threats imposed on each species. Therefore, NEXUS conducted mist-net surveys along the entire proposed route where landowner access was available in order to better determine the current presence of Indiana bats and their utilization of the Project area. The mist-net surveys within the Project area provide more specific information on the level of impact that Project activities may have on Indiana bat breeding, sheltering, and foraging habitat, in addition to aiding FWS in the ongoing assessment of population status.

No Indiana bats were captured during mist-net surveys along the NGT Project route. A total of 264 km blocks were surveyed. Three blocks remain unsurveyed for mist-net surveys, all of which are within the Indiana bat known records of Medina County and Erie County.

In addition to mist-net surveys, habitat assessment surveys were conducted wherever access was permissible within the 33-mile range of known Indiana bat habitat. Of the 90.5 acres of forest within the 33-mile Indiana bat occupied habitat, approximately 62.0 acres were accessible and were surveyed to determine the quality of the habitat. The forest data collected during habitat assessments provide detailed information to determine if the forested areas are maternity roosting habitat, non-maternity roosting habitat

or foraging habitat, based on the definitions in section 3.5.1.4. Table 3.7-2 displays the forested areas within the Indiana bat buffer. Information for all unsurveyed areas show the known Indiana bat habitat as general age classifications. For the surveyed areas, biologists were able to refine the forested areas into the acreages of suitable Indiana bat maternity roost habitat, non-maternity roost habitat and foraging habitat for the Indiana bats.

Table 3.7-2

Forested Areas within Identified Indiana Bat Buffers [a]

	Acoustic Record		**Male Record**		**Maternity Record**		**Total Impacts (acres)**	**Total O&M Impacts (acres)**
	MP 119.7 – 129.7		MP 64.1 – 75.7		MP 42.0 – 53.7			
	Total [b] acres	O&M [c] acres	Total acres	O&M acres	Total acres	O&M acres		
Maternity Roost Habitat, Surveyed (acres)	0.0	0.0	2.6	1.3	6.9	3.1	**9.5**	**4.4**
Maternity Roost Habitat, Assumed (acres)	0.0	0.0	5.5	2.4	1.9	1.0	**7.4**	**3.4**
total maternity roost habitat	*0.0*	*0.0*	*8.1*	*3.7*	*8.8*	*4.1*	***16.9***	***7.8***
Non-Maternity Roost Habitat, Surveyed (acres)	1.2	0.6	11.2	5.3	31.5	14.1	**43.9**	**20.0**
Non-Maternity Roost Habitat, Assumed (acres)	0.0	0.0	2.7	1.2	8.4	4.0	**11.1**	**5.2**
total non-maternity roost habitat	*1.2*	*0.6*	*13.9*	*6.5*	*39.9*	*18.1*	***55.0***	***25.2***
Foraging Habitat, Surveyed (acres)	0.0	0.0	3.6	1.4	5.0	2.0	**8.6**	**3.4**
Foraging Habitat, Assumed (acres)	0.0	0.0	0.4	0.2	9.6	4.4	**10.0**	**4.6**
total non-maternity roost habitat	*0.0*	*0.0*	*4.0*	*1.6*	*14.6*	*6.4*	***18.6***	***8.0***
Total Surveyed Habitat	*1.2*	*0.6*	*17.4*	*8.0*	*43.4*	*19.2*	*62.0*	*27.8*
Total Assumed Habitat	*0.0*	*0.0*	*8.6*	*3.8*	*19.9*	*9.4*	*28.5*	*13.2*
Total Suitable Habitat	***1.2***	***0.6***	***26.0***	***11.8***	***63.3***	***28.6***	***90.5***	***41.0***

[a] Forested areas within Indiana bat buffers are considered assumed habitat unless habitat assessments were conducted to determine suitability. Assumed Maternity Roost habitat = mature forest stands; Assumed Non-Maternity = intermediate forest stands; Assumed Foraging = scrub-shrub or young forest stands.

[b] Total acres is the area of the Project that would be cleared for construction and operation. This includes both temporary and permanent impacts.

[c] O&M acres is the operation and maintenance area of the Project that may maintained as part of the permanent easement of the Project.

Direct Effects

The primary impacts from the NGT Project on the Indiana bat would be due to potential direct take and the removal and disturbance of occupied suitable summer habitat. Construction and operation of the project could impact Indiana bat through direct mortality if clearing affected occupied roost trees, or indirectly through habitat loss and disruption. The potential impacts and stressors on Indiana bats are outlined in table A-1. NEXUS is committed to avoidance and conservation measures, as seen in the overall minimal relative amount of forest impact along the Project. Additional conservation measures for the Project are described in section 2.6. The following sections describe existing potential habitat within the Project area that may be used for each season. The summer habitat is described first, including sheltering and foraging for male and nonreproductive females, as well as breeding, sheltering, and foraging for reproductive females. The fall season includes migration and swarming, winter habitat includes hibernation, and spring season includes emergence and migration.

Summer Roosting and Foraging

The Indiana bats utilize their summer roosting habitat from April/May through August/September. During this time, both male and female bats will utilize several trees within a stand of suitable roosts. The proposed activities may impact the availability of summer roosting habitat for Indiana bats. The areas within the Project area that have not been surveyed will assume occupation of habitat by Indiana bat, unless absence can be confirmed (for areas outside of known habitat). There are approximately 90.5 acres of forest within the Project along the 33-mile stretch of known occupied Indiana bat habitat area. The primary impact to the Indiana bat roosting and foraging habitat would be tree removal activities. NEXUS is committed to clearing trees between October 1 and March 31 in accordance with the current Project schedule, thereby reducing direct effects on the Indiana bat.

It is possible that noise and vibrations from construction activities may temporarily alter the behavior of roosting Indiana bats, although the disturbance would likely have to be extreme to cause abandonment (Gardner et al., 1991). The Indiana bats tend to have several roost trees within close proximity to each other, it is likely that the bats may choose alternate roosts to escape noise from the Project. The majority of proposed construction activities would be limited to a few days and the linear nature of the Project allow for displaced bats to seek alternate roost trees without relocating to a different geographic area. Construction related noise impacts to the bats would be minor and short-term. As such, direct effects on the Indiana bat would be negligible.

Summer Breeding and Maternity Colony

Reproductive female Indiana bats begin to congregate in their summer habitat between April and mid-May (Humphrey et al., 1977). The known populations that migrate from Kentucky and southern Indiana to southern Michigan arrive to their summer habitat as early as late April, though the majority of the bats do not arrive until mid to late-May (Kurta and Rice, 2002). Female Indiana bats give birth to young in June or early July (Humphrey et al., 1977; Kurta and Rice, 2002). The pups become volant 3 to 5 weeks after birth and typically begin to fly between early and late July.

Tree removal during this sensitive time, particularly after birth of young and before they are volant, could result in adverse impacts on the Indiana bat. During June and July, tree clearing would likely result in injury or direct take of young Indiana bat pups, if present in trees cut in preparation for construction. Additionally, stress on the lactating females is greater during this time. NEXUS has committed to not conduct tree clearing activities of known occupied suitable habitat between June 1 and July 31, reducing the likelihood of harm to young and lactating females.

Fall Migration and Swarming

Indiana bats start to leave the maternity colonies shortly after the pups are volant, typically by the end of July. The majority of bats begin to migrate during the first 2 weeks of August, although some individuals may migrate into September (Humphrey et al., 2007). Little is known about the habitat requirements and foraging patterns of migrating bats (FWS, 2007). Proposed Project activities involving tree clearing during the fall would have direct impacts on Indiana bats. The likelihood of injury or harm is minimal due to the lack of captures during the mist-net surveys.

Once the Indiana bats reach the hibernacula, they participate in swarming behaviors and forage in nearby forested areas before hibernation (Cope and Humphrey, 1977 and Hall, 1962). The proposed activities may disrupt the swarming behavior, due to increased noise levels during construction.

Winter Hibernation

Consultation with FWS indicated that the Project would not be near any known Indiana bat hibernacula. Furthermore, no portals were identified within the Project area during portal search efforts. The proposed activities may impact bats by disrupting hibernation due to increased noise levels and potential ground vibrations from operation of heavy equipment, as well as limited blasting during construction.

Spring Emergence and Migration

Indiana bats emerge from their hibernacula beginning in early April, and typically begin migration to their summer habitat immediately (FWS, 2007). Males and nonreproductive females may not migrate far, as they can remain close to the hibernaculum; however, the reproductive females can migrate up to 357 miles from the hibernaculum to their summer maternity colonies (Brack, 1983; Whitaker and Brack, 2002; Winhold and Kurta, 2006). Proposed Project tree removal activities in spring habitat for migration would impact Indiana bat populations or available spring habitat. Emergence behaviors occur in the spring near cave entrances and portals, which are absent in the Project area.

3.7.1.2 Northern long-eared bats

Presence of Species

The FWS identified five separate areas along the NGT Project where the route intersects with the buffers of known northern long-eared bat records in Columbiana, Stark, Summit, Wayne, Erie, and Sandusky Counties. These buffers were created to identify summer habitat that may be utilized by northern long-eared bats. Since the time NEXUS conducted northern long-eared bat surveys in 2015, the FWS published a final rule pursuant to section 4(d) of the ESA that provides measures that are necessary and advisable to provide for the conservation of this species. FWS quantified the impacts of forest conversion on northern long-eared bats and identified sensitive habitat and life stages in which forest conversion and construction activities will lead to harassment, injury, or take of individuals (FWS, 2016d). FWS supports the quantification of impacts within the *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions*, published in 2016. For the purpose of this BA, the FWS biological opinion research and text would be followed and sensitive habitats of the northern long-eared bat would be considered within 0.25 mile of known occupied hibernacula and within 150 feet of known maternity roost trees (FWS, 2016d).

Recent consultations with both the Ohio and Michigan Field Offices confirmed that the Project is not within 0.25 mile of any known occupied northern long-eared bat hibernacula or within 150 feet of any known maternity roost trees. Even though these areas are not identified as sensitive habitats, tree clearing during the active season may affect the northern long-eared bat within the buffers of known records provided by the FWS in the aforementioned counties.

A total of eight northern long-eared bats were captured during the NEXUS mist-net surveys. Two of the bats, a juvenile male and a juvenile female, were captured in Medina County and tracked to the same roost tree, approximately 3,300 feet from the Project in Wayne County. The third bat, a post-lactating

female, was captured in Lorain County and tracked to a roost tree approximately 2,400 feet from the Project. The fourth bat, a lactating female, was captured in Sandusky County, but was not successfully tracked to a roost. The remaining four bats were captured in Stark County. All roosts were located through telemetry, or if access didn't allow, estimated using triangulation. Two of the Stark County bats, a pregnant female and a lactating female, were found utilizing the same forested area with the closest roost located approximately 200 feet from the construction workspace. The third Stark County bat, a lactating female, used several roosts, one within the construction workspace and two others within 50 feet of the workspace. The fourth Stark County bat, a non-reproductive female, was triangulated to a roost approximately 450 feet from the construction area. These additional areas will be buffered as follows: in areas where roosts were identified, all suitable habitat within a 1.5-mile buffer of the roost would be considered occupied. If a roost was not identified, all suitable habitat within a 3-mile buffer of the mist-net capture site would be considered occupied.

All suitable roosting habitat within the buffers, as described previously, would be considered occupied. Based on results from the mist-net surveys and FWS consultation, absence of occupied sensitive areas for northern long-eared bats is presumed along the majority of the route. The roosts confirmed for the third Stark County bat are within 150 feet of the construction workspace. This portion of the Project area is considered a northern long-eared bat sensitive area and is comprised of 1.8 acres of forest cover.

Direct Effects

FWS has identified several life stages where the northern long-eared bat is more sensitive to impacts: adults hibernating in hibernacula, and the breeding, sheltering, and foraging of reproductive females. The sections below outline the potential impacts to northern long-eared bats within each season. The summer habitat is described first, including sheltering and foraging for male and non-reproductive females, as well as breeding, sheltering, and foraging for reproductive females. The fall season includes migration and swarming, winter habitat includes hibernation, and spring season includes emergence and migration. Construction and operation of the project could impact northern long-eared bats through direct mortality if clearing affected occupied roost trees, or indirectly through habitat loss and disruption.

Summer Roosting and Foraging

The northern long-eared bat typically arrives in summer roosting habitat between April and May. Fall migration back to swarming areas and hibernacula begins after pups become volant, with the bulk of migrations occurring between August and September. During summer roosting and foraging activities, both male and female bats will switch roost trees often (Sasse and Pekins, 1996). The northern long-eared bat is considered a generalist in terms of roosting habitat, and as such, is better suited to adapt to tree removal activities. If the preferred roosting area of a northern long-eared bat is removed, the bats typically find other roosts without minimal impact on its health and fitness. The northern long-eared bat is not limited in summer habitat (FWS, 2016d).

As summer habitat is not limited, it would be unlikely that the proposed tree removal activities would impact the availability of summer roosting habitat for northern long-eared bats.

It is possible that noise and vibrations from construction activities may temporarily alter the behavior of roosting bats, although the disturbance would likely have to be extreme to cause abandonment (Gardner et al., 1991). The generalist nature of roosting preference by the northern long-eared bats allow them to move away from disturbances without a great impact to fitness. The majority of proposed

construction activities would be temporary in nature. As such, direct effects on the northern long-eared bat would be negligible.

Summer Breeding and Maternity Colony

Reproductive female northern long-eared bats begin to congregate in summer habitat between mid-March and mid-May (Caire et al., 1979; Easterla, 1968; Whitaker and Mumford, 2009), traveling approximately 40 to 50 miles from hibernacula to summer habitat. Male and non-reproductive female northern long-eared bats most typically stay closer to the hibernacula. Female northern long-eared bats give birth to young in late May or early June. The pups are volant 3 to 5 weeks after birth, and typically begin to fly between early and late July (FWS, 2016b). The northern long-eared bat is most sensitive from June through July, during the pup non-volant period.

Tree removal between June 1 and July 31 during the non-volant time period would likely have adverse impacts on the northern long-eared bat tree clearing during this sensitive time would likely result in injure or death of bat pups if present at the time of tree removal. NEXUS has committed to conduct tree clearing activities between August 1 and May 31 within northern long-eared bat sensitive areas, avoiding the June 1-July 31 non-volant period and thereby reducing the likelihood of harm to young northern long-eared bats and lactating females.

Spring Emergence

During spring emergence, reproductive females typically begin spring migration immediately, while males and non-reproductive females may stay closer to the hibernacula. Emergence can begin as early as late March and continue to late May, depending upon conditions (FWS, 2016b). Emergence activities occur near cave entrances and portals.

No portals were identified within the Project area and consultation with FWS indicated that the Project would not be within 0.25 mile of any known northern long-eared bat hibernacula.

Fall Swarming

Once northern long-eared bats reach the hibernacula after fall migration, they participate in swarming behaviors and forage in nearby forested areas prior to hibernation (Cope and Humphrey, 1977; Hall, 1962). The behavior typically occurs between mid-August and mid-November (FWS, 2016). Habitat for swarming and foraging activities just before hibernation is similar to summer habitat. Northern long-eared bats will roost within 5 miles of the hibernacula during swarming (FWS, 2016). Swarming typically occurs between dusk and dawn. Proposed Project activities may disrupt swarming and emergence behavior, due to increased noise levels during construction; however, impacts should be minimal or negligible, as construction activities are scheduled to occur during daylight hours.

No portals were identified within the Project area and consultation with FWS indicated that the Project would not be within the sensitive area (within 0.25 mile) of any known northern long-eared bat hibernacula.

Spring and Fall Migration

During the spring migration, northern long-eared bats emerge from hibernacula beginning in early April, and typically begin migration to summer habitat immediately (FWS, 2007). Reproductive females have been known to migrate up to 357 miles from the hibernaculum to summer maternity colonies (Brack,

1983; Whitaker and Brack, 2002; Winhold and Kurta, 2006). During fall migration, northern long-eared bats leave the maternity colonies shortly after pups are volant, typically by the end of July. The majority of bats begin to migrate back to hibernacula during the first 2 weeks of August, although some individuals may migrate into September (Humphrey et al., 2007).

Winter Hibernation

The proposed activities may disrupt hibernation, due to increased noise levels and potential ground vibrations from operation of heavy equipment, as well as occasional blasting during construction. If hibernacula are within close range of the proposed activities, bats could be disturbed from their hibernation state, causing the bats to use energy reserves intended to last through the winter.

Based on consultations with FWS, no known northern long-eared bat hibernacula are located within 0.25 mile of the proposed Project workspace. No portals were identified within the Project area.

3.7.2 Indirect Effects on Mammal Species

Indirect effects on mammal species would be from proposed activities that would not have direct immediate impacts on the species, but may have delayed or indirect impacts. The following proposed Project activities, including construction and operation and maintenance may have indirect effects on bat populations found in the Project area: habitat loss, use of artificial lighting, alteration of water quality, unanticipated spill/chemical contamination, and traffic (foot and vehicle) during routine maintenance and inspections. Provided the implementation of construction measures outlined in section 2.6, these activities "may affect, but are not likely to affect" either the Indiana bat or the northern long-eared bat, as described in table A-1.

3.7.2.1 Forest Conversion – Habitat Loss

Bats inhabit and utilize forested areas in the spring, summer, and fall and caves/hibernacula during the winter months. This Project is not within the vicinity of known hibernaculum for either bat species. As such, no loss of, or impacts on, winter habitat are anticipated from the Project. Removal of potential roost trees and foraging habitat would reduce habitat for summer populations. The fall and spring populations during typical swarming and emergence events are likely low along the Project area, due to the lack of known hibernacula in the area. Additionally, it was determined that the Project would not cause fragmentation to impacted forested areas, as defined by FWS. The majority of the forest conversion proposed for this Project is along existing edges and corridors. Although habitat loss impacts have been reduced by collocating the pipeline with existing utilities, suitable roost trees are proposed for removal. Habitat loss is an indirect impact that would "likely adversely affect" both the northern long-eared bat and the Indiana bat.

3.7.2.2 Artificial Lighting and Noise

Lighting of buildings and use of light during proposed construction activities may alter the behavior of bat species. Bats may avoid the well-lit areas during foraging activities (FWS, 2016b) and may reduce emergence from roost trees that are exposed to the light (Downs et al., 2003). The majority of the proposed construction activities would occur during daylight hours. Night construction activities would be limited to occasional time-sensitive pipeline installation, such as road crossings and HDDs. Impacts imposed on bats from artificial light and noise during operation and maintenance activities would be limited to the

compressor stations. It is understood that bats avoid areas where lighting and noise disturbs their foraging, therefore impacts would be negligible.

3.7.2.3 Alteration of Water Quality

Bats utilize streams, rivers, ponds, lakes, and other open water sources for drinking and foraging. Construction within open water may temporarily increase sedimentation and reduce water sources available to bats, and could affect insects that are part of the bat's diet. Bats would likely seek alternate water sources during construction. These activities are short-term, the indirect effects are inconsequential, and would not have lasting effects on bat species.

3.7.2.4 Spill/Chemical Contamination

Unanticipated spills of chemicals or hazardous materials into water resources during Project activities has the potential to reduce the presence of aquatic insects and decrease water quality. NEXUS has prepared a SPCC Plan for the Project that would be implemented in the event of an unanticipated spill or chemical release into water resources. Impacts associated with an inadvertent chemical spill or hazardous release would be addressed expeditiously in consultation with the appropriate regulatory agencies and would have temporary indirect impacts on bat species in the Project area.

3.7.2.5 Traffic from Routine Maintenance and Inspections

Following construction, the Project area would be subject to occasional inspection and routine maintenance activities described in detail in section 2.5.2 of this BA. Some of these activities would be conducted on foot, and therefore are not expected to harm or harass the bat species. Maintenance and inspection activities involving the use of vehicles may expose roosting bats to temporary increases in noise levels compared to ambient conditions, and may increase the likelihood of collision with vehicles. These inspections and maintenance activities would be conducted during the day, actively avoiding impacts to bats.

Additional activities as described in section 2.5.1 that may have minimal or negligible impacts to bat species are discussed in table A-1.

3.8 Conservation Measures for Mammal Species

See sections 2.6 and 2.7 for all conservation measures to be implemented by NEXUS to avoid, minimize, and mitigate impacts to mammal species.

3.8.1 Clearing Contingency Plans for Tree Removal Activities

As stated previously, NEXUS fully intends to conduct clearing of all forested areas, including suitable roosting habitat known to be occupied by either Indiana bats or northern long-eared bats, within a winter clearing window (i.e., between October 1 and March 31). Areas with suitable roosting habitat within Indiana bat records and within northern long-eared bat sensitive areas would be prioritized for winter clearing to the extent practicable. However, it is possible that landowner access and/or scheduling may prevent clearing of all roosting habitat within the winter clearing window. In the event where clearing would be conducted outside of the winter clearing window, forested areas would be further prioritized based on the quality of habitat and the likelihood of presence of federally-listed bats utilizing the areas. Clearing

restrictions would be followed for forested areas that qualify for the various parameters defined by each Clearing Contingency Plan (CCP), as outlined below. Table 3.8-1 shows the acreages within each category.

3.8.1.1 CCP 1 – No Additional Clearing Restriction

CCP 1a – Unoccupied Tree Clearing

Forested areas with negative presence/absence results for both the Indiana bat and northern long-eared bat, outside of FWS known occupied habitat, are considered unoccupied habitat for the purpose of the BA.

Regardless of presence of federally-listed species, NEXUS intends to clear all trees within the Project area between October 1 and March 31. However, in areas where clearing is required outside of the window, no additional clearing restrictions would apply to forested areas that are presumed to be absent of federally-listed bat species, specifically including areas with negative presence/absence results outside of known occupied habitat. Tree removal activities in unoccupied habitat "may affect, but are not likely to adversely affect" the bat species due to the unlikelihood of presence of federally-listed bats.

CCP 1b – Occupied Foraging Habitat Clearing

Foraging habitat (young forest without potential roost habitat) is not likely to host either the northern long-eared bat or Indiana bat during the day. The trees in the foraging habitat, as defined previously, are too small for roosting and hosting colonies.

Regardless of presence of federally-listed species, NEXUS intends to clear all trees within the Project area between October 1 and March 31. However, in areas where clearing is required outside of the window, no additional clearing restrictions would apply to young forested areas without roosting habitat that are considered foraging habitat. Tree removal activities in foraging habitat "may affect, but are not likely to adversely affect" the bat species due to the unlikelihood of presence of roosting bats.

CCP 1c – Northern Long-eared Bat Occupied Habitat Clearing outside of Sensitive Areas

The potential impacts to northern long-eared bats are separated into activities within sensitive areas and outside of sensitive areas. Sensitive areas are considered to be within 150 feet of known maternity roosts and 0.25 mile of known occupied hibernacula. There were eight northern long-eared bat captures during 2015/2016 surveys, and five previously-known records of northern long-eared bat habitat along the Project. Capture sites and identified roost trees were buffered by 1.5 miles and 3.0 miles respectively to identify occupied habitat. The majority of occupied northern long-eared bat habitat proposed for removal is outside of sensitive areas.

NEXUS intends to clear all trees within the Project area between October 1 and March 31. However, in areas where clearing is required outside of the window, no additional clearing restrictions would apply to forested areas, outside of the sensitive areas, within the northern long-eared bat buffers. *CCP 1c* is only applicable to areas outside of known occupied Indiana bat habitat. FWS has determined that habitat is not limited for the northern long-eared bat. Tree removal activities that take place outside the winter clearing window within northern long-eared bat habitat buffers, but located outside of the identified sensitive areas are "likely to adversely affect" the species.

3.8.1.2 CCP 2 – August 1 to May 31, Occupied Habitat Clearing Restriction within Northern Long-eared Bat Sensitive Areas

The northern long-eared bat sensitive areas are considered to be within 150 feet of known maternity roosts and 0.25 mile of known occupied hibernacula. Bats in these areas are more vulnerable to impacts, particularly during June and July when female northern long-eared bats give birth, nurture their young, and the juveniles are non-volant. Activities within sensitive areas during June and July are "likely to adversely affect" the northern long-eared bat.

NEXUS intends to clear all trees within the Project area between October 1 and March 31. However, in areas where clearing is required outside of the window, no clearing would occur between June 1 and July 31 in forested areas within the northern long-eared bat sensitive areas. *CCP 2* is only applicable to areas outside of known occupied Indiana bat habitat. Proposed activities within *CCP 2* areas occurring between August 1 and May 31, including tree removal, would still be considered to "likely to adversely affect" the species, but would likely have a lower level of take than activities conducted in June or July. No clearing would occur in June or July within *CCP 2* areas. The expectation of the reduced impact to the bats when trees are cleared outside of the June to July non-volant period is based on the generalist nature of the northern long-eared bat and the presence of suitable habitat pre- and post-construction.

3.8.1.3 CCP 3 – August 15 to May 15, Clearing Restriction for Suitable Roost Habitat within Indiana Bat Occupied Areas

Mist-net surveys were completed at 93 percent (3 km blocks were inaccessible) of the areas identified by FWS as occupied Indiana bat habitat in an attempt to capture any federally-protected bat species to provide an indication of presence. Negative results from mist-net surveys within known occupied Indiana bat habitat do not confirm absence. However, this data can be used to better determine how Indiana bats utilize the forest proposed to be impacted by the Project. The majority of the Project area (approximately 92 percent) is either located within agricultural fields or co-located with existing utilities. The availability of suitable habitat adjacent to the Project is minimal; therefore, it is likely that captures would occur if the area is currently utilized by the bats. These areas are considered occupied from previous captures. Due to the lack of captures during the NEXUS surveys, if Indiana bats do utilize the area then the population levels would likely be low.

All tree clearing is scheduled to be completed between October 1 and March 31. The suitable habitat within known occupied areas would be prioritized to the extent practicable. In the event that the restrictions cannot be met, tree removal activities would be performed between August 15 and May 15 for forested areas that qualify for *CCP 3*. This clearing restriction would be applied to forested areas that have been determined to be suitable roost habitat within the known occupied Indiana bat areas.

Beginning in early August, juvenile bats will be volant and participating in foraging activities with the adults. By August 15, the majority of bats will have begun fall migration back toward their hibernacula. Between early April and May 15, bats will return to summer habitat from hibernacula. By May 15, reproductive females will begin to congregate at maternity colonies.

Proposed tree clearing activities occurring between August 15 and October 1, and March 31 and May 15, would "likely adversely affect" both the northern long-eared bat and Indiana bat. The impacts may include reduction of suitable habitat, increased chance of predation on bats, and direct take of individuals.

Noise and vibrations during tree removal activities will likely cause any remaining bats to flee the roost tree, possibly increasing the risk of predation and exhaustion.

Clearing of the forested areas within the *CCP 3* windows (between August 15 and May 15) would be unlikely to directly harm individual bats, as no Indiana bats were captured during the NEXUS surveys. However, due to the previous capture information, the removal of suitable roost trees within known occupied habitat may lead to direct take of individuals and would result in a "likely to adversely affect" determination.

Table 1.8-1
Summary of Clearing Contingency Plans 1 through 3

Clearing Contingency Plan [a]	Habitat Type	Record Type [b]	Clearing Window
CCP-1a	Suitable Roost and Foraging	No records	no clearing restriction
CCP-1b	Foraging	NLEB and IB	no clearing restriction
CCP-1c	Suitable Roost	NLEB, no IB record, outside of NLEB sensitive area	no clearing restriction
CCP-2	Suitable Roost	NLEB, no IB record, inside of NLEB sensitive area	August 1 – May 31
CCP-3	Suitable Roost	IB	August 15 – May 15

[a] NEXUS is planning to conduct all clearing between October 1 and March 31. These are contingency plans for any areas not cleared within that window.
[b] IB=Indiana bat, NLEB =northern long-eared bat

3.8.2 Mitigation

During consultation, FWS stated that habitat utilized by federally-listed threatened and endangered species, specifically Indiana bat and northern long-eared bat, may require mitigation. An MOU agreement between NEXUS and FWS has been executed committing NEXUS to mitigate for impacts to federally-listed bats. As discussed in section 2.7, NEXUS and FWS have ongoing collaboration to determine the mitigation required for impacts to Indiana bat and northern long-eared bat habitat on the Project.

3.9 Northern riffleshell mussel

3.9.1 Species' Description and General Habitat Requirements

The northern riffleshell is a federally-endangered fresh-water mollusk within the Lampsilinae subfamily. The northern riffleshell mussel is considered a moderately sized mussel reaching 2 inches in length. The shell is ovate to quadrate in shape and becomes thicker towards the anterior. The color of the shell can range from light greenish-yellow to an olive green, with narrow, dark, closed-spaced rays. The riffleshell is typically observed in well-oxygenated large streams or rivers with sand and coarse gravel. Fish hosts for the species are the mottled sculpin (*Cottus bairdi*), banded darter (*Etheostoma zonale*), bluebreast darter (*Etheostoma camurum*), and brown trout (*Salmo trutta*) (Watters, 1996; Watters et al., 2009).

3.9.2 Distribution and Threats

The northern riffleshell is listed with historical occurrences in Illinois, Indiana, Kentucky, Michigan, Ohio, Pennsylvania, and West Virginia. Presently, it occurs in short reaches of six streams in Kentucky, Michigan, Ohio, and Pennsylvania (FWS, 1993, NatureServe, 2015; FWS, 2016d). In Ohio, the northern riffleshell is limited to Defiance, Franklin, Madison, Pike, Pickaway, Ross, Scioto, Union, Williams, and Wyandot Counties (NatureServe, 2015; FWS, 2016d). Known and/or historic distribution of the species in Michigan is limited to Bay, Lenawee, Monroe, Oakland, Sanilac, and Wayne Counties (NatureServe, 2015; FWS, 2016d).

With respect to the States crossed by the Project route, the northern riffleshell is known from the tributaries of the Ohio River and western Lake Erie basin in Ohio and from the St. Clair and Detroit Rivers in Michigan. The northern riffleshell has been observed in Big Darby Creek, Pickaway County, Ohio, and the upper 2 miles of the Detroit River from Lake St. Clair to Belle Isle, Wayne County, Michigan. In the letter correspondence dated January 6, 2016 from the FWS to FERC, it was indicated that additional records for the northern riffleshell occur within Macon Creek, a tributary river to River Raisin. There are no recent records of the northern riffleshell within Ohio that co-occur with the Project route.

Declines in populations of certain fish species may contribute to the threats and declines of mussels throughout North America (Smith, 1971). Impoundments pose a large threat to mussels and their host fishes by increasing siltation which can reduce the available habitat for host fish and can smother and suffocate mussels. Impoundments have also contributed to the introduction of invasive species, such as the zebra mussel (*Dreissena polymorpha*) and the quagga mussel (*D. rostriformis bugensis*). Zebra and quagga mussels pose a threat as they can colonize on native mussels, such as the northern riffleshell, thus causing suffocation and death.

Other threats to the northern riffleshell include the construction of dams and reservoirs, erosion incurred from anthropogenic activities, dredging of flowing rivers and streams, and reduced water quality from pollution and runoff. Dams and reservoirs flood mussel and fish host habitat and act as barriers to fish movement that can isolate upstream populations from those downstream causing reduced genetic flow within the species, reducing fitness and reproductive viability. Erosion caused by strip mining, logging and farming adds silt to rivers, which can suffocate mussels by clogging the feeding siphon. Pollution from agricultural and industrial runoff can have lethal effects on mussels and their respective host fishes; chemicals and toxic metals may become concentrated in the body tissues of mussels, leading to illness or death (FWS, 1994)

3.9.3 Presence of Species in the Action Area

The northern riffleshell may occur in Monroe County, Michigan (table 3.0-1).

3.9.4 Analysis of Potential Effect on Species

3.9.4.1 Effect on Critical Habitat

Critical habitat has not been designated for the northern riffleshell mussel.

3.9.4.2 Effect on Species

The northern riffleshell is known to occur within Monroe and Lenawee Counties, Michigan. Specifically, the northern riffleshell has a historical record for Macon Creek, which is a tributary of the River Raisin in Michigan. Although the species' range includes Ohio, its current known distribution in Ohio does not occur in any counties crossed by the Project (Watters, 1994; NatureServe, 2015; FWS, 2016d).

The FWS identified this species as potentially occurring near the Project area in Michigan. Mussel surveys were completed in September 2015, including Macon Creek and the Huron River. No northern riffleshell mussels were observed during the surveys. Potential effects on the northern riffleshell incurred by the Project in Michigan include habitat degradation and or habitat loss; no potential effects to northern riffleshell populations in Ohio are identified as it does not occur in Ohio counties crossed by the Project. Potential direct and indirect impacts to mussel species, including northern riffleshell, are discussed in section 3.12.

3.9.5 Avoidance and Minimization Efforts

NEXUS is committed to avoiding direct impacts and minimizing the level and degree of indirect impacts to federally-listed mussel species. NEXUS conducted mussel surveys on all streams within the Project that were identified by FWS to potentially harbor federally-listed mussels. To avoid direct effects at the one waterbody crossing where federal mussels were located within the Project area, NEXUS plans to implement HDD and construct the Project in accordance with the Project E&SCP and all federal and state regulations and permit requirements. Additional major waterbody crossings and crossings of federal and state-designated waterbodies are also proposed to be crossed using the HDD, including Swan Creek in Ohio and the Huron River in Michigan. The E&SCP and SPCC Plan outlines in detail the measures to be employed to reduce any short or long-term impacts potentially incurred by the Project. Activities potentially affecting mussels either through direct or indirect impacts and NEXUS avoidance procedures to minimize these impacts are described in section 2.6.

3.9.6 Determination of Effect under ESA

The northern riffleshell mussel has a historical record of occurrence in Macon Creek, a tributary of River Raisin, as well as occurrences in the Huron River in Michigan. The northern riffleshell mussel is federally-listed as endangered and is also listed as state endangered in Michigan. The FWS identified this species as potentially occurring near the Project area in Michigan. Mussel surveys were completed in September 2015, including Macon Creek and the Huron River. No northern riffleshell mussels were observed during the surveys, therefore no impacts to the species are expected.

The Project would have ***no effect*** the northern riffleshell mussel. This determination is based on the lack of presence of northern riffleshell mussels in the Project area, in addition to the NEXUS plan to use HDD on the Huron River and perform a mussel relocation at Macon Creek. The avoidance of species, utilization of HDD methods, and conducting relocation efforts, in combination with a commitment from NEXUS to use the appropriate conservation measures for the Project, support the *no effect* determination.

Because no critical habitat has been designated, the Project would have ***no effect*** on designated critical habitat for the northern riffleshell mussel.

3.10 Rayed bean

3.10.1 Species' Description and General Habitat Requirements

The rayed bean is a federally-endangered fresh-water mollusk within the Lampsilinae subfamily. Adults are approximately 1.5 inches long; shell coloration varies and may be brown, green, or yellow-green with wavy, dark-green lines. The species is found most commonly in sand or gravel substrate and at the margins of water willow beds of headwater creeks and larger rivers. The Tippecanoe darter (*Etheostoma tippecanoe*) has been identified as a host fish for the rayed bean. Other hosts are thought to include the greenside darter (*Etheostoma blennioides*), rainbow darter (*Etheostoma caeruleum*), mottled sculpin (*Cottus bairdi*), and largemouth bass (*Micropterus salmoides*) (FWS, 2012b).

3.10.2 Distribution and Threats

The rayed bean is found across the mid-western U.S. Historical and present occurrence is known in Indiana, Illinois, Kentucky, Tennessee, Alabama, Virginia, West Virginia, Michigan, New York, Ohio, and Pennsylvania (NatureServe, 2015; FWS, 2016d). The rayed bean is known to have occurred in parts of

the upper (Lake Michigan drainage) and lower Great Lakes systems, and throughout most of the Ohio and Tennessee River systems (FWS, 2010).

In Ohio, the distribution of the species includes Adams, Auglaize, Brown, Butler, Clark, Champaign, Clermont, Coshocton, Darke, Defiance, Delaware, Franklin, Fulton, Greene, Hamilton, Hancock, Hardin, Logan, Lucas, Madison, Marion, Miami, Montgomery, Morrow, Muskingum, Ottawa, Pickaway, Pike, Ross, Scioto, Shelby, Union, Warren, Williams, and Wyandot Counties (FWS, 2016d). Known and/or historic distribution of the rayed bean in Michigan is limited to Hillsdale, Lenawee, Macomb, Monroe, Oakland, St. Clair, and Wayne Counties (NatureServe, 2015; FWS, 2016d).

Extant populations of the rayed bean are known from 28 streams and one lake in six states and one Canadian province. Of those 28 streams, eight are within Ohio (Swan Creek, Fish Creek, Blanchard River, Tymochtee Creek, Walhonding River, Mill Creek, Big Darby Creek, Scioto Brush Creek). Only Swan Creek in Fulton County, Ohio is crossed by the Project.

The rayed bean was historically widespread in the Lake Erie watershed; however, populations have declined in number and distribution due to the invasive zebra mussel (FWS, 2010). As discussed in section 3.4.1.1, zebra and quagga mussels colonize on native mussels causing suffocation and death. Pollution through point (industrial and residential discharge) and non-point (siltation, herbicide and fertilizer run-off) sources also imposes a threat to the rayed bean and its host fishes. Water quality issues such as lowered dissolved oxygen content and elevated ammonia levels (frequently associated with agricultural runoff and sewage discharge) have been also shown to be lethal to both mussels and their fish hosts (Horne and McIntosh, 1979; NatureServe, 2015).

The decline of the rayed bean in the Great Lakes region is also attributed to habitat loss and/or degradation (Smith, 1971; Butler 2003; NatureServe, 2015). Destruction of habitat through stream channelization and maintenance and the construction of dams threatens the survival of the rayed bean. Additionally, impoundments, dams, reservoirs, and dredging threaten the rayed bean.

3.10.3 Presence of Species in the Action Area

The rayed bean may occur in Fulton and Lucas Counties, Ohio (table 3.0-1).

3.10.4 Analysis of Potential Effect on Species

3.10.4.1 Effect on Critical Habitat

Critical habitat has not been designated for the rayed bean mussel.

3.10.4.2 Effect on Species

The rayed bean is known to occur in Fulton and Lucas Counties, Ohio where the species was once prevalent in the Maumee River system. The species was historically known from eight tributary streams of the mainstem Maumee River. One of the eight tributaries, Swan Creek in Fulton County, has recent collections of the rayed bean (2005 to present) (FWS, 2010). In Ohio, NEXUS conducted mussel surveys in Swan Creek, Huron River, and the Sandusky River between August and September 2015, and no live rayed bean were present within the Project corridor at these crossings.

Additionally, the rayed bean is known to occur within Lenawee and Monroe Counties, Michigan, specifically the Huron River and River Raisin. Surveys were conducted along the proposed NEXUS route in 2015 and live individuals of the rayed bean were only present in one stream, the River Raisin. Surveys

performed in the River Raisin documented eight live rayed bean individuals within the proposed Project corridor. The River Raisin is proposed for HDD and would be used for hydrostatic testing water withdrawal.

Potential effects on the rayed bean include siltation and habitat degradation. Potential direct and indirect impacts to mussel species are discussed in section 3.12.

3.10.5 Avoidance and Minimization Efforts

NEXUS is committed to avoiding direct impacts and minimizing the level and degree of indirect impacts to federally-listed mussel species. NEXUS conducted mussel surveys on all streams within the Project that were identified by FWS to potentially harbor federally-listed mussels. To avoid direct effects at the one waterbody crossing where federal mussels were located within the Project area, NEXUS plans to implement HDD and construct the Project in accordance with the Project E&SCP and all federal and state regulations and permit requirements. Additional major waterbody crossings and crossings of federal and state-designated waterbodies are also proposed to be crossed using the HDD, including Swan Creek in Ohio and the Huron River in Michigan. The E&SCP and SPCC Plan outlines in detail the measures to be employed to reduce any short or long-term impacts potentially incurred by the Project. Activities potentially affecting mussels either through direct or indirect impacts and NEXUS avoidance procedures to minimize these impacts are described in section 2.6.

3.10.6 Determination of Effect under ESA

The rayed bean is currently federally-listed and state-listed as endangered in Ohio and Michigan. In Ohio, the rayed bean is known to occur in the Lake Erie basin including recent records in Swan Creek, which flows through Fulton and Lucas Counties, Ohio. Historically, it was widely distributed in the Sandusky River (Watters et al, 2009). In Michigan, the rayed bean mussel is known to occur in the Huron River and River Raisin.

In Ohio, NEXUS conducted mussel surveys in Swan Creek, Huron River, and the Sandusky River between August and September 2015, and no live rayed bean were present within the Project corridor at these crossings. No impacts are anticipated to occur on the rayed bean where recent and historical records were within Swan Creek, Huron River, and the Sandusky River.

Live individuals of the rayed bean were only present in one stream (in Michigan) surveyed in 2015. Surveys performed in the River Raisin documented 8 live rayed bean individuals within the proposed Project corridor. The River Raisin is proposed for HDD and would be used for hydrostatic testing and water withdrawal. All standard protocols would be followed to prevent impacts to the mussel species during hydrostatic test water withdrawal as described in section 2.6.6. The Vermilion River is proposed to be crossed using the HDD crossing method. A letter from the Department of the Interior dated August 22, 2016 states that the rayed bean is currently considered extirpated from the Vermillion River. As such, no impacts are expected on the rayed bean in this waterbody.

The Project ***may affect, but is not likely to adversely affect*** the rayed bean mussel. This determination is based on NEXUS' plan to use the HDD method to cross the River Raisin, the only location on the Project where rayed bean was identified during field surveys. Additional HDD locations include Swan Creek, Huron River, and the Sandusky River, where historical records for the rayed bean occur. The construction methods, in combination with a commitment from NEXUS to use the appropriate conservation measures for the Project, support this determination.

Because no critical habitat has been designated, the Project would have ***no effect*** on designated critical habitat for the rayed bean mussel.

3.11 Snuffbox mussel

3.11.1 Species' Description and General Habitat Requirements

The snuffbox mussel is a federally-endangered fresh-water mollusk in the Lampsilinae subfamily. The snuffbox mussel is thick-shelled and triangular-shaped, and approximately 2 inches in length; males are typically larger than females. Coloration is light yellowish with numerous dark-green rays that are broken intermediately. This mussel tends to inhabit small to medium sized rivers but can be found in larger waterbodies. The snuffbox mussel is associated with flowing waters with sand, gravel, and cobble substrates. In laboratory tests, juvenile snuffbox have successfully transformed on logperch (*Percina caprodes*), blackside darter (*Percina maculata*), rainbow darter, Iowa darter (*Etheostoma exile*), blackspotted topminnow (*Fundulus olivaceus*), mottled sculpin, largemouth bass, and brook stickleback (*Culaea inconstans*) (FWS, 2010).

3.11.2 Distribution and Threats

The snuffbox is found across the mid-western U.S. Historical and present occurrence is known in Alabama, Arkansas, Illinois, Indiana, Kansas, Kentucky, Michigan, Minnesota, Mississippi, Missouri, New York, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin (NatureServe, 2015; FWS, 2016d). The major watersheds of historical streams and lakes of occurrence include the upper Great Lakes sub-basin (Lake Michigan drainage), lower Great Lakes sub-basin (Lakes Huron, Erie, and Ontario drainages), upper Mississippi River sub-basin, lower Missouri River system, Ohio River system, Cumberland River system, Tennessee River system, lower Mississippi River sub-basin, and White River system (FWS, 2010).

In Ohio, the distribution of the species includes Adams, Ashtabula, Athens, Brown, Clermont, Coshocton, Delaware, Franklin, Gallia, Greene, Hamilton, Lake, Lawrence, Madison, Meigs, Miami, Montgomery, Morgan, Muskingum, Pickaway, Ross, Scioto, Union, and Washington Counties (NatureServe, 2015; FWS, 2016d). Known and/or historic distribution of the snuffbox mussel in Michigan includes Berrien, Gratiot, Huron, Ionia, Kent, Livingston, Macomb, Midland, Monroe, Newaygo, Oakland, Saginaw, St. Clair, St. Joseph, Tuscola, Washtenaw, and Wayne Counties (NatureServe, 2015; FWS, 2016d).

Threats to the snuffbox are similar in nature and effects as those described in sections 3.4.1.1 and 3.4.2.1 for the northern riffleshell and the rayed bean. Extirpation or declines of host fishes, invasive species introductions, pollution, impoundments, and habitat degradation and/or destruction are all cited as contributing factors for the decline of the snuffbox mussel throughout its known range (Smith, 1971; FWS, 2010). These factors can render habitats unsuitable, cause the isolation of populations reducing their colonization potential, and lead to extirpation (NatureServe, 2015).

3.11.3 Presence of Species in the Action Area

The snuffbox mussel may occur in Washtenaw County, Michigan (table 3.0-1).

3.11.4 Analysis of Potential Effect on Species

3.11.4.1 Effect on Critical Habitat

Critical habitat has not been designated for the snuffbox mussel.

3.11.4.2 Effect on Species

The snuffbox is known from Monroe and Washtenaw Counties, Michigan. The snuffbox was historically recorded in the lower Great Lakes sub-basin, including several chains-of-lakes, springs, and channels in some systems (Clinton, Huron Rivers in Michigan). Historically, populations occurred in some streams within the western Lake Erie basin (Belle, Clinton, Huron, Portage, and Niagara Rivers), but is now uncommon' with very few to no observations of live individuals since the 1970s (Strayer, 1980). The snuffbox is considered extant in two disjunct upper mainstem reaches of the Huron River in Michigan (FWS, 2010). The Huron River is crossed by the Project in Washtenaw County. Although the species' range includes Ohio, its current known distribution does not occur in any counties crossed by the Project (NatureServe, 2015; FWS, 2016d). Additionally, FWS letter correspondence dated January 6, 2016 indicated that snuffbox occurrences with respect to the Project were limited to Michigan.

Surveys were completed in September 2015. No snuffbox individuals or snuffbox habitat were observed during any of the surveys, including the Huron River. Due to the absence of snuffbox in the Huron River in Michigan, potential effects incurred by the Project would be limited to potential habitat loss and/or siltation restricting colonization of the species. Potential direct, indirect, and cumulative impacts to mussel species are discussed in section 3.12.

3.11.5 Avoidance and Minimization Efforts

NEXUS is committed to avoiding direct impacts and minimizing the level and degree of indirect impacts to federally-listed mussel species. NEXUS conducted mussel surveys on all streams within the Project that were identified by FWS to potentially harbor federally-listed mussels. To avoid direct effects at the one waterbody crossing where federal mussels were located within the Project area, NEXUS plans to implement HDD and construct the Project in accordance with the Project E&SCP and all federal and state regulations and permit requirements. Additional major waterbody crossings and crossings of federal and state-designated waterbodies are also proposed to be crossed using the HDD, including Swan Creek in Ohio and the Huron River in Michigan. The E&SCP and SPCC Plan outlines in detail the measures to be employed to reduce any short or long-term impacts potentially incurred by the Project. Activities potentially affecting mussels either through direct or indirect impacts and NEXUS avoidance procedures to minimize these impacts are described in section 2.6.

3.11.6 Determination of Effect under ESA

Surveys for the snuffbox mussel were completed in September 2015. No snuffbox individuals or snuffbox habitat was observed during any of the surveys, including the Huron River, therefore no impacts to the species are expected. The Project would have ***no effect*** on the snuffbox mussel. This determination is based on the lack of presence of snuffbox mussel in the Project area and NEXUS' plan to use the HDD crossing method the Huron River.

Because no critical habitat has been designated, the Project would have ***no effect*** on designated critical habitat for the snuffbox mussel.

3.12 Indirect, Direct, and Cumulative Effects on Mussel Species

A variety of natural and anthropogenic threats may cause harm or even death to mussels. These threats often result in reducing the availability of suitable habitat, availability of host fishes, and survival and reproduction (fitness) of mussels. These threats have been evaluated to determine the effect that the construction of the Project may have on listed mussel species. Table A-2 includes a summary of all potential stressor pathways and the potential threats they pose to mussels, either directly or indirectly. NEXUS has incorporated conservation measures to avoid and minimize impacts on mussels and their respective habitats.

Project activities that have a potential to impact federally-listed mussel species, including northern riffleshell, rayed bean, and snuffbox vary in the type, degree of expected impact, and the duration of the impact in the Project area. The indirect impacts of Project construction activities are designed to be temporary. By adhering to the avoidance and minimization procedures described in section 2.6, NEXUS has limited the extent of impacts for these species primarily by avoiding direct impacts of waterbodies that harbor federally-protected mussels.

Streams scheduled for the activities described in sections 2.5.1 and 2.5.2 have been reviewed for the presence or absence of mussels, and all streams where federally-protected mussels were located within the Project area are proposed to be avoided by implementation of HDD. These activities are analyzed in table A-2.

Mussels are particularly vulnerable to habitat alterations. The construction activities listed above can directly and indirectly affect mussels as they are sessile organisms and are immobile. Changes that occur in their habitat resulting from the activities described above can impact reproductive life cycles by eliminating suitable fish host habitat. Additionally, changes in habitat may not be conducive for mussel colonization. For example, some mussels require gravel and sand substrates in riffles and runs of streams, including the northern riffleshell and snuffbox. A shift to substrates comprised mostly of silt, and clay could impact its persistence at that location. Impacts on habitat for the streams where federally-protected mussels were located within the Project area would be avoided by utilization of HDD methods.

The current state of water quality along the Project route is already compromised. All of the streams crossed by the Project in Ohio and the majority in Michigan are considered impaired for aquatic health, human health and/or recreation, and fish consumption. Therefore, any potential for cumulative impacts to occur on mussels from water quality issues related to Project construction, as well as operation and maintenance, is expected to be minimal or negligible against existing conditions. Water quality perturbations that could occur on this Project are chemical and/or sediment in nature. Incidental spills (i.e., petroleum products and those used for machine operation such as fuels, lubricating oils) near waterways can have a temporal effect on federal mussels. Toxicity of chemical pollutants would likely need to persist over a long period of time to cause death; however, incidental spills may only cause temporary stress to mussels. Mussels are known to cease siphoning and clam up to ward off acute toxicity. This can induce nutritional stress and potentially decrease viability.

Siltation and erosion are likely the most common and prevalent potential impacts in streams crossed by the Project that harbor federal mussels. However, NEXUS is committed to keeping these temporal impacts confined to the construction workspace as much as possible. The installation of the pipeline, and its presence within the waterbody, can alter channel morphology and change flow regimes resulting in

erosion. The physical processes associated with construction activities, such as trenching and pipe installation, may cause a temporary increase in siltation; however, it is the erosional processes imposed by the altered stream morphology and flow that can result in a more persistent impact from siltation.

Mussels exposed to turbid conditions in non-flowing waters can suffocate and die if exposed for long periods of time. Project activities that result in temporary siltation events, such as stream crossings, access roads, and in-stream stabilization, would likely only minimally impact habitat where present at streams being crossed dry crossing methods. Any streams where federal mussels were located within the Project area would have reduced impact from siltation and erosion due to implementation of HDD methods and avoidance of bed and bank alteration. It is not likely the short-term spike in siltation to the receiving streams would be long lasting, nor have a long-term effect on mussel populations potentially occurring downstream.

3.13 Eastern prairie fringed orchid

3.13.1 Species' Description and General Habitat Requirements

The eastern prairie fringed orchid is a federally-listed threatened species. The orchid is a perennial, upright, leafy-stem plant that ranges from 8 to 40 inches in height. The plant has 3- to 8-inch lance-shaped leaves, with one single flower spike, composed of 5 to 40 creamy white flowers. The plants emerge from a winter-dormant, underground tuber in May; flowering usually begins in late June and early July. The flowers are nocturnally fragrant and attract the species' primary pollinator, the night-flying hawkmoth (FWS, 2015e).

3.13.2 Distribution and Threats

The eastern prairie fringed orchid historically ranged from Iowa to Oklahoma in the west, with the majority of the species located to the west of the Mississippi River, spreading from Wisconsin and Illinois to western New York, Virginia, Maine, and Ontario. The species range has declined more than 70 percent within the U.S., with only 59 populations found within six states at the time of the Recovery Plan (FWS, 1999c).

In Michigan, the eastern prairie fringed orchid has been observed in Barry, Bay, Calhoun, Cass, Cheboygan, Clinton, Eaton, Genesee, Gratiot, Huron, Livingston, Monroe, Oakland, Saginaw, St. Joseph, Tuscola, Washtenaw, and Wayne Counties. In Ohio, the species has been known to occur in Clark, Holmes, Lucas, Ottawa, Sandusky, and Wayne Counties.

The eastern prairie fringed orchid is primarily found in sandy or peaty lakeshores or bogs. The orchid thrives in low competition, grass and sedge dominated communities, where natural processes (i.e., seasonal flooding or disturbance) maintain the early successional stages. Peripheral habitat includes sedge-sphagnum bog mats around neutral pH kettle lakes, and fallow agricultural fields. Wet ditches and railroad rights-of-way also serve as refugia. This species' winter-dormant tubers are adapted to dormant-season prairie fires; such fires and high precipitation levels appear to promote flowering. Threats to the orchid include drainage and ditching for crop production, commercial and residential development, grazing by cattle and deer, drought, and encroachment of woody vegetation in prairies due to fire suppression. Populations along the shores of the Great Lakes are threatened by high water levels and invasion of purple loosestrife and other non-native species. Cutting hay in midsummer prevents populations from dispersing seed (NatureServe, 2015).

3.13.3 Presence of Species in the Action Area

The eastern prairie fringed orchid may occur in Lucas and Sandusky Counties, Ohio, and Monroe and Washtenaw Counties, Michigan (table 3.0-1).

3.13.4 Analysis of Potential Effect on Species

3.13.4.1 Effect on Critical Habitat

Critical habitat has not been designated for the eastern prairie fringed orchid.

3.13.4.2 Effect on Species

The Michigan Natural Features Inventory and the FWS suggest there are no historic occurrences identified within the proposed Project corridor; the FWS recommended a habitat survey be conducted. The habitat survey ensures that no potential habitat or unknown populations of eastern prairie fringed orchid are disturbed during construction and operation of the Project. More recent accounts of orchid populations suggest that this species currently occurs in nine Michigan Counties and four Ohio Counties. The Project traverses Monroe and Washtenaw Counties in Michigan and Sandusky and Wayne Counties in Ohio, which have known populations or were recommended by FWS for evaluation. In Ohio, the known populations are all located within existing state parks or protected wildlife areas, and efforts have been made to reduce the decline in Ohio populations. The significant decline resulting from agricultural development is exemplified by Michigan studies. Between 1984 and 1990 the orchid population was estimated to decline from roughly 900 to 316 (FWS, 1999c).

The eastern prairie fringed orchid can be found in mesic prairies and various wetland types, including sedge meadows, marsh edges, and bogs. According to the FWS, the orchid requires full sun for optimum growth, and a grassy habitat, with little or no woody encroachment. The orchid thrives in moist to wet tallgrass prairies, sedge meadows, fens, and old fields (FWS, 2005). Therefore, the Huron/Erie Lake Plains Ecoregion, between MPs 116 and 246, or the Eastern Corn Belt Plains Ecoregion, between MPs 90 and MP 116, would be most likely to promote growth, based on the naturally silt-loam and sand prairie soils and habitat. Despite the naturally supportive ecosystems of these regions, the habitat of this orchid continues to decline, as the occurrence of wetland drainage, the prevention of natural succession, and the increase in non-native species is a side effect of the increased land development and clearing for crop and grazing (FWS, 2005).

Botanical surveys were completed in areas identified as potential suitable habitat, and no eastern prairie fringed orchids were located within the Project area. Through agency consultation with FWS and ODNR, in addition to botanical survey efforts, Project activities are not expected to have an effect on the federally-listed plant species. Based on botanical surveys conducted in these areas, it is not believed that the eastern prairie fringed orchid is found within the Project right-of-way.

Direct Effects to Plant Species

TRC conducted pre-construction botanical surveys for the eastern prairie fringed orchid (i.e., mesic prairies, sedge meadows, marsh edges, and bogs) along the Project pipeline right-of-way; no individuals of the species were observed within the Project area. As such, no impacts are anticipated to the eastern prairie fringed orchid by the construction of this Project.

Indirect Effects to Plant Species

Potential indirect threats to plant populations from the Project include habitat loss or degradation, introduction and/or spread of exotic species, successional woody species development within the preferred habitat of some species, and the use of herbicides/pesticides. Habitat destruction and modification are the main reasons for the decline of these plant species.

Further indirect impacts from the Project on the orchid includes the potential for expansion of the species into portions of preferred habitats adjacent to the right-of-way, due to the potential reestablishment of riparian and wetland vegetation within both the temporary and permanent right-of-way. This disturbance may benefit the eastern prairie fringed orchid by eliminating canopy coverage and exposing the species to full sunlight.

3.13.5 Avoidance and Minimization Efforts

See section 2.6 for all conservation measures to be implemented by NEXUS to avoid and minimize impacts to plant species.

3.13.6 Determination of Effect under ESA

The overall quality of the plant communities within the proposed Project corridor is not indicative of high-quality plant communities known to occur in Ohio and Michigan. Botanists conducted a pre-construction survey within the range and the preferred habitat of the eastern prairie fringed orchid. No individuals were found in the course of surveys. The proposed activities would have ***no effect*** on the eastern prairie fringed orchid, based on the absence of individuals from the Project area. Because no critical habitat has been designated, the Project would have ***no effect*** on designated critical habitat for the eastern prairie fringed orchid.

3.14 Eastern massasauga

3.14.1 Species' Description and General Habitat Requirements

The eastern massasauga is a federally-listed threatened species. It is a small, thick-bodied rattlesnake with a broad head and vertical pupils. The average length of an adult is about 2 feet; coloring is gray or light brown with light-edged chocolate brown blotches on the back and smaller blotches on the sides. The belly is marbled dark gray or black, and there is a narrow, white stripe on the head. The tail has several dark brown rings and is tipped by a gray-yellow horny rattle. Recently-born snakes have the same markings as

3.14.2 Distribution and Threats

The eastern massasauga ranges across several northeastern and Midwestern states, including New York, Pennsylvania, Ohio, Michigan, Missouri, Indiana, Iowa, Minnesota, and Wisconsin. In Michigan, the Eastern massasauga has been observed in Alcona, Allegan, Alpena, Antrim, Arenac, Barry, Benzie, Berrien, Branch, Calhoun, Cass, Cheboygan, Clare, Clinton, Crawford, Eaton, Emmet, Genesee, Grand Traverse, Hillsdale, Ingham, Ionia, Iosco, Jackson, Kalamazoo, Kalkaska, Kent, Lake, Lapeer, Lenawee, Livingston, Macomb, Manistee, Mason, Missaukee, Montcalm, Montmorency, Muskegon, Newayg, Oakland, Oscoda, Presque Isle, Roscommon, Saginaw, Shiawassee, St. Joseph, Van Buren, and

Washtenaw Counties (NatureServe, 2015). In Ohio, current range is not as well-known, but includes mainly the northern portion of the state.

The home range for this species varies for each individual population and is dependent on habitat quality. Eastern massasauga live in wet areas, including wet prairies, marshes, and low areas along rivers and lakes. In many areas, the species can also be found in adjacent uplands during part of the year. They often hibernate in crayfish burrows, but may also be found under logs and tree roots, or in small mammal burrows. Unlike other rattlesnakes, massasauga hibernate alone. Populations in southern Michigan and northern Ohio are typically found in shallow, sedge, or grass dominated wetlands, while those in northern Michigan prefer lowland coniferous forests. This species exists in disjunctive population segments, near both wetland habitats and along forest edges in Michigan and Ohio. This species requires sunny areas with scattered shade for thermoregulation; as such, it will avoid heavily wooded or closed canopy areas. It is typical for the massasauga to hibernate from the end of October through April in hummocked wetland landscapes, and move to drier upland areas along fields and old wood edges for hunting purposes in the summer months. It is also common in very warm months for the massasauga to become more active in mornings and evenings (FWS, 2015f).

The major threat to this species is habitat loss, destruction, or modification, which affects at least 50 populations range-wide. Habitat fragmentation and the elimination of, and severe degradation to, remaining habitat have occurred in Ohio and Michigan due to residential development, agricultural practices, and highway construction. In addition, urban encroachment has disrupted natural disturbance processes such as hydrological cycles and fire frequency, thus changing habitat structure and vegetative composition. Furthermore, loss of suitable habitat area may be occurring where invasive woody vegetation is altering the vegetative structure of massasauga habitat, even at some protected sites (NatureServe, 2015).

3.14.3 Presence of Species in the Action Area

The eastern massasauga may occur in Columbiana, Erie, Huron, Lucas, and Sandusky Counties, Ohio, and Lenawee and Washtenaw Counties, Michigan (table 3.0-1).

3.14.4 Analysis of Potential Effect on Species

3.14.4.1 Effect on Critical Habitat

Critical habitat has not been designated for the eastern massasauga throughout its range, nor within the Project area.

3.14.4.2 Effect on Species

Populations of this Eastern massasauga in southern Michigan and Ohio typically use shallow, sedge, or grass dominated wetlands, while those in northern Michigan, prefer lowland coniferous forests. This species exists in disjunctive population segments, near both wetland habitats and along forest edges in Michigan and Ohio. There is potential for habitat to be impacted, as listed below.

NEXUS performed a habitat analysis, by a qualified herpetologist, in June 2015, to determine if any suitable habitat for eastern massasauga rattlesnake may be impacted by the Michigan portion of the proposed Project. Ten sites were identified through desktop review as potential habitat and two sites were confirmed as suitable massasauga habitat during field habitat surveys. Fall season presence/absence surveys were conducted at the two sites with confirmed suitable habitat, and no individuals were observed. Spring emergence surveys were conducted during May of 2016. During the survey effort, herpetologists conducted

visual search surveys for 40 hours within each of the two potential massasauga survey areas. No massasauga were located during the survey effort.

Indirect/Direct Effects to Reptile Species

The Project is not expected to affect the eastern massasauga. The presence/absence surveys conducted in all suitable habitat located along the Project returned negative results. All impacts to the habitat would be temporary in nature and may increase the suitability of the habitat due to the occasional maintenance.

3.14.5 Avoidance and Minimization Efforts

See section 2.6 for all conservation measures to be implemented by NEXUS to avoid and minimize impacts to federal reptile species.

3.14.6 Determination of Effect under ESA

Ten sites were identified through desktop review as potential habitat for the eastern massasauga and 2 sites were confirmed as suitable massasauga habitat, during field habitat surveys in June of 2015. Fall season presence/absence surveys were conducted at the 2 sites with confirmed suitable habitat, and no individuals were observed. Visual presence/absence surveys were conducted for 40 additional hours in May 2016 during spring emergence and no individuals were observed within the Project. The negative result allows the presumption of absence of eastern massasauga within the Project. Therefore, the Project would have ***no effect*** on the eastern massasauga, based on the absence of the massasauga in the Project area and the proposed restoration of disturbed habitat.

Because no critical habitat has been designated, the Project would have ***no effect*** on designated critical habitat for the eastern massasauga.

4.0 CONCLUSIONS

Based on the analysis contained in this BA, and with the implementation of the mitigation/conservation measures proposed by NEXUS, NEXUS' Plan and Procedures, and recommendations included in the Project EIS, we have determined that the NGT Project:

- would have ***no effect*** on eight federally listed species: Kirtland's Warbler (*Setophaga kirtlandii*), Karner blue butterfly (*Lycaeides melissa samuelis*), Mitchell's satyr butterfly (*Neonympha mitchelli mitchelli*), Poweshiek skipperling (*Oarisma poweshiek*), northern riffelshell mussel (*Epioblasma torulosa rangiana*), snuffbox mussel (*Epioblasma triquetra*), eastern prairie fringed orchid (*Platanthera leucophaea*), and eastern massasauga (*Sistrurus catenatus catenatus*);

- ***may affect, but is not likely to adversely affect*** the rayed bean (*Villosa fabalis*);

- ***may affect, and is likely to adversely affect*** both the Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*); and

- would have ***no effect*** on designated critical habitat for the Poweshiek skipperling or Indiana bat.

These determinations are based on NEXUS' informal consultation with the U.S. Fish and Wildlife Service and our own analyses.

We request your concurrence with our determination of effect for the rayed bean and **request initiation of formal consultation under Section 7 of the ESA for the Indiana bat and northern long-eared bat**.

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TABLE A-1

ANALYSIS OF POTENTIAL IMPACTS ON PROTECTED BAT SPECIES

Table A-1

Analysis of Potential Impacts of the NGT Project on Protected Bat Species

Indiana bat (*Myotis sodalis*) and Northern long-eared bat (*Myotis septentrionalis*)											
Pipeline Activity	**Subactivity**	**Environmental Impact or Threat**	**Stressor**	**Stressor Pathway (optional)**	**Typical Frequency in the ROW**	**Time Period of Potential Impact**	**Exposure (Resource Affected)**	**Conservation Need Affected**	**Avoidance and Minimization Measures[1]**	**Effects Determination[2]**	**Comments**
Construction	Facilities - Vehicles, foot traffic, noise, communication facilities, pipeline corridor presence	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Intermittent	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	7, 8, 9	NLAA	
Construction	Clearing herbaceous vegetation, groundcover, trees (< 4 inches dbh), and shrubs	Disturbance and foraging habitat loss	Flushing bats; shrub and tree removal	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area; Removal of habitat	Once	April 1 - October 1	Adults, juveniles, and pups.	Feeding	1, 2, 3, 4, 7, 11	NLAA	Impacts are not likely, as individuals are not likely roosting in small trees or shrubs.
Construction	Clearing unoccupied habitat	Disturbance and foraging habitat loss	Flushing bats; tree removal	Removal of habitat, clearing of trees when bats may be roosting.	Once	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	1, 2, 3, 4, 7, 11	NLAA	Impacts are not likely, as individuals were not found during Project mist-net surveys. Likelihood of roosting in unoccupied habitat is minimal.
Construction	Clearing within known Indiana bat habitat	Loss of individuals	Injury or mortality	Roost trees may be cleared during times when Indiana bats may be roosting.	Once	August 15 - October 1 and April 1 - May 15	Adults and juveniles	Breeding and sheltering	1, 2, 3, 5, 7, 8, 9	LAA	Clearing is planned to be completed between October 1 and March 31, however any required clearing between August 15 - October 1 and April 1 - May 15 would likely adversely affect the bats. The August 15 - May 15 window is designed as a contingency for areas determined to be utilized by Indiana bat, but not within northern long-eared bat sensitive areas.
Construction	Clearing within known northern long-eared bat sensitive habitat	Loss of individuals	Injury or mortality	Roost trees would be cleared during times when northern long-eared bats may be roosting.	Once	August 1 - May 31	Adults and juveniles	Breeding and sheltering	1, 2, 3, 6, 7, 8, 9	LAA	Clearing is planned to be completed between October 1 and March 31, however any required clearing between August 1 - October 1 and April 1 - May 31 would likely adversely affect the bats. The August 1 - May 31 window is designed as a contingency for areas determined NOT to be utilized by Indiana bat, but are within northern long-eared bat sensitive areas.
Construction	Clearing within known Indiana bat habitat	Summer roosting and swarming habitat loss	Tree removal	Removal of habitat.	Once	August 15 - October 1 and April 1 - May 15	Roosting trees	Feeding and sheltering	1, 2, 3, 5, 7, 8, 9, 11	LAA	Clearing is planned to be completed between October 1 and March 31, however any required clearing between August 15 - October 1 and April 1 - May 15 would likely adversely affect the bats. The August 15 - May 15 window is designed as a contingency for areas determined to be utilized by Indiana bat, but not within northern long-eared bat sensitive areas.
Construction	Clearing within known northern long-eared bat sensitive habitat	Summer roosting and swarming habitat loss	Tree removal	Removal of habitat.	Once	August 1 - May 31	Roosting trees	Feeding and sheltering	1, 2, 3, 6, 7, 8, 9, 11	LAA	Clearing is planned to be completed between October 1 and March 31, however any required clearing between August 1 - October 1 and April 1 - May 31 would likely adversely affect the bats. The August 1 - May 31 window is designed as a contingency for areas determined NOT to be utilized by Indiana bat, but are within northern long-eared bat sensitive areas.
Construction	Vegetation disposal (dragging, chipping, piling, and brush pile burning)	Disturbance of individuals	Flushing bats	Smoke from burn pile, noise, and/or presence of humans and equipment flush bats from trees and/or result in bats temporarily moving away from the Project area.	Once	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	3, 4, 7, 8, 9	NLAA	
Construction	Vegetation clearing - tree side trimming	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Once	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	3, 4, 7, 8, 9	NLAA	
Construction	Re-grading and Stabilization - restoration of corridor	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Once	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	3, 4, 7, 8, 9, 10, 11	NLAA	
Construction	Trenching (digging, blasting, dewatering, open trench, and sedimentation)	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Once	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	7, 8, 9	NLAA	
Construction	Pipe stringing, bending, welding, coating, padding, and backfilling	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Once	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	7, 8, 9	NLAA	

Table A-1

Analysis of Potential Impacts of the NGT Project on Protected Bat Species

Indiana bat (*Myotis sodalis*) and Northern long-eared bat (*Myotis septentrionalis*)

Pipeline Activity	Subactivity	Environmental Impact or Threat	Stressor	Stressor Pathway (optional)	Typical Frequency in the ROW	Time Period of Potential Impact	Exposure (Resource Affected)	Conservation Need Affected	Avoidance and Minimization Measures[1]	Effects Determination[2]	Comments
Construction	Hydrostatic testing (water withdrawal and discharge)	Not applicable								NE	No clearing or disturbance is associated with hydrostatic testing.
Construction	Access Roads upgrading existing roads, new roads temp and permanent - grading, graveling, culvert installation	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Infrequent	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	7, 8, 9	NLAA	
Construction	Stream Crossings (wet, dry, flume pipe, dam and pump)	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Once	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	7, 8, 9	NLAA	
Construction	Horizontal Directional Drill (HDD)	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Once	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	7, 8, 9	NLAA	
Operation and Maintenance	Facilities - Vehicles, foot traffic, noise, communication facilities, pipeline corridor presence, artificial lighting	Disturbance of individuals	Flushing bats	Noise and presence of humans, artificial lighting and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Infrequent	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	1, 2, 8, 9	NLAA	
Operation and Maintenance	Access road maintenance	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Infrequent	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	1, 2, 8, 9	NLAA	
Operation and Maintenance	Cathodic protection construction	Not applicable								NE	This subactivity would not occur within the vicinity of federally-listed bats.
Operation and Maintenance	Vegetation Management	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Infrequent	April 1 - October 1	Adults, juveniles, and pups.	Breeding, feeding, and sheltering	8, 9, 10	NLAA	
Operation and Maintenance	Mowing	Disturbance of individuals	Flushing bats	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area.	Infrequent	April 1 - October 1	Adults, juveniles, and pups.	Breeding, feeding, and sheltering	8, 9, 10	NLAA	
Operation and Maintenance	Herbicides - hand applications	Injury	Flushing bats, Direct physical impact	Noise and presence of humans and equipment may cause bats to flush from trees and/or results in bat moving away temporarily from the Project area; physical impact	Infrequent	April 1 - October 1	Adults, juveniles, and pups.	Feeding and sheltering	8, 9, 10	NLAA	Herbicide may be applied for maintenance of permanent easement. Effects are anticipated to be discountable and insignificant, because of the low likelihood of occurrence near bats.

[1]Conservation Measures for Bat Species

Pre-Construction Planning

1. Routing efforts avoided sensitive species and habitats to the maximum extent practicable. Approximately 44 percent of the proposed pipeline route is collocated with existing overhead electric transmission line, pipeline, or railroad utility corridors; with an additional 48 percent of the route (that is not co-located with existing utilities), crossing agricultural land uses. A resulting 92 percent of the proposed pipeline route was sited to avoid conversion of existing land uses to reduce impacts on sensitive species and habitat including protected bat species.

2. NEXUS modified construction workspace and routing after target bat species were captured during mist-net surveys to unnecessary forested impacts.

Construction Planning

3. All tree clearing would be conducted between October 1 and March 31 to the extent that landowner access and schedule allows. Clearing would be prioritized to clear maternity roost and non-maternity roost Indiana bat and northern long-eared bat habitat first, if schedule does not allow all clearing within the October 1 and March 31. Clearing outside of this window would follow the restrictions outlined in 4, 5 and 6.

4. As a contingency for areas not cleared between October 1 and March 31, NEXUS would prioritize the quality of habitat for additional clearing restrictions. No additional clearing restrictions would apply to areas with no presence of Indiana bats, all foraging habitat and areas outside of known northern long-eared bat sensitive areas (within 150-feet of known maternity roosts and/or within 0.25 mile of known occupied hibernacula).

5. As a contingency for areas not cleared between October 1 and March 31, NEXUS would prioritize the quality of habitat for additional clearing restrictions. Tree removal activities would be performed between August 15 and May 15 for forested areas that have been determined to be suitable roost habitat within the known occupied Indiana bat areas.

6. As a contingency for areas not cleared between October 1 and March 31, NEXUS would prioritize the quality of habitat for additional clearing restrictions. Tree removal activities would be performed between August 1 and May 31 for forested areas that have been determined to be within known northern long-eared bat sensitive areas (within 150-feet of known maternity roosts and/or within 0.25 mile of known occupied hibernacula).

7. NEXUS would use a typical ROW width of 100 feet. The ROW would be reduced to 75 feet in wetlands, including forested wetlands. The permanently maintained ROW would be 50 feet in width. The additional temporary workspace, aboveground facilities, access roads, ware yards and staging areas were designed to avoid tree clearing to reduce impacts to the federally-listed bats.

Table A-1

Analysis of Potential Impacts of the NGT Project on Protected Bat Species

Indiana bat (*Myotis sodalis*) and Northern long-eared bat (*Myotis septentrionalis*)

Pipeline Activity	Subactivity	Environmental Impact or Threat	Stressor	Stressor Pathway (optional)	Typical Frequency in the ROW	Time Period of Potential Impact	Exposure (Resource Affected)	Conservation Need Affected	Avoidance and Minimization Measures[1]	Effects Determination[2]	Comments

8. NEXUS would conduct all Project activities in accordance with the NEXUS construction plans. The plans were developed to ensure that all pertinent construction-related environmental policies, procedures, and mitigation measures are implemented during construction. The plans are intended to meet or exceed applicable federal, state, and local environmental protection specifications and practices.

9. NEXUS would employ Environmental Inspectors (EIs) and Craft Inspectors (CIs) during construction to observe construction activities to ensure the compliance with environmental permit requirements and implementation of the NEXUS construction plans to prevent unnecessary impacts to the federally-listed bats. All inspectors would be provided specific environmental training according to the task and presence of T&E species and sensitive habitat.

Post-Construction Planning

10. Post-construction mitigation efforts are focused on revegetation of the construction and permanent ROW. Temporary workspace would be allowed to return to its preconstruction condition. The maximum 50-foot-wide permanently maintained ROW would be periodically cleared of woody vegetation, as required for operation and maintenance activities.

11. NEXUS and FWS have executed a Memorandum of Understanding agreement to mitigate for lost suitable roosting habitat. NEXUS is committed to mitigation to reduce overall impacts federally-listed bats by providing compensatory mitigation reflecting the acreages of lost habitat.

[2]Determination of Effect:

NE = "No Effect"
NLAA = "May Affect, Not Likely to Adversely Affect"
LAA = "May Affect, Likely to Adversely Affect"

TABLE A-2

ANALYSIS OF POTENTIAL IMPACTS ON PROTECTED MUSSEL SPECIES

Table A-2

Analysis of Potential Impacts of the NGT Project on Protected Mussel Species

Northern Riffleshell (*Epioblasma torulosa rangiana*), Rayed Bean (*Villosa fabalis*), and Snuffbox (*Epioblasma triquetra*)

Pipeline Activity	Subactivity	Environmental Impact or Threat	Stressor	Stressor Pathway (optional)	Exposure (Resource Affected)	Conservation Need Affected	Avoidance and Minimization Measures[1]	Effects Determination[2]	Comments
Construction	Facilities - Vehicles, foot traffic, noise, communication facilities, pipeline corridor presence	Neutral	None					NE	No impacts are anticipated from this subactivity.
Construction	Clearing - herbaceous vegetation and ground cover	Habitat degradation; Degradation of host fish habitat	Sedimentation	Near stream earth disturbance - minor sedimentation in water column and on stream bed; host fish leave so less chance for glochidia to attach to gills	All Mussel Life stages and habitat; Host Fish habitat	Breeding, Feeding, Sheltering	1, 2, 4, 5, 6, 7, 8	NE	This subactivity would not occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin.
Construction	Clearing - trees and shrubs	Habitat degradation; Degradation of host fish habitat	Sedimentation, increase in water temperature	Near stream earth disturbance - minor sedimentation in water column and on stream bed; host fish leave so less chance for glochidia to attach to gills	All Mussel Life stages and habitat; Host Fish habitat	Breeding, Feeding, Sheltering	1, 2, 4, 5, 6, 7, 8	NE	This subactivity would not occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin.
Construction	Vegetation disposal (dragging, chipping, piling, and brush pile burning)	Not applicable						NE	This subactivity would not occur within the vicinity of the one waterbody where listed mussels were identified within the Project, the River Raisin.
Construction	Grading and Trenching (digging, blasting, dewatering, open trench, sedimentation)	Habitat degradation; Degradation of host fish habitat	Crushing, Sedimentation, Chemical Contaminants, Altered Flow	Crushing of mussels by equipment, replacement of habitat by bridge, altered flow, sedimentation in water column and on stream bed; host fish leave so less chance for glochidia to attach to gills, changes in flow affect food availability	All Mussel Life stages and habitat; Host Fish habitat	Breeding, Feeding, Sheltering	1, 2, 3, 7, 8, 9, 10	NE	This subactivity would not occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin.
Construction	Pipe Stringing - bending, welding, coating, padding and backfilling	Not applicable						NE	This subactivity would not occur within the vicinity of the one waterbody where listed mussels were identified within the Project, the River Raisin.
Construction	Hydrostatic Testing (water withdrawal and discharge)	Habitat degradation; Degradation of host fish habitat, impacts to gametes	Sedimentation, impacts to sperm during reproduction; Chemical contaminants	Gametes sucked into pipe during reproduction, minor sediment impacts; chemical contaminants introduction from used pipeline	Habitat and Glochidia	Breeding, Feeding, Sheltering	7, 10, 11	NLAA	The streams receiving HDD where federally listed mussels are located (River Raisin in Michigan) are not likely to adversely affect the rayed bean if avoidance and minimization measures are followed.
Construction	Re-grading and Stabilization - restoration of corridor	Habitat degradation; Degradation of host fish habitat	Sedimentation	Near stream earth disturbance - minor sedimentation in water column and on stream bed; host fish leave so less chance for glochidia to attach to gills	Mussel Habitat, host fish habitat	Breeding, Feeding, Sheltering	1, 5, 7, 8, 9, 10	NE	This subactivity would not occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin.
Construction	Access Roads upgrading existing roads, new roads temp and permanent - grading, graveling, culvert installation	Physical Impacts to Individuals, Permanent or temporary loss of occupied habitat, altered flow, Habitat degradation, Loss and degradation of host fish habitat	Crushing, Sedimentation, Chemical Contaminants, Altered Flow	Crushing of mussels by equipment, replacement of habitat by bridge, altered flow, sedimentation in water column and on stream bed; host fish leave so less chance for glochidia to attach to gills, changes in flow affect food availability	All Mussel Life stages and habitat; Host Fish habitat	Breeding, Feeding, Sheltering	1, 7, 8, 9, 10	NE	This subactivity would not occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin.
Construction	Stream Crossings (wet, dry, flume pipe, dam and pump)	Physical Impacts to Individuals, Temporary loss of occupied habitat, Habitat degradation, riparian habitat loss, Loss and degradation of host fish habitat	Crushing, Sedimentation, Chemical Contaminants, Increase in Water Temperatures	Equipment crushes individuals; sedimentation in water column and streambed; downstream degradation; host fish leave so less chance of glochidia to attach to gills	All Mussel Life stages and habitat; Host Fish and habitat	Breeding, Feeding, Sheltering	1, 2, 3, 7, 8, 10	NE	This subactivity would not occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin.
Construction	Stream Crossings, horizontal bore	Habitat degradation, degradation of host fish habitat	Sedimentation	Sediment in water column and stream bed, Near stream earth disturbance - minor sedimentation in water column and on stream bed; host fish leave so less chance for glochidia to attach to gills	All Mussel Life stages and habitat; Host Fish and habitat	Breeding, Feeding, Sheltering	1, 2, 3, 7, 8, 10	NE	This subactivity would not occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin.
Construction	Stream Crossings, Horizontal Directional Drill (HDD)	Habitat degradation, degradation of host fish habitat	Sedimentation	Sediment in water column and stream bed	All Mussel Life stages and habitat; Host Fish habitat	Breeding, Feeding, Sheltering	1, 7, 8, 10	NLAA	The streams receiving HDD where federally listed mussels are located (River Raisin in Michigan) are not likely to adversely affect the rayed bean if avoidance and minimization measures are followed.
Operation and Maintenance	Facilities - Vehicles, foot traffic, noise, communication facilities, pipeline corridor presence	Neutral	None					NE	No impacts are anticipated from this subactivity.
Operation and Maintenance	Vegetation Management - chainsaw and tree clearing	Habitat degradation, Degradation of host fish habitat	Sedimentation, Increase in Water Temperatures	Disturbing Soil	All Mussel Life stages and habitat; Host Fish habitat	Breeding, Feeding, Sheltering	1, 2, 4, 5, 6, 7, 8, 12	NE	This subactivity would not occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin. Vegetation management would not be required.

Table A-2

Analysis of Potential Impacts of the NGT Project on Protected Mussel Species

Northern Riffleshell (*Epioblasma torulosa rangiana*), Rayed Bean (*Villosa fabalis*), and Snuffbox (*Epioblasma triquetra*)

Pipeline Activity	Subactivity	Environmental Impact or Threat	Stressor	Stressor Pathway (optional)	Exposure (Resource Affected)	Conservation Need Affected	Avoidance and Minimization Measures[1]	Effects Determination[2]	Comments
Operation and Maintenance	Vegetation Management, herbicides - hand, vehicle mounted, aerial applications	Habitat degradation, Degradation of host fish habitat	Chemical contamination	Algae blooms, impacts to individuals, suffocation and host fish habitat	All Mussel Life stages and habitat; Host Fish habitat	Breeding, Feeding, Sheltering	1, 2, 7, 8, 12	NE	This subactivity would not occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin. Vegetation management would not be required.
Operation and Maintenance	Vegetation disposal (dragging, chipping, piling, and brush pile burning)	Not applicable						NE	This subactivity would not occur within the vicinity of the one waterbody where listed mussels were identified within the Project, the River Raisin.
Operation and Maintenance	ROW Repair, regrading and revegetation	Habitat degradation, Degradation of host fish habitat	Sedimentation, Increase in Water Temperatures	Disturbing Soil	All Mussel Life stages and habitat; Host Fish habitat	Breeding, Feeding, Sheltering	1, 2, 6, 7, 8, 12	NE	This subactivity would not expected to occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin. Vegetation management would not be required.
Operation and Maintenance	Access Road Maintenance - grading and graveling	Habitat degradation; Loss and degradation of Host fish Habitat	Sedimentation	Tributary and/or near stream earth disturbance - sedimentation in water column and on stream bed	Mussel habitat; Host Fish habitat	Breeding, Feeding, Sheltering	1, 2, 4, 7, 12	NE	This subactivity would not occur within the vicinity of listed mussels identified within the Project due to implementation of HDD crossing at the River Raisin.
Operation and Maintenance	Cathodic protection construction	Not applicable						NE	This subactivity would not occur within the vicinity of the one waterbody where listed mussels were identified within the Project, the River Raisin.

[1]Conservation Measures for Mussel Species

Pre-Construction Planning

1. Routing efforts avoided sensitive species and habitats to the maximum extent practicable. Approximately 44 percent of the proposed pipeline route is collocated with existing overhead electric transmission line, pipeline, or railroad utility corridors; with an additional 48 percent of the route (that is not co-located with existing utilities), crossing agricultural land uses. A resulting 92 percent of the proposed pipeline route was sited to avoid conversion of existing land uses to reduce impacts on sensitive species and habitat including protected mussel species.

2. If a population of mussels is identified within the Project footprint and in-stream work is proposed, all live mussels regardless of status are to be relocated outside of the ROW prior to construction.

Construction Planning

3. Construction equipment and vehicle refueling and lubricating takes place in upland areas located more than 100 feet from the edge of a waterbody (or wetland). In addition, fuels, lubricating oils, petroleum products, and other hazardous materials are not stored within 100 feet of an aquatic resource. The Project E&SCP and SPCC Plan address the handling of fuel and other hazardous materials in or within 100 feet of a waterbody, which may be approved with conditions by the Lead Environmental Inspector (EI).

4. In adherence to the FERC's Procedures, ATWS would be located at least 50 feet away from the waterbody edge, topographic and other site specific conditions permitting and except where the adjacent upland consists of cultivated or rotated cropland or other disturbed land. If conditions do not permit a 50-foot setback where required, NEXUS would request a variance from the FERC's Procedures.

5. Woody vegetation along the permanent easement is cleared to the edge of the waterbody; however, where available, a 50-foot wide herbaceous strip is left on the approach until immediately before construction to provide a natural sediment filter that helps minimize the potential for erosion immediately adjacent to the waterbody and sedimentation from cleared upland areas.

6. NEXUS would use a typical ROW width of 75 feet of wetlands. This should minimize impact to mussel species by reducing sedimentation.

7. NEXUS E&SCP would be implemented during Project construction to minimize the extent and duration of disturbance, divert runoff to stabilized areas, installing temporary and permanent erosion control measures and establish an effective inspection and maintenance program. The E&SCP outlines construction-related environmental policies, procedures, and mitigation measures. E&SCP is intended to meet or exceed applicable federal, state, and local environmental protection specifications and practices. Measures within the E&SCP would minimize impacts on potential mussel habitat, these include erosion and sediment controls, restrictions on vegetation clearing in close proximity to all waterbodies, grading and soil segregation, stream and river crossing construction measures, wetland crossing requirements, rough grading cleanup and temporary restoration, hydrostatic test water obtaining and discharging requirements, revegetation and monitoring within riparian habitat areas, and permanent seeding of waterbody banks.

8. The Horizontal Directional Drill (HDD) method is a trenchless installation process by which the pipeline is installed beneath obstacles or sensitive areas using equipment and techniques derived from oil well drilling technology. NEXUS would comply with the HDD Monitoring and Inadvertent Return Contingency Plan for proposed HDD crossings, including the River Raisin crossing.

9. Completed stream crossings would be stabilized within 24 hours of backfilling in accordance with the FERC Procedures and the Project E&SCP, weather and soil conditions permitting.

10. NEXUS would employ EIs and Craft Inspectors (CIs) during construction. The EIs and CIs would be responsible for observing construction activities to verify that work is proceeding in accordance with environmental permit requirements and to monitor the implementations of the E&SCP, and conservation measures specific to potential mussel habitat. All inspectors would be provided specific environmental training according to the task and presence of T&E species and sensitive habitat.

11. NEXUS would employ measures designed to reduce the likelihood of entrainment or impingement of juvenile and adult fishes during hydrostatic test water withdrawal operations. NEXUS would attempt to avoid low-flow conditions to limit any potential effect on downstream aquatic resources. Hydrostatic test water intake structures would be floated so they are not laying on the streambed and screened with wire to prevent larger fish from entering the intake structure. The screen around the intake would be fabricated to provide an adequate surface area of fine meshed screen designed to reduce the approach velocity to prevent impingement or entrainment of small fish and/or macroinvertebrates. NEXUS would obtain necessary permits for water withdrawal as required to be implemented during surface water withdrawals to maintain adequate stream flow rates and to ensure adequate volumes are available downstream for withdrawals by existing users.

Post-Construction Planning

12. Post-construction mitigation efforts are focused on revegetation of the construction and permanent ROW. Within the construction ROW, a 25 foot-wide riparian strip adjacent to waterbodies would be allowed to revegetate with native plant species. A 10-foot wide area centered on the pipeline would be maintained to facilitate periodic pipeline corrosion/leak surveys. Temporary workspace would be allowed to return to its preconstruction condition.

[2]Determination of Effect:

NE = "No Effect"

NLAA = "May Affect, Not Likely to Adversely Affect"

APPENDIX J-3

MIGRATORY BIRD CONSERVATION PLAN

NEXUS Gas Transmission Project

Migratory Bird Conservation Plan

July 2016

TABLE OF CONTENTS

LIST OF APPENDICES

ACRONYMS AND ABBREVIATIONS

BCC	Birds of Conservation Concern
BCR	Bird Conservation Region
BGEPA	Bald and Golden Eagle Protection Act
E&SCP	NEXUS Erosion and Sediment Control Plan
EO	Executive Order
FERC	Federal Energy Regulatory Commission
FERC Plan	FERC Upland Erosion Control Revegetation and Maintenance Plan
FERC Procedures	FERC Wetland and Waterbody Construction and Mitigation Procedures
HDD	horizontal directional drill
LIDAR	light, detection and ranging
MBBA II	Michigan Breeding Bird Atlas II
MBCP	Migratory Bird Conservation Plan
MBCP target species	federal and state listed birds, species of special concern, and BCCs found near the Project that potentially breed within the NEXUS Project area
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
MP	milepost
NEXUS	NEXUS Gas Transmission, LLC
NEXUS Project	NEXUS Gas Transmission Project ("NEXUS Project" or "Project")
OBBA II	Ohio Breeding Bird Atlas II
NOAA	National Oceanic and Atmospheric Administration
ROW	right-of-way
TRC	TRC Environmental Corporation
U.S.	United States
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

NEXUS Gas Transmission, LLC ("NEXUS"), an affiliate company of Spectra Energy Partners, LP and DTE Energy Company, is seeking a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission ("FERC") pursuant to Section 7(c) of the Natural Gas Act, authorizing the construction and operation of the NEXUS Gas Transmission Project ("NEXUS Project" or "Project"). The Project will include approximately 256 miles of new 36-inch diameter mainline pipeline and associated aboveground facilities in northern Ohio and eastern Michigan, including four compressor stations, all located in Ohio. On November 20, 2015, NEXUS filed with the FERC an Abbreviated Application for Certificates of Public Convenience and Necessity and Related Authorizations for the proposed Project. The FERC has assigned docket number CP16-22-000 to the NEXUS Project.

Migratory birds are defined as species which nest in the United States ("U.S.") and Canada during summer months, and migrate south to areas within the U.S. and tropical regions of Mexico, Central or South America, and the Caribbean for the non-breeding season. On March 30, 2011, the U.S. Fish and Wildlife Service ("USFWS") and the FERC entered into a Memorandum of Understanding ("MOU") that focuses on the avoidance or minimization of adverse effects on migratory birds and the strengthening of conservation through enhanced collaboration between the two agencies under the Migratory Bird Treaty Act ("MBTA") (16 U.S. Code 703-711). Executive Order 13186 (["EO"] 13186) (66 Federal Register 3853) directs federal agencies to identify areas where unintentional take is likely to have a measurable negative effect on migratory bird populations. EO 13186 states that emphasis should be placed on species of concern, priority habitats, and key risk factors. Particular focus should be given to addressing population-level impacts. The voluntary MOU does not waive any legal requirements under the MBTA, Bald and Golden Eagle Protection Act ("BGEPA"), Endangered Species Act, Federal Power Act, Natural Gas Act, or any other statutes, and does not authorize the take of migratory birds.

TRC Environmental Corporation ("TRC") has prepared a migratory bird conservation plan ("MBCP") for both Michigan and Ohio for the proposed Project, on behalf of NEXUS, utilizing the guidance and direction provided by USFWS Region 3. TRC was retained by NEXUS to identify natural resources along the proposed Project area, which includes the proposed pipeline route, associated aboveground facilities, additional temporary construction work areas, staging areas, access roads, and contractor ware yards. This MBCP describes the measures that will be utilized to avoid and minimize impacts to migratory bird species that are potentially located within the NEXUS Project area.

2.0 AGENCY CONSULTATION

NEXUS has consulted directly with USFWS Region 3 office since the Project start in 2014 with one of the goals being to avoid and minimize impacts to migratory bird breeding habitat to the extent practicable. In the comments posted to the FERC docket on January 6, 2016, the Region 3 office stated that "without undertaking specific analysis of breeding species and their respective nesting seasons on the project site, implementation of seasonal clearing [September 1 to March 31] will avoid direct take of most breeding birds, their nests and their young". The current NEXUS Project schedule includes conducting tree clearing prior to March 31, however there is the potential that changes to the Project schedule, or site-specific construction or access restrictions may not allow clearing to be fully completed within that recommended clearing timeframe. During a January 27, 2016 meeting, Region 3 staff recommended that NEXUS create

a MBCP and work with both the Michigan and Ohio USFWS Field Offices to determine the potential for impacts to migratory birds within the Project area as a contingency plan if clearing cannot be completed within the recommended September 1 to March 31 timeframe. Through consultation and mitigation, the USFWS Region 3 office has provided guidance on development of this plan for determining potential impacts to migratory birds, specifically use of state breeding bird atlases, Audubon's Important Bird Areas, habitat analysis and additional consultation with the USFWS Michigan and Ohio Field Offices. In the event of not meeting the recommended blanket seasonal clearing window, NEXUS will implement the clearing windows as outlined in this document and prioritize the location and timing of clearing to identified habitat areas to the extent practicable. Where clearing within these windows cannot be met, NEXUS will work with USFWS on a case-by-case basis using the information regarding the identified habitat by type and location, applicable species and breeding seasons identified in this plan.

3.0 AVOIDANCE AND MINIMIZATION

NEXUS has designed the proposed Project and implemented mitigation measures to minimize potential impacts to migratory birds during Project construction and operation. These measures are listed here and described in more detail below:

- routing Project facilities to avoid sensitive resources where possible;
- routing Project facilities to avoid forest fragmentation;
- maximizing the use of active agricultural lands or existing utility right-of-ways ("ROW");
- limiting the construction and operation ROW widths to the minimum necessary;
- implementing mitigation for impacts to sensitive resources (e.g., wetlands) through agency permit conditions; and
- adherence to the measures outlined in the NEXUS Erosion and Sediment Control Plan ("E&SCP"), FERC *Upland Erosion Control, Revegetation and Maintenance Plan, May 2013 (*"FERC Plan" and FERC *Wetland and Waterbody Construction and Mitigation Procedures, May 2013* ("FERC Procedures") during construction of the Project facilities.

NEXUS has routed the proposed pipeline to minimize disruptions to migratory birds by avoiding preferred habitat including intact forested areas, wetland areas, waterbodies and associated riparian vegetation, and large open grassland and shrubland to the extent practicable. As such, the majority of the pipeline is located within active agricultural land use, accounting for approximately 79 percent of the Project area. The pipeline facilities also traverse or are adjacent to urban and developed lands; therefore, all vegetative communities in the area reflect previous anthropogenic disturbance and no old-growth communities are located within the Project area. The potential migratory bird breeding habitat types that are proposed to be impacted include forested, shrub, and open upland communities, as well as scrub-shrub, open water and emergent wetland communities. The proposed NEXUS Project crosses a small percentage of relatively intact, less disturbed natural communities along the pipeline. The pipeline has been routed to avoid large contiguous forested areas, accounting for areas where the route was previously co-located, but was relocated to avoid unnecessary impacts to woodlands. Of the forested communities, 80.4 percent are co-located with existing right-of-ways or edges of potential habitat. Additionally, based on USFWS parameters of fragmentation calculation, the NEXUS Project will not result in an increase of forest fragmentation.

The majority of the unavoidable, highest quality habitat areas along the proposed pipeline route have been avoided through the implementation of horizontal directional drilling ("HDD") crossing methods. HDD

methods have been designed specifically to avoid large, complex wetlands, particularly forested wetlands, in addition to large stream/river crossings and associated riparian vegetation. NEXUS has further avoided impacts to migratory bird habitat by designing the temporary and permanent access roads and aboveground facilities within mainly active agricultural land.

Within unavoidable habitat, construction measures are proposed that minimize impacts to potential migratory bird habitat. The NEXUS Project will follow the Project E&SCP Guidelines and the FERC Procedures outlining wetland and waterbody construction and mitigation procedures, including designing narrowed workspace in wetlands and waterbodies and associated riparian vegetation. Post-construction, the temporary construction workspace will be revegetated and allowed to restore pre-construction conditions. As per the FERC Plan, the permanent easement will be revegetated and undergo routine vegetation maintenance that will not occur between April 15th and August 1st. The adherence to the vegetation management schedule should avoid impacts to nesting birds in the maintained right-of-way.

The avoidance and minimization measures undertaken by NEXUS have resulted in the siting of the proposed pipeline facilities to minimize impacts to natural habitat and avoid forest fragmentation.

4.0 MBCP MIGRATORY BIRD SPECIES

USFWS Region 3 recommended that NEXUS focus on birds listed under the Federal and State Endangered Species list, State Species of Special Concern, and Birds of Conservation Concern ("BCC") as listed in each Bird Conservation Region ("BCR") that have potential breeding habitat within the Project area. Bald eagles and golden eagles are protected under the BGEPA (16 U.S. Code 668-668d). Aerial surveys were conducted to identify any active bald eagle nests along the proposed NEXUS route in April 2015 and again in April 2016. No active nests were located within 660 feet of the Project, and therefore impacts to bald eagles are not anticipated. Bald eagles are not considered as part of this MBCP. *See* Tables 1 and 2 for all bird species identified in the plan for Ohio and Michigan, respectively. The species listed in the following sections are birds that are within the range of the Project and individual determinations of likelihood of presence were made based on breeding habitat, range and bird behavior. The MBCP target species are limited to species identified below that have breeding habitat within the Project and have been identified to occur near the Project by the Ohio and Michigan breeding bird atlases.

4.1 Federal Listed Species

USFWS identified the Kirtland's warbler (*Setophaga kirtlandii*) and piping plover (*Charadrius melodus*) as occurring in the vicinity of the Project. After consultation and further assessment of Project location and lack of suitable habitat, USFWS concluded that no impacts were expected to federally-listed bird species. Therefore, they have not been included in the NEXUS MBCP.

4.2 State Listed Species

4.2.1 Ohio Species

Ohio Department of Natural Resources identified American bittern (*Botarus lentiginosus*), black tern (*Chilodonias niger*), common tern (*Sterna hirundo*), king rail (*Rallus elegans*), lark sparrow (*Chondestes grammacus*), sandhill crane (*Grus canadensis*), northern harrier (*Circus cyneus*), and upland sandpiper (*Bartramia longicauda*) as state-endangered species potentially found in the vicinity of the NEXUS Project. State-listed threatened species identified as potentially found the project area are the barn owl (*Tyto alba*) and trumpeter swan (*Cygnus buccinator*). Migratory birds of special concern found in Ohio include the

bobolink (*Dolichonyx oryzivorus*), cerulean warbler (*Setophaga cerulean*), Henslow's sparrow (*Ammodramus henslowii*), common moorhen (*Gallinula galeata*), great egret (*Casmerodius albus*), sedge wren (*Cistothorus platensi*), prothonotary warbler (*Protonotaria citrea*), marsh wren (*Cistothorus palustris*), sharp-shinned hawk (*Accipiter striatus*), yellow-bellied sapsucker (*Sphyrapicus varius*), sora (*Porzana carolina*), and Virginia rail (*Rallus limicola*). Through habitat avoidance and compliance with timing restrictions, the construction of the NEXUS Project is not expected to impact these species.

4.2.2 Michigan Species

Only one state-listed species was identified by Michigan Natural Features Inventory, on behalf of Michigan Department of Resources, within the NEXUS Project area in Michigan, the grasshopper sparrow (*Ammodramus savannarum*), listed as a species of special concern. Through avoidance and restoration, no permanent impacts are expected to the grasshopper sparrow.

4.3 Birds of Conservation Concern

4.3.1 Ohio Birds of Conservation Concern

The BCC list of 2008 identified species of concern within the three BCRs traversed by the proposed Project in Ohio. These BCRs are within USFWS Region 3 and more specifically, the Lower Great Lakes/St. Lawrence Plain (BCR 13), the Eastern Tallgrass Prairie (BCR 22) and the Appalachian Mountains (BCR 28) (USFWS, 2012). Species occurrence within the Project was determined utilizing data provided by the Ohio Breeding Bird Atlas II ("OBBA II") (Rodewald et al., 2016). *See* Table 1 for the MBCP target species in Ohio potentially breeding within the Project area.

The proposed Project crosses the Lower Great Lakes/St. Lawrence Plain BCR (BCR 13) between milepost ("MP") 0 to 95.3 and MP 109 to 120. Within BCR 13 there are 27 bird species identified as BCCs. Ten (10) of these species are listed as non-breeding within the BCR and the majority of birds listed have only been confirmed along Lake Erie, which is well outside the Project area. Eight (8) species were found to have potential of occurrence within towns crossed by the Project, these include the American bittern, black-billed cuckoo (*Coccyzus erythropthalmus*), blue-winged warbler (*Vermivora cyanoptera*), cerulean warbler, Henslow's sparrow, least bittern (*Ixobrychus exilis*), red-headed woodpecker (*Melanerpes erythrocephalus*), and wood thrush (*Hylocichla mustelina*) (Rodewald et al., 2016).

The proposed Project crosses the Eastern Tallgrass Prairie BCR (BCR 22) between MP 95.3 to 109 and MP 120 to 208.3 in Ohio. There are 39 species of birds listed as BCCs within BCR 22, 12 of which are listed as non-breeding and therefore are not included as MBCP target species. Eighteen (18) species have potential breeding habitat within the towns along the Project route with confirmed occurrences including Acadian flycatcher (*Empidonax virescens*), American bittern, Bell's vireo (*Vireo bellii*), black-billed cuckoo, blue-winged warbler, cerulean warbler, dickcissel (*Spiza americana*), whip-poor-will (*Caprimulgus vociferous*), field sparrow (*Spizella pusilla*), grasshopper sparrow, Henslow's sparrow, Kentucky warbler (*Geothlypis formosa)*, least bittern, loggerhead shrike (*Lanius ludovicianus*), prothonotary warbler, red-headed woodpecker, wood thrush, and yellow-shafted flicker (*Colaptes auratus*) (Rodewald et al., 2016).

The proposed Project mainline route does not cross the Appalachian Mountains BCR (BCR 28), however the entire 0.9 TGP Interconnecting Pipeline is within BCR 28. BCR 28 has 25 bird species associated with its listing, five (5) of which were identified to potentially occur within the towns along the Project, including the blue-winged warbler, Kentucky warbler, Cerulean warbler, red-headed woodpecker, and the wood thrush (Rodewald et al., 2016).

4.3.2 Michigan Birds of Conservation Concern

The BCC list of 2008 identified an array of potentially impacted species throughout the two regions traversed by the Project in Michigan. These BCRs are the Eastern Tallgrass Prairie (BCR 22) and the Prairie Hardwood Transition (BCR 23) (USFWS, 2012). Species occurrence within the counties and towns crossed by the Project was determined through consultation with the Michigan Breeding Bird Atlas II ("MBBA II") (Chartier, et al., 2011). *See* Table 2 for the MBCP target species in Michigan potentially breeding within the Project area.

In Michigan, the proposed Project crosses Eastern Tallgrass Prairie BCR (BCR 22) between MP 208.3 to 242, MP 243.5 to 245.5 and MP 246.6 to 247.2. There are 39 species of birds listed as BCCs within BCR 22, 12 of which are listed as non-breeding and therefore are not included as MBCP target species. Within BCR 22 in Michigan, seven (7) species were found within towns and counties crossed by the Project including the Acadian flycatcher, black-billed cuckoo, yellow-shafted flicker, red-headed woodpecker, blue-winged warbler, field sparrow, and wood thrush (Chartier, et al., 2011).

The proposed Project crosses the Prairie Hardwood Transition BCR (BCR 23) between MP 242 to 243.5, MP 245.5 to 246.6 and MP 247.2 to 255.2. BCR 23 has a listing of 29 species, 11 of which are considering non-breeding and therefore are not included as MBCP target species. Within BCR 23, seven (7) species were found within towns and counties crossed by the Project including the black-billed cuckoo, bobolink, red-headed woodpecker, willow flycatcher (*Empidonax traillii*), brown thrasher (*Toxostoma rufum*), blue-winged warbler, and pied-billed grebe (*Podilymbus podiceps*) (Chartier, et al., 2011).

5.0 MBCP BREEDING BIRD HABITAT TYPES

Breeding bird habitat types were determined by utilizing field data and thorough desktop analysis. The references used include survey photos, field-based land use data, LIDAR topographic mapping, survey information from bald eagle aerial surveys, and aerial photography. *See* Tables 3 and 4 in Appendix A and MBCP Target Species Breeding Habitat Figures in Appendix B for the MBCP target species habitat locations within the Project area. The following habitat types were identified along the Project route.

- Forested areas include isolated woodlots edges, forested wetlands, and varied age forest complexes.
- Riparian areas are scrub-shrub, forested, or mixed buffers along large streams or rivers. These vegetated buffer areas are typically less than 50-feet in width adjacent to the waterbody and are generally isolated by surrounding agriculture.
- Forested/Riparian are riparian areas that are part of a larger forested complex.
- Pasture includes un-improved land lacking woody vegetation, young fallow fields, active pastures, and open areas with occasional maintenance.
- Scrub-Shrub includes early to mid-successional fallow fields, forest edges, and young riparian buffers.
- Treeline/Hedgerow includes isolated hedgerows and/or wind breaks surrounded by agricultural land.
- Hedge/Ditch includes thin treeline/hedgerows found along small waterbodies.
- Mowed Native Grasslands are upland areas with native grasses present. Semi-regular maintenance, mowing once or twice a year, prevent woody vegetation growth.
- Open Water areas include ponds, reservoirs and large rivers.
- Developed includes fragmented habitat within utility and transportation corridors and industrial/commercial areas that have occasional maintenance.

6.0 HABITAT CLEARING WINDOWS

The NEXUS MBCP for Ohio and Michigan was created through ongoing USFWS consultation, use of migratory breeding bird atlases, field survey habitat data, and thorough desktop determination of habitat as described in previous sections. The habitat clearing windows outlined in the MBCP are based on the nesting periods of target species that may utilize habitat along the Project route. The nesting periods of the MBCP target species were determined through use of the migratory bird species accounts described by Cornell Lab of Ornithology, the Ohio breeding bird atlas and the Michigan breeding bird atlas. Information such as timing of spring arrival, territorial behavior, timing of nest building, fledging dates, number of broods, and other typical breeding characteristics for each species was considered when determining the nesting period. In addition to nesting periods, TRC biologists determined the habitat requirements for each MBCP target species. Habitat requirements were also described from the breeding bird atlases and the Cornell Lab of Ornithology database. *See* Tables 1 and 2 in Appendix A for a summary of nesting periods and habitat requirements for MBCP target species in Ohio and Michigan, respectively.

All potential habitat proposed to be impacted for the NEXUS Project was classified by TRC biologists, as described in Section 5. After all of the habitat types were classified, TRC biologists then identified which target species utilize the potential habitat. The bird species attributed to each area of potential habitat was determined by location along the route, i.e., which BCR is the habitat located in and the location of the species observations as provided by the breeding bird atlases by town and/or county (instead of block). Using the species occurrence data by town and/or county is a conservative approach to account for the possibility of blocks not surveyed by the breeding bird atlases. See the examples listed below for clarification.

- There is scrub-shrub habitat located in the town of Palmyra in Lenawee County, Michigan within *BCR 22.* The field sparrow is listed as a BCC in BCR 22 and inhabits scrub-shrubland. The field sparrow nesting period is applied to that habitat because the field sparrow was listed as observed in Palmyra by the breeding bird atlas.
- There is scrub-shrub habitat located in the town of Augusta in Washtenaw County, Michigan within *BCR 23.* Field sparrows are *not* listed as BCCs in BCR 23. Therefore the nesting period is not applied, even though field sparrow inhabits scrub-shrubland and was listed as observed in Augusta by the breeding bird atlas.

The result of this procedure is a list of areas with MBCP target species and their habitat, by location, with nesting periods applied to the habitat present. *See* Tables 3 and 4 in Appendix A for the locations of breeding habitat potentially utilized by MBCP target species in Ohio and Michigan, respectively, by MP.

Using all of this information, NEXUS has defined habitat clearing windows for potential habitat outside of the nesting periods for MBCP target species that may be within the Project area. *See* Appendix B for Figures depicting the MBCP Habitat Clearing Windows.

7.0 MITIGATION

NEXUS avoided impacts to natural areas wherever practicable, particularly in potential nesting areas for migratory birds, as outlined by this MBCP. In addition to compliance with this MBCP, NEXUS has committed to provide compensatory mitigation for unavoidable impacts to potential migratory bird habitat. Tree inventory surveys and extensive desktop analysis were conducted to determine forest composition and

structure of the forested areas within the Project corridor. This information was used by Region 3 staff to quantify migratory bird habitat impacts and to determine mitigation ratios for mature forest, intermediate forest, young forest and scrub-shrub open land. The methodology used for these assessments is referred to as a Habitat Equivalency Analysis, which is a metric based on the total number of years that habitat is lost or degraded due to temporary or permanent conversions (National Oceanic and Atmospheric Administration ["NOAA"], 2015). Mitigation totals were calculated by utilizing growth factors of dominant tree species to determine the recovery time of impacted habitat to the pre-construction conditions.

As discussed with USFWS, mitigation for migratory bird habitat will not overlap with mitigation for habitat occupied by federally listed species or mitigation for forested wetlands that will be separately compensated for under jurisdiction of the Section 401 Certificate of the Clean Water Act. An MOU agreement between NEXUS and USFWS has been executed committing NEXUS to mitigate for unavoidable impacts to migratory bird habitat. NEXUS will continue to consult with USFWS to determine the final compensatory mitigation required for the Project.

8.0 REFERENCES

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APPENDIX A

NEXUS PROJECT MBCP TABLES

TABLE 1

Migratory Birds[1] Potentially Breeding Within or Near the Project Area in Ohio

Species Name		Bird Code	Federal	State	Listed as BCC within BCR[2]	Counties with Occurrence[3]	Town(s) with Occurrence[3]	Breeding Status[4]	Habitat	Target Species[5]	Nesting Dates	Clearing Window
Common	**Scientific**											
Acadian flycatcher	*Empidonax virescens*	ACFL	Not listed	Not listed	22	Lorain; Huron; Erie; Sandusky; Wood; Lucas; Henry; Fulton	Camden, New Russia, Pittsfield; Wakeman; Berlin, Florence, Groton, Milan, Oxford; Rice, Riley, Sandusky, Townsend, Washington, Woodville; Troy, Webster; Providence, Waterville; Washington; Swan Creek	Confirmed	Mature forests, especially deciduous woods, along streams, ravines, and swamps	yes	May 15 - July 15	July 16 - May 14
American bittern	*Botaurus lentiginosus*	AMBI	Not listed	Endangered	13,22	Columbiana; Lorain; Sandusky	Hanover; Grafton; Riley, Townsend, Washington, Woodville	Probable	Occurs in large and undisturbed wetlands with thick vegetative cover and areas with small sections of open water.	yes	April 15 – July 15	July 16 - April 14
Barn owl	*Tyto alba*	BNOW	Not listed	Threatened	Not listed	Columbiana; Stark; Wayne	Hanover, West; Lake; Milton	Confirmed	Utilizes hollow trees or man-made sheds, etc. for nesting but are found in areas of large open grasslands.	no; habitat not impacted	N/A	no clearing restriction
Bell's vireo	*Vireo bellii*	BEVI	Not listed	Not listed	22	Lucas	Waterville	Probable	Prefers dense, low, shrubby vegetation, in both fields and riparian areas.	yes	May 15 - July 31	August 1 - May 14
Bewick's Wren	*Thryomanes bewickii*	BEWR	Not listed	Not listed	22,28	no occurrence	no occurrence	N/A	Favor mix of dense scrub/brush and open woodland. Will utilize abandoned tree cavities, brush piles, and rock crevices, etc. in these areas for nesting.	no; no occurrence	N/A	no clearing restriction
Black-billed cuckoo	*Coccyzus erythropthalmus*	BBCU	Not listed	Not listed	13,22	Columbiana; Stark; Summit; Medina; Lorain; Huron; Erie; Sandusky; Wood; Lucas; Henry; Fulton	Hanover, West, Knox; Lake, Marlboro, Nimishillen; Franklin, Urban; Litchfield, Montville; Camden, Grafton, Lagrange, New Russia, Pittsfield; Wakeman; Florence, Groton, Milan, Oxford; Rice, Riley, Sandusky, Townsend, Woodville; Webster; Providence, Waterville; Washington; Swan Creek, Fulton	Confirmed	Occurs in large woodlands, typically deciduous stands.	yes	June 1 - July 31	August 1 - May 31
Black-capped chickadee	*Poecile atricapillus*	BCCH	Not listed	Not listed	28 (S. Appalachian only)	Columbiana	Hanover	Confirmed	Utilizes small abandoned tree cavities, or primary excavator in dead trees, found in deciduous forest, mixed forest, disturbed areas.	no; habitat not impacted	N/A	no clearing restriction
Black-crowned night heron	*Nycticorax nycticorax*	BCNH	Not listed	Not listed	13,22	Erie; Sandusky; Henry; Fulton	Berlin; Riley, Townsend; Washington; Swan Creek	Possible	Occurs in variety of wetland habitats - canals, rivers, lakes, marshes, etc., nests colonially, typically in trees or cattails	no; habitat not impacted	N/A	no clearing restriction
Black rail	*Laterallus jamaicensis*	BLRA	Not listed	Not listed	22	no occurrence	no occurrence	N/A	Nests in shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	no; no occurrence	N/A	no clearing restriction

TABLE 1

Migratory Birds[1] Potentially Breeding Within or Near the Project Area in Ohio

Species Name		Bird Code	Federal	State	Listed as BCC within BCR[2]	Counties with Occurrence[3]	Town(s) with Occurrence[3]	Breeding Status[4]	Habitat	Target Species[5]	Nesting Dates	Clearing Window
Common	**Scientific**											
Black tern	*Chlidonias niger*	BLTE	Not listed	Endangered	13,22	Sandusky	Riley, Townsend	Possible	The black tern prefers large, undisturbed inland marshes with fairly dense vegetation and pockets of open water. They nest in various kinds of marsh vegetation, but cattail marshes are generally favored.	no; habitat not impacted	N/A	no clearing restriction
Blue-winged warbler	*Vermivora cyanoptera*	BWWA	Not listed	Not listed	13,22,28	Columbiana; Stark; Summit; Wayne; Medina; Lorain; Huron; Erie; Sandusky; Lucas; Fulton	Hanover, West, Franklin, Knox; Lake, Marlboro, Nimishillen, Washington; Franklin, Urban; Chippewa; Guilford, Wadsworth, Litchfield, Montville; Camden, Grafton, Lagrange, New Russia, Pittsfield; Wakeman; Berlin, Groton, Florence, Milan, Oxford; Rice, Riley, Sandusky, Townsend, Woodville; Providence, Waterville; Swan Creek, Fulton, Amboy	Confirmed	Open shrubby lands, woodland openings, abandoned fields, stream edges and willow swamps	yes	May 25 - July 15	July 16 - May 24
Bobolink	*Dolichonyx oryzivorus*	BOBO	Not listed	Special Concern	Not listed	Columbiana; Stark; Summit; Wayne; Medina; Lorain; Huron; Erie; Sandusky; Wood; Lucas; Henry; Fulton	Hanover, West, Franklin, Knox; Lake, Marlboro, Nimishillen, Washington; Urban; Chippewa, Milton; Wadsworth, Litchfield, Lafayette, Montville; Camden, Grafton, Lagrange, New Russia, Pittsfield; Wakeman; Groton, Florence, Milan, Oxford; Riley, Washington, Townsend; Middleton, Webster; Providence, Waterville; Washington; Swan Creek, Fulton, Amboy	Confirmed	Tall grasslands, uncut pastures, overgrown fields and meadows, large prairies	yes	May 15 - June 30	July 1 - May 14
Canada warbler	*Cardellina canadensis*	CAWA	Not listed	Not listed	13,22,28	no occurrence	no occurrence	N/A	Found in both deciduous and coniferous forests, preferring wet scrubland, typically characterized by alder and bordered by wetlands of various types.	no; no occurrence	N/A	no clearing restriction
Cerulean warbler	*Setophaga cerulean*	CEWA	Not listed	Special Concern	13,22,28	Columbiana; Wayne; Medina; Lorain; Huron; Erie; Lucas	Hanover, West, Franklin; Chippewa; Guilford, Wadsworth, Litchfield, Lafayette, Montville; Camden, Lagrange, New Russia, Pittsfield; Wakeman; Berlin, Florence, Milan, Oxford; Waterville	Confirmed	Prefers large expanses of mature forest, usually nesting along river bottom-lands or mountainous areas with steep ridges.	yes	May 25 - July 31	August 1 - May 24
Common moorhen	*Gallinula galeata*	COMO	Not listed	Special Concern	Not listed	Columbiana; Medina; Lorain; Sandusky	Hanover; Lafayette, Montville; Lagrange, New Russia, Pittsfield; Rice, Riley, Sandusky, Townsend	Confirmed	Prefers fresh marshes with open water and emergent vegetation and open ground. Nests in tall vegetation.	no	N/A	no clearing restriction
Common tern	*Sterna hirundo*	COTE	Not listed	Endangered	13,22	Sandusky	Riley, Townsend	Observed	Limited to the shores or islands of Lake Erie.	no; habitat not impacted	N/A	no clearing restriction

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Migratory Birds[1] Potentially Breeding Within or Near the Project Area in Ohio

Species Name		Bird Code	Federal	State	Listed as BCC within BCR[2]	Counties with Occurrence[3]	Town(s) with Occurrence[3]	Breeding Status[4]	Habitat	Target Species[5]	Nesting Dates	Clearing Window
Common	**Scientific**											
Dickcissel	*Spiza americana*	DICK	Not listed	Not listed	22	Lorain; Huron; Erie; Sandusky; Wood; Lucas; Henry; Fulton	Grafton, Lagrange; Wakeman; Florence, Groton, Oxford; Rice, Riley, Sandusky, Townsend, Washington, Woodville; Troy, Webster; Providence, Waterville; Washington; Swan Creek, Fulton	Confirmed	Occurs in medium to tall grasslands: prairie, hayfield, old fields with few shrubs.	yes	June 1 - July 31	August 1 - May 31
Field sparrow	*Spizella pusilla*	FISP	Not listed	Not listed	22	Lorain; Huron; Erie; Sandusky; Wood; Lucas; Henry; Fulton	Grafton, Camden, New Russia, Pittsfield, Lagrange; Wakeman; Berlin, Florence, Groton, Milan, Oxford; Rice, Riley, Sandusky, Townsend, Washington, Woodville; Middleton, Troy, Webster; Providence, Waterville; Washington; Swan Creek, Fulton, Amboy	Confirmed	Dry abandoned fields containing scattered shrubs or saplings, preferring areas with mid-height vegetation, shrubs and perch trees, with patches of bare ground	yes	May 15 - August 15	August 16 - May 14
Golden-winged warbler	*Vermivora chrysoptera*	GWWA	Not listed	Not listed	13,22,28	no occurrence	no occurrence	N/A	Occurs in early successional forests, along the edges of fields and in shrubby wetlands	no; no occurrence	N/A	no clearing restriction
Grasshopper sparrow	*Ammodramus savannarum*	GRSP	Not listed	Not listed	22	Lorain; Huron; Erie; Sandusky; Wood; Lucas; Henry; Fulton	Grafton, Camden, New Russia, Pittsfield, Lagrange; Wakeman; Florence, Groton, Milan, Oxford; Rice, Riley, Sandusky, Townsend, Washington, Woodville; Middleton, Troy, Webster; Providence, Waterville; Washington; Swan Creek, Fulton, Amboy	Confirmed	Habitat includes grasslands, cultivated fields, hayfields and old fields.	yes	May 15 – July 15	July 16 - May 14
Great Egret	*Casmerodius albus*	GREG	Not listed	Special Concern	Not listed	Stark; Medina; Lorain; Erie; Sandusky; Wood; Lucas; Henry; Fulton	Marlboro; Wadsworth; Grafton, Lagrange, New Russia; Berlin, Florence, Groton, Milan, Oxford; Riley, Townsend, Woodville; Webster; Washington; Swan Creek	Observed	Marshes, ponds, shores, mud flats, nesting in trees and shrubs near open water.	no; habitat not impacted	N/A	no clearing restriction
Henslow's sparrow	*Ammodramus henslowii*	HESP	Not listed	Special Concern	13,22,28	Columbiana; Medina; Lorain; Erie; Sandusky; Wood; Lucas; Fulton	Franklin, Hanover; Lafayette, Litchfield, Montville, York; Grafton; Berlin, Florence, Milan, Oxford; Riley; Middleton; Waterville; Swan Creek	Probable	Large expanses of fields with tall, dense grass: tall grass prairies and surrounding open lands	yes	May 15 - August 15	August 16 - May 14
Kentucky warbler	*Geothlypis formosa*	KEWA	Not listed	Not listed	22,28	Columbiana; Stark; Summit; Lucas	Hanover; Lake, Washington; Franklin, Urban; Providence, Waterville	Probable	Prefers large blocks of mixed deciduous forests with thick understory	yes	June 1 - July 31	August 1 - May 31
King rail	*Rallus elegans*	KIRA	Not listed	Endangered	Not listed	Summit; Sandusky	Franklin, Urban; Townsend, Riley	Probable	Marshes, ponds, shores, mud flats, nesting in trees and shrubs near open water.	yes	May 1 - July 31	August 1 - April 30
Kirtland's warbler	*Setophaga kirtlandii*	KIWA	Endangered	Endangered	Not listed	no occurrence	no occurrence	N/A	Kirtland's warblers are known to migrate along the Lake Erie shoreline through Ohio in late April-May and late August-early October.	no; no occurrence	N/A	no clearing restriction

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Species Name		Bird Code	Federal	State	Listed as BCC within BCR[2]	Counties with Occurrence[3]	Town(s) with Occurrence[3]	Breeding Status[4]	Habitat	Target Species[5]	Nesting Dates	Clearing Window
Common	**Scientific**											
Lark sparrow	*Chondestes grammacus*	LASP	Not listed	Endangered	Not listed	Lucas	Providence, Waterville	Confirmed	Occupy open grass and shrubby fields along sandy beach ridges.	no	N/A	no clearing restriction
Least bittern	*Ixobrychus exilis*	LEBI	Not listed	Not listed	13,22	Columbiana; Summit; Erie; Sandusky	Hanover; Franklin, Urban; Riley, Townsend	Confirmed	Prefers freshwater marshes with equal ratios of emergent vegetation and open water.	yes	June 1 - July 31	August 1 - May 31
Loggerhead Shrike	*Lanius ludovicianus*	LOSH	Not listed	Endangered	22,28	Sandusky	Washington, Woodville	Possible	Treelines and isolated forested islands surrounded by grasslands.	yes	April 15 – August 15	August 16 - April 14
Louisiana waterthrush	*Parkesia motacilla*	LOWA	Not listed	Not listed	28	Columbiana	Hanover	Confirmed	Prefers small fast streams in upland deciduous forest habitats, may occasionally nest in swamps and bottomlands.	no; habitat not impacted	N/A	no clearing restriction
Marsh wren	*Cistothorus palustris*	MAWR	Not listed	Special Concern	Not listed	Columbiana; Summit; Medina; Lorain; Erie; Sandusky; Henry; Fulton	Hanover; Franklin, Urban; Lafayette, Montville; Grafton, Lagrange, New Russia, Pittsfield; Berlin, Milan; Riley, Townsend;' Washington; Swan Creek	Confirmed	Wetlands and freshwater marshes dominated by cord grasses, bulrushes, cattails	yes	May 15 - June 30	July 1 - May 14
Northern harrier	*Circus cyaneus*	NOHA	Not listed	Endangered	Not listed	Columbiana; Stark; Summit; Medina; Erie; Sandusky; Wood; Lucas	Knox; Lake, Marlboro, Nimishillen, Washington; Franklin, Urban; Litchfield; Milan, Oxford; Washington, Woodville; Middleton; Providence, Waterville	Observed	Inhabits large marshes and grasslands.	yes	May 15 - July 31	August 1 - May 14
Northern saw-whet owl	*Aegolius acadicus*	NSWO	Not listed	Not listed	28 (S. Appalachian only)	no occurrence	no occurrence	N/A	Prefer mixed woods with conifers for roost cover and deciduous trees for nest cavities	no; no occurrence	N/A	no clearing restriction
Olive-sided flycatcher	*Contopus cooperi*	OSFL	Not listed	Not listed	28	no occurrence	no occurrence	N/A	Prefer tamarack - black spruce peatlands, beaver flowage, and other edge habitats adjacent to sedge meadows and wet openings	no; no occurrence	N/A	no clearing restriction
Peregrine falcon	*Falco peregrinus*	PEFA	Not listed	Not listed	13,22,28	Medina; Erie	Wadsworth; Berlin	Observed	Prefer areas that contain cliffs and open areas for foraging, usually along streams or shorelines. Sometimes nesting in cavities of large trees.	no; habitat not impacted	N/A	no clearing restriction
Pied-billed grebe	*Podilymbus podiceps*	PBGR	Not listed	Not listed	13,22	Columbiana; Summit; Lorain; Sandusky	Hanover; Franklin, Urban; Lagrange, New Russia, Pittsfield; Riley, Townsend	Confirmed	Occurs in waterbodies greater than 0.2 ha with dense stands of emergent vegetation ample stretches of open water	yes	June 1 - July 31	August 1 - May 31
Piping plover	*Charadrius melodus*	PIPL	Endangered	Endangered	Not listed	none	none	N/A	Beaches along shorelines of the Great Lakes.	no; no occurrence	N/A	no clearing restriction

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Migratory Birds[1] Potentially Breeding Within or Near the Project Area in Ohio

Species Name		Bird Code	Federal	State	Listed as BCC within BCR[2]	Counties with Occurrence[3]	Town(s) with Occurrence[3]	Breeding Status[4]	Habitat	Target Species[5]	Nesting Dates	Clearing Window
Common	**Scientific**											
Prairie warbler	*Setophaga discolor*	PRAW	Not listed	Not listed	28	no occurrence	no occurrence	N/A	Early successional habitats: Lake Michigan dunelands with shrub/grass, jack pine barrens burned 10-20 years prior, and burnt pineries made up of shrubs and small trees	no; no occurrence	N/A	no clearing restriction
Prothonotary warbler	*Protonotaria citrea*	PROW	Not listed	Special Concern	22	Columbiana; Summit; Wayne; Medina; Lorain; Sandusky; Lucas; Henry	Hanover; Franklin, Urban; Chippewa; Guilford, Lafayette, Montville; Lagrange, New Russia, Pittsfield; Rice, Riley, Sandusky, Townsend, Washington, Woodville; Providence; Washington	Confirmed	Wooded swamps, typically nesting in abandoned downy woodpecker nests.	yes	May 25 - July 15	July 16 - May 24
Red crossbill	*Loxia curvirostra*	RECR	Not listed	Not listed	28 (S. Appalachian only)	no occurrence	no occurrence	N/A	Occur in conifer forests, prefer savannah-like stands of mature red pine.	no; no occurrence	N/A	no clearing restriction
Red-headed woodpecker	*Melanerpes erythrocephalus*	RHWO	Not listed	Not listed	13,22,28	Columbiana; Stark; Summit; Wayne; Medina; Lorain; Huron; Erie; Sandusky; Wood; Lucas; Henry; Fulton	Hanover, West, Franklin, Knox; Lake, Marlboro, Nimishillen, Washington; Franklin, Urban; Chippewa, Milton; Wadsworth, Montville; Grafton, Camden, New Russia, Pittsfield, Lagrange; Wakeman; Berlin, Florence, Groton, Milan, Oxford; Rice, Riley, Sandusky, Townsend, Washington, Woodville; Middleton, Troy, Webster; Providence, Waterville; Washington; Swan Creek, Fulton, Amboy	Confirmed	Deciduous woodlands with oak or beech, open areas: river bottoms, beaver swamps, orchards, farmland, forest edges, with dead or partially dead trees	yes	May 25 - July 31	August 1 - May 24
Sandhill crane	*Grus canadensis*	SACR	Not listed	Endangered	Not listed	Columbiana; Summit; Wayne; Medina; Sandusky; Lucas	Hanover, West, Knox; Urban; Chippewa, Milton; Guilford, Lafayette, Montville, Wadsworth; Riley, Townsend; Waterville	Observed	Dependent on wetland habitats, including large tracts of wet meadow, shallow marsh or bogs for breeding.	yes	April 1 - August 31	September 1 - March 31
Sedge wren	*Cistothorus platensis*	SEWR	Not listed	Special Concern	28	Columbiana; Medina; Lorain; Sandusky; Erie; Lucas; Henry	Hanover, West, Knox; Lafayette, Montville; Camden, Grafton, Pittsfield; Riley, Townsend; Berlin, Florence, Milan; Providence, Waterville; Washington	Confirmed	Occurs in moist locations with dense matts of tall sedges and grasses: meadows, bogs, former beaver impoundments, edges of lakes and marshes	yes	May 25 - August 15	August 16 - May 24
Sharp-shinned hawk	*Accipiter striatus*	SSHA	Not listed	Special Concern	Not listed	Columbiana; Stark; Summit; Wayne; Lorain; Erie; Lucas; Henry; Fulton	Hanover, West, Knox; Lake, Washington; Franklin, Urban; Chippewa; Camden, New Russia, Pittsfield; Berlin, Groton, Oxford; Providence, Waterville; Washington; Swan Creek	Confirmed	Open woodlands, thickets, edges of deciduous or mixed covertypes.	yes	June 1 - July 31	August 1 - May 31
Snowy egret	*Egretta thula*	SNEG	Not listed	Endangered	Not listed	Sandusky	Riley, Townsend	Possible	Marshes, ponds, shores, mud flats, nesting in colonies in trees and shrubs near open water.	no; habitat not impacted	N/A	no clearing restriction

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Species Name		Bird Code	Federal	State	Listed as BCC within BCR[2]	Counties with Occurrence[3]	Town(s) with Occurrence[3]	Breeding Status[4]	Habitat	Target Species[5]	Nesting Dates	Clearing Window
Common	**Scientific**											
Sora	*Porzana carolina*	SORA	Not listed	Special Concern	Not listed	Columbiana; Stark; Wayne; Sandusky; Wood	Hanover, Knox, West; Lake; Chippewa; Riley, Townsend; Webster	Probable	Freshwater habitat with large stands of cattails, wet meadows, occasionally in salt marshes	yes	May 1 - July 31	August 1 - April 30
Swainson's warbler	*Limnothlypis swainsonii*	SWWA	Not listed	Not listed	28	no occurrence	no occurrence	N/A	Prefers forest with thick undergrowth, especially canebrakes and floodplain forests in lowlands	no; no occurrence	N/A	no clearing restriction
Trumpeter swan	*Cygnus buccinator*	TRSW	Not listed	Threatened	Not listed	Lorain; Sandusky; Henry; Fulton	Lagrange, Pittsfield; Rice, Riley, Sandusky, Townsend, Woodville; Washington; Swan Creek	Confirmed	Occur in large marshes and lakes (typically 40 to 150 acres). Utilize shallow wetlands with a diverse mix of plenty of emergent and submergent vegetation and open water.	no; habitat not impacted	N/A	no clearing restriction
Upland sandpiper	*Bartramia longicauda*	UPSA	Not listed	Endangered	13,22,28	no occurrence	no occurrence	N/A	Native prairie and other dry grasslands, including airports and some croplands.	no; no occurrence	N/A	no clearing restriction
Virginia rail	*Rallus limicola*	VIRA	Not listed	Special Concern	Not listed	Columbiana; Stark; Summit; Wayne; Medina; Lorain; Sandusky; Lucas; Henry; Fulton	Hanover, Knox, West; Lake; Franklin, Urban; Chippewa; Montville, Wadsworth; Grafton, Lagrange, New Russia, Pittsfield; Riley, Townsend; Washington; Swan Creek	Probable	Freshwater habitat with large stands of cattails, wet meadows, occasionally in salt marshes	yes	May 1 - July 31	August 1 - April 30
Whip-poor-will	*Caprimulgus vociferus*	WPWI	Not listed	Not listed	22,28	Lucas; Fulton	Providence, Waterville; Swan Creek	Confirmed	Occurs in dry deciduous or evergreen-deciduous forests with little to no underbrush, near open areas.	yes	May 25 - July 31	August 1 - May 24
Wood thrush	*Hylocichla mustelina*	WOTH	Not listed	Not listed	13,22,28	Columbiana; Stark; Summit; Wayne; Medina; Lorain; Huron; Erie; Sandusky; Wood; Lucas; Henry; Fulton	Hanover, West, Knox; Lake, Marlboro, Nimishillen, Washington; Franklin, Urban; Chippewa, Milton; Wadsworth, Montville, Guilford, Lafayette, Litchfield; Grafton, Camden, New Russia, Pittsfield, Lagrange; Wakeman; Berlin, Florence, Groton, Milan, Oxford; Rice, Riley, Sandusky, Townsend, Washington, Woodville; Middleton, Troy, Webster; Providence, Waterville; Washington; Swan Creek, Fulton, Amboy	Confirmed	Wet or dry deciduous mixed woods	yes	May 15 - July 31	August 1 - May 14
Worm-eating warbler	*Helmitheros vermivorum*	WEWA	Not listed	Not listed	28	no occurrence	no occurrence	N/A	Prefers mature deciduous or mixed deciduous-coniferous forest with patches of dense understory, usually on steep hillside	no; no occurrence	N/A	no clearing restriction

TABLE 1

Migratory Birds[1] Potentially Breeding Within or Near the Project Area in Ohio

Species Name		Bird Code	Federal	State	Listed as BCC within BCR[2]	Counties with Occurrence[3]	Town(s) with Occurrence[3]	Breeding Status[4]	Habitat	Target Species[5]	Nesting Dates	Clearing Window
Common	**Scientific**											
Yellow-bellied sapsucker	*Sphyrapicus varius*	YBSA	Not listed	Not listed	28 (S. Appalachian only)	no occurrence	no occurrence	N/A	Mixed hardwood forests, typically aspen, birch, maple, or spruce	no; no occurrence	N/A	no clearing restriction
Yellow-shafted flicker	*Colaptes auratus*	YSFL	Not listed	Not listed	22	Lorain; Huron; Erie; Sandusky; Wood; Lucas; Henry; Fulton	Grafton, Camden, New Russia, Pittsfield, Lagrange; Wakeman; Berlin, Florence, Groton, Milan, Oxford; Rice, Riley, Sandusky, Townsend, Washington, Woodville; Middleton, Troy, Webster; Providence, Waterville; Washington; Swan Creek, Fulton, Amboy	Confirmed	Open woodland, forest edges and savannas	yes	May 15 - July 31	August 1 - May 14

1 For the purposes of this document, "Migratory Birds" includes birds listed under the Federal and State Endangered Species list, Species of Special Concern, and Birds of Conservation Concern as listed in each Bird Conservation Region (BCR).

2 Bird Conservation Regions in the Ohio Portion of the Project: Region 13-Lower Great Lakes/St.Lawrence Plain; Region 22-Eastern Tallgrass Prairie; Region 28-Appalachian Mountains

3 Information for occurrence data was provided by the Ohio Breeding Bird Atlas II.

4 Definitions of Breeding Status adapted from Ohio BBA II. Observed - Species observed during its breeding season but no evidence of breeding in block. Individual birds in unlikely breeding habitat, flying over, or out of their normal breeding range without any indication of breeding belong in this category; Possible - Species observed in suitable nesting habitat during its breeding season; Probable - Nesting or breeding behavior observed in suitable habitat; Confirmed - Evidence of breeding observed; Not observed - Bird species not documented in the Project area by the BBA.

5 Target species include all federal and state-listed species, state species of special concern, and BCCs that have potential breeding habitat within the Project area and were identified to be located within the Project towns by the Ohio BBA II. Species not located in Project towns were not considered target species.

TABLE 2

Migratory Birds[1] Potentially Occurring Within or Near the Project Area in Michigan

Species Name		Bird Code	Federal	State	Listed as BCC within BCR[2]	Counties with Occurrence[3]	Town(s) with Occurrence[3]	Breeding Status[4]	Habitat	Target Species[5]	Nesting Dates	Clearing Window
Common	**Scientific**											
Acadian flycatcher	*Empidonax virescens*	ACFL	Not listed	Not listed	22	Washtenaw	York	Probable	Mature forests, especially deciduous woods, along streams, ravines, and swamps	yes	May 15 - July 15	July 16 - May 14
American bittern	*Botaurus lentiginosus*	AMBI	Not listed	Not listed	22,23	no occurrence	no occurrence	N/A	Occurs in large and undisturbed wetlands with thick vegetative cover and areas with small sections of open water.	no; no occurrence	N/A	no clearing restriction
Bell's vireo	*Vireo bellii*	BEVI	Not listed	Not listed	22	no occurrence	no occurrence	N/A	Prefers dense, low, shrubby vegetation, in both fields and riparian areas.	no; no occurrence	N/A	no clearing restriction
Bewick's Wren	*Thryomanes bewickii*	BEWR	Not listed	Not listed	22	no occurrence	no occurrence	N/A	Favor mix of dense scrub/brush and open woodland. Will utilize abandoned tree cavities, brush piles, and rock crevices, etc. in these areas for nesting.	no; no occurrence	N/A	no clearing restriction
Black rail	*Laterallus jamaicensis*	BLRA	Not listed	Not listed	22	no occurrence	no occurrence	N/A	Nests in shallow freshwater marshes, wet meadows, and flooded grassy vegetation.	no; no occurrence	N/A	no clearing restriction
Black tern	*Chlidonias niger*	BLTE	Not listed	Not listed	22,23	no occurrence	no occurrence	N/A	The black tern prefers large, undisturbed inland marshes with fairly dense vegetation and pockets of open water. They nest in various kinds of marsh vegetation, but cattail marshes are generally favored.	no; no occurrence	N/A	no clearing restriction
Black-billed cuckoo	*Coccyzus erythropthalmus*	BBCU	Not listed	Not listed	22,23	Monroe; Washtenaw	Milan; York	Probable	Occurs in large woodlands, typically deciduous stands.	yes	June 1 - July 31	August 1 - May 31
Black-crowned night heron	*Nycticorax nycticorax*	BCNH	Not listed	Not listed	22	no occurrence	no occurrence	N/A	Occurs in variety of wetland habitats - canals, rivers, lakes, marshes, etc., nests colonially, typically in trees or cattails	no; no occurrence	N/A	no clearing restriction
Blue-winged warbler	*Vermivora cyanoptera*	BWWA	Not listed	Not listed	22,23	Lenawee; Washtenaw	Macon; Ypsilanti	Probable	Open shrubby lands, woodland openings, abandoned fields, stream edges and willow swamps	yes	May 25 - July 15	July 16 - May 24
Bobolink	*Dolichonyx oryzivorus*	BOBO	Not listed	Not listed	23	Washtenaw	York, Ypsilanti	Confirmed	Occurs in large grasslands, hayfields	yes	May 15 - June 30	July 1 - May 14
Brown thrasher	*Toxostoma rufrum*	BRTH	Not listed	Not listed	23	Washtenaw	York, Ypsilanti	Confirmed	Prefers deciduous-mix shrub uplands, shrubby old field, and shrubby wetlands. Will also utilize hedgerows for nesting habitat.	yes	May 15 - July 31	August 1 - May 14
Cerulean warbler	*Setophaga cerulean*	CEWA	Not listed	Not listed	22,23	Washtenaw	York	Probable	Prefers large expanses of mature forest, usually nesting along river bottom-lands or mountainous areas with steep ridges.	no; habitat not impacted	N/A	no clearing restriction

TABLE 2

Migratory Birds[1] Potentially Occurring Within or Near the Project Area in Michigan

Species Name		Bird Code	Federal	State	Listed as BCC within BCR[2]	Counties with Occurrence[3]	Town(s) with Occurrence[3]	Breeding Status[4]	Habitat	Target Species[5]	Nesting Dates	Clearing Window
Common	**Scientific**											
Common tern	*Sterna hirundo*	COTE	Not listed	Not listed	22,23	no occurrence	no occurrence	N/A	Limited to the shores or islands of Lake Erie.	no; no occurrence	N/A	no clearing restriction
Dickcissel	*Spiza americana*	DICK	Not listed	Not listed	22,23	no occurrence	no occurrence	N/A	Occurs in medium to tall grasslands: prairie, hayfield, old fields with few shrubs.	no; no occurrence	N/A	no clearing restriction
Field sparrow	*Spizella pusilla*	FISP	Not listed	Not listed	22	Lenawee; Monroe; Washtenaw	Palmyra, Blissfield/Deerfield; Milan; Augusta, York	Confirmed	Dry abandoned fields containing scattered shrubs or saplings, preferring areas with mid-height vegetation, shrubs and perch trees, with patches of bare ground	yes	May 15 - August 15	August 16 - May 14
Golden-winged warbler	*Vermivora chrysoptera*	GWWA	Not listed	Not listed	23	no occurrence	no occurrence	N/A	Occurs in early successional forests, along the edges of fields and in shrubby wetlands	no; no occurrence	N/A	no clearing restriction
Grasshopper sparrow	*Ammodramus savannarum*	GRSP	Not listed	Special Concern	22	Washtenaw	York	Possible	Habitat includes grasslands, cultivated fields, hayfields and old fields.	no; habitat not impacted	N/A	no clearing restriction
Henslow's sparrow	*Ammodramus henslowii*	HESP	Not listed	Not listed	22,23	no occurrence	no occurrence	N/A	Large expanses of fields with tall, dense grass: tall grass prairies and surrounding open lands	no; no occurrence	N/A	no clearing restriction
Kentucky warbler	*Geothlypis formosa*	KEWA	Not listed	Not listed	22	no occurrence	no occurrence	N/A	Prefers large blocks of mixed deciduous forests with thick understory	no; no occurrence	N/A	no clearing restriction
Least bittern	*Ixobrychus exilis*	LEBI	Not listed	Not listed	22	no occurrence	no occurrence	N/A	Prefers freshwater marshes with equal ratios of emergent vegetation and open water.	no; no occurrence	N/A	no clearing restriction
Loggerhead Shrike	*Lanius ludovicianus*	LOSH	Not listed	Not listed	22	no occurrence	no occurrence	N/A	Treelines and isolated forested islands surrounded by grasslands.	no; no occurrence	N/A	no clearing restriction
Marsh wren	*Cistothorus palustris*	MAWR	Not listed	Not listed	23	Washtenaw	York	Possible	Wetlands and freshwater marshes dominated by cord grasses, bulrushes, cattails	no; habitat not impacted	N/A	no clearing restriction
Peregrine falcon	*Falco peregrinus*	PEFA	Not listed	Not listed	22,23	no occurrence	no occurrence	N/A	Prefer areas that contain cliffs and open areas for foraging, usually along streams or shorelines. Sometimes nesting in cavities of large trees.	no; no occurrence	N/A	no clearing restriction
Pied-billed grebe	*Podilymbus podiceps*	PBGR	Not listed	Not listed	22,23	Monroe; Washtenaw	City of Milan; Augusta, Ypsilanti	Probable	Occurs in waterbodies greater than 0.2 ha with dense stands of emergent vegetation ample stretches of open water	yes	May 15 - July 31	August 1 - May 14
Prothonotary warbler	*Protonotaria citrea*	PROW	Not listed	Not listed	22	no occurrence	no occurrence	N/A	Wooded swamps, typically nesting in abandoned downy woodpecker nests.	no; no occurrence	N/A	no clearing restriction

TABLE 2

Migratory Birds[1] Potentially Occurring Within or Near the Project Area in Michigan

Species Name		Bird Code	Federal	State	Listed as BCC within BCR[2]	Counties with Occurrence[3]	Town(s) with Occurrence[3]	Breeding Status[4]	Habitat	Target Species[5]	Nesting Dates	Clearing Window
Common	**Scientific**											
Red-headed woodpecker	*Melanerpes erythrocephalus*	RHWO	Not listed	Not listed	22,23	Lenawee; Washtenaw	Palmyra; City of Milan	Probable	Deciduous woodlands with oak or beech, open areas: river bottoms, beaver swamps, orchards, farmland, forest edges, with dead or partially dead trees	yes	May 25 - July 31	August 1 - May 24
Upland sandpiper	*Bartramia longicauda*	UPSA	Not listed	Not listed	22,23	Washtenaw	Ypsilanti	Confirmed	Native prairie and other dry grasslands, including airports and some croplands.	no; habitat not impacted	N/A	no clearing restriction
Whip-poor-will	*Caprimulgus vociferus*	WPWI	Not listed	Not listed	22	no occurrence	no occurrence	N/A	Occurs in dry deciduous or evergreen-deciduous forests with little to no underbrush, near open areas.	no; no occurrence	N/A	no clearing restriction
Willow flycatcher	*Empidonax traillii*	WIFL	Not listed	Not listed	23	Washtenaw	Augusta, Ypsilanti	Confirmed	Occurs in a variety of habitats of upland brush and lowland swamp, overgrown uplands, dry marsh, old pasture lands, shrubs along the edges of streams, wet willow thickets	yes	June 1 - August 15	August 16 - May 31
Wood thrush	*Hylocichla mustelina*	WOTH	Not listed	Not listed	22	Lenawee; Monroe; Washtenaw	Blissfield/Deerfield, Palmyra, Macon, Ridgeway; Milan; York	Probable	Wet or dry deciduous mixed woods	yes	May 15 - July 31	August 1 - May 14
Yellow rail	*Coturnicops noveboracensis*	YEAR	Not listed	Not listed	23	no occurrence	no occurrence	N/A	Shallow marshes, and wet meadows	no; no occurrence	N/A	no clearing restriction
Yellow-shafted flicker	*Colaptes auratus*	YSFL	Not listed	Not listed	22	Lenawee; Monroe; Washtenaw	Blissfield/Deerfield, Macon, Ogden, Palmyra, Ridgeway; Milan; Augusta, York	Possible	Open woodland, forest edges and savannas	yes	May 15 - July 31	August 1 - May 14

1 For the purposes of this document, “Migratory Birds” includes birds listed under the Federal and State Endangered Species list, Species of Special Concern, and Birds of Conservation Concern as listed in each Bird Conservation Region (BCR).

2 Bird Conservation Regions in the Michigan Portion of the Project: Region 22-Eastern Tallgrass Prairie; Region 23-Prairie Hardwood Transition

3 Information for occurrence data was provided by the Michigan Breeding Bird Atlas II.

4 Definitions of Breeding Status adapted from Michigan BBA II. Observed - Species observed during its breeding season but no evidence of breeding in block. Individual birds in unlikely breeding habitat, flying over, or out of their normal breeding range without any indication of breeding belong in this category; Possible - Species observed in suitable nesting habitat during its breeding season; Probable - Nesting or breeding behavior observed in suitable habitat; Confirmed - Evidence of breeding observed; Not observed - Bird species not documented in the Project area by the BBA.

5 Target species include all federal and state-listed species, state species of special concern, and BCCs that have potential breeding habitat within the Project area and were identified to be located within the Project towns by the Ohio BBA II. Species not located in Project towns were not considered target species.

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
TGP Interconnect							
Columbiana	Hanover	0.065 R	0.107 R	Forested	CEWA, KEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.82
Columbiana	Hanover	0.111 R	0.121 R	Forested	CEWA, KEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.09
Columbiana	Hanover	0.47 R	0.47 R	Forested	CEWA, KEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.32
Columbiana	Hanover	0.6 R	0.6 R	Forested	CEWA, KEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.53
NEXUS Mainline							
Columbiana	Hanover	0.041	0.173	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.53
Columbiana	Hanover	0.33	0.33	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.18
Columbiana	Hanover	0.34	0.34	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.12
Columbiana	Hanover	0.492	0.683	Scrub-Shrub	BWWA	July 16 - May 24	2.20
Columbiana	Hanover	1.022	1.055	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.78
Columbiana	Hanover	1.07	1.07	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.24
Columbiana	Hanover	1.142	1.167	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.33
Columbiana	Hanover	1.167	1.199	Scrub-Shrub	BWWA	July 16 - May 24	0.27
Columbiana	Hanover	1.199	1.222	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.26
Columbiana	Hanover	1.3	1.3	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.17
Columbiana	Hanover	1.528	1.772	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	3.61
Columbiana	Hanover	1.778	1.799	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.23
Columbiana	Hanover	2.423	2.462	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.36
Columbiana	Hanover	2.719	2.748	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.32
Columbiana	Hanover	3.381	3.459	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.85
Columbiana	Hanover	3.459	3.494	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.85
Columbiana	Hanover	3.501 R	3.518 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.44
Columbiana	Hanover	3.518 R	3.552 R	Scrub-Shrub	BWWA	July 16 - May 24	0.96
Columbiana	Hanover	3.54 R	3.54 R	Scrub-Shrub	BWWA	July 16 - May 24	0.13
Columbiana	Hanover	3.553 R	3.585 R	Scrub-Shrub	BWWA	July 16 - May 24	0.96

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County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Columbiana	Hanover	3.585 R	3.662 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.44
Columbiana	Hanover	3.662	3.752	Pasture	HESP, BOBO	August 16 - May 14	1.32
Columbiana	Hanover	3.752	3.806	Forested	BBCU, CEWA, RHWO, SSHA. WOTH	August 1 - May 14	2.05
Columbiana	Hanover	3.806	3.899	Forested	BBCU, CEWA, RHWO, SSHA. WOTH	August 1 - May 14	2.05
Columbiana	Hanover	3.902 R	3.984 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	5.07
Columbiana	Hanover	3.984 R	4.248 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	5.07
Columbiana	West	4.248	4.263	Scrub-Shrub	BWWA	July 16 - May 24	0.21
Columbiana	West	4.263	4.266	Scrub-Shrub	BWWA	July 16 - May 24	0.21
Columbiana	West	4.266 R	4.338 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.88
Columbiana	West	4.754	4.777	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.28
Columbiana	West	4.857	4.861	Forested/Riparian	BBCU, CEWA, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	0.04
Columbiana	West	4.862	4.87	Forested/Riparian	BBCU, CEWA, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	0.09
Columbiana	West	4.875	4.904	Forested/Riparian	BBCU, CEWA, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	0.25
Columbiana	West	4.907	4.912	Forested/Riparian	BBCU, CEWA, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	0.12
Columbiana	West	4.912	5.01	Pasture	BOBO, SEWR	August 16 - May 14	1.51
Columbiana	West	5.22	5.552	Scrub-Shrub	BWWA	July 16 - May 24	4.07
Columbiana	West	5.68 R	5.688 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	2.29
Columbiana	West	5.688 R	5.768 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	2.29
Columbiana	West	5.768 R	5.873 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	2.29
Columbiana	West	5.873	5.899	Pasture	BOBO	July 1 - May 14	0.67
Columbiana	West	5.899	5.913	Pasture	BOBO	July 1 - May 14	0.67
Columbiana	West	6.37	6.412	Pasture	BOBO	July 1 - May 14	0.39
Columbiana	West	7.206 R	7.265 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.69

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Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Columbiana	West	7.32 R	7.32 R	Pasture	BOBO	July 1 - May 14	0.10
Columbiana	West	7.353 R	7.363 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.16
Columbiana	West	7.404 R	7.456 R	Scrub-Shrub	BWWA	July 16 - May 24	0.67
Columbiana	West	7.709 R	7.777 R	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.30
Columbiana	West	7.82 R	7.82 R	Scrub-Shrub	BWWA	July 16 - May 24	0.09
Columbiana	West	7.851	7.871	Scrub-Shrub	BWWA	July 16 - May 24	0.25
Columbiana	West	7.852	7.852	Scrub-Shrub	BWWA	July 16 - May 24	0.25
Columbiana	West	7.87	7.87	Scrub-Shrub	BWWA	July 16 - May 24	0.12
Columbiana	West	9.838	9.858	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.23
Columbiana	Knox	10.295 R	10.352 R	Pasture	NOHA, BOBO	August 1 - May 14	0.66
Columbiana	Knox	10.416 R	10.493 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.16
Columbiana	Knox	10.48 R	10.48 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.11
Columbiana	Knox	10.493 R	10.498 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.16
Columbiana	Knox	10.552	10.572	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.24
Columbiana	Knox	10.572	10.582	Scrub-Shrub	BWWA	July 16 - May 24	0.10
Columbiana	Knox	10.582	10.591	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.14
Columbiana	Knox	10.971	11.045	Pasture	NOHA, BOBO	August 1 - May 14	1.12
Columbiana	Knox	11.147	11.205	Pasture	NOHA, BOBO	August 1 - May 14	1.42
Columbiana	Knox	11.239	11.248	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.34
Columbiana	Knox	11.808	11.883	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.96
Stark	Washington	12.894	12.897	Scrub-Shrub	BWWA	July 16 - May 24	0.55
Stark	Washington	12.897	12.97	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.59
Stark	Washington	12.97	12.994	Scrub-Shrub	BWWA	July 16 - May 24	0.55
Stark	Washington	12.994	13.002	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.10
Stark	Washington	13.002	13.016	Pasture	NOHA, BOBO	August 1 - May 14	1.14
Stark	Washington	13.029	13.051	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.27

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Stark	Washington	13.051	13.139	Pasture	NOHA, BOBO	August 1 - May 14	1.14
Stark	Washington	13.186	13.19	Scrub-Shrub	BWWA	July 16 - May 24	0.13
Stark	Washington	13.19	13.291	Scrub-Shrub	BWWA	July 16 - May 24	1.56
Stark	Washington	13.292	13.316	Scrub-Shrub	BWWA	July 16 - May 24	0.35
Stark	Washington	13.666	13.696	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.60
Stark	Washington	13.718	13.72	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.60
Stark	Washington	13.723	13.733	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.60
Stark	Washington	13.733	13.743	Scrub-Shrub	BWWA	July 16 - May 24	0.18
Stark	Washington	13.733	13.743	Scrub-Shrub	BWWA	July 16 - May 24	0.18
Stark	Washington	13.743	13.794	Pasture	NOHA, BOBO	August 1 - May 14	0.64
Stark	Washington	13.801	13.948	Forested	RHWO, SSHA, WOTH	August 1 - May 14	1.74
Stark	Washington	13.948	13.961	Scrub-Shrub	BWWA	July 16 - May 24	0.19
Stark	Washington	13.961	14.04	Forested	RHWO, SSHA, WOTH	August 1 - May 14	1.31
Stark	Washington	15.102	15.156	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.70
Stark	Washington	15.263	15.367	Forested	RHWO, SSHA, WOTH	August 1 - May 14	1.03
Stark	Washington	15.41	15.444	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.39
Stark	Washington	16.387 R	16.397 R	Pasture	NOHA, BOBO	August 1 - May 14	0.13
Stark	Washington	16.453 R	16.504 R	Scrub-Shrub	BWWA	July 16 - May 24	0.49
Stark	Washington	16.726 R	16.745 R	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.22
Stark	Washington	16.746 R	16.795 R	Pasture	NOHA, BOBO	August 1 - May 14	0.48
Stark	Washington	16.795 R	16.841 R	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.46
Stark	Washington	16.978 R	16.987 R	Scrub-Shrub	BWWA	July 16 - May 24	0.08
Stark	Washington	16.987 R	17.008 R	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.23
Stark	Washington	17.103 R	17.111 R	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.09
Stark	Washington	17.114 R	17.242 R	Forested	RHWO, SSHA, WOTH	August 1 - May 14	1.16
Stark	Washington	17.245 R	17.252 R	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.08

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Stark	Washington	17.633	17.649	Scrub-Shrub	BWWA	July 16 - May 24	0.13
Stark	Washington	17.649	17.675	Forested	RHWO, SSHA, WOTH	August 1 - May 14	0.36
Stark	Washington	17.913	18.013	Forested	RHWO, SSHA, WOTH	August 1 - May 14	1.20
Stark	Washington	18.182	18.213	Pasture	NOHA, BOBO	August 1 - May 14	0.46
Stark	Washington	19.296	19.46	Forested	RHWO, SSHA, WOTH	August 1 - May 14	1.86
Stark	Nimishillen	20.469	20.485	Riparian	BBCU, RHWO, WOTH, BWWA	August 1 - May 14	0.19
Stark	Nimishillen	20.487	20.495	Riparian	BBCU, RHWO, WOTH, BWWA	August 1 - May 14	0.10
Stark	Nimishillen	20.495	20.516	Scrub-Shrub	BWWA	July 16 - May 24	0.26
Stark	Marlboro	24.504	24.589	Forested/Riparian	BBCU, RHWO, WOTH, BWWA, PROW	August 1 - May 14	1.02
Stark	Marlboro	24.603	24.672	Forested/Riparian	BBCU, RHWO, WOTH, BWWA, PROW	August 1 - May 14	0.76
Stark	Marlboro	24.997	25.174	Pasture	NOHA, BOBO	August 1 - May 14	2.59
Stark	Marlboro	25.174	25.274	Scrub-Shrub	BWWA	July 16 - May 24	1.36
Stark	Marlboro	25.907	26.019	Forested	BBCU, RHWO, WOTH	August 1 - May 14	1.44
Stark	Marlboro	26.025	26.064	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.50
Stark	Marlboro	26.674	26.719	Pasture	NOHA, BOBO	August 1 - May 14	0.55
Stark	Marlboro	26.814	26.828	Riparian	BWWA, BBCU	August 1 - May 24	0.18
Stark	Marlboro	26.835	26.92	Pasture	NOHA, BOBO	August 1 - May 14	1.56
Stark	Marlboro	26.92	26.937	Scrub-Shrub	BWWA	July 16 - May 24	0.21
Stark	Lake	27.221	27.271	Pasture	NOHA, BOBO	August 1 - May 14	0.92
Stark	Lake	28.05	28.05	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.10
Stark	Lake	28.587	28.692	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.30
Stark	Lake	28.869	28.914	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.47
Stark	Lake	28.919	29.019	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.09
Stark	Lake	29.1	29.295	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.78
Stark	Lake	29.649	29.69	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.24
Stark	Lake	29.844	29.906	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.75

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Stark	Lake	29.968	30.029	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.67
Stark	Lake	30.03	30.031	Scrub-Shrub	BWWA	July 16 - May 24	0.09
Stark	Lake	30.182	30.241	Pasture	NOHA	August 1 - May 14	0.67
Stark	Lake	31.334	31.443	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.28
Stark	Lake	31.443	31.453	Pasture	NOHA	August 1 - May 14	2.50
Stark	Lake	31.453	31.592	Pasture	NOHA	August 1 - May 14	2.50
Stark	Lake	32.263	32.289	Wetland	NOHA, VIRA, SORA	August 1 - April 30	0.21
Stark	Lake	32.628	32.638	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.11
Stark	Lake	32.648	32.668	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.11
Stark	Lake	32.684	32.731	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.11
Stark	Lake	32.731	32.771	Scrub-Shrub	BWWA	July 16 - May 24	0.63
Stark	Lake	32.785	32.828	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.37
Stark	Lake	32.85	32.896	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.37
Stark	Lake	33.129	33.138	Forested	BWWA	July 16 - May 24	1.12
Stark	Lake	33.234	33.243	Scrub-Shrub	BWWA	July 16 - May 24	1.06
Stark	Lake	33.243	33.276	Scrub-Shrub	BWWA	July 16 - May 24	1.06
Stark	Lake	33.276 R	33.294 R	Scrub-Shrub	BWWA	July 16 - May 24	0.50
Stark	Lake	33.294 R	33.43 R	Scrub-Shrub	BWWA	July 16 - May 24	2.15
Stark	Lake	33.38 R	33.38 R	Scrub-Shrub	BWWA	July 16 - May 24	0.02
Stark	Lake	33.43 R	33.46 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.53
Stark	Lake	33.46 R	33.478 R	Scrub-Shrub	BWWA	July 16 - May 24	0.12
Stark	Lake	33.492 R	33.782 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	3.83
Stark	Lake	33.793 R	33.911 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.85
Stark	Lake	33.849 R	33.871 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.85
Stark	Lake	33.896	34.008	Pasture	NOHA	August 1 - May 14	2.04
Summit	Urban	34.187	34.262	Scrub-Shrub	BWWA	July 16 - May 24	0.90

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Summit	Urban	34.262	34.328	Wetland	NOHA, VIRA	August 1 - April 30	1.49
Summit	Urban	34.34	34.591	Scrub-Shrub	BWWA	July 16 - May 24	3.91
Summit	Urban	34.71	34.73	Scrub-Shrub	BWWA	July 16 - May 24	0.23
Summit	Urban	35.284	35.382	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.06
Summit	Urban	35.524	35.63	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.72
Summit	Urban	35.876 R	35.899 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.43
Summit	Urban	36.044 R	36.09 R	Wetland	KIRA, LEBI, PBGR, VIRA	August 1 - April 30	0.40
Summit	Urban	36.116 R	36.231 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.40
Summit	Urban	36.236 R	36.24 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.40
Summit	Urban	36.249 R	36.355 R	Scrub-Shrub	BWWA	July 16 - May 24	3.67
Summit	Urban	36.361 R	36.536 R	Scrub-Shrub	BWWA	July 16 - May 24	3.67
Summit	Urban	36.536 R	36.545 R	Scrub-Shrub	BWWA	July 16 - May 24	1.52
Summit	Urban	36.592 R	36.685 R	Scrub-Shrub	BWWA	July 16 - May 24	1.52
Summit	Urban	36.685 R	36.689 R	Scrub-Shrub	BWWA	July 16 - May 24	1.52
Summit	Urban	36.705 R	36.746 R	Scrub-Shrub	BWWA	July 16 - May 24	0.58
Summit	Urban	36.939 R	37.005 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.58
Summit	Urban	37.007 R	37.15 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.58
Summit	Urban	37.278	37.351	Scrub-Shrub	BWWA	July 16 - May 24	1.22
Summit	Urban	37.389	37.482	Scrub-Shrub	BWWA	July 16 - May 24	1.33
Summit	Urban	37.482	37.496	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.16
Summit	Urban	37.532	37.561	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.35
Summit	Urban	37.686	37.795	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.55
Summit	Urban	37.841	37.957	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.50
Summit	Urban	37.86	37.86	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.08
Summit	Urban	37.957	38.292	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	4.76
Summit	Urban	38.3	38.426	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	3.51

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Summit	Urban	38.426	38.439	Scrub-Shrub	BWWA	July 16 - May 24	0.53
Summit	Urban	38.439	38.467	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	3.51
Summit	Urban	38.488	38.622	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	3.51
Summit	Urban	38.628	38.641	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.15
Summit	Urban	38.647	38.773	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.48
Summit	Urban	39.07	39.095	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.38
Summit	Urban	39.543	39.613	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.09
Summit	Urban	39.621	39.699	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.95
Summit	Urban	39.699	39.738	Scrub-Shrub	BWWA	July 16 - May 24	1.27
Summit	Urban	39.73	39.73	Wetland	LEBI, VIRA	August 1 - April 30	0.15
Summit	Urban	39.738	39.808	Scrub-Shrub	BWWA	July 16 - May 24	1.27
Summit	Urban	39.814 R	39.872 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.94
Summit	Urban	39.87 R	39.87 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.13
Summit	Urban	39.904 R	39.914 R	Scrub-Shrub	BWWA	July 16 - May 24	0.13
Summit	Urban	39.914 R	39.998 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.96
Summit	Urban	39.997 R	40.044 R	Scrub-Shrub	BWWA	July 16 - May 24	0.42
Summit	Urban	40.047 R	40.183 R	Pasture	NOHA, BOBO	August 1 - May 14	2.07
Summit	Urban	40.303 R	40.398 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.60
Summit	Urban	40.54 R	40.585 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.66
Summit	Urban	41.384 R	41.497 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.19
Summit	Urban	41.489	41.504	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.43
Summit	Urban	41.512	41.54	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.25
Summit	Urban	41.553	41.697	Forested/Riparian	BBCU, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	1.69
Summit	Urban	41.625	41.651	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.43
Summit	Urban	41.64	41.64	Forested/Riparian	BBCU, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	0.52

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Summit	Urban	41.701	41.718	Scrub-Shrub	BWWA	July 16 - May 24	0.09
Summit	Urban	41.736	41.775	Forested/Riparian	BBCU, BWWA, RHWO, SSHA, WOTH, PROW	August 1 - May 14	0.48
Summit	Urban	41.775	41.959	Wetland	KIRA, LEBI, NOHA, SACR, VIRA, MAWR	September 1 - March 31	1.62
Summit	Franklin	42.143	42.176	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.57
Summit	Franklin	42.334	42.472	Scrub-Shrub	BWWA	July 16 - May 24	1.79
Summit	Franklin	42.474	42.533	Scrub-Shrub	BWWA	July 16 - May 24	0.89
Summit	Franklin	42.533	42.584	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.69
Summit	Franklin	42.659	42.851	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	4.56
Summit	Franklin	42.851	42.862	Scrub-Shrub	BWWA	July 16 - May 24	0.16
Summit	Franklin	42.862	42.931	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	4.56
Summit	Franklin	42.954	43.012	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	4.56
Summit	Franklin	43.029	43.047	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	4.56
Summit	Franklin	43.245	43.262	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.27
Summit	Franklin	43.265	43.304	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.62
Summit	Franklin	43.44 R	43.493 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.69
Summit	Franklin	43.668 R	43.699 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.62
Summit	Franklin	43.751 R	43.772 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.63
Summit	Franklin	43.78 R	43.809 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.63
Summit	Franklin	43.921 R	43.945 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.32
Summit	Franklin	44.042	44.063	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.31
Summit	Franklin	44.092	44.128	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.34
Summit	Franklin	44.655	44.758	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.32
Summit	Franklin	44.991	45.339	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	4.06
Summit	Franklin	45.602	45.802	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.41
Summit	Franklin	45.933	46.081	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.95

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Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Summit	Franklin	46.101	46.154	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.72
Summit	Franklin	46.158	46.2	Scrub-Shrub	BWWA	July 16 - May 24	0.83
Summit	Franklin	46.271	46.335	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.71
Summit	Franklin	46.342	46.383	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.92
Summit	Franklin	46.383	46.399	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.92
Summit	Franklin	46.403	46.454	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.92
Summit	Franklin	46.446	46.538	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.92
Summit	Franklin	46.939	47.004	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.88
Summit	Franklin	47.005	47.149	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.37
Summit	Franklin	47.149	47.237	Scrub-Shrub	BWWA	July 16 - May 24	0.98
Summit	Franklin	47.765	47.83	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.41
Summit	Franklin	47.841	47.891	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.31
Summit	Franklin	47.94	47.968	Scrub-Shrub	BWWA	July 16 - May 24	0.15
Summit	Franklin	48.917	48.929	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.11
Summit	Franklin	49.24	49.279	Forested/Riparian	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.43
Summit	Franklin	49.279	49.357	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.15
Summit	Franklin	49.357	49.37	Scrub-Shrub	BWWA	July 16 - May 24	0.32
Summit	Franklin	49.37	49.389	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.15
Summit	Franklin	49.492	49.634	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.17
Summit	Franklin	49.634	49.664	Scrub-Shrub	BWWA	July 16 - May 24	0.38
Summit	Franklin	49.664	49.729	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.78
Summit	Franklin	49.729	49.868	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.78
Summit	Franklin	49.875 R	50.004 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	2.17
Summit	Franklin	50.004 R	50.084 R	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	1.24
Summit	Franklin	50.235	50.284	Forested	BBCU, RHWO, SSHA, WOTH	August 1 - May 14	0.64
Wayne	Chippewa	51.141 R	51.21 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.08

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Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Wayne	Chippewa	51.458 R	51.504 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.41
Wayne	Chippewa	51.525 R	51.596 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	2.58
Wayne	Chippewa	51.596 R	51.733 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	2.58
Wayne	Chippewa	52.178 R	52.249 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.86
Wayne	Chippewa	52.551 R	52.565 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.11
Wayne	Chippewa	52.565 R	52.574 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.10
Wayne	Chippewa	52.588 R	52.607 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.25
Wayne	Chippewa	52.611 R	52.616 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.25
Wayne	Chippewa	52.726 R	52.753 R	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	0.35
Wayne	Chippewa	52.754 R	52.891 R	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	2.34
Wayne	Chippewa	52.92 R	52.943 R	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	2.34
Wayne	Chippewa	52.934 R	52.94 R	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	2.34
Wayne	Chippewa	52.942	52.999	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	0.97
Wayne	Chippewa	53.016	53.016	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA, PROW	August 1 - May 14	0.97
Wayne	Chippewa	53.026	53.064	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.04
Wayne	Chippewa	53.064	53.091	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.04
Wayne	Chippewa	53.186 R	53.19 R	Scrub-Shrub	BWWA	July 16 - May 24	0.18
Wayne	Chippewa	53.211	53.219	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.57
Wayne	Chippewa	53.231	53.35	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.57
Wayne	Chippewa	53.446	53.522	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.26
Wayne	Chippewa	53.55	53.577	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.58

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County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Wayne	Chippewa	53.633	53.669	Scrub-Shrub	BWWA	July 16 - May 24	1.04
Wayne	Chippewa	53.671	53.96	Scrub-Shrub	BWWA	July 16 - May 24	3.87
Wayne	Chippewa	53.96	54.029	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.76
Wayne	Chippewa	54.878	54.901	Riparian	CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	0.34
Wayne	Chippewa	54.912	54.948	Riparian	CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	0.43
Wayne	Chippewa	56.305	56.371	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.00
Wayne	Chippewa	56.396	56.465	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.98
Medina	Wadsworth	56.76	56.76	Forested	CEWA, RHWO, WOTH	August 1 - May 14	0.12
Wayne	Chippewa	57.257 R	57.313 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.03
Wayne	Chippewa	57.313 R	57.335 R	Scrub-Shrub	BWWA	July 16 - May 24	0.36
Wayne	Chippewa	57.345 R	57.373 R	Scrub-Shrub	BWWA	July 16 - May 24	0.26
Medina	Wadsworth	58.349	58.394	Forested	CEWA, RHWO, WOTH	August 1 - May 14	0.86
Medina	Wadsworth	59.156	59.299	Forested	CEWA, RHWO, WOTH	August 1 - May 14	1.73
Medina	Guilford	59.828	59.909	Riparian	CEWA, WOTH, BWWA	August 1 - May 14	0.96
Medina	Guilford	60.716	60.726	Forested/Riparian	CEWA, WOTH, BWWA, PROW	August 1 - May 14	0.13
Medina	Guilford	60.73	60.883	Forested/Riparian	CEWA, WOTH, BWWA, PROW	August 1 - May 14	2.18
Medina	Guilford	60.885	60.909	Forested/Riparian	CEWA, WOTH, BWWA, PROW	August 1 - May 14	0.24
Medina	Guilford	61.48	61.525	Forested	CEWA, WOTH	August 1 - May 14	0.52
Medina	Guilford	62.822	62.849	Forested	CEWA, WOTH	August 1 - May 14	0.31
Medina	Guilford	64.87	64.87	Forested	CEWA, WOTH	August 1 - May 14	0.12
Medina	Guilford	65.095	65.114	Forested	CEWA, WOTH	August 1 - May 14	0.20
Medina	Guilford	65.172	65.287	Forested/Riparian	CEWA, WOTH, BWWA, PROW	August 1 - May 14	1.47
Medina	Guilford	65.288	65.366	Forested/Riparian	CEWA, WOTH, BWWA, PROW	August 1 - May 14	1.05
Medina	Guilford	65.798	65.824	Forested	CEWA, WOTH	August 1 - May 14	0.68
Medina	Montville	66.169	66.195	Riparian	BBCU, CEWA, RHWO, WOTH, BWWA	August 1 - May 14	0.30
Medina	Montville	66.197	66.21	Riparian	BBCU, CEWA, RHWO, WOTH, BWWA	August 1 - May 14	0.12

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Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Medina	Montville	66.27	66.27	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	0.13
Medina	Montville	67.124	67.204	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	0.75
Medina	Montville	67.354	67.379	Forested/Riparian	BBCU, CEWA, RHWO, WOTH, BWWA, PROW	August 1 - May 14	0.29
Medina	Montville	67.381	67.419	Forested/Riparian	BBCU, CEWA, RHWO, WOTH, BWWA, PROW	August 1 - May 14	0.45
Medina	Montville	67.419	67.483	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	0.78
Medina	Lafayette	67.535	67.573	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.44
Medina	Lafayette	67.577	67.611	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.38
Medina	Lafayette	67.611	67.76	Forested	CEWA, WOTH	August 1 - May 14	2.68
Medina	Lafayette	67.757	67.89	Forested	CEWA, WOTH	August 1 - May 14	2.00
Medina	Lafayette	68.06	68.115	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.63
Medina	Lafayette	68.118	68.153	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.39
Medina	Lafayette	68.451	68.488	Forested	CEWA, WOTH	August 1 - May 14	0.34
Medina	Lafayette	68.48	68.48	Pasture	HESP	August 16 - May 14	0.31
Medina	Lafayette	68.506	68.521	Forested	CEWA, WOTH	August 1 - May 14	0.20
Medina	Lafayette	68.553	68.565	Forested	CEWA, WOTH	August 1 - May 14	0.14
Medina	Lafayette	68.584	68.68	Forested	CEWA, WOTH	August 1 - May 14	0.93
Medina	Lafayette	68.745	68.783	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.47
Medina	Lafayette	68.787	68.826	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.89
Medina	Lafayette	68.854	68.879	Forested	CEWA, WOTH	August 1 - May 14	0.49
Medina	Lafayette	69.289 R	69.31 R	Forested	CEWA, WOTH	August 1 - May 14	0.41
Medina	Lafayette	69.532	69.848	Pasture	HESP, BOBO	August 16 - May 14	6.24
Medina	Lafayette	69.848	69.859	Forested/Riparian	CEWA, WOTH	August 1 - May 14	0.14
Medina	Lafayette	69.864	69.953	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.97
Medina	Lafayette	69.956	69.989	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.39
Medina	Lafayette	69.989	69.994	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.39

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Medina	Lafayette	69.994 R	70.156 R	Pasture	HESP, BOBO	August 16 - May 14	3.74
Medina	Lafayette	72.184	72.516	Forested	CEWA, WOTH	August 1 - May 14	4.40
Medina	Lafayette	72.596	72.643	Forested	CEWA, WOTH	August 1 - May 14	0.41
Medina	Lafayette	72.885 R	72.91 R	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.43
Medina	Lafayette	72.912 R	72.971 R	Forested/Riparian	CEWA, WOTH, PROW	August 1 - May 14	0.71
Medina	Lafayette	73.209	73.244	Forested	CEWA, WOTH	August 1 - May 14	0.46
Medina	Lafayette	73.3	73.3	Forested	CEWA, WOTH	August 1 - May 14	0.07
Medina	Lafayette	73.305	73.321	Forested	CEWA, WOTH	August 1 - May 14	0.50
Medina	York	73.86	73.873	Forested	WOTH	August 1 - May 14	0.12
Medina	York	73.929	73.995	Forested	WOTH	August 1 - May 14	0.74
Medina	York	75.677	75.692	Forested	WOTH	August 1 - May 14	0.18
Medina	York	75.788	75.81	Forested/Riparian	WOTH	August 1 - May 14	0.42
Medina	York	75.811	75.823	Forested/Riparian	WOTH	August 1 - May 14	0.42
Medina	York	75.834	75.849	Forested/Riparian	WOTH	August 1 - May 14	0.16
Medina	York	75.965 R	75.994 R	Forested/Riparian	WOTH	August 1 - May 14	0.45
Medina	York	76.092 R	76.115 R	Forested	WOTH	August 1 - May 14	0.19
Medina	York	76.35	76.35	Forested	WOTH	August 1 - May 14	0.11
Medina	York	77.411	77.441	Forested	WOTH	August 1 - May 14	0.30
Medina	Litchfield	80.387 R	80.404 R	Scrub-Shrub	BWWA	July 16 - May 24	0.24
Medina	Litchfield	80.405 R	80.424 R	Forested	BBCU, CEWA, WOTH	August 1 - May 14	0.13
Medina	Litchfield	80.442 R	80.467 R	Scrub-Shrub	BWWA	July 16 - May 24	0.22
Lorain	Grafton	80.467 R	80.55 R	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.81
Lorain	Grafton	80.54 R	80.54 R	Scrub-Shrub	BWWA	July 16 - May 24	0.17
Lorain	Grafton	81.003	81.089	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.74
Lorain	Grafton	81.539	81.549	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.21
Lorain	Grafton	82.033	82.072	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.41

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Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Lorain	Grafton	82.638	82.73	Pasture	HESP, BOBO	August 16 - May 14	0.79
Lorain	Grafton	82.733	82.733	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.52
Lorain	Grafton	82.762	82.792	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.57
Lorain	Grafton	82.82	82.898	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.74
Lorain	Grafton	82.898	82.907	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.74
Lorain	Grafton	82.907 R	82.917 R	Scrub-Shrub	BWWA	July 16 - May 24	0.09
Lorain	Grafton	82.984 R	83.003 R	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.13
Lorain	Grafton	83.392	83.532	Forested	BBCU, RHWO, WOTH	August 1 - May 14	3.12
Lorain	Grafton	83.532	83.644	Forested	BBCU, RHWO, WOTH	August 1 - May 14	3.12
Lorain	Grafton	83.644	83.646	Forested	BBCU, RHWO, WOTH	August 1 - May 14	3.12
Lorain	Grafton	83.676	83.832	Forested	BBCU, RHWO, WOTH	August 1 - May 14	1.46
Lorain	Grafton	84.278 R	84.378 R	Forested	BBCU, RHWO, WOTH	August 1 - May 14	1.22
Lorain	Grafton	84.378 R	84.409 R	Forested/Riparian	BBCU, RHWO, WOTH, BWWA	August 1 - May 14	0.39
Lorain	Grafton	84.412 R	84.434 R	Forested/Riparian	BBCU, RHWO, WOTH, BWWA	August 1 - May 14	0.23
Lorain	Grafton	84.434 R	84.476 R	Pasture	HESP, BOBO	August 16 - May 14	0.70
Lorain	Grafton	84.476 R	84.515 R	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.44
Lorain	Grafton	85.017	85.044	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.27
Lorain	Grafton	85.1	85.231	Forested	BBCU, RHWO, WOTH	August 1 - May 14	1.09
Lorain	Grafton	85.804	85.828	Forested/Riparian	BBCU, RHWO, WOTH, BWWA	August 1 - May 14	0.27
Lorain	Grafton	85.829	85.862	Forested/Riparian	BBCU, RHWO, WOTH, BWWA	August 1 - May 14	0.34
Lorain	Grafton	85.946	85.956	Scrub-Shrub	BWWA	July 16 - May 24	0.33
Lorain	Grafton	85.959	85.982	Scrub-Shrub	BWWA	July 16 - May 24	0.26
Lorain	Grafton	86.364	86.4	Forested	BBCU, RHWO, WOTH	August 1 - May 14	0.46
Lorain	Lagrange	87.055	87.068	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	0.61
Lorain	Lagrange	87.676	87.747	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	0.49
Lorain	Lagrange	88.006	88.063	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	0.57

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Lorain	Lagrange	88.424	88.475	Pasture	BOBO	July 1 - May 14	2.15
Lorain	Lagrange	88.475	88.542	Pasture	BOBO	July 1 - May 14	2.15
Lorain	Lagrange	88.55 R	88.63 R	Forested/Riparian	BBCU, CEWA, RHWO, WOTH, BWWA, PROW	August 1 - May 14	1.14
Lorain	Lagrange	88.634	88.753	Forested/Riparian	BBCU, CEWA, RHWO, WOTH, BWWA, PROW	August 1 - May 14	1.05
Lorain	Lagrange	89.983 R	90.053 R	Scrub-Shrub	BWWA	July 16 - May 24	1.06
Lorain	Lagrange	90.056 R	90.062 R	Scrub-Shrub	BWWA	July 16 - May 24	0.08
Lorain	Lagrange	91.32	91.339	Riparian	BBCU, CEWA, RHWO, WOTH, BWWA	August 1 - May 14	0.26
Lorain	Lagrange	91.343	91.36	Riparian	BBCU, CEWA, RHWO, WOTH, BWWA	August 1 - May 14	0.27
Lorain	Pittsfield	91.76	91.801	Riparian	BBCU, CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	0.50
Lorain	Pittsfield	92.595 R	92.615 R	Riparian	BBCU, CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	0.22
Lorain	Pittsfield	93.01	93.01	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.09
Lorain	Pittsfield	93.43	93.43	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.10
Lorain	New russia	94.175	94.308	Scrub-Shrub	BWWA	July 16 - May 24	1.66
Lorain	New russia	94.308	94.391	Forested	BBCU, CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.96
Lorain	New russia	95.365	95.375	Treeline	FISP, YSFL	August 16 - May 14	0.12
Lorain	New russia	95.5	95.513	Treeline	FISP, YSFL	August 16 - May 14	0.16
Lorain	New russia	95.554	95.565	Treeline	FISP, YSFL	August 16 - May 14	0.12
Lorain	New russia	95.977	95.985	Treeline	FISP, YSFL	August 16 - May 14	0.18
Lorain	New russia	96.059	96.162	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.94
Lorain	New russia	96.163	96.303	Forested	ACFL, BBCU, CEWA, YSFL, PROW, RHWO, SSHA, WOTH	August 1 - May 14	1.56
Lorain	Pittsfield	96.3	96.3	Forested	ACFL, BBCU, CEWA, YSFL, PROW, RHWO, SSHA, WOTH	August 1 - May 14	0.14

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Lorain	New russia	96.309	96.33	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.43
Lorain	Pittsfield	96.758	96.768	Treeline	FISP, YSFL	August 16 - May 14	0.20
Lorain	Camden	97.309	97.318	Treeline	FISP, YSFL	August 16 - May 14	0.12
Lorain	Camden	98.094	98.103	Treeline	FISP, YSFL	August 16 - May 14	0.12
Lorain	Camden	98.114	98.126	Treeline	FISP, YSFL	August 16 - May 14	0.15
Lorain	Camden	98.778 R	98.933 R	Pasture	GRSP, FISP, BOBO	August 16 - May 14	2.15
Lorain	Camden	98.93 R	98.93 R	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.15
Lorain	Camden	99.257 R	99.274 R	Riparian	ACFL, BBCU, CEWA, YSFL, RHWO, SSHA, WOTH	August 1 - May 14	0.18
Lorain	Camden	99.295 R	99.301 R	Riparian	ACFL, BBCU, CEWA, YSFL, RHWO, SSHA, WOTH	August 1 - May 14	0.07
Lorain	Camden	99.309 R	99.324 R	Riparian	ACFL, BBCU, CEWA, YSFL, RHWO, SSHA, WOTH	August 1 - May 14	0.20
Lorain	Camden	99.395 R	99.403 R	Treeline	FISP, YSFL	August 16 - May 14	0.10
Lorain	Camden	99.584	99.591	Treeline	FISP, YSFL	August 16 - May 14	0.08
Lorain	Camden	100.251	100.258	Treeline	FISP, YSFL	August 16 - May 14	0.09
Lorain	Camden	100.43	100.614	Forested	ACFL, BBCU, CEWA, YSFL, RHWO, SSHA, WOTH	August 1 - May 14	2.47
Lorain	Camden	100.769	100.964	Scrub-Shrub	BWWA, FISP	August 16 - May 14	1.78
Huron	Wakeman	101.636	101.646	Treeline	FISP, YSFL	August 16 - May 14	0.13
Huron	Wakeman	101.818	101.824	Treeline	FISP, YSFL	August 16 - May 14	0.07
Huron	Wakeman	101.882	101.89	Riparian	ACFL, BBCU, CEWA, YSFL, RHWO, WOTH	August 1 - May 14	0.10
Huron	Wakeman	101.893	101.918	Riparian	ACFL, BBCU, CEWA, YSFL, RHWO, WOTH	August 1 - May 14	0.31
Huron	Wakeman	101.918	101.924	Pasture	DICK, FISP, GRSP, BOBO	August 16 - May 14	0.10
Huron	Wakeman	102.295	102.333	Riparian	ACFL, BBCU, CEWA, YSFL, RHWO, WOTH, BWWA	August 1 - May 14	0.44

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Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Huron	Wakeman	102.334	102.347	Riparian	ACFL, BBCU, CEWA, YSFL, RHWO, WOTH, BWWA	August 1 - May 14	0.15
Huron	Wakeman	103.083	103.136	Pasture	DICK, FISP, GRSP, BOBO	August 16 - May 14	0.74
Huron	Wakeman	103.136	103.149	Treeline	FISP, YSFL	August 16 - May 14	0.15
Huron	Wakeman	104.724	104.738	Treeline	FISP, YSFL	August 16 - May 14	0.26
Erie	Florence	105.88	105.896	Riparian	BBCU, YSFL, RHWO, BWWA	August 1 - May 14	0.18
Erie	Florence	105.902	105.92	Riparian	BBCU, YSFL, RHWO, BWWA	August 1 - May 14	0.21
Erie	Florence	106.353	106.867	Forested	ACFL, BBCU, CEWA, YSFL, RHWO, WOTH	August 1 - May 14	4.83
Erie	Berlin	109.396	109.44	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.42
Erie	Berlin	111.024	111.035	Pasture	HESP	August 16 - May 14	0.17
Erie	Berlin	111.386	111.391	Treeline	FISP, YSFL	August 16 - May 14	0.11
Erie	Berlin	111.681	111.837	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.88
Erie	Berlin	111.922 R	111.929 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.21
Erie	Berlin	111.929 R	111.94 R	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.21
Erie	Berlin	112.172 R	112.187 R	Treeline	FISP, YSFL	August 16 - May 14	0.21
Erie	Berlin	112.998	113.009	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	0.13
Erie	Berlin	113.145 R	113.184 R	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	1.91
Erie	Berlin	113.187 R	113.317 R	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	1.91
Erie	Berlin	113.319 R	113.346 R	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	0.31
Erie	Berlin	113.792	113.835	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	0.83
Erie	Berlin	113.842	113.906	Forested/Riparian	CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	0.62
Erie	Berlin	113.906	113.994	Forested	CEWA, RHWO, SSHA, WOTH	August 1 - May 14	1.61

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Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Erie	Berlin	114.226	114.25	Riparian	CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	0.29
Erie	Berlin	114.253	114.318	Riparian	CEWA, RHWO, SSHA, WOTH, BWWA	August 1 - May 14	0.72
Erie	Berlin	114.455	114.467	Treeline	FISP, YSFL	August 16 - May 14	0.13
Erie	Milan	115.342	115.422	Scrub-Shrub	BWWA, FISP	August 16 - May 14	1.05
Erie	Milan	115.38	115.381	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	1.80
Erie	Milan	115.381	115.387	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	1.80
Erie	Milan	115.394	115.395	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	1.80
Erie	Milan	115.456	115.593	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	1.80
Erie	Milan	115.7	115.726	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	0.27
Erie	Milan	115.7	115.7	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.08
Erie	Milan	115.731	115.744	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.13
Erie	Milan	115.742	115.78	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	0.42
Erie	Milan	115.954 R	116.146 R	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	2.83
Erie	Milan	116.14 R	116.159 R	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	2.83
Erie	Milan	116.159	116.172	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.38
Erie	Milan	116.173 R	116.231 R	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	2.83
Erie	Milan	116.395	116.417	Pasture	HESP, NOHA	August 16 - May 14	1.59
Erie	Milan	116.417	116.433	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	0.86
Erie	Milan	116.433	116.457	Pasture	HESP, NOHA	August 16 - May 14	1.59
Erie	Milan	116.457	116.505	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	0.86
Erie	Milan	116.507	116.639	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	1.97
Erie	Milan	116.55	116.55	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.00
Erie	Milan	116.63	116.63	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.33
Erie	Milan	116.644	116.725	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.97

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Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Erie	Milan	117.43	117.43	Forested	BBCU, CEWA, RHWO, WOTH	August 1 - May 14	2.24
Erie	Milan	118.113	118.29	Pasture	HESP, NOHA	August 16 - May 14	2.58
Erie	Milan	118.385	118.391	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.08
Erie	Milan	118.391	118.415	Forested/Riparian	BBCU, CEWA, RHWO, WOTH, BWWA	August 1 - May 14	0.26
Erie	Milan	118.42	118.515	Forested/Riparian	BBCU, CEWA, RHWO, WOTH, BWWA	August 1 - May 14	1.16
Erie	Milan	118.799	118.96	Forested/Riparian	BBCU, CEWA, RHWO, WOTH, BWWA	August 1 - May 14	1.78
Erie	Milan	118.964	118.972	Forested/Riparian	BBCU, CEWA, RHWO, WOTH, BWWA	August 1 - May 14	0.09
Erie	Milan	120.003	120.011	Hedge/Ditch	FISP	August 16 - May 14	0.09
Erie	Milan	120.129	120.137	Treeline	FISP, YSFL	August 16 - May 14	0.19
Erie	Milan	120.36	120.36	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.00
Erie	Milan	120.36	120.378	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.24
Erie	Oxford	120.418	120.518	Pasture	GRSP, FISP, HESP, DICK, NOHA, BOBO	August 16 - May 14	1.89
Erie	Oxford	125.693	125.711	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.23
Erie	Oxford	125.713	125.735	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.24
Erie	Oxford	125.913	125.923	Forested	ACFL, BBCU, CEWA, YSFL, RHWO, SSHA, WOTH	August 1 - May 14	0.18
Erie	Groton	127.894	127.903	Treeline	FISP, YSFL	August 16 - May 14	0.15
Erie	Groton	127.927	127.938	Treeline	FISP, YSFL	August 16 - May 14	0.12
Erie	Groton	128.366	128.4	Scrub-Shrub	BWWA, FISP	August 16 - May 14	4.04
Erie	Groton	128.453	128.738	Scrub-Shrub	BWWA, FISP	August 16 - May 14	4.04
Erie	Groton	130.6	130.6	Forested	ACFL, BBCU, YSFL, RHWO, SSHA, WOTH	August 1 - May 14	0.08
Erie	Groton	130.782	130.859	Forested	ACFL, BBCU, YSFL, RHWO, SSHA, WOTH	August 1 - May 14	1.29
Sandusky	Townsend	135.909	135.962	Forested/Riparian	ACFL, BBCU, YSFL, PROW, RHWO, WOTH, BWWA	August 1 - May 14	0.65

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Sandusky	Townsend	135.965	135.968	Forested/Riparian	ACFL, BBCU, YSFL, PROW, RHWO, WOTH, BWWA	August 1 - May 14	0.05
Sandusky	Riley	138.008	138.017	Hedge/Ditch	FISP	August 16 - May 14	0.08
Sandusky	Riley	138.322	138.426	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	1.03
Sandusky	Riley	138.59	138.644	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.91
Sandusky	Riley	139.794	139.895	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	1.20
Sandusky	Riley	140.516	140.525	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.10
Sandusky	Riley	140.529	140.545	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.21
Sandusky	Riley	141.682	141.687	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.06
Sandusky	Riley	141.694	141.702	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.10
Sandusky	Sandusky	149.37	149.376	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.07
Sandusky	Washington	151.253 R	151.265 R	Treeline	FISP, LOSH, YSFL	August 16 - April 14	0.11
Sandusky	Washington	151.276 R	151.288 R	Treeline	FISP, LOSH, YSFL	August 16 - April 14	0.11
Sandusky	Washington	151.363	151.374	Treeline	FISP, LOSH, YSFL	August 16 - April 14	0.12
Sandusky	Washington	151.498	151.531	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	0.71
Sandusky	Washington	151.85	151.85	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	0.14
Sandusky	Washington	152.229	152.281	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	0.41
Sandusky	Washington	153.242	153.348	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	0.98
Sandusky	Washington	153.362	153.453	Mowed Native Grassland	LOSH, HESP, GRSP, NOHA, DICK, BOBO, SEWR, MAWR	August 1 - April 14	1.58
Sandusky	Washington	154.867	154.907	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.41

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Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Sandusky	Washington	155.358	155.367	Treeline	YSFL, LOSH, FISP	August 16 - April 14	0.11
Sandusky	Washington	155.49	155.512	Treeline	YSFL, LOSH, FISP	August 16 - April 14	0.19
Sandusky	Washington	156.304	156.466	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	1.90
Sandusky	Woodville	157.253	157.483	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	2.12
Sandusky	Woodville	157.521	157.544	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	0.26
Sandusky	Woodville	157.549	157.565	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	0.19
Sandusky	Woodville	157.569	157.643	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	1.07
Sandusky	Woodville	157.903	158.154	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	2.53
Sandusky	Woodville	158.165	158.207	Scrub-Shrub	BWWA, FISP	August 16 - May 14	0.76
Sandusky	Woodville	158.613	158.668	Scrub-Shrub	BWWA, FISP	August 16 - May 14	1.02
Sandusky	Woodville	159.458	159.544	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	1.95
Sandusky	Woodville	159.548	159.605	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	0.65
Sandusky	Woodville	159.619	159.68	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	0.72
Sandusky	Woodville	159.82	159.967	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	1.42
Sandusky	Woodville	159.967	160.24	Pasture	LOSH, DICK, FISP, GRSP, NOHA	August 16 - April 14	4.52
Sandusky	Woodville	160.694	160.774	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	0.78
Sandusky	Woodville	162.449 R	162.462 R	Riparian	BBCU, YSFL, BWWA	August 1 - May 14	0.09

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Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Sandusky	Woodville	162.492 R	162.503 R	Riparian	BBCU, YSFL, BWWA	August 1 - May 14	0.07
Sandusky	Woodville	162.885	163.018	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	1.22
Sandusky	Woodville	163.281	163.536	Forested	ACFL, BBCU, YSFL, PROW, RHWO, WOTH	August 1 - May 14	2.53
Sandusky	Woodville	163.659	163.72	Pasture	LOSH, DICK, FISP, GRSP, NOHA	August 16 - April 14	0.84
Wood	Troy	163.727	163.806	Pasture	DICK, GRSP, FISP	August 16 - May 14	1.76
Wood	Troy	164.476	164.531	Scrub-Shrub	FISP	August 16 - May 14	1.01
Wood	Troy	164.5	164.5	Scrub-Shrub	FISP	August 16 - May 14	0.08
Wood	Troy	164.531	164.576	Scrub-Shrub	FISP	August 16 - May 14	0.65
Wood	Troy	164.576	164.671	Scrub-Shrub	FISP	August 16 - May 14	1.26
Wood	Troy	164.671	164.694	Scrub-Shrub	FISP	August 16 - May 14	0.22
Wood	Troy	164.749	164.937	Forested	ACFL, YSFL, RHWO, WOTH	August 1 - May 14	2.44
Wood	Troy	165.706	165.78	Forested	ACFL, YSFL, RHWO, WOTH	August 1 - May 14	0.68
Wood	Troy	166.075	166.318	Forested	ACFL, YSFL, RHWO, WOTH	August 1 - May 14	2.58
Wood	Troy	166.356	166.365	Treeline	FISP, YSFL	August 16 - May 14	0.22
Wood	Troy	166.489	166.496	Treeline	FISP, YSFL	August 16 - May 14	0.08
Wood	Troy	166.541	166.707	Forested	ACFL, YSFL, RHWO, WOTH	August 1 - May 14	1.60
Wood	Troy	167.301	167.327	Pasture	DICK, GRSP, FISP	August 16 - May 14	0.57
Wood	Troy	167.327	167.333	Riparian	FISP, YSFL	August 16 - May 14	0.09
Wood	Troy	167.342	167.358	Riparian	FISP, YSFL	August 16 - May 14	0.27
Wood	Troy	167.358	167.378	Pasture	DICK, GRSP, FISP	August 16 - May 14	0.66
Wood	Troy	168.238	168.263	Scrub-Shrub	FISP	August 16 - May 14	0.30
Wood	Troy	170.018	170.151	Forested	ACFL, YSFL, RHWO, WOTH	August 1 - May 14	0.94
Wood	Webster	172.016	172.166	Pasture	DICK, FISP, GRSP, BOBO	August 16 - May 14	2.27
Wood	Webster	173.276	173.473	Scrub-Shrub	FISP	August 16 - May 14	2.57

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Wood	Middleton	173.481	173.683	Pasture	FISP, GRSP, DICK, HESP, NOHA, BOBO	August 16 - May 14	2.58
Wood	Middleton	173.683	173.709	Scrub-Shrub	FISP	August 16 - May 14	0.86
Wood	Middleton	173.709	173.854	Forested	YSFL, RHWO, WOTH	August 1 - May 14	1.50
Wood	Middleton	173.881	173.93	Mowed Native Grassland	NOHA, GRSP, FISP, BOBO	August 16 - May 14	1.49
Wood	Middleton	176.156	176.169	Hedge/Ditch	FISP	August 16 - May 14	0.15
Wood	Middleton	180.656	180.783	Forested	YSFL, RHWO, WOTH	August 1 - May 14	1.61
Wood	Middleton	180.785	180.828	Forested	YSFL, RHWO, WOTH	August 1 - May 14	0.59
Wood	Middleton	180.994	181.004	Treeline	FISP, YSFL	August 16 - May 14	0.27
Wood	Middleton	181.229	181.241	Treeline	FISP, YSFL	August 16 - May 14	0.08
Lucas	Waterville	185.277	185.28	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.04
Lucas	Waterville	185.284	185.292	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.09
Lucas	Providence	188.102	188.12	Riparian	BWWA, YSFL, BBCU	August 1 - May 14	0.21
Lucas	Providence	188.988	189.115	Forested	ACFL, BBCU, WPWI, KEWA, YSFL, PROW, RHWO, SSHA, WOTH	August 1 - May 14	1.47
Henry	Washington	189.538	189.687	Forested	ACFL, BBCU, YSFL, PROW, RHWO, SSHA, WOTH	August 1 - May 14	1.91
Henry	Washington	189.688	189.812	Forested	ACFL, BBCU, YSFL, PROW, RHWO, SSHA, WOTH	August 1 - May 14	1.75
Henry	Washington	189.95 R	189.961 R	Scrub-Shrub	FISP	August 16 - May 14	0.16
Henry	Washington	189.979 R	190.043 R	Forested	ACFL, BBCU, YSFL, PROW, RHWO, SSHA, WOTH	August 1 - May 14	0.97
Henry	Washington	190.038 R	190.063 R	Forested	ACFL, BBCU, YSFL, PROW, RHWO, SSHA, WOTH	August 1 - May 14	0.97
Fulton	Swan creek	191.995	192.002	Treeline	FISP, YSFL	August 16 - May 14	0.10
Fulton	Swan creek	192.003	192.009	Treeline	FISP, YSFL	August 16 - May 14	0.10

TABLE 3

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Ohio

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Fulton	Swan creek	193.275	193.735	Forested	ACFL, BBCU, YSFL, RHWO, SSHA, WOTH, WPWI	August 1 - May 14	5.02
Fulton	Swan creek	193.734	193.805	Pasture	DICK, FISP, GRSP, HESP, BOBO	August 16 - May 14	1.47
Fulton	Swan creek	193.86	193.863	Hedge/Ditch	FISP	August 16 - May 14	0.04
Fulton	Swan creek	193.869	193.876	Hedge/Ditch	FISP	August 16 - May 14	0.08
Fulton	Swan creek	194.969	194.975	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.06
Fulton	Swan creek	194.979	194.986	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.08
Fulton	Swan creek	195	195	Riparian	YSFL, BWWA, BBCU	August 1 - May 14	0.03
Fulton	Swan creek	195.225	195.238	Riparian	BWWA, YSFL, BBCU	August 1 - May 14	0.14
Fulton	Fulton	200.765	200.773	Riparian	BBCU, YSFL, BWWA	August 1 - May 14	0.10
Fulton	Fulton	200.778	200.783	Riparian	BBCU, YSFL, BWWA	August 1 - May 14	0.05
Fulton	Fulton	200.926	200.956	Forested	BBCU, YSFL, RHWO, WOTH	August 1 - May 14	0.24
Fulton	Fulton	202.133	202.155	Riparian	BBCU, BWWA, YSFL	August 1 - May 14	0.20

1 Mileposts followed by an “R” indicate the revised milepost occurs along a change in the pipeline route since the November 2015 filing.

TABLE 4

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Michigan

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Lenawee	Blissfield	220.381	220.391	Scrub-Shrub	FISP	August 16 - May 14	0.12
Lenawee	Blissfield	223	223.077	Forested	YSFL	August 1 - May 14	0.86
Lenawee	Deerfield	223.428	223.456	Forested	YSFL	August 1 - May 14	0.32
Lenawee	Ridgeway	226.832	226.845	Hedge/Ditch	FISP	August 16 - May 14	0.16
Lenawee	Ridgeway	229.52	229.52	Riparian	FISP	August 16 - May 14	0.01
Lenawee	Ridgeway	229.527	229.541	Riparian	FISP	August 16 - May 14	0.21
Monroe	Milan	231.896	231.909	Riparian	BBCU, FISP, YSFL	August 16 - May 14	0.16
Monroe	Milan	233.273	233.281	Riparian	FISP	August 16 - May 14	0.10
Monroe	Milan	234.427 R	234.442 R	Forested/Riparian	BBCU, FISP, YSFL	August 16 - May 14	0.17
Monroe	Milan	235.953 R	236.046 R	Forested/Riparian	YSFL, BBCU, RHWO	August 1 - May 14	1.03
Monroe	City of Milan	236.807	236.817	Treeline	FISP	August 16 - May 14	0.12
Washtenaw	York	237.887	237.898	Treeline	FISP, BRTH	August 16 - May 14	0.35
Washtenaw	York	239.081	239.089	Hedge/Ditch	FISP	August 16 - May 14	0.10
Washtenaw	York	239.759	239.769	Treeline	FISP	August 16 - May 14	0.13
Washtenaw	York	239.832	239.845	Hedge/Ditch	FISP	August 16 - May 14	0.16
Washtenaw	York	239.968	239.975	Treeline	FISP	August 16 - May 14	0.42
Washtenaw	York	240.805	240.836	Forested/Riparian	BBCU, YSFL, WOTH	August 1 - May 14	0.34
Washtenaw	Augusta	241.486	241.493	Hedge/Ditch	FISP	August 16 - May 14	0.14
Washtenaw	Augusta	241.597	241.607	Treeline	FISP	August 16 - May 14	0.13
Washtenaw	Augusta	242.344	242.357	Hedge/Ditch	FISP	August 16 - May 14	0.16
Washtenaw	Augusta	242.778	242.785	Treeline	BRTH	August 1 - May 14	0.09
Washtenaw	Augusta	244.176	244.361	Forested/Riparian	ACFL, BBCU, YSFL, WOTH	August 1 - May 14	1.92
Washtenaw	Augusta	244.425	244.62	Forested/Riparian	ACFL, BBCU, YSFL, WOTH	August 1 - May 14	2.06
Washtenaw	Augusta	244.667	244.729	Forested/Riparian	ACFL, BBCU, YSFL, WOTH	August 1 - May 14	0.75
Washtenaw	Augusta	244.73	244.73	Forested/Riparian	ACFL, BBCU, YSFL, WOTH	August 1 - May 14	0.00
Washtenaw	Augusta	245.484	245.49	Hedge/Ditch	FISP	August 16 - May 14	0.07
Washtenaw	Augusta	245.76	245.76	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.09
Washtenaw	Augusta	246.277	246.298	Riparian	FISP, BWWA	August 16 - May 14	0.25

TABLE 4

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Michigan

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Washtenaw	Ypsilanti	247.679	247.704	Forested	RHWO, BBCU	August 1 - May 24	0.86
Washtenaw	Ypsilanti	247.713	247.764	Forested	RHWO, BBCU	August 1 - May 24	0.86
Washtenaw	Ypsilanti	247.771	247.797	Scrub-Shrub	BBCU, BWWA, RHWO	August 1 - May 24	0.32
Washtenaw	Ypsilanti	247.798	247.855	Forested	RHWO, BBCU	August 1 - May 24	0.65
Washtenaw	Ypsilanti	248.162	248.272	Forested	RHWO, BBCU	August 1 - May 24	1.73
Washtenaw	Ypsilanti	248.318	248.391	Pasture	BOBO	July 1 - May 14	0.89
Washtenaw	Ypsilanti	248.937	249.013	Forested	RHWO, BBCU	August 1 - May 24	1.11
Washtenaw	Ypsilanti	249.159	249.168	Treeline	BRTH	August 1 - May 14	0.34
Washtenaw	Ypsilanti	249.189	249.206	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.40
Washtenaw	Ypsilanti	249.206	249.223	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.21
Washtenaw	Ypsilanti	249.223	249.343	Forested	RHWO, BBCU	August 1 - May 24	1.09
Washtenaw	Ypsilanti	249.343	249.352	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.08
Washtenaw	Ypsilanti	249.461	249.573	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	2.34
Washtenaw	Ypsilanti	249.824	249.88	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.68
Washtenaw	Ypsilanti	249.906	249.919	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.68
Washtenaw	Ypsilanti	250.25	250.299	Forested	RHWO, BBCU	August 1 - May 24	0.70
Washtenaw	Ypsilanti	250.306	250.428	Scrub-Shrub	BWWA, BRTH	August 1 - May 14	2.01
Washtenaw	Ypsilanti	250.428	250.465	Forested	RHWO, BBCU	August 1 - May 24	0.34
Washtenaw	Ypsilanti	250.465	250.492	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.32
Washtenaw	Ypsilanti	250.48	250.48	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.27
Washtenaw	Ypsilanti	250.492	250.604	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	1.67
Washtenaw	Ypsilanti	250.604	250.644	Developed	BWWA, BRTH, WIFL	August 16 - May 14	2.95
Washtenaw	Ypsilanti	250.644	250.714	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	2.73
Washtenaw	Ypsilanti	251.09	251.117	Developed	BWWA, BRTH, WIFL	August 16 - May 14	5.43
Washtenaw	Ypsilanti	251.117	251.134	Developed	BWWA, BRTH, WIFL	August 16 - May 14	5.43
Washtenaw	Ypsilanti	251.11	251.11	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.00
Washtenaw	Ypsilanti	251.134 R	251.217 R	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	1.23
Washtenaw	Ypsilanti	251.74	251.846	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	2.07
Washtenaw	Ypsilanti	251.874	251.996	Forested	RHWO, BBCU	August 1 - May 24	2.47

TABLE 4

Potential Breeding Habitat for Target Species within the NEXUS Project Area in Michigan

County	Township	MP Start[1]	MP End	Habitat Type	MBCP Target Species (bird code)	Target Clearing Window	Acres
Washtenaw	Ypsilanti	252.093	252.224	Forested	RHWO, BBCU	August 1 - May 24	2.07
Washtenaw	Ypsilanti	252.238	252.263	Forested	RHWO, BBCU	August 1 - May 24	0.70
Washtenaw	Ypsilanti	252.275	252.373	Forested	RHWO, BBCU	August 1 - May 24	2.29
Washtenaw	Ypsilanti	252.373	252.396	Scrub-Shrub	BWWA, BRTH	August 1 - May 14	0.51
Washtenaw	Ypsilanti	253.38 R	253.396 R	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.19
Washtenaw	Ypsilanti	253.396 R	253.425 R	Open/Water	PBGR	August 1 - May 14	0.35
Washtenaw	Ypsilanti	253.425 R	253.581 R	Developed	BWWA, BRTH, WIFL	August 16 - May 14	8.46
Washtenaw	Ypsilanti	253.612 R	253.694 R	Developed	BWWA, BRTH, WIFL	August 16 - May 14	8.46
Washtenaw	Ypsilanti	253.56 R	253.56 R	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.15
Washtenaw	Ypsilanti	253.581 R	253.612 R	Open/Water	PBGR	August 1 - May 14	0.27
Washtenaw	Ypsilanti	253.62 R	253.62 R	Scrub-Shrub	BWWA, BRTH, WIFL	August 16 - May 14	0.21
Washtenaw	Ypsilanti	254.353 R	254.507 R	Scrub-Shrub	BWWA, BRTH	August 1 - May 14	3.87
Washtenaw	Ypsilanti	254.43 R	254.43 R	Developed	BWWA, BRTH	August 1 - May 14	0.42
Washtenaw	Ypsilanti	254.526 R	254.642 R	Scrub-Shrub	BWWA, BRTH	August 1 - May 14	1.65
Washtenaw	Ypsilanti	254.642 R	254.744 R	Developed	BWWA, BRTH	August 1 - May 14	1.41

1 Mileposts followed by an “R” indicate the revised milepost occurs along a change in the pipeline route since the November 2015 filing.

APPENDIX B

NEXUS PROJECT MBCP FIGURES

These figures are available on the FERC's eLibrary under accession number 20160826-5230.

APPENDIX K

LAND USE TABLES

APPENDIX K-1

SUMMARY OF EXISTING UTILITIES CROSSED BY THE NGT PROJECT

APPENDIX K-1

Summary of Existing Utilities Crossed by the NGT Project

State, Facility, County	Approximate MP	Utility Owner(s)/Operator(s)	Utility Type(s)
OHIO			
TGP Interconnecting Pipeline			
Columbiana	0.6	Access Midstream	Natural Gas
Columbiana	0.7	NiSource Midstream	Natural Gas
Mainline			
Columbiana	0.3	S&S Energy Corp, Access Midstream	Natural Gas
Columbiana	0.9	S&S Energy Corp	Natural Gas
Columbiana	0.9	Midstream	Natural Gas
Columbiana	0.9	Williams	Natural Gas
Columbiana	1.3	First Energy	Electric Transmission
Columbiana	1.4	First Energy	Electric Transmission
Columbiana	1.6	Unknown	Unknown
Columbiana	1.8	Access Midstream (49) M3 Midstream (30) Ev Energy (21)	Natural Gas Liquid (NGL)
Columbiana	1.8	Midstream Nisource Inc.	Natural Gas
Columbiana	2.2	Midstream Caiman Energy II Dominion	Natural Gas
Columbiana	3.1	Access Midstream Total E&P USA Enervest Energy	Natural Gas
Columbiana	3.2	Dominion East Ohio	Natural Gas
Columbiana	5.0	Atlas Energy	Natural Gas
Columbiana	5.6	Atlas Energy	Natural Gas
Columbiana	5.7	First Energy	Electric Transmission
Columbiana	6.1	Unknown	Electric Transmission
Columbiana	6.2	First Energy	Electric Transmission
Columbiana	6.3	Unknown	Electric Transmission
Columbiana	6.4	Atlas Energy	Natural Gas
Columbiana	6.6	First Energy	Electric Transmission
Columbiana	7.2	Atlas Energy	Natural Gas
Columbiana	7.3	Atlas Energy	Natural Gas
Columbiana	7.6	America Energy	Crude Oil
Columbiana	7.7	Atlas Energy	Natural Gas
Columbiana	7.8	Atlas Pipeline	Natural Gas
Columbiana	7.8	Atlas Pipeline	Natural Gas
Columbiana	8.0	Atlas Energy	Natural Gas
Columbiana	8.2	Atlas Pipeline	Natural Gas
Columbiana	8.5	Unknown	Natural Gas
Columbiana	8.6	First Energy	Electric Transmission
Columbiana	8.6	Unknown	Natural Gas
Columbiana	8.9	Unknown	Natural Gas
Columbiana	9.9	Atlas Gas Enervest Energy Partners	Natural Gas
Columbiana	10.0	Enervest Energy Partners	Natural Gas
Columbiana	10.2	First Energy	Electric Transmission
Columbiana	10.3	Enervest Energy Partners	Natural Gas
Columbiana	10.5	Enervest Energy Partners	Natural Gas
Columbiana	10.6	Enervest Energy Partners	Natural Gas
Columbiana	11.1	NiSource Inc.	Natural Gas
Columbiana	11.7	First Energy	Electric Transmission
Columbiana	12.3	Clinton Oil	Natural Gas

APPENDIX K-1 (cont'd)

Summary of Existing Utilities Crossed by the NGT Project

State, Facility, County	Approximate MP	Utility Owner(s)/Operator(s)	Utility Type(s)
Mainline (cont'd)			
Columbiana	12.4	Unknown	Electric Transmission
Stark	12.5	Unknown	Electric Transmission
Stark	13.1	First Energy	Electric Transmission
Stark	13.2	Unknown	Electric Transmission
Stark	14.0	Unknown	Electric Transmission
Stark	14.1	First Energy	Electric Transmission
Stark	14.1	Enervest Energy Partners	Natural Gas
Stark	14.2	Unknown	Unknown
Stark	14.3	First Energy	Electric Transmission
Stark	14.5	Belden & Blake Corp Enervest Energy Partners	Natural Gas
Stark	14.6	Dominion	Natural Gas
Stark	14.8	Unknown	Electric Transmission
Stark	14.8	Enervest Energy Partners	Natural Gas
Stark	15.0	East Ohio Gas Company Dominion	Natural Gas
Stark	15.2	East Ohio Gas Company	Natural Gas
Stark	15.8	First Energy	Electric Transmission
Stark	16.0	First Energy	Electric Transmission
Stark	16.0	Unknown	Natural Gas
Stark	16.0	Unknown	Natural Gas
Stark	16.2	Unknown	Electric Transmission
Stark	16.4	Unknown	Electric Transmission
Stark	16.6	Petrox Inc.	Natural Gas
Stark	16.7	Petrox Inc.	Natural Gas
Stark	16.7	Unknown	Natural Gas
Stark	16.7	Unknown	Electric Transmission
Stark	17.3	Atlas Energy	Natural Gas
Stark	17.6	Unknown	Natural Gas
Stark	17.7	Unknown	Natural Gas
Stark	17.8	Atlas Energy	Natural Gas
Stark	18.3	Unknown	Electric Transmission
Stark	18.3	Unknown	Unknown
Stark	19.6	Enervest Energy Partners	Natural Gas
Stark	20.4	Enervest Energy Partners	Natural Gas
Stark	20.6	First Energy	Electric Transmission
Stark	21.7	Unknown	Electric Transmission
Stark	21.7	Enervest Energy Partners	Natural Gas
Stark	22.2	Enervest Energy Partners	Natural Gas
Stark	23.1	Enervest Energy Partners	Natural Gas
Stark	23.2	Enervest Energy Partners	Natural Gas
Stark	23.3	Old Dominion/Caiman Energy II	Natural Gas
Stark	23.5	Enervest Energy Partners	Natural Gas
Stark	24.2	Enervest Energy Partners	Natural Gas
Stark	25.0	Enervest Energy Partners	Natural Gas
Stark	25.5	Enervest Energy Partners	Natural Gas
Stark	26.0	Belden & Blake Corp	Unknown
Stark	26.4	Enervest Energy Partners	Natural Gas
Stark	26.5	Enervest Energy Partners	Natural Gas
Stark	26.7	Enervest Energy Partners	Natural Gas
Stark	27.2	Enervest Energy Partners	Natural Gas
Stark	27.3	Enervest Energy Partners	Natural Gas

APPENDIX K-1 (cont'd)

Summary of Existing Utilities Crossed by the NGT Project

State, Facility, County	Approximate MP	Utility Owner(s)/Operator(s)	Utility Type(s)
Mainline (cont'd)			
Stark	28.0	MB Operating Company	Natural Gas
Stark	28.1	MB Operating	Natural Gas
Stark	28.2	Dominion	Natural Gas
Stark	28.2	Enervest Energy Partners	Natural Gas
Stark	29.3	Enervest Energy Partners	Natural Gas
Stark	29.4	BP	Product
Stark	29.7	Dominion	Natural Gas
Stark	29.8	First Energy	Electric Transmission
Stark	30.3	Enervest Energy Partners	Natural Gas
Stark	30.8	Enervest Energy Partners	Natural Gas
Stark	30.9	Dominion	Natural Gas
Stark	31.8	First Energy	Electric Transmission
Stark	31.9	Enervest Energy Partners	Natural Gas
Stark	32.1	Dominion	Natural Gas
Stark	32.1	Enervest Energy Partners	Natural Gas
Stark	32.6	First Energy	Electric Transmission
Stark	32.8	First Energy	Power
Stark	32.8	First Energy	Electric Transmission
Stark	32.8	Dominion	Natural Gas
Stark	33.0	Unknown	Electric Transmission
Stark	33.0	Dominion	Natural Gas
Stark	33.1	Unknown	Electric Transmission
Stark	34.0	Unknown	Electric Transmission
Summit	34.4	Enervest Energy Partners	Natural Gas
Summit	35.0	Enervest Energy Partners	Natural Gas
Summit	35.0	Unknown	Electric Transmission
Summit	35.2	Enervest Energy Partners	Natural Gas
Summit	35.9	First Energy	Electric Transmission
Summit	36.4	Unknown	Natural Gas
Summit	36.7	Dominion	Natural Gas
Summit	36.8	Enervest Energy Partners	Natural Gas
Summit	37.4	Unknown	Electric Transmission
Summit	38.0	Dominion	Natural Gas
Summit	39.8	Unknown	Electric Transmission
Summit	40.9	Dominion	Natural Gas
Summit	41.1	First Energy	Electric Transmission
Summit	41.5	East Ohio Gas Company/Dominion	Natural Gas
Summit	41.9	Dominion	Natural Gas
Summit	42.2	Dominion	Natural Gas
Summit	42.6	Dominion	Natural Gas
Summit	42.8	Dominion East	Natural Gas
Summit	43.2	Dominion	Natural Gas
Summit	43.3	Dominion	Natural Gas
Summit	43.5	Dominion	Natural Gas
Summit	43.5	East Ohio Gas Company	Natural Gas
Summit	43.8	Dominion	Natural Gas
Summit	44.2	Dominion	Natural Gas
Summit	44.3	Dominion	Natural Gas
Summit	44.5	Dominion	Natural Gas
Summit	44.5	Dominion	Natural Gas
Summit	44.7	Dominion	Natural Gas
Summit	44.8	Dominion	Natural Gas

APPENDIX K-1 (cont'd)

Summary of Existing Utilities Crossed by the NGT Project

State, Facility, County	Approximate MP	Utility Owner(s)/Operator(s)	Utility Type(s)
Mainline (cont'd)			
Summit	44.9	Dominion	Natural Gas
Summit	45.1	Dominion	Natural Gas
Summit	45.2	Dominion	Natural Gas
Summit	45.3	Dominion	Natural Gas
Summit	45.4	Dominion	Natural Gas
Summit	45.4	East Ohio Gas Company/Dominion	Natural Gas
Summit	45.5	Dominion	Natural Gas
Summit	46.2	Dominion	Natural Gas
Summit	46.2	Dominion	Natural Gas
Summit	46.8	Sunoco/BP	Natural Gas
Summit	47.4	Marathon Petroleum Company, LLC	Product
Summit	47.7	First Energy	Electric Transmission
Summit	48.0	Dominion	Natural Gas
Summit	48.6	Dominion	Natural Gas
Summit	48.8	Unknown	Unknown
Summit	48.9	Dominion	Natural Gas
Summit	48.9	First Energy	Electric Transmission
Summit	49.0	Marathon Petroleum Company, LLC	Product
Summit	49.5	Unknown	Electric Transmission
Summit	49.7	First Energy	Electric Transmission
Summit	49.9	Unknown	Electric Transmission
Summit	50.0	North Coast Gas	Natural Gas
Wayne	50.4	Unknown	Electric Transmission
Wayne	50.4	Dominion	Natural Gas
Wayne	50.7	Unknown	Electric Transmission
Wayne	51.3	First Energy	Electric Transmission
Wayne	51.3	First Energy	Electric Transmission
Wayne	51.8	Dominion	Natural Gas
Wayne	51.8	Somerset Gas Transmission Company, LLC	Natural Gas
Wayne	52.0	Somerset Gas Transmission Company, LLC	Natural Gas
Wayne	52.0	First Energy	Electric Transmission
Wayne	52.4	Dominion	Natural Gas
Wayne	52.6	First Energy	Electric Transmission
Wayne	52.6	Somerset Gas Transmission Company, LLC	Natural Gas
Wayne	52.7	Unknown	Unknown
Wayne	52.9	Dominion	Natural Gas
Wayne	53.5	Dominion	Natural Gas
Wayne	54.5	Dominion	Natural Gas
Wayne	54.7	Dominion	Natural Gas
Wayne	54.8	Unknown	Unknown
Wayne	55.2	Unknown	Unknown
Wayne	55.8	First Energy	Electric Transmission
Medina	56.8	Northeast Ohio Natural Gas Corporation	Natural Gas
Medina	57.2	Dominion	Natural Gas
Medina	57.3	Dominion	Natural Gas
Medina	57.6	First Energy	Electric Transmission
Medina	57.7	First Energy	Electric Transmission
Medina	57.7	Dominion	Natural Gas
Medina	59.7	Dominion	Natural Gas
Medina	60.1	Bass Energy	Natural Gas
Medina	60.1	Dominion	Natural Gas
Medina	60.2	S&S Energy Corp	Crude Oil

APPENDIX K-1 (cont'd)

Summary of Existing Utilities Crossed by the NGT Project

State, Facility, County	Approximate MP	Utility Owner(s)/Operator(s)	Utility Type(s)
Mainline (cont'd)			
Medina	60.3	Unknown	Electric Transmission
Medina	60.8	Mb Operation Company	Natural Gas
Medina	60.8	Bass Energy Company	Natural Gas
Medina	60.8	Bass Energy Company	Natural Gas
Medina	63.0	Mb Operating	Natural Gas
Medina	63.0	Mb Operating	Natural Gas
Medina	63.5	King Energy	Natural Gas
Medina	63.8	Unknown	Crude Oil
Medina	66.0	Unknown	Unknown
Medina	66.0	Unknown	Unknown
Medina	66.7	Gatherco Inc.	Natural Gas
Medina	68.8	First Energy	Electric Transmission
Medina	69.3	NiSource Inc.	Natural Gas
Medina	69.3	Unknown	Electric Transmission
Medina	69.7	Columbia Gas	Natural Gas
Medina	69.8	NiSource Inc.	Natural Gas
Medina	70.5	Medina Fuel Company	Unknown
Medina	70.6	Columbia Gas NiSource Inc.	Natural Gas
Medina	70.6	Columbia Gas NiSource Inc.	Natural Gas
Medina	70.9	Unknown	Electric Transmission
Medina	71.5	Unknown	Unknown
Medina	73.1	Aspire Energy	Natural Gas
Medina	73.4	Columbia Gas NiSource Inc.	Natural Gas
Medina	73.6	Columbia Gas NiSource Inc.	Natural Gas
Medina	73.8	NiSource Inc.	Natural Gas
Medina	75.0	Columbia Gas	Natural Gas
Medina	75.3	Columbia Gas	Natural Gas
Medina	75.4	NiSource Inc. Columbia	Natural Gas
Medina	75.9	NiSource Inc.	Natural Gas
Medina	75.9	Columbia Gas	Natural Gas
Medina	76.0	NiSource Inc.	Natural Gas
Medina	76.6	NiSource Inc.	Natural Gas
Medina	77.0	Unknown	Electric Transmission
Medina	77.4	NiSource Inc.	Natural Gas
Medina	77.5	First Energy	Electric Transmission
Medina	77.8	Sunoco, Inc. (Energy Transfer Partners, LP)	Natural Gas
Medina	78.6	NiSource Inc.	Natural Gas
Medina	79.4	NiSource Inc.	Natural Gas
Lorain	81.2	Unknown	Electric Transmission
Lorain	82.8	NiSource Inc.	Natural Gas
Lorain	82.9	NiSource Inc.	Natural Gas
Lorain	83.3	Magellan Midstream Partners Poet	Product
Lorain	83.7	First Energy	Electric Transmission
Lorain	83.9	NiSource Inc.	Natural Gas
Lorain	85.1	First Energy	Electric Transmission
Lorain	85.9	Unknown	Electric Transmission
Lorain	86.1	Unknown	Unknown

APPENDIX K-1 (cont'd)

Summary of Existing Utilities Crossed by the NGT Project

State, Facility, County	Approximate MP	Utility Owner(s)/Operator(s)	Utility Type(s)
Mainline (cont'd)			
Lorain	87.0	Unknown	Electric Transmission
Lorain	87.8	First Energy	Electric Transmission
Lorain	88.5	Dominion	Natural Gas
Lorain	88.5	Dominion	Natural Gas
Lorain	89.1	NiSource Inc.	Natural Gas
Lorain	89.5	NiSource Inc.	Natural Gas
Lorain	91.4	Dominion	Natural Gas
Lorain	92.7	Dominion	Natural Gas
Lorain	93.4	Unknown	Electric Transmission
Lorain	93.6	Dominion	Natural Gas
Lorain	94.3	Buckeye Partners, LP	Crude Oil
Lorain	94.6	Unknown	Electric Transmission
Lorain	96.4	Buckeye Partners NiSource Inc.	Natural Gas
Lorain	96.4	Columbia Gas NiSource Inc.	Natural Gas
Lorain	96.4	Buckeye Partners, LP	Crude Oil
Lorain	97.5	First Energy	Electric Transmission
Lorain	98.1	Buckeye Partners	Natural Gas
Lorain	98.2	Somerset Gas Transmission Company, LLC	Natural Gas
Lorain	98.3	Buckeye	Natural Gas
Lorain	98.3	North Coast Gas	Natural Gas
Lorain	98.6	Unknown	Natural Gas
Lorain	99.2	Unknown	Unknown
Lorain	99.6	NiSource Inc.	Natural Gas
Lorain	99.9	Unknown	Electric Transmission
Huron	104.2	NiSource Inc.	Natural Gas
Erie	107.1	Dominion	Natural Gas
Erie	108.3	NiSource Inc.	Natural Gas
Erie	112.1	Unknown	Electric Transmission
Erie	112.6	First Energy	Electric Transmission
Erie	112.6	AEP Ohio	Electric Transmission
Erie	113.0	AEP Ohio	Electric Transmission
Erie	113.1	First Energy	Electric Transmission
Erie	113.5	First Energy	Electric Transmission
Erie	113.6	AEP Ohio	Electric Transmission
Erie	116.2	NiSource Inc.	Natural Gas
Erie	116.7	Unknown	Electric Transmission
Erie	117.4	AEP Ohio	Electric Transmission
Erie	117.5	First Energy	Electric Transmission
Erie	118.1	Columbia Gas	Natural Gas
Erie	119.2	First Energy	Electric Transmission
Erie	119.2	AEP Ohio	Electric Transmission
Erie	122.6	AEP Ohio	Electric Transmission
Erie	122.6	First Energy	Electric Transmission
Erie	130.4	Dominion	Natural Gas
Sandusky	137.4	Unknown	Electric Transmission
Sandusky	139.6	Buckeye PL Co	Crude Oil
Sandusky	139.8	Unknown	Electric Transmission
Sandusky	140.7	Dominion	Natural Gas
Sandusky	140.7	East Ohio Gas Company	Natural Gas
Sandusky	147.0	Unknown	Electric Transmission

APPENDIX K-1 (cont'd)

Summary of Existing Utilities Crossed by the NGT Project

State, Facility, County	Approximate MP	Utility Owner(s)/Operator(s)	Utility Type(s)
Mainline (cont'd)			
Sandusky	147.5	Columbia Gas	Natural Gas
Sandusky	148.1	Columbia Gas NiSource Inc.	Natural Gas
Sandusky	149.3	Unknown	Electric Transmission
Sandusky	153.9	East Ohio Gas Company	Natural Gas
Sandusky	153.9	Dominion	Natural Gas
Sandusky	156.1	Dominion	Natural Gas
Sandusky	156.1	East Ohio Gas Company	Natural Gas
Sandusky	157.6	Kinder Morgan	NGL
Sandusky	157.7	East Ohio Gas Company	Natural Gas
Sandusky	157.7	Dominion	Natural Gas
Sandusky	158.2	Unknown	Electric Transmission
Sandusky	159.4	Columbia Gas NiSource Inc.	Natural Gas
Sandusky	160.3	Unknown	Electric Transmission
Sandusky	161.4	Unknown	Electric Transmission
Sandusky	163.0	Dominion	Natural Gas
Sandusky	163.2	North Coast Gas Somerset Gas Transmission Company, LLC	Natural Gas
Sandusky	163.7	Dominion	Natural Gas
Wood	164.5	Unknown	Electric Transmission
Wood	165.5	BP	Highly volatile liquid
Wood	165.5	Sunoco	Liquefied gas
Wood	165.5	Unknown	Electric Transmission
Wood	165.5	American Electric Power Company, Inc.	Electric Transmission
Wood	165.5	Unknown	Electric Transmission
Wood	165.5	BP	Product
Wood	168.4	Unknown	Electric Transmission
Wood	168.5	First Energy	Electric Transmission
Wood	169.4	Buckeye Partners, LP	NGL
Wood	170.5	Mid Valley Pipeline Sunoco, Inc. (Energy Transfer Partners, LP)	Crude Oil
Wood	170.5	Buckeye PL Co	Crude Oil
Wood	170.6	Columbia Gas NiSource Inc.	Natural Gas
Wood	174.2	Kinder Morgan	Natural Gas
Wood	175.2	First Energy	Electric Transmission
Wood	175.3	First Energy	Electric Transmission
Wood	175.6	Columbia Gas NiSource Inc.	Natural Gas
Wood	176.6	First Energy	Electric Transmission
Wood	177.1	First Energy	Electric Transmission
Wood	177.1	First Energy	Electric Transmission
Wood	181.0	Waterville Gas Company	Natural Gas
Lucas	182.1	Waterville Gas Company	Natural Gas
Lucas	185.1	First Energy	Electric Transmission
Henry	190.0	ANR Pipeline Transcanada	Natural Gas
Henry	190.0	First Energy	Electric Transmission
Fulton	192.5	First Energy	Electric Transmission
Fulton	193.7	NORCO Pipeline Buckeye Partners, LP	Natural Gas
Fulton	197.9	First Energy	Electric Transmission

APPENDIX K-1 (cont'd)

Summary of Existing Utilities Crossed by the NGT Project

State, Facility, County	Approximate MP	Utility Owner(s)/Operator(s)	Utility Type(s)
Ohio (cont'd)			
Fulton	199.1	First Energy	Electric Transmission
Fulton	200.7	First Energy	Electric Transmission
Fulton	201.5	First Energy	Electric Transmission
Fulton	201.8	First Energy	Electric Transmission
Fulton	202.2	Transcanada	Natural Gas
Fulton	204.9	First Energy	Electric Transmission
Fulton	205.3	First Energy	Electric Transmission
Fulton	207.2	Panhandle Eastern Southern Union Company (Energy Transfer Partners, LP)	Natural Gas
Fulton	207.3	Kinder Morgan	NGL
Fulton	207.8	First Energy	Electric Transmission
Michigan			
Lenawee	210.0	Kinder Morgan	NGL
Lenawee	212.8	Michigan Gas Integrys Energy Group, Inc.	Natural Gas
Lenawee	217.4	Hanover Marathon Petroleum Company, LLC	Crude Oil
Lenawee	218.8	Transcanada	Natural Gas
Lenawee	218.8	Transcanada	Natural Gas
Lenawee	218.9	CMS Energy	Electric Transmission
Lenawee	222.6	Panhandle Eastern Southern Union Company (Energy Transfer Partners, LP)	Natural Gas
Lenawee	229.0	ITC Holdings Corporation	Electric Transmission
Lenawee	229.8	Enbridge	Crude Oil
Monroe	236.3	MichCon	Natural Gas
Washtenaw	240.0	Ameritech	Unknown
Washtenaw	240.1	ITC Holdings Corporation	Electric Transmission
Washtenaw	241.4	ITC Holdings Corporation	Electric Transmission
Washtenaw	241.5	Transcanada	Crude Oil
Washtenaw	241.8	MichCon	Natural Gas
Washtenaw	242.8	Buckeye Partners, LP	NGL
Washtenaw	248.5	BP Pipeline	Crude Oil
Washtenaw	248.6	ITC Holdings Corporation	Electric Transmission
Washtenaw	248.7	BP Pipeline	Crude Oil
Washtenaw	248.9	BP Pipeline	Crude Oil
Washtenaw	249.2	Enbridge Wolverine Pipeline Company	Crude Oil
Washtenaw	250.2	MichCon	Natural Gas
Washtenaw	250.2	MichCon	Natural Gas
Washtenaw	251.0	MichCon	Natural Gas
Washtenaw	251.1	YCUA	Water
Washtenaw	251.1	DTE	Natural Gas
Washtenaw	251.1	Unknown	Electric Transmission
Washtenaw	251.4	DTE Energy	Natural Gas
Washtenaw	251.4	Unknown	Electric Transmission
Washtenaw	251.4	MichCon	Natural Gas
Washtenaw	252.0	MichCon (DTE)	Natural Gas
Washtenaw	252.0	Unknown	Electric Transmission
Washtenaw	252.4	Transcanada	Natural Gas
Washtenaw	252.5	Transcanada	Natural Gas
Washtenaw	252.8	DTE Energy (MichCon)	Natural Gas

APPENDIX K-1 (cont'd)

Summary of Existing Utilities Crossed by the NGT Project

State, Facility, County	Approximate MP	Utility Owner(s)/Operator(s)	Utility Type(s)
Michigan (cont'd)			
Washtenaw	253.7	MichCon	Natural Gas
Washtenaw	253.7	Unknown	Electric Transmission
Washtenaw	253.8	MichCon	Natural Gas
Washtenaw	254.0	DTE Energy	Natural Gas
Washtenaw	254.3	Transcanada	Natural Gas
Washtenaw	254.7	DTE Energy	Natural Gas
Washtenaw	255.0	MichCon	Natural Gas
Washtenaw	255.0	MichCon	Natural Gas

APPENDIX K-2

BUILDINGS WITHIN 50 FEET OF THE NGT PROJECT

APPENDIX K-2

Buildings within 50 Feet of the NGT Project

State, Facility, County	Parcel ID	Building Type	Approximate Milepost	Distance from [a] Pipeline Centerline (feet)	Distance from [a] Edge of Workspace (feet)	Direction (Right or Left) [b]	Occupied (Yes/No) [c]	Proposed Mitigation Measures [d]	Residential Construction Plan Number
OHIO									
TGP Interconnecting Pipeline									
Columbiana	OH-COL-003.0000	Shed	0.5	53	Inside	Right	No	Safety Fence	TGPI-P-8001_1D
Columbiana	OH-COL-003.0000	Shed	0.5	63	3	Right	No	Safety Fence	TGPI-P-8001_1D
Mainline									
Columbiana	OH-CO-013.0000	Garage	1.9	94	8	Right	No	Safety Fence	HANO-P-8001_1A
Columbiana	OH-CO-016.0010	Barn	2.1	173	48	Right	No	Safety Fence	HANO-P-8002_1A
Columbiana	OH-CO-031.0000	Shed	4.1	103	38	Left	No	Safety Fence	HANO-P-8003_1A
Columbiana	OH-CO-031.0000	Shed	4.1	107	42	Left	No	Safety Fence	HANO-P-8003_1A
Columbiana	OH-CO-055.0100/ OH-CO-055.0102	Dwelling	6.3	88	28	Right	Yes	Safety Fence	HANO-P-8004_1B
Columbiana	OH-CO-055.0100	Barn	6.3	97	37	Right	No	Safety Fence	HANO-P-8004_1B
Columbiana	OH-CO-055.0100	Pool	6.3	68	8	Right		Safety Fence	HANO-P-8004_1B
Columbiana	OH-CO-055.0001	Garage	6.4	94	29	Left	No	Safety Fence	HANO-P-8005_1B
Columbiana	OH-CO-055.0210	Garage	6.4	81	41	Left	No	Safety Fence	HANO-P-8005_1B
Columbiana	OH-CO-055.0210	Shed	6.4	88	48	Left	No	Safety Fence	HANO-P-8005_1B
Columbiana	OH-CO-055.0210	Dwelling	6.4	75	35	Left	Yes	Safety Fence	HANO-P-8005_1B
Columbiana	OH-CO-102.0000	Barn	11.4	59	11	Left	No	Safety Fence	HANO-P-8006_1A
Columbiana	OH-CO-106.0000	Barn	11.7	101	36	Left	No	Safety Fence	HANO-P-8007_1A
Stark	OH-ST-046.0000	Barn	18.4	97	32	Left	No	Safety Fence	HANO-P-8010_1A
Stark	OH-ST-046.0000	Garage	18.4	120	30	Left	No	Safety Fence	HANO-P-8010_1A
Stark	OH-ST-046.0000	Shed	18.4	86	21	Left	No	Safety Fence	HANO-P-8010_1A
Stark	OH-ST-046.0000	Shed	18.4	89	24	Left	No	Safety Fence	HANO-P-8010_1A
Stark	OH-ST-046.0000	Shed	18.4	91	26	Left	No	Safety Fence	HANO-P-8010_1A
Stark	OH-ST-069.0000	Barn	21.5	124	39	Right	No	Safety Fence	HANO-P-8011_1A
Stark	OH-ST-093.0000	Barn	26.3	42	7	Right	No	Safety Fence	HANO-P-8012_1A
Stark	OH-ST-093.0000	Animal Pen	26.3	69	16	Right	No	Safety Fence	HANO-P-8012_1A
Stark	OH-ST-093.0000	Dwelling	26.3	77	42	Right	Yes	Safety Fence	HANO-P-8012_1A
Stark	OH-ST-107.0000	Shed	27.9	62	Inside	Left	No	Safety Fence	HANO-P-8082_1A
Stark	OH-ST-110.0000	Barn	28.1	110	50	Right	No	Safety Fence	HANO-P-8013_1A
Stark	OH-ST-110.0000	Barn	28.1	89	18	Right	No	Safety Fence	HANO-P-8013_1A
Stark	OH-ST-110.0000	Dwelling	28.2	132	27	Right	Yes	Safety Fence	HANO-P-8013_1A
Stark	OH-ST-123.0000	Barn	29.9	53	Inside	Left	No	Safety Fence	HANO-P-8014_1A
Stark	OH-ST-123.0002	Barn	30.3	107	44	Left	No	Safety Fence	HANO-P-8015_1B
Stark	OH-ST-123.0002	Dwelling	30.3	129	36	Left	Yes	Safety Fence	HANO-P-8015_1B

APPENDIX K-2 (cont'd)

Buildings within 50 Feet of the NGT Project

State, Facility, County	Parcel ID	Building Type	Approximate Milepost	Distance from [a] Pipeline Centerline (feet)	Distance from [a] Edge of Workspace (feet)	Direction (Right or Left) [b]	Occupied (Yes/No) [c]	Proposed Mitigation Measures [d]	Residential Construction Plan Number
Mainline (cont'd)									
Stark	OH-ST-136.0005	Barn	32.3	87	47	Left	No	Safety Fence	HANO-P-8016_1A
Stark	OH-ST-136.0007/ OH-ST-136.0000	Barn	32.3	81	41	Left	No	Safety Fence	HANO-P-8016_1A
Stark	OH-ST-138.0000	Dwelling	32.6	95	35	Right	Yes	Safety Fence	HANO-P-8017_1A
Stark	OH-ST-138.0000	Barn	32.7	88	28	Right	No	Safety Fence	HANO-P-8017_1A
Stark	OH-ST-148.0000	Commercial Building	32.7	70	30	Left	Yes	Safety Fence	HANO-P-8018_1A
Stark	OH-ST-149.0001	Shed	32.8	114	29	Right	No	Safety Fence	HANO-P-8019_1A
Stark	OH-ST-149.0001	Shed	32.8	101	16	Right	No	Safety Fence	HANO-P-8019_1A
Stark	OH-ST-151.0001	Shed	32.8	128	43	Right	No	Safety Fence	HANO-P-8019_1A
Stark	OH-ST-153.0001	Garage	32.9	87	27	Right	No	Safety Fence	HANO-P-8019_1A
Stark	OH-ST-153.0001	Shed	32.9	103	43	Right	No	Safety Fence	HANO-P-8019_1A
Stark	OH-ST-153.0001	Shed	32.9	105	45	Right	No	Safety Fence	HANO-P-8019_1A
Stark	OH-ST-154.0000	Dwelling	32.9	69	29	Left	Yes	Safety Fence	HANO-P-8020_1A
Stark	OH-ST-155.0000	Dwelling	32.9	84	39	Left	Yes	Safety Fence	HANO-P-8020_1A
Stark	OH-ST-169.0000	Commercial Building	33.1	40	10	Left	Yes	Safety Fence	HANO-P-8021_1A
Stark	OH-ST-166.0000	Dwelling	33.2	84	24	Right	Yes	Safety Fence	HANO-P-8021_1A
Stark	OH-ST-172.0000	Commercial Building	33.2	41	12	Left	Yes	Safety Fence	HANO-P-8022_1A
Stark	OH-ST-174.0000	Dwelling	33.5 R	72	37	Right	Yes	Safety Fence	HANO-P-8023_1A
Summit	OH-SU-001.0000	Shed	34.3	169	34	Right	No	Safety Fence	HANO-P-8024_1A
Summit	OH-SU-006.0000/ OH-SU-007.0000	Shed	34.6	131	32	Left	No	Safety Fence	HANO-P-8025_1A
Summit	OH-SU-006.0000/ OH-SU-007.0000	Shed	34.6	136	43	Left	No	Safety Fence	HANO-P-8025_1A
Summit	OH-SU-013.0000	Dwelling	35	73	8	Left	Yes	Safety Fence	HANO-P-8026_1A
Summit	OH-SU-030.0000	Garage	36.7 R	54	11	Left	No	Safety Fence	HANO-P-8028_1A
Summit	OH-SU-029.0010	Dwelling	36.8 R	45	10	Right	Yes	Safety Fence	HANO-P-8028_1A
Summit	OH-SU-029.0010	Garage	36.8 R	55	12	Right	No	Safety Fence	HANO-P-8028_1A
Summit	OH-SU-030.0000	Dwelling	36.8 R	45	110	Left	Yes	Safety Fence	HANO-P-8028_1A
Summit	OH-SU-037.0000/ OH-SU-034.0000/ OH-SU-034.0001	Tanks	37.3	77	37	Left	No	Safety Fence	HANO-P-8029_1A
Summit	OH-SU-035.0000	Dwelling	37.3	95	35	Right	Yes	Safety Fence	HANO-P-8029_1A

APPENDIX K-2 (cont'd)

Buildings within 50 Feet of the NGT Project

State, Facility, County	Parcel ID	Building Type	Approximate Milepost	Distance from [a] Pipeline Centerline (feet)	Distance from [a] Edge of Workspace (feet)	Direction (Right or Left) [b]	Occupied (Yes/No) [c]	Proposed Mitigation Measures [d]	Residential Construction Plan Number
Mainline (cont'd)									
Summit	OH-SU-037.0000	Dwelling	37.3	82	37	Left	Yes	Safety Fence	HANO-P-8029_1A
Summit	OH-SU-041.0000	Dwelling	37.8	69	9	Right	Yes	Safety Fence	HANO-P-8030_1A
Summit	OH-SU-042.0000	Garage	37.8	81	30	Left	No	Safety Fence	HANO-P-8031_1A
Summit	OH-SU-042.0000	Dwelling	37.8	125	35	Left	Yes	Safety Fence	HANO-P-8031_1A
Summit	OH-SU-045.0000	Garage	37.9	67	Inside	Right	No	Safety Fence	HANO-P-8030_1A
Summit	OH-SU-044.0001	Dwelling	37.9	86	10	Left	Yes	Safety Fence	HANO-P-8031_1A
Summit	OH-SU-061.0000	Dwelling	39	158	48	Right	Yes	Safety Fence	HANO-P-8032_1B
Summit	OH-SU-061.0000	Garage	39	97	37	Right	No	Safety Fence	HANO-P-8032_1B
Summit	OH-SU-066.0000	Dwelling	39.6	101	41	Right	Yes	Safety Fence	HANO-P-8033_1A
Summit	OH-SU-069.0001	Dwelling	39.8 R	139	49	Left	Yes	Safety Fence	HANO-P-8034_1A
Summit	OH-SU-072.0510	Shed	40.1 R	68	18	Right	No	Safety Fence	HANO-P-8070_1A
Summit	OH-SU-072.0510	Shed	40.2 R	62	3	Right	No	Safety Fence	HANO-P-8070_1A
Summit	OH-SU-072.0510	Dwelling	40.2 R	83	23	Right	Yes	Safety Fence	HANO-P-8070_1A
Summit	OH-SU-078.0200	Dwelling	40.2 R	59	On Edge	Right	Yes	Safety Fence	HANO-P-8070_1A
Summit	OH-SU-078.0100	Garage	40.2 R	88	18	Left	No	Safety Fence	HANO-P-8071_1A
Summit	OH-SU-078.0100	Dwelling	40.2 R	61	21	Left	Yes	Safety Fence	HANO-P-8071_1A
Summit	OH-SU-081.0000	Shed	40.8 R	123	38	Right	No	Safety Fence	HANO-P-8072_1A
Summit	OH-SU-081.0000	Shed	40.8 R	119	34	Right	No	Safety Fence	HANO-P-8072_1A
Summit	OH-SU-083.0100	Dwelling	41.2 R	34	19	Left	Yes	Safety Fence	HANO-P-8036_1A
Summit	OH-SU-097.0000	Barn	42	128	43	Right	No	Safety Fence	HANO-P-8037_1A
Summit	OH-SU-097.0000	Barn	42.1	97	12	Right	No	Safety Fence	HANO-P-8037_1A
Summit	OH-SU-097.0000	Dwelling	42.1	107	34	Right	Yes	Safety Fence	HANO-P-8037_1A
Summit	OH-SU-099.0010	Dwelling	42.1	137	47	Left	Yes	Safety Fence	HANO-P-8038_1A
Summit	OH-SU-099.0010	Barn	42.1	136	46	Left	No	Safety Fence	HANO-P-8038_1A
Summit	OH-SU-110.0000	Dwelling	42.7	118	42	Right	Yes	Safety Fence	HANO-P-8039_1A
Summit	OH-SU-111.0000	Barn	42.8	123	38	Right	No	Safety Fence	HANO-P-8039_1A
Summit	OH-SU-132.0001	Garage	43.6 R	78	25	Right	No	Safety Fence	HANO-P-8074_1B
Summit	OH-SU-132.0001	Dwelling	43.6 R	73	20	Right	Yes	Safety Fence	HANO-P-8074_1B
Summit	OH-SU-135.0400	Barn	43.6 R	55	15	Left	No	Safety Fence	HANO-P-8073_1B
Summit	OH-SU-135.0400	Shed	43.6 R	65	25	Left	No	Safety Fence	HANO-P-8073_1B
Summit	OH-SU-132.0001	Barn	43.7 R	124	14	Right	No	Safety Fence	HANO-P-8074_1B
Summit	OH-SU-135.0300	Dwelling	43.7 R	63	23	Left	Yes	Safety Fence	HANO-P-8073_1B
Summit	OH-SU-133.0003	Garage	43.7 R	81	21	Right	No	Safety Fence	HANO-P-8074_1B
Summit	OH-SU-133.0003	Dwelling	43.7 R	65	30	Right	Yes	Safety Fence	HANO-P-8074_1B

APPENDIX K-2 (cont'd)

Buildings within 50 Feet of the NGT Project

State, Facility, County	Parcel ID	Building Type	Approximate Milepost	Distance from [a] Pipeline Centerline (feet)	Distance from [a] Edge of Workspace (feet)	Direction (Right or Left) [b]	Occupied (Yes/No) [c]	Proposed Mitigation Measures [d]	Residential Construction Plan Number
Mainline (cont'd)									
Summit	OH-SU-137.0010	Dwelling	44.4	106	46	Right	Yes	Safety Fence	HANO-P-8042_1B
Summit	OH-SU-137.0010	Barn	44.4	99	39	Right	No	Safety Fence	HANO-P-8042_1B
Summit	OH-SU-137.0010	Barn	44.4	83	23	Right	No	Safety Fence	HANO-P-8042_1B
Summit	OH-SU-145.0000	Dwelling	44.9	90	30	Right	Yes	Safety Fence	HANO-P-8043_1A
Summit	OH-SU-145.0000	Garage	45	102	42	Right	No	Safety Fence	HANO-P-8043_1A
Summit	OH-SU-149.0001	Barn	45.4	104	46	Right	No	Safety Fence	HANO-P-8045_1A
Summit	OH-SU-153.0000	Barn	45.6	83	48	Right	No	Safety Fence	HANO-P-8046_1A
Summit	OH-SU-157.0000	Dwelling	46.2	84	43	Left	Yes	Safety Fence	HANO-P-8047_1A
Summit	OH-SU-161.0000	Barn	46.4	76	16	Right	No	Safety Fence	HANO-P-8048_1A
Summit	OH-SU-189.0001	Barn	48.8	85	25	Right	No	Safety Fence	HANO-P-8049_1B
Summit	OH-SU-189.0001	Barn	48.8	101	17	Right	No	Safety Fence	HANO-P-8049_1B
Summit	OH-SU-191.0010	Dwelling	48.8	156	21	Right	Yes	Safety Fence	HANO-P-8049_1B
Summit	OH-SU-193.0010	Shed	49.3	76	14	Right	No	Safety Fence	HANO-P-8050_1A
Summit	OH-SU-193.0010	Dwelling	49.4	80	20	Right	Yes	Safety Fence	HANO-P-8050_1A
Summit	OH-SU-195.0000	Dwelling	49.4	79	44	Right	Yes	Safety Fence	HANO-P-8051_1A
Summit	OH-SU-195.0000	Garage	49.4	59	24	Right	No	Safety Fence	HANO-P-8051_1A
Summit	OH-SU-195.0000	Shed	49.4	59	24	Right	No	Safety Fence	HANO-P-8051_1A
Summit	OH-SU-195.0000	Barn	49.5	116	6	Right	No	Safety Fence	HANO-P-8051_1A
Summit	OH-SU-198.0006	Garage	49.8 R	83	23	Right	No	Safety Fence	HANO-P-8075_1A
Summit	OH-SU-198.0006	Barn	49.8 R	71	11	Right	No	Safety Fence	HANO-P-8075_1A
Summit	OH-SU-198.0009	Shed	49.8 R	82	22	Right	No	Safety Fence	HANO-P-8075_1A
Summit	OH-SU-199.0002	Dwelling	49.8 R	89	29	Right	Yes	Safety Fence	HANO-P-8075_1A
Summit	OH-SU-200.0001	Dwelling	49.9 R	80	20	Right	Yes	Safety Fence	HANO-P-8076_1A
Summit	OH-SU-203.0000	Barn	50.2	107	47	Right	No	Safety Fence	HANO-P-8052_1A
Summit	OH-SU-206.0001	Barn	50.3	80	20	Right	No	Safety Fence	HANO-P-8053_1B
Summit	OH-SU-206.0010	Shed	50.3	76	16	Right	No	Safety Fence	HANO-P-8053_1B
Summit	OH-SU-206.0000	Dwelling	50.3	92	43	Left	Yes	Safety Fence	HANO-P-8053_1B
Wayne	OH-WA-008.0000	Barn	51.4 R	91	26	Left	No	Safety Fence	HANO-P-8054_1A
Wayne	OH-WA-014.0001	Dwelling	52.0 R	88	23	Left	Yes	Safety Fence	HANO-P-8055_1B
Wayne	OH-WA-020.0000	Dwelling	52.9 R	114	24	Left	Yes	Safety Fence	HANO-P-8077_1A
Wayne	OH-WA-020.0000	Pool	52.9 R	81	Inside	Left	No	Safety Fence	HANO-P-8077_1A
Wayne	OH-WA-024.0010	Dwelling	53	139	49	Left	Yes	Safety Fence	HANO-P-8056_1A
Wayne	OH-WA-026.0002	Dwelling	53.3	74	34	Left	Yes	Safety Fence	HANO-P-8057_1A
Wayne	OH-WA-026.0006	Dwelling	53.3	84	44	Left	Yes	Safety Fence	HANO-P-8057_1A

APPENDIX K-2 (cont'd)

Buildings within 50 Feet of the NGT Project

State, Facility, County	Parcel ID	Building Type	Approximate Milepost	Distance from [a] Pipeline Centerline (feet)	Distance from [a] Edge of Workspace (feet)	Direction (Right or Left) [b]	Occupied (Yes/No) [c]	Proposed Mitigation Measures [d]	Residential Construction Plan Number
Mainline (cont'd)									
Wayne	OH-WA-026.0020	Garage	53.5	129	39	Left	No	Safety Fence	HANO-P-8058_1A
Wayne	OH-WA-030.0101	Barn	54	91	23	Left	No	Safety Fence	HANO-P-8059_1A
Wayne	OH-WA-030.0101	Dwelling	54	37	22	Left	Yes	Safety Fence	HANO-P-8059_1A
Wayne	OH-WA-030.0103	Dwelling	54	68	33	Right	Yes	Safety Fence	HANO-P-8059_1A
Wayne	OH-WA-033.0400	Barn	54.3 R	79	19	Right	No	Safety Fence	HANO-P-8078_1A
Wayne	OH-WA-046.0000	Commercial Building	55.7	85	25	Right	Yes	Safety Fence	HANO-P-8062_1A
Wayne	OH-WA-044.0000	Dwelling	55.7	55	15	Left	Yes	Safety Fence	HANO-P-8062_1A
Wayne	OH-WA-053.0000	Dwelling	56.5	87	27	Right	Yes	Safety Fence	HANO-P-8063_1A
Wayne	OH-WA-054.0000	Barn	56.5	106	41	Left	No	Safety Fence	HANO-P-8063_1A
Wayne	OH-WA-057.0004	Garage	57.2 R	42	27	Left	No	Safety Fence	HANO-P-8079_1A
Wayne	OH-WA-057.0200	Trailer	57.2 R	25	10	Left	No	Safety Fence	HANO-P-8079_1A
Wayne	OH-WA-057.0400	Dwelling	57.2 R	92	10	Right	Yes	Safety Fence	HANO-P-8079_1A
Wayne	OH-WA-057.0001	Commercial Building	57.4	113	33	Right	Yes	Safety Fence	HANO-P-8080_1A
Medina	OH-ME-018.0000	Dwelling	59.3	89	29	Right	Yes	Safety Fence	HANO-P-8081_1A
Medina	OH-ME-071.0000	Animal Pen	65.4	102	17	Right	No	Safety Fence	WADS-P-8001_1A
Medina	OH-ME-071.0000	Barn	65.4	125	40	Right	No	Safety Fence	WADS-P-8001_1A
Medina	OH-ME-100.0000	Barn	68	61	21	Left	No	Safety Fence	WADS-P-8002_1A
Medina	OH-ME-107.0000	Dwelling	68.3	37	2	Right	Yes	Safety Fence	WADS-P-8004_1A
Medina	OH-ME-107.0000	Garage	68.3	75	40	Right	No	Safety Fence	WADS-P-8004_1A
Medina	OH-ME-108.0000	Shed	68.3	80	45	Right	No	Safety Fence	WADS-P-8004_1A
Medina	OH-ME-111.0002	Shed	68.3	36	21	Left	No	Safety Fence	WADS-P-8003_1A
Medina	OH-ME-112.0001	Shed	68.4	119	25	Left	No	Safety Fence	WADS-P-8003_1A
Medina	OH-ME-116.0000	Barn	68.8	43	3	Left	No	Safety Fence	WADS-P-8005_1A
Medina	OH-ME-116.0000	Commercial Building	68.8	140	44	Left	Yes	Safety Fence	WADS-P-8005_1A
Medina	OH-ME-122.0400	Dwelling	69.3 R	105	40	Left	Yes	Safety Fence	WADS-P-8050_1A
Medina	OH-ME-130.0060	Shed	69.4 R	42	7	Right	No	Safety Fence	WADS-P-8050_1A
Medina	OH-ME-144.0010	Dwelling	71.9	153	18	Right	Yes	Safety Fence	WADS-P-8007_1A
Medina	OH-ME-147.0000	Barn	71.9	91	6	Right	No	Safety Fence	WADS-P-8007_1A
Medina	OH-ME-147.0000	Barn	72	90	5	Right	No	Safety Fence	WADS-P-8007_1A
Medina	OH-ME-150.0000	Barn	72.6	78	18	Right	No	Safety Fence	WADS-P-8008_1A
Medina	OH-ME-149.0000	Dwelling	72.6	102	33	Left	Yes	Safety Fence	WADS-P-8009_1A

APPENDIX K-2 (cont'd)

Buildings within 50 Feet of the NGT Project

State, Facility, County	Parcel ID	Building Type	Approximate Milepost	Distance from [a] Pipeline Centerline (feet)	Distance from [a] Edge of Workspace (feet)	Direction (Right or Left) [b]	Occupied (Yes/No) [c]	Proposed Mitigation Measures [d]	Residential Construction Plan Number
Mainline (cont'd)									
Medina	OH-ME-150.0000	Garage	72.6	70	10	Right	No	Safety Fence	WADS-P-8008_1A
Medina	OH-ME-149.0000	Barn	72.6	86	46	Left	No	Safety Fence	WADS-P-8009_1A
Medina	OH-ME-151.0000	Barn	72.6	43	8	Right	No	Safety Fence	WADS-P-8008_1A
Medina	OH-ME-153.0000	Garage	72.7	90	50	Left	No	Safety Fence	WADS-P-8009_1A
Medina	OH-ME-153.0000	Barn	72.7	88	50	Left	No	Safety Fence	WADS-P-8009_1A
Medina	OH-ME-153.0000	Barn	72.7	50	10	Left	No	Safety Fence	WADS-P-8009_1A
Medina	OH-ME-153.0000	Barn	72.7	74	48	Left	No	Safety Fence	WADS-P-8009_1A
Medina	OH-ME-153.0000	Shed	72.7	60	20	Left	No	Safety Fence	WADS-P-8009_1A
Medina	OH-ME-161.0000	Shed	73.6	153	18	Right	No	Safety Fence	WADS-P-8010_1A
Medina	OH-ME-165.0000	Garage	73.9	84	24	Right	No	Safety Fence	WADS-P-8011_1A
Medina	OH-ME-165.0000	Shed	73.9	29	Inside	Right	No	Safety Fence	WADS-P-8011_1A
Medina	OH-ME-165.0000	Barn	73.9	46	Inside	Right	No	Safety Fence	WADS-P-8011_1A
Medina	OH-ME-181.0010	Dwelling	76.4	148	38	Right	Yes	Safety Fence	WADS-P-8012_1A
Lorain	OH-LO-002.0000	Grain Bin	81	109	49	Right	No	Safety Fence	WADS-P-8013_1A
Lorain	OH-LO-002.0000	Shed	81	93	33	Right	No	Safety Fence	WADS-P-8013_1A
Lorain	OH-LO-015.0000	Dwelling	82.6	90	30	Right	Yes	Safety Fence	WADS-P-8014_1A
Lorain	OH-LO-023.0000	Wood Deck	83.9	60	20	Left	No	Safety Fence	WADS-P-8015_1A
Lorain	OH-LO-027.0000	Barn	84.6	132	50	Right	No	Safety Fence	WADS-P-8016_1A
Lorain	OH-LO-031.0001	Barn	84.8	129	44	Right	No	Safety Fence	WADS-P-8017_1A
Lorain	OH-LO-031.0001	Barn	84.8	122	37	Right	No	Safety Fence	WADS-P-8017_1A
Lorain	OH-LO-050.0000	Shed	88	65	25	Left	No	Safety Fence	WADS-P-8018_1A
Lorain	OH-LO-060.0000	Dwelling	89.2	152	42	Right	Yes	Safety Fence	WADS-P-8019_1B
Lorain	OH-LO-065.0110	Shed	90.4 R	83	23	Right	No	Safety Fence	WADS-P-8047_1A
Lorain	OH-LO-083.0000	Shed	93.4	59	Inside	Right	No	Safety Fence	WADS-P-8020_1A
Lorain	OH-LO-083.0000	Shed	93.4	78	Inside	Right	No	Safety Fence	WADS-P-8020_1A
Lorain	OH-LO-083.0000	Shed	93.5	48	Inside	Right	No	Safety Fence	WADS-P-8020_1A
Lorain	OH-LO-086.000/ OH-LO-087.0000	Barn	94.5	75	35	Left	No	Safety Fence	WADS-P-8021_1A
Lorain	OH-LO-086.000/ OH-LO-087.0000	Commercial Building	94.6	79	39	Left	Yes	Safety Fence	WADS-P-8021_1A
Lorain	OH-LO-086.000/ OH-LO-087.0000	Dwelling	94.6	62	22	Left	Yes	Safety Fence	WADS-P-8021_1A
Lorain	OH-LO-090.0000	Dwelling	94.6	84	24	Right	Yes	Safety Fence	WADS-P-8022_1A
Lorain	OH-LO-090.0000	Gazebo	94.6	71	11	Right	No	Safety Fence	WADS-P-8022_1A

APPENDIX K-2 (cont'd)

Buildings within 50 Feet of the NGT Project

State, Facility, County	Parcel ID	Building Type	Approximate Milepost	Distance from [a] Pipeline Centerline (feet)	Distance from [a] Edge of Workspace (feet)	Direction (Right or Left) [b]	Occupied (Yes/No) [c]	Proposed Mitigation Measures [d]	Residential Construction Plan Number
Mainline (cont'd)									
Lorain	OH-LO-090.0000	Shed	94.7	102	43	Right	No	Safety Fence	WADS-P-8022_1A
Lorain	OH-LO-092.0002	Shed	94.8	67	27	Left	No	Safety Fence	WADS-P-8023_1A
Lorain	OH-LO-092.0003	Shed	94.9	65	25	Left	No	Safety Fence	WADS-P-8023_1A
Lorain	OH-LO-092.0004	Shed	94.9	62	22	Left	No	Safety Fence	WADS-P-8023_1A
Lorain	OH-LO-092.0007	Shed	94.9	68	28	Left	No	Safety Fence	WADS-P-8023_1A
Lorain	OH-LO-092.0008	Shed	94.9	73	33	Left	No	Safety Fence	WADS-P-8023_1A
Lorain	OH-LO-093.0006	Shed	95.1	78	38	Left	No	Safety Fence	WADS-P-8024_1A
Lorain	OH-LO-093.0007	Shed	95.1	79	39	Left	No	Safety Fence	WADS-P-8024_1A
Lorain	OH-LO-093.0009	Shed	95.1	69	29	Left	No	Safety Fence	WADS-P-8024_1A
Lorain	OH-LO-096.0000/ OH-LO-096.0001	Shed	95.7	45	5	Left	No	Safety Fence	WADS-P-8025_1A
Lorain	OH-LO-107.0002	Garage	96.8	106	46	Right	No	Safety Fence	WADS-P-8026_1A
Lorain	OH-LO-115.0100	Dwelling	98.5 R	98	38	Right	Yes	Safety Fence	WADS-P-8049_1A
Lorain	OH-LO-115.0100	Garage	98.5 R	76	16	Right	No	Safety Fence	WADS-P-8049_1A
Lorain	OH-LO-122.0000	Barn	99.2 R	88	11	Right	No	Safety Fence	WADS-P-8029_1A
Lorain	OH-LO-128.0000	Barn	100.5	87	47	Left	No	Safety Fence	WADS-P-8030_1A
Erie	OH-ER-059.0100	Dwelling	112.1 R	131	41	Left	Yes	Safety Fence	WADS-P-8048_1A
Erie	OH-ER-059.0100	Dwelling	112.1 R	65	19	Left	Yes	Safety Fence	WADS-P-8048_1A
Erie	OH-ER-063.0000	Barn	113.1	143	28	Left	No	Safety Fence	WADS-P-8032_1A
Erie	OH-ER-063.0000	Barn	113.1 R	164	49	Left	No	Safety Fence	WADS-P-8032_1A
Erie	OH-ER-078.0000	Shed	115.9 R	94	9	Right	No	Safety Fence	WADS-P-8033_1B
Erie	OH-ER-078.0000	Barn	115.9 R	179	44	Right	No	Safety Fence	WADS-P-8033_1B
Erie	OH-ER-078.0000	Barn	116.0 R	34	Inside	Right	No	Safety Fence	WADS-P-8033_1B
Erie	OH-ER-078.0000	Barn	116.0 R	66	Inside	Right	No	Safety Fence	WADS-P-8033_1A
Erie	OH-ER-094.0000	Commercial Building	118.1	140	30	Right	Yes	Safety Fence	WADS-P-8034_1B
Erie	OH-ER-097.0000	Barn	118.5	34	Inside	Right	No	Safety Fence	WADS-P-8035_1A
Erie	OH-ER-099.0000	Garage	119.2	157	42	Left	No	Safety Fence	WADS-P-8036_1A
Erie	OH-ER-135.0000	Shed	125.8	77	17	Right	No	Safety Fence	WADS-P-8037_1A
Erie	OH-ER-135.0001	Dwelling	125.8	131	32	Right	Yes	Safety Fence	WADS-P-8037_1A
Erie	OH-ER-136.0000	Dwelling	125.8	74	34	Left	Yes	Safety Fence	WADS-P-8038_1A
Erie	OH-ER-139.0000	Barn	125.8	62	2	Right	No	Safety Fence	WADS-P-8039_1A
Erie	OH-ER-139.0000	Barn	125.9	99	5	Right	No	Safety Fence	WADS-P-8039_1A
Erie	OH-ER-152.0001	Dwelling	127.7	107	22	Right	Yes	Safety Fence	WADS-P-8040_1A

APPENDIX K-2 (cont'd)

Buildings within 50 Feet of the NGT Project

State, Facility, County	Parcel ID	Building Type	Approximate Milepost	Distance from [a] Pipeline Centerline (feet)	Distance from [a] Edge of Workspace (feet)	Direction (Right or Left) [b]	Occupied (Yes/No) [c]	Proposed Mitigation Measures [d]	Residential Construction Plan Number
Mainline (cont'd)									
Erie	OH-ER-152.0010	Dwelling	127.7	160	48	Left	Yes	Safety Fence	WADS-P-8041_1A
Erie	OH-ER-152.0001	Pool	127.7	126	41	Right	No	Safety Fence	WADS-P-8040_1A
Erie	OH-ER-152.0000	Shed	127.7	103	18	Right	No	Safety Fence	WADS-P-8040_1A
Erie	OH-ER-160.0010	Barn	128.9	175	30	Right	No	Safety Fence	WADS-P-8042_1A
Erie	OH-ER-160.0010	Silo	128.9	383	24	Right	No	Safety Fence	WADS-P-8042_1A
Sandusky	OH-SA-014.0000	Dwelling	133.5	73	33	Left	Yes	Safety Fence	WADS-P-8043_1A
Sandusky	OH-SA-085.0000	Barn	145.2	109	29	Left	No	Safety Fence	CLYD-P-8001_1B
Sandusky	OH-SA-120.0010	Barn	150.2	110	25	Right	No	Safety Fence	CLYD-P-8003_1B
Sandusky	OH-SA-120.0010	Shed	150.2	86	On Edge	Right	No	Safety Fence	CLYD-P-8003_1B
Sandusky	OH-SA-120-0010	Dwelling	150.2	132	47	Right	Yes	Safety Fence	CLYD-P-8003_1B
Sandusky	OH-SA-120.0010	Shed	150.2	127	42	Right	No	Safety Fence	CLYD-P-8003_1B
Sandusky	OH-SA-156.0002	Shed	155.1	113	20	Right	No	Safety Fence	CLYD-P-8004_1B
Sandusky	OH-SA-159.0030	Barn	155.9	98	12	Right	No	Safety Fence	CLYD-P-8006_1B
Sandusky	OH-SA-159.0020	Dwelling	155.9	134	44	Left	No	Safety Fence	CLYD-P-8005_1B
Sandusky	OH-SA-159.0020	Dwelling	155.9	107	17	Left	Yes	Safety Fence	CLYD-P-8005_1B
Sandusky	OH-SA-159.0020	Shed	155.9	116	26	Left	No	Safety Fence	CLYD-P-8005_1B
Sandusky	OH-SA-170.0000	Dwelling	157.7	169	34	Right	Yes	Safety Fence	CLYD-P-8008_1B
Sandusky	OH-SA-217.0010	Dwelling	163.7	101	15	Right	Yes	Safety Fence	CLYD-P-8009_1A
Wood	OH-WO-028.0001	Garage	167.2	153	43	Right	No	Safety Fence	CLYD-P-8010_1B
Wood	OH-WO-048.0000	Barn	170.7	118	37	Right	No	Safety Fence	CLYD-P-8011_1A
Wood	OH-WO-048.0000	Shed	170.7	111	49	Right	No	Safety Fence	CLYD-P-8011_1A
Lucas	OH-LC-055.0003	Shed	187.9	84	24	Right	No	Safety Fence	WATE-P-8001_1A
Henry	OH-HY-001.0000	Barn	189.3	97	29	Left	No	Safety Fence	WATE-P-8002_1A
Fulton	OH-FU-014.0030	Shed	193.5	36	Inside	Right	No	Safety Fence	WATE-P-8003_1A
Fulton	OH-FU-014.0030	Shed	193.5	42	Inside	Right	No	Safety Fence	WATE-P-8003_1A
Fulton	OH-FU-014.0030	Shed	193.5	39	Inside	Right	No	Safety Fence	WATE-P-8003_1A
Fulton	OH-FU-015.0001	Garage	193.8	159	45	Left	No	Safety Fence	WATE-P-8005_1B
Fulton	OH-FU-015.0001	Dwelling	193.8	144	17	Left	Yes	Safety Fence	WATE-P-8005_1B
Fulton	OH-FU-015.0000	Barn	193.8	162	27	Right	No	Safety Fence	WATE-P-8004_1B
Fulton	OH-FU-019.0000	Barn	194.8	117	32	Left	No	Safety Fence	WATE-P-8006_1A
MICHIGAN									
Monroe	MI-MR-019.0000	Barn	232.4	65	25	Left	No	Safety Fence	WATE-P-8007_1A
Monroe	MI-MR-019.0001	Dwelling	232.4	165	50	Left	Yes	Safety Fence	WATE-P-8007_1A
Monroe	MI-MR-028.0000	Shed	233.1	105	45	Right	No	Safety Fence	WATE-P-8008_1B

APPENDIX K-2 (cont'd)

Buildings within 50 Feet of the NGT Project

State, Facility, County	Parcel ID	Building Type	Approximate Milepost	Distance from [a] Pipeline Centerline (feet)	Distance from [a] Edge of Workspace (feet)	Direction (Right or Left) [b]	Occupied (Yes/No) [c]	Proposed Mitigation Measures [d]	Residential Construction Plan Number
MICHIGAN (cont'd)									
Washtenaw	MI-WA-027.0000	Barn	241.1	55	14	Left	No	Safety Fence	WATE-P-8010_1B
Washtenaw	MI-WA-030.0001	Shed	241.6	77	37	Left	No	Safety Fence	WATE-P-8011_1A
Washtenaw	MI-WA-035.0000	Barn	242.4	93	8	Right	No	Safety Fence	WATE-P-8012_1A
Washtenaw	MI-WA-069.0001	Shed	247.5	134	49	Right	No	Safety Fence	WATE-P-8013_1A
Washtenaw	MI-WA-074.0000	Shed	247.9	100	15	Right	No	Safety Fence	WATE-P-8014_1A
Washtenaw	MI-WA-075.0010	Dwelling	247.9	123	44	Left	Yes	Safety Fence	WATE-P-8015_1A
Washtenaw	MI-WA-106.0000	Commercial Building	250.2	62	1	Right	Yes	Safety Fence	WATE-P-8016_1B
Washtenaw	MI-WA-118.0000	Dwelling	252	77	37	Left	Yes	Safety Fence	WATE-P-8017_1B
Washtenaw	MI-WA-118.0000	Shed	252	41	On Edge	Left	No	Safety Fence	WATE-P-8017_1B
Washtenaw	MI-WA-119.0010	Dwelling	252	66	26	Left	Yes	Safety Fence	WATE-P-8017_1B
Washtenaw	MI-WA-119.0010	Shed	252.1	29	Inside	Left	No	Safety Fence	WATE-P-8017_1B
Washtenaw	MI-WA-119.0020	Shed	252.1	39	On Edge	Left	No	Safety Fence	WATE-P-8017_1B
Washtenaw	MI-WA-119.0020	Shed	252.1	90	50	Left	No	Safety Fence	WATE-P-8017_1B
Washtenaw	MI-WA-120.0000	Commercial Building	252.2	66	31	Right	Yes	Safety Fence	WATE-P-8018_1A
Washtenaw	MI-WA-123.0001	Commercial Building	252.2	172	45	Right	No	Safety Fence	WATE-P-8018_1A
Washtenaw	MI-WA-141.1300	Commercial Building	254.9 R	40	6	Left	No	Safety Fence	WATE-P-8027_1A
Washtenaw	MI-WA-141.1300	Commercial Building	254.9 R	Crossed	Inside	Left	No	Safety Fence	WATE-P-8027_1A

a Distances are approximate and derived from aerial photography and LIDAR data (where survey is not available).
b Direction "right" and "left" are from the perspective of an observer starting at milepost 0.0 of the proposed pipeline centerline.
c See site-specific residential construction plans for workspace configuration and mitigation (e.g., placement of safety fencing).
d Occupancy status determined based on DOT/Non-DOT structure classification.

APPENDIX K-3

PLANNED DEVELOPMENTS NEAR THE NGT PROJECT

APPENDIX K-3

Planned Developments Near the NGT Project

State, Name of Planned Development	Description	Approximate Milepost	Location and Proximity to NGT Project	Status
OHIO				
Private Residential	Pond recently installed on property.	1.0 to 1.3	The pond is within the study corridor and approximately 89 feet NW of the 100-foot temporary right-of-way corridor and will be approximately 1 acre in size. The project borders Railroad Street/Hwy 644 to the north. The exact location of the proposed pond is unknown, but from the southern property boundary bordering Railroad Street/Hwy 644 to pipeline centerline is approximately 1,883.9 feet and from the northern property boundary line it is approximately 723.5 feet.	Plans have not been filed.
Dehoff Agency Inc.	Residential development.	32.7	Multiple properties bordering Dotwood Street to the south.	Plans have not been filed.
Whitetail Properties, Inc.	Residential development.	33.0	Multiple properties bordering Wright Road.	Plans have not been filed.
Dutch Heritage Homes, Inc.	Residential development.	33.0	Multiple properties bordering Wright Road.	Plans have not been filed.
Private Residential	Plans have been approved for construction of a pole barn, pond, and bridge. Landowner has future plans to construct a residence; these plans have not been approved.	34.0	Parcel borders Cain Street to the northwest; centerline crosses through this property.	Plan approved by Stark County for pole barn, pond, and bridge. Construction schedule unknown.
Brienza Park	Commercial development.	34.4	Parcel is located approximately 3,080 feet south of the construction workspace.	Status unknown
Ariss Park Master Plan	Public park	35.4	Undetermined	Status unknown
Wise's Mayfair Allotment	Residential development.	35.4	Parcel is located approximately 1,100 feet southeast of the construction workspace.	Status unknown
Park Place	Commercial development.	35.6 to 36.0	Undetermined	Status unknown
Portage Lakes Career Center	Commercial development.	36.0	Parcel is approximately 1.2 mile northwest of MP 36.0 R.	Status unknown
Green Vertical Properties LLC	Commercial development. According to Green Vertical Properties LLC, future development plans are confidential.	36.0	Parcel is approximately 0.3 mile southwest of MP 36.0R.	Will not provide copies of plans; unknown if plans have been filed.
Greensburg Heights Allotment	Residential development.	36.3	Parcel is approximately 710 feet west of construction workspace.	Status unknown

APPENDIX K-3 (cont'd)

Planned Developments Near the NGT Project

State, Name of Planned Development	Description	Approximate Milepost	Location and Proximity to NGT Project	Status
OHIO (cont'd)				
NCT Development Corporation	Commercial development. NCT Development Corporation plans to expand its facility by the end of 2017.	36.4	Parcel is approximately 0.4 mile southwest of MP 36.4 R.	Status unknown
Green Meadows Estates	Residential development.	37.0	Parcel is approximately 2,775 feet west of construction workspace.	Status unknown
Akron-Canton Airport Runway Protection Zone	Commercial development.	37.0	Parcel is approximately 1,070 feet east of construction workspace.	Status unknown
Summit County sheriff training facility	Summit County Sheriff plans to construct a training facility (including a firing range) at this location.	37.0	Parcel is adjacent to and east of construction workspace.	Status unknown
Greensburg Woodlands	Residential development.	37.8	Parcel is approximately 3,225 feet northwest of construction workspace.	Status unknown
Hidden Trail Estates	Residential development.	39.3	Undetermined	Status unknown
Sanctuary At Stoney Creek	Residential development.	39.4	Parcel is approximately 760 feet east of construction workspace.	Status unknown
High Tower Estates	Residential development.	39.5	Parcel is approximately 4,200 feet north of construction workspace.	Status unknown
Mirror Lake Allotment	Residential development.	39.5	Parcel is approximately 4,150 feet north of construction workspace.	Status unknown
Rabl Subdivision	Residential development.	39.5	Parcel is approximately 1,300 feet north of construction workspace.	Status unknown
Springview Estates	Residential development.	39.5	Parcel is approximately 1,750 feet northeast of construction workspace.	Status unknown
Stoney Creek Estates (and future phases)	Residential development.	39.5	Parcel is approximately 760 feet east of construction workspace.	Status unknown
Lake Breeze Allotment	Residential development.	39.5	Parcel is approximately 1,050 feet north of construction workspace.	Status unknown
Forest Lake Estates	Residential development.	39.8	Parcel is approximately 357 feet south of construction workspace.	Status unknown
Commercial	Loyola of the Lakes Jesuit Retreat House	41.0	Parcel is approximately 1,998 feet northwest of construction workspace.	Status unknown
Comet Lake Club	Residential development.	41.5	Parcel is approximately 1,749 feet north of construction workspace.	Status unknown

APPENDIX K-3 (cont'd)

Planned Developments Near the NGT Project

State, Name of Planned Development	Description	Approximate Milepost	Location and Proximity to NGT Project	Status
OHIO (cont'd)				
Woods at Silver Creek Ltd.	Residential development. Township has approved 65 allotments for future development.	53.3	Parcel is northwest of MP 53.3 on Akron Road and Gates Street.	Allotments approved since 2003. A map has been filed with Wayne County. Construction schedule unknown.
AR Lockhart Development	Shopping center, apartment complex, and residential development. Plans contingent upon developer installing sewage line. Plans have been filed with county but zoning is pending.	54.0	Undetermined	Plans filed. Construction schedule unknown.
Private Residential	Plans to build residence.	54.2	Undetermined	Plans have not been filed.
Private Residential	Plans to develop land.	54.9	Undetermined	Plans have not been filed.
City of Wadsworth Airport Expansion	Airport expansion plans are from 2008.	57.5	Parcel is approximately 500 feet north of the proposed permanent easement.	Status unknown
Private	Mining of peat moss on property.	59.0	Undetermined	Current.
Damar Valley LLC	Residential subdivision development.	59.0	Undetermined	Plans have not been filed.
Private Residential	Plans to build residence and barn on property.	59.3	Undetermined	Plans have not been filed.
Private Residential	Operating orchard on property. Plans to further develop with additional trees.	59.5	Undetermined	Plans have not been filed.
Gatliff Building Company	Plans to build residential home on lot.	61.3	Undetermined	Plans have not been filed.
Private Residential	Potential plans to build residences on properties.	62.8	Undetermined	Plans have not been filed.
Private Residential	Plans to subdivide property along road frontage on Blake and Guilford Roads.	64.0	Undetermined	Plans have not been filed.
Private Residential	Plans to subdivide lot (MP 65).	65.8	Undetermined	Plans have not been filed.
Private Residential	Plans to build sewage line and associated pump.	68.3	Undetermined	Plans have not been filed.
VGL Properties LLC	Development related to outdoor public attractions. Plans involve construction of driveways, trails, dirt moving/excavating, and construction of small structures, paintball course, and hay ride trails.	68.8	Undetermined	In process of obtaining permits. Construction schedule unknown.

APPENDIX K-3 (cont'd)

Planned Developments Near the NGT Project

State, Name of Planned Development	Description	Approximate Milepost	Location and Proximity to NGT Project	Status
OHIO (cont'd)				
Medina County Parks	Plans to develop an extension to an existing biking/running trail.	68.9	Undetermined	Plans have not been filed.
Board of County Commissioners of Medina County	No details provided.	70.0	Undetermined	Plans have not been filed.
Medina County Park District	Medina County Parks Department is planning on developing mitigated wetland on tract. Parks Department owns additional tracts near this location that have been developed into mitigated wetlands. Subsequent to development of mitigated wetlands on a tract, the Parks Department historically enters into an environmental covenant with the ODNR.	70.5	Undetermined	Plans have not been filed.
Western Land Conservancy	Conservancy recently purchased this parcel to protect land from development.	95.4	Undetermined	Plans have not been filed.
Western Land Conservancy	Conservancy recently purchased this parcel to protect land from development.	95.4 to 95.5	Undetermined	Plans have not been filed.
Private Residential	Plans to subplot properties for additional residential structures.	111.5 to 111.7	Undetermined	Plans have not been filed.
Private Residential	Plans to build residential structure directly behind existing residence.	112.1	Undetermined	Plans have not been filed.
Private Residential	Plans to build residence.	112.3	NEXUS has not been able to connect with landowner. Distance and direction from Project unknown	Plans have not been filed.
Board of County Commissioners of Erie County	Future plans to use property for land mining. Dirt will be removed and used to cover county landfills.	119.0	Parcel is approximately 290 feet north of construction workspace.	Plans have not been filed.
Avery Commerce Park, LLC	Plans for commercial park to be updated and/or renovated.	119.7	Undetermined	Plans have not been filed.
State of Ohio and Sandusky County	State and county have plans to build a new intersection from 53, about 800 feet south of proposed pipeline route. New intersection at turnpike would intersect the proposed pipeline route.	146.2	Located at the intersection of County Road 53 and the turnpike, just south of the proposed pipeline route.	Possibly start construction in 2016.
Gun range	Plans to sell property to the City of Bowling Green; not currently in negotiations. Pipeline route intersects gun range on this property.	178.5	Undetermined	Plans have not been filed. Gun range is operational.

APPENDIX K-3 (cont'd)

Planned Developments Near the NGT Project

State, Name of Planned Development	Description	Approximate Milepost	Location and Proximity to NGT Project	Status
OHIO (cont'd)				
Commercial	City of Bowling Green has purchased this property with initial plan to lease as farm land. Future plans may include building a substation or water reservoir.	178.6	Undetermined	Plans have not been filed.
Browning Masonic Community Inc.	Masonic lodge plans to build a retirement community with housing and other facilities on the property	182.0	West of County Road 53.	Pre-filing stage.
Noward Road Rebuild; Waterville Township and Lucas County	Planning to rebuild this stretch of road.	183.1	Located in Lucas County, Waterville Township; Township Rd 137 (Noward) between Highway 64 and Neopolis Waterville Rd.	Plans are firm. Rebuild to start in spring 2017.
MICHIGAN				
Crescent Hills Associates, LLC	Residential development. Subdivision expansion; planned subdivision would take up the entire parcel. There are currently two existing utility lines on this parcel.	236.7	Undetermined	Plans have not been filed.
Undetermined	An easterly expansion of the subdivision on the property to the west across this parcel of land.	244.6	Undetermined	Plans were filed around 2004 but have not been approved to date. Tentatively breaking ground on road construction in spring 2016.
Undetermined	Current: Disc golf course. Future plans to build an apartment complex and restaurant along the lake, service station near north east side of property with restaurants.	251.2	The new apartments and restaurant will be along the lake where temporary workspace is located (west of centerline). New gas station will be built at the intersection of Bridge Road and Southgrove Street.	Plans filed with Ypsilanti Township.
Racer Properties, LLC	Remediation site with ground contamination; communications with different interested parties regarding future developmental plans but no firm commitments have been shared. Future development is scheduled for entire tract; type of development will determine how much space is used. Could be several simultaneous projects on this property.	253.4R	Undetermined	Plans have not been filed.

APPENDIX K-4

KNOWN FSA-ENROLLED LANDS CROSSED BY THE NGT PROJECT

APPENDIX K-4

Known FSA-Enrolled Lands Crossed by the NGT Project Mainline

State, Tract Number	Milepost Start	Milepost End	Acres Affected	
			Construction [a]	Operation [b]
OHIO				
OH-CO-059.0000	6.4	6.9	9.2	2.7
OH-CO-059.0000-AB.05				
OH-CO-059.0100-AB.05	6.4	6.9	1.0	0.5
OH-CO-073.0000	8.1	8.2	0.2	1.0
OH-CO-073.0000-TAR-7				
OH-CO-080.0000	9.5	9.9	8.0	3.0
OH-CO-082.0000	10.0	10.0	1.5	0.5
OH-CO-108.0000	11.8	11.9	0.9	0.4
OH-SU-150.0000	45.3	45.5	1.9	0.7
OH-SU-177.0000	48.0	48.1	0.0	1.0
OH-ME-097.0000	67.9	67.9	0.1	0.0
OH-ME-173.0000	75.4	75.5	2.7	0.7
OH-LO-026.0000	83.9	84.4	7.4	2.8
OH-LO-039.0000	86.4	86.5	2.5	0.9
OH-LO-040.0000	86.5	86.7	1.7	1.2
OH-LO-071.0010	90.6	90.6	0.0	0.0
OH-LO-076.0000	92.4	92.7	5.9	1.9
OH-LO-076.0000-TAR-7-92.5				
OH-LO-077.0000	92.7	92.8	1.8	0.7
OH-ER-005.0000	105.5	105.9	6.8	2.4
OH-ER-007.0000	105.9	105.9	0.9	0.2
OH-ER-008.0000	105.9	106.1	2.6	0.9
OH-ER-008.0000	116.9	117.1	0.1	1.3
OH-ER-089.0000	117.1	117.2	0.0	0.5
OH-ER-091.0000	117.1	117.7	11.0	2.7
OH-ER-091.0000-TAR-7-117.6 c				
OH-ER-097.0000	118.4	118.7	4.2	1.8
OH-ER-098.0000	118.7	118.8	2.0	0.6
OH-ER-111.0000	120.4	120.8	8.0	2.7
OH-ER-114.0000	121.3	121.6	5.1	2.0
OH-ER-142.0000	126.1	126.1	1.7	0.4
OH-SA-012.0000	133.1	133.4	7.8	1.5
OH-SA-012.0000-TAR-1				
OH-SA-032.0000	137.9	138.0	2.4	0.9
OH-SA-045.0000	139.6	139.8	2.9	0.9
OH-SA-056.0000	141.3	141.6	5.7	2.0
OH-SA-081.0000	144.9	145.2	10.4	3.0
OH-SA-081.0000-AB-1				
OH-SA-092.0000	146.0	146.2	2.6	1.0
OH-SA-109.0000	148.1	148.2	1.7	0.4
OH-SA-110.0000	148.2	148.3	1.0	0.4
OH-SA-110.0000-PAR				
OH-SA-116.0000	149.4	149.6	4.8	1.6
OH-SA-120.0000	150.0	150.3	4.0	1.5
OH-SA-132.0000	151.7	151.8	1.6	0.6
OH-SA-134.0000	151.9	152.2	6.0	2.3
OH-SA-135.0000	152.2	152.5	2.8	1.3
OH-SA-151.0000	154.6	154.7	2.7	0.9

APPENDIX K-4 (cont'd)

Known FSA-Enrolled Lands Crossed by the NGT Project Mainline

State, Tract Number	Milepost Start	Milepost End	Acres Affected	
			Construction [a]	Operation [b]
OHIO (cont'd)				
OH-SA-164.0000	156.6	156.9	5.2	1.9
OH-SA-168.0000	157.4	157.6	3.1	1.6
OH-SA-170.0000	157.6	157.7	1.0	0.3
OH-SA-171.0000	157.7	157.9	4.3	1.2
OH-SA-177.0000	158.9	159.0	1.2	0.4
OH-SA-179.0000	159.0	159.2	1.8	1.1
OH-SA-180.0000	159.2	159.4	4.3	1.5
OH-SA-181.0000	159.4	159.4	0.5	0.1
OH-SA-184.0000	159.6	159.7	1.9	0.8
OH-SA-192.0000	160.8	161.1	4.4	1.6
OH-SA-194.0000	161.1	161.4	4.6	1.7
OH-SA-207.0000	162.6	162.8	6.1	2.0
OH-WO-011.0000	165.0	165.1	1.1	0.5
OH-WO-015.0000	165.4	165.6	5.2	1.2
OH-WO-015.0000-TAR-2				
OH-WO-016.0000	165.6	165.7	2.2	0.6
OH-WO-017.0000	165.7	165.8	1.7	0.8
OH-WO-026.0000	166.8	167.2	6.8	2.2
OH-WO-029.0010	167.4	167.4	0.1	0.0
OH-WO-037.0000	168.3	168.4	2.1	0.6
OH-WO-039.0000	168.4	168.4	1.5	0.4
OH-WO-047.0000	170.4	170.7	4.4	1.6
OH-WO-049.0000	170.7	170.8	1.8	0.7
OH-WO-049.0000-MLV				
OH-WO-051.0000	170.8	170.9	1.2	0.4
OH-WO-057.0000	171.4	171.7	1.9	1.1
OH-WO-059.0000	171.7	171.8	1.1	0.4
OH-WO-060.0000	171.8	171.8	0.6	0.2
OH-WO-062.0000	171.9	172.0	1.1	0.4
OH-WO-063.0000	172.0	172.2	2.3	0.9
OH-WO-064.0000	172.2	172.2	1.1	0.5
OH-WO-065.0000	172.2	172.3	1.2	0.5
OH-WO-071.0000	172.8	172.9	1.2	0.5
OH-WO-072.0000	172.9	173.0	1.2	0.5
OH-WO-081.0000	173.9	173.9	1.7	0.5
OH-WO-088.0000	174.5	174.6	2.3	0.9
OH-WO-088.0000-TAR-6-174.5				
OH-WO-088.0000-AB-3				
OH-WO-088.0100-AB-3				
OH-WO-089.0000	174.6	174.7	1.6	0.6
OH-WO-090.0000	174.7	174.7	0.5	0.2
OH-WO-091.0000	174.7	174.9	1.9	0.8
OH-WO-092.0000	174.9	175.0	1.9	0.7
OH-WO-093.0000	175.0	175.1	3.8	0.8
OH-WO-093.0000-TAR-7-175.1				
OH-WO-095.0000	175.2	175.2	2.1	0.4
OH-WO-096.0000	175.2	175.4	3.1	0.9

APPENDIX K-4 (cont'd)

Known FSA-Enrolled Lands Crossed by the NGT Project Mainline

State, Tract Number	Milepost Start	Milepost End	Acres Affected	
			Construction [a]	Operation [b]
OHIO (cont'd)				
OH-WO-101.0000	175.6	176.1	8.4	3.1
OH-WO-102.0000	176.1	176.2	0.9	0.4
OH-WO-115.0000 c	177.8	178.1	3.9	1.5
OH-WO-117.0000 c	178.1	178.3	3.9	1.5
OH-WO-118.0000 c	178.3	178.4	0.9	0.4
OH-WO-129.0000	179.5	179.5	1.2	0.4
OH-LC-035.0000	184.5	184.8	4.0	1.5
OH-FU-004.0000	190.9	191.5	10.0	3.5
OH-FU-018.0000	194.1	194.3	4.0	1.5
OH-FU-019.0000	194.3	194.8	8.1	3.1
OH-FU-027.0000	195.9	196.2	6.4	2.1
		Ohio Total	**292.4**	**104.8**
MICHIGAN				
MI-LE-001.0000-SC MI-LE-001.0000-TAR-1	208.3	208.5	8.6	0.9
MI-LE-002.0000	208.5	208.7	4.0	1.5
MI-LE-005.0000	209.0	209.5	7.8	3.0
MI-LE-006.0000	209.5	209.7	4.0	1.5
MI-LE-007.0000	209.7	210.0	5.6	1.6
MI-LE-012.0000	210.5	211.0	7.6	2.9
MI-LE-014.0000	211.0	211.5	8.1	3.1
MI-LE-015.0000	211.5	212.0	8.1	3.1
MI-LE-017.0000	212.0	212.5	7.6	2.9
MI-LE-018.0000	212.5	213.0	7.7	2.9
MI-LE-020.0000	213.0	213.5	8.5	3.1
MI-LE-021.0000	213.5	214.0	8.2	3.1
MI-LE-023.0000	214.0	214.3	3.7	1.4
MI-LE-024.0000	214.3	214.5	3.5	1.4
MI-LE-025.0000	214.5	214.8	4.7	1.8
MI-LE-026.0000	215.1	215.2	7.3	2.4
MI-LE-030.0000	215.9	216.0	2.6	1.0
MI-LE-035.0000	216.8	217.1	6.8	1.9
MI-LE-038.0000	217.1	217.4	7.1	1.5
MI-LE-040.0000	217.9	218.4	8.6	3.0
MI-LE-042.0000	218.4	218.9	9.3	3.0
MI-LE-052.0000	220.1	220.2	1.7	0.0
MI-LE-053.0000	220.2	220.4	2.8	0.0
MI-LE-073.0000	222.8	223.1	3.6	1.6
MI-LE-074.0000	223.1	223.2	2.6	1.0
MI-LE-077.0000	223.5	223.8	4.6	1.8
MI-LE-078.0000	223.8	224.1	3.8	1.4
MI-LE-079.0000	224.1	224.1	0.7	0.3
MI-LE-084.0000	224.9	225.0	1.8	0.4
MI-LE-086.0000	225.0	225.1	1.7	0.4
MI-LE-093.0000 MI-LE-093.0000-TAR-3	226.3	226.6	7.1	2.3
MI-LE-095.0000	226.7	227.0	6.2	2.1

APPENDIX K-4 (cont'd)

Known FSA-Enrolled Lands Crossed by the NGT Project Mainline

State, Tract Number	Milepost Start	Milepost End	Acres Affected	
			Construction [a]	Operation [b]
MICHGIAN (cont'd)				
MI-LE-116.0000	230.3	230.4	0.7	0.2
MI-MR-007.0000	230.8	231.1	3.3	1.4
MI-MR-008.0000	231.1	231.2	3.3	1.1
MI-MR-010.0000	231.3	231.3	0.6	0.2
MI-MR-013.0000	231.8	231.9	1.8	0.0
MI-MR-015.0000	231.9	232.2	4.5	1.7
MI-MR-019.0000	232.3	232.5	2.2	0.8
MI-MR-027.0000	233.3	233.4	5.2	1.6
MI-MR-029.0000	233.4	233.7	4.6	1.7
MI-MR-031.0000	233.8	234.0	1.7	3.5
MI-MR-039.0000	234.7	235.0	5.7	2.0
MI-MR-040.0000	235.0	235.2	3.3	1.2
MI-MR-042.0000	235.3	235.6	4.4	1.7
MI-MR-043.0000	235.6	235.7	1.2	0.4
MI-MR-044.0000	235.7	235.9	4.0	1.4
MI-MR-048.0000	236.3	236.6	5.6	2.0
MI-WA-023.0000	240.5	240.7	4.0	1.6
		Michigan Total	**232.1**	**80.8**
		NGT Project Total	**524.5**	**185.6**

a Land affected during construction includes temporary workspace, permanent easement, and additional temporary workspace.

b Land affected during operation of the pipeline includes only the permanent right-of-way.

c Tract also produces specialty crops.

APPENDIX K-5

AGRICULTURAL DRAIN TILES AND IRRIGATION SYSTEMS CROSSED BY THE NGT PROJECT

APPENDIX K-5

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
OHIO				
TGP Interconnecting Pipeline				
Columbiana	OH-COL-008.0000 OH-COL-008.0000-MR OH-COL-008.0000-PAR-1	0.0	0.1	Drain tiles; size and type unknown
Columbiana	OH-COL-006.0000	0.1	0.1	Drain tiles; size and type unknown
Mainline				
Columbiana	OH-CO-003.0000	0.3	0.6	Drain tiles; size and type unknown
Columbiana	OH-CO-004.0000	0.6	0.9	Drain tiles; size and type unknown
Columbiana	OH-CO-005.0000	0.9	1.0	Drain tiles; 4" plastic
Columbiana	OH-CO-006.0000	1.0	1.1	Drain tiles; 4" plastic
Columbiana	OH-CO-010.0000 OH-CO-010.0000-CS OH-CO-010-0000-PAR-2-1.4	1.3	1.5	Drain tiles; 6” clay
Columbiana	OH-CO-013.0000	1.9	2.0	Drain tiles; 4” and 12” plastic
Columbiana	OH-CO-016.0000	2.0	2.2	Drain tiles; 4" plastic
Columbiana	OH-CO-019.0000	2.2	2.5	Drain tiles; 4" plastic and clay
Columbiana	OH-CO-020.0000 OH-CO-020.0000-TAR-2-2.6 OH-CO-000.0001-SA-3-SPRD1	2.5	2.8	Drain tiles; size and type unknown
Columbiana	OH-CO-021.0000	2.8	2.9	Drain tiles; size and type unknown
Columbiana	OH-CO-022.0000	2.9	3.1	Drain tiles; size and type unknown
Columbiana	OH-CO-035.0000 OH-CO-035.0000-TAR-4-4.3	4.3	4.7	Drain tiles; 4” and 6” clay
Columbiana	OH-CO-035.0010-TAR-4-4.3	4.3	4.3	Drain tiles; size and type unknown
Columbiana	OH-CO-036.0000	4.7	4.8	Drain tiles; 4” and 6” clay
Columbiana	OH-CO-037.0000 OH-CO-037.0000-TAR-5	4.8	4.9	Drain tiles; 4” and 6” clay
Columbiana	OH-CO-039.0000	4.9	5.0	Drain tiles; size and type unknown
Columbiana	OH-CO-042.0000	5.0	5.1	Drain tiles; 4" plastic
Columbiana	OH-CO-043.0000	5.1	5.3	Drain tiles; 4" plastic
Columbiana	OH-CO-046.0000	5.5	5.6	Drain tiles; 4" plastic
Columbiana	OH-CO-053.0000	5.9	6.1	Drain tiles; size and type unknown
Columbiana	OH-CO-054.0000	6.1	6.3	Drain tiles; size and type unknown
Columbiana	OH-CO-054.0100	6.3	6.3	Drain tiles; size and type unknown
Columbiana	OH-CO-055.0100	6.3	6.4	Drain tiles; size and type unknown
Columbiana	OH-CO-055.0200	6.4	6.4	Drain tiles; 4" plastic
Columbiana	OH-CO-059.0000 OH-CO-059.0000-AB-1 OH-CO-000.0001-SA-6-SPRD1	6.4	6.9	Drain tiles; 6" plastic
Columbiana	OH-CO-061.0000	6.9	7.2	Drain tiles; size unknown; clay and plastic
Columbiana	OH-CO-062.0000 OH-CO-062.0000-TAR-6-7.3	7.2	7.5	Drain tiles; size and type unknown
Columbiana	OH-CO-063.0000	7.5	7.5	Drain tiles; size unknown; clay and plastic
Columbiana	OH-CO-064.0000	7.5	7.6	Drain tiles; size unknown; clay and plastic
Columbiana	OH-CO-065.0000	7.6	7.7	Drain tiles; size unknown; clay
Columbiana	OH-CO-074.0000 OH-CO-074.0000-TAR-8-8.2 OH-CO-000.0001-SA-8-SPRD1 OH-CO-000.0001-SA-9-SPRD1	8.2	8.3	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Columbiana	OH-CO-075.0000	8.3	8.5	Drain tiles; size and type unknown
Columbiana	OH-CO-076.0000	8.5	8.6	Drain tiles; size unknown; clay and plastic
Columbiana	OH-CO-077.0000	8.6	8.7	Drain tiles; size unknown; clay and plastic
Columbiana	OH-CO-078.0000	8.7	8.9	Drain tiles; size unknown; clay and plastic
Columbiana	OH-CO-079.0000	8.9	9.5	Drain tiles; 4" and 6" clay and plastic
Columbiana	OH-CO-080.0000	9.5	9.9	Drain tiles; 4" and 6" clay and plastic
Columbiana	OH-CO-082.0000	10.0	10.0	Drain tiles; 4" and 6" clay and plastic
Columbiana	OH-CO-086.0000	10.1	10.4	Drain tiles; size and type unknown
Columbiana	OH-CO-087.0000	10.4	10.5	Drain tiles; size and type unknown
Columbiana	OH-CO-089.0000 OH-CO-089.0000-TAR-9-10.8 OH-CO-000.0001-SA-10-SPRD1	10.5	10.8	Drain tiles; 3" and 4"; clay and plastic
Columbiana	OH-CO-091.0000	11.0	11.0	Drain tiles; size and type unknown
Columbiana	OH-CO-093.0000	11.0	11.1	Drain tiles; size and type unknown
Columbiana	OH-CO-094.0000	11.1	11.1	Drain tiles; size and type unknown
Columbiana	OH-CO-099.0010	11.2	11.3	Drain tiles; size and type unknown
Columbiana	OH-CO-098.0010	11.3	11.3	Drain tiles; size and type unknown
Columbiana	OH-CO-102.0000	11.4	11.4	Drain tiles; 3" and 4"; clay and plastic
Columbiana	OH-CO-103.0000	11.4	11.4	Drain tiles; 3" and 4"; clay and plastic
Columbiana	OH-CO-106.0000	11.4	11.7	Drain tiles; 4" and 6"; clay and plastic
Columbiana	OH-CO-107.0000	11.7	11.8	Drain tiles; size and type unknown
Columbiana	OH-CO-109.0000	11.9	12.1	Drain tiles; 4" and 6"; clay and plastic
Columbiana	OH-CO-110.0000	12.1	12.5	Drain tiles; 4" and 6"; clay and plastic
Columbiana	OH-CO-112.0000	12.5	12.5	Drain tiles; 4" and 6"; clay and plastic
Stark	OH-ST-001.0000	12.5	13.1	Drain tiles; 4" and 6"; clay and plastic
Stark	OH-ST-005.0100 OH-ST-005.0100-HTAR-0.5	13.2	13.5	Drain tiles; size unknown; clay
Stark	OH-ST-008.0000 OH-ST-008.0000-TAR-1-13.5	13.5	13.8	Drain tiles; size and type unknown
Stark	OH-ST-013.0000	14.0	14.1	Drain tiles; size and type unknown
Stark	OH-ST-015.0000	14.1	14.2	Drain tiles; 4" clay and plastic
Stark	OH-ST-016.0000	14.2	14.3	Drain tiles; 4" and 6"; type unknown
Stark	OH-ST-017.0000	14.3	14.4	Drain tiles; 4" clay and plastic
Stark	OH-ST-018.0000	14.4	14.5	Drain tiles; 4"; type unknown
Stark	OH-ST-020.0000	14.5	14.5	Drain tiles; size and type unknown
Stark	OH-ST-021.0000	14.5	14.8	Drain tiles; 4" and 6"; clay and plastic
Stark	OH-ST-023.0000	14.8	15.0	Drain tiles; 4" and 6"; clay and plastic
Stark	OH-ST-024.0000	15.0	15.1	Drain tiles; size and type unknown
Stark	OH-ST-025.0000	15.1	15.2	Drain tiles; size and type unknown
Stark	OH-ST-026.0000	15.2	15.4	Drain tiles; 4" and 6"; clay and plastic
Stark	OH-ST-028.0000 OH-ST-028.0000-TAR-2-15.4 OH-ST-000.0001-SA-2-SPRD1	15.4	15.7	Drain tiles; 6" and 8"; clay
Stark	OH-ST-029.0000	15.7	16.0	Drain tiles; 4" clay and plastic
Stark	OH-ST-030.0000	16.0	16.2	Drain tiles; 4" and 12"; clay
Stark	OH-ST-032.0000	16.2	16.3	Drain tiles; size unknown; clay
Stark	OH-ST-032.0100	16.3	16.4	Drain tiles; 4" clay and plastic
Stark	OH-ST-032.0200	16.4	16.5	Drain tiles; size unknown; clay

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Stark	OH-ST-032.0300	16.5	16.6	Drain tiles; size unknown; clay
Stark	OH-ST-033.0000 OH-ST-033.0000-PAR-1-16.8 OH-ST-033.0000-MLV-1	16.6	16.7	Drain tiles; size unknown; clay
Stark	OH-ST-035.0000	16.7	17.0	Drain tiles; 6" clay
Stark	OH-ST-036.0000	17.0	17.0	Drain tiles; size and type unknown
Stark	OH-ST-037.0000	17.0	17.1	Drain tiles; 4" clay
Stark	OH-ST-039.0000	17.2	17.6	Drain tiles; 4", 6" and 8"; clay and plastic
Stark	OH-ST-040.0000	17.6	17.7	Drain tiles; 4" clay
Stark	OH-ST-041.0000	17.8	17.9	Drain tiles; 4" plastic
Stark	OH-ST-042.0000	17.9	18.3	Drain tiles; 4" clay and plastic
Stark	OH-ST-045.0000	18.3	18.4	Drain tiles; 4" clay and plastic
Stark	OH-ST-047.0000	18.4	18.6	Drain tiles; 4" and 6"; clay and plastic
Stark	OH-ST-051.0000 OH-ST-051.0000-TAR-3-18.6	18.6	19.0	Drain tiles; 4" and 8" clay
Stark	OH-ST-052.0000	19.0	19.2	Drain tiles; 4" clay and plastic
Stark	OH-ST-053.0000	19.2	19.3	Drain tiles; 4" clay and plastic
Stark	OH-ST-055.0000	19.5	19.6	Drain tiles; 8" clay
Stark	OH-ST-057.0000	19.6	19.9	Drain tiles; 4", 6" and 8"; clay and plastic
Stark	OH-ST-057.0010	19.7	19.9	Drain tiles; size and type unknown
Stark	OH-ST-058.0000	19.9	20.0	Drain tiles; 4", 6" and 8"; clay and plastic
Stark	OH-ST-059.0000	20.0	20.0	Drain tiles; size and type unknown
Stark	OH-ST-062.0000	20.1	20.2	Drain tiles; 4", 6", 8" and 12"; clay and plastic
Stark	OH-ST-063.0000 OH-ST-063.0000-TAR-4-20.4	20.2	20.4	Drain tiles; 4" and 6" clay
Stark	OH-ST-066.0000	20.5	20.5	Drain tiles; size and type unknown
Stark	OH-ST-067.0000	20.5	20.8	Drain tiles; size and type unknown
Stark	OH-ST-068.0000	20.8	21.2	Drain tiles; size and type unknown
Stark	OH-ST-069.0000	21.2	21.7	Drain tiles; 4" clay
Stark	OH-ST-070.0000 OH-ST-070.0000-AB-1	21.7	22.0	Drain tiles; size and type unknown
Stark	OH-ST-072.0000	22.0	22.2	Drain tiles; size and type unknown
Stark	OH-ST-073.0010	22.2	22.2	Drain tiles; size and type unknown
Stark	OH-ST-073.0000	22.2	22.2	Drain tiles; size and type unknown
Stark	OH-ST-075.0000	22.2	22.5	Drain tiles; size unknown; clay and plastic
Stark	OH-ST-077.0000	22.7	23.2	Drain tiles; size unknown; clay and plastic
Stark	OH-ST-079.0000	23.2	23.5	Drain tiles; size unknown; clay and plastic
Stark	OH-ST-082.0000	23.7	24.2	Drain tiles; 4" and 6"; clay and plastic
Stark	OH-ST-082.0010	24.1	24.2	Drain tiles; size and type unknown
Stark	OH-ST-084.0000	24.2	24.7	Drain tiles; size unknown; clay
Stark	OH-ST-085.0000	24.7	25.0	Drain tiles; size and type unknown
Stark	OH-ST-087.0000	25.0	25.3	Drain tiles; size and type unknown
Stark	OH-ST-088.0000	25.3	25.5	Drain tiles; 4" and 6" clay
Stark	OH-ST-089.0000	25.6	25.7	Drain tiles; 4" and 6" clay
Stark	OH-ST-090.0000	25.7	25.8	Drain tiles; size and type unknown
Stark	OH-ST-091.0000	25.8	25.9	Drain tiles; size and type unknown
Stark	OH-ST-093.0000	25.9	26.4	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Stark	OH-ST-098.0000	26.7	26.7	Drain tiles; size and type unknown
Stark	OH-ST-099.0000	26.7	26.8	Drain tiles; size and type unknown
Stark	OH-ST-104.0000	27.3	27.4	Drain tiles; 4" clay and plastic
Stark	OH-ST-105.0000	27.4	27.7	Drain tiles; size unknown; clay and plastic
Stark	OH-ST-107.0000	27.8	28.0	Drain tiles; 4" clay
Stark	OH-ST-112.0000	28.2	28.7	Drain tiles; size and type unknown
Stark	OH-ST-113.0000	28.7	28.7	Drain tiles; size and type unknown
Stark	OH-ST-114.0000	28.7	28.9	Drain tiles; size and type unknown
Stark	OH-ST-116.0000 OH-ST-116.0000-TAR-5-29.1 OH-ST-000.0001-SA-6.1-SPRD1	29.0	29.1	Drain tiles; size and type unknown
Stark	OH-ST-121.0000	29.3	29.7	Drain tiles; size and type unknown
Stark	OH-ST-122.0000	29.7	29.9	Drain tiles; size and type unknown
Stark	OH-ST-123.0000	29.9	30.2	Drain tiles; size and type unknown
Stark	OH-ST-124.0000	30.2	30.3	Drain tiles; size and type unknown
Stark	OH-ST-126.0000	30.3	30.7	Drain tiles; size and type unknown
Stark	OH-ST-127.0000	30.7	30.8	Drain tiles; size and type unknown
Stark	OH-ST-129.0000	30.9	31.1	Drain tiles; size and type unknown
Stark	OH-ST-130.0000	31.1	31.4	Drain tiles; size and type unknown
Stark	OH-ST-131.0000	31.4	31.9	Drain tiles; size and type unknown
Stark	OH-ST-133.0000 OH-ST-133.0000-AB-2	31.9	32.1	Drain tiles; size and type unknown
Stark	OH-ST-135.0000	32.1	32.2	Drain tiles; size and type unknown
Stark	OH-ST-136.0000 OH-ST-136.0000-PAR-2-32.6 OH-ST-136.0000-MLV-2 OH-ST-000.0001-SA-7-SPRD1	32.2	32.6	Drain tiles; size and type unknown
Stark	OH-ST-180.0000	34.0	34.1	Drain tiles; size and type unknown
Stark	OH-ST-181.0000	34.1	34.2	Drain tiles; size and type unknown
Summit	OH-SU-005.0000	34.5	34.5	Drain tiles; size and type unknown
Summit	OH-SU-006.0000	34.5	34.5	Drain tiles; size and type unknown
Summit	OH-SU-007.0000	34.5	34.7	Drain tiles; size and type unknown
Summit	OH-SU-008.0000	34.7	34.8	Drain tiles; size and type unknown
Summit	OH-SU-009.0000	34.8	35.0	Drain tiles; size and type unknown
Summit	OH-SU-016.0000	35.0	35.0	Drain tiles; size and type unknown
Summit	OH-SU-034.0000	37.1	37.3	Drain tiles; 4" clay and plastic
Summit	OH-SU-041.0000	37.6	37.8	Drain tiles; size and type unknown
Summit	OH-SU-044.0000	37.8	37.9	Drain tiles; size and type unknown
Summit	OH-SU-045.0000	37.9	37.9	Drain tiles; size and type unknown
Summit	OH-SU-058.0000	38.8	38.9	Drain tiles; size and type unknown
Summit	OH-SU-059.0000	38.9	39.0	Drain tiles; size and type unknown
Summit	OH-SU-064.0000	39.3	39.3	Drain tiles; size and type unknown
Summit	OH-SU-065.0000	39.3	39.5	Drain tiles; size and type unknown
Summit	OH-SU-067.0000	39.6	39.7	Drain tiles; size and type unknown
Summit	OH-SU-081.0000 OH-SU-081.0000-TAR-2-40.8	40.7	41.0	Drain tiles; size and type unknown
Summit	OH-SU-085.0000	41.2	41.4	Drain tiles; size and type unknown
Summit	OH-SU-086.0000	41.3	41.4	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Summit	OH-SU-090.0000 OH-SU-000.0001-SA-2-SPRD-1	41.5	41.5	Drain tiles; size and type unknown
Summit	OH-SU-091.0000	41.5	41.5	Drain tiles; size and type unknown
Summit	OH-SU-097.0000	41.9	42.1	Drain tiles; size and type unknown
Summit	OH-SU-101.0000	42.2	42.2	Drain tiles; size and type unknown
Summit	OH-SU-103.0000	42.3	42.3	Drain tiles; size and type unknown
Summit	OH-SU-107.0010	42.5	42.6	Drain tiles; size and type unknown
Summit	OH-SU-108.0000	42.6	42.7	Drain tiles; size and type unknown
Summit	OH-SU-123.0000	43.1	43.1	Drain tiles; size and type unknown
Summit	OH-SU-124.0000	43.1	43.2	Drain tiles; size and type unknown
Summit	OH-SU-126.0000	43.2	43.3	Drain tiles; size and type unknown
Summit	OH-SU-127.0000	43.3	43.5	Drain tiles; size and type unknown
Summit	OH-SU-135.0000 OH-SU-135.0000-TAR-2.2-44.1	44.0	44.3	Drain tiles; size and type unknown
Summit	OH-SU-138.0000 OH-SU-138.0000-TAR-3-44.3	44.4	44.7	Drain tiles; size and type unknown
Summit	OH-SU-141.0000	44.7	44.8	Drain tiles; size and type unknown
Summit	OH-SU-142.0000	44.8	44.8	Drain tiles; size and type unknown
Summit	OH-SU-150.0000	45.3	45.5	Drain tiles; size and type unknown
Summit	OH-SU-152.0000	45.5	45.5	Drain tiles; size and type unknown
Summit	OH-SU-155.0000	45.8	46.2	Drain tiles; size and type unknown
Summit	OH-SU-155.0010	46.0	46.2	Drain tiles; size and type unknown
Summit	OH-SU-164.0000	46.5	46.8	Drain tiles; size and type unknown
Summit	OH-SU-166.0000	46.8	47.0	Drain tiles; size and type unknown
Summit	OH-SU-167.0000	47.0	47.0	Drain tiles; size and type unknown
Summit	OH-SU-171.0000 OH-SU-171.0000-TAR-4-47.4	47.4	47.5	Drain tiles; size and type unknown
Summit	OH-SU-172.0000	47.5	47.8	Drain tiles; size and type unknown
Summit	OH-SU-173.0000	47.8	47.8	Drain tiles; size and type unknown
Summit	OH-SU-185.0000 OH-SU-185.0000-TAR-5-48.5	48.2	48.5	Drain tiles; size and type unknown
Summit	OH-SU-186.0000	48.5	48.5	Drain tiles; size and type unknown
Summit	OH-SU-187.0000 OH-SU-187.0000-TAR-5-48.5	48.5	48.6	Drain tiles; size and type unknown
Summit	OH-SU-188.0000	48.6	48.7	Drain tiles; size and type unknown
Summit	OH-SU-189.0000	48.7	48.8	Drain tiles; size and type unknown
Summit	OH-SU-191.0000	48.8	48.9	Drain tiles; 6" clay and plastic
Summit	OH-SU-193.0000	48.9	49.4	Drain tiles; size and type unknown
Wayne	OH-WA-001.0000 OH-WA-001.0000-MLV-4 OH-WA-001.0000-PAR-1-50.5	50.4	50.6	Drain tiles; size and type unknown
Wayne	OH-WA-002.0000	50.6	50.9	Drain tiles; 6" clay and plastic
Wayne	OH-WA-003.0000	50.9	51.1	Drain tiles; 6" clay and plastic
Wayne	OH-WA-005.0000	51.1	51.1	Drain tiles; size and type unknown
Wayne	OH-WA-006.0000	51.1	51.3	Drain tiles; 6" clay
Wayne	OH-WA-007.0000	51.3	51.3	Drain tiles; 6" clay
Wayne	OH-WA-008.0000	51.3	51.4	Drain tiles; 6" clay
Wayne	OH-WA-010.0000	51.4	51.6	Drain tiles; size and type unknown
Wayne	OH-WA-011.000	51.6	51.7	Drain tiles; 4" and 6"; clay and plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Wayne	OH-WA-012.0000	51.7	52.0	Drain tiles; size and type unknown
Wayne	OH-WA-014.0000	52.0	52.0	Drain tiles; size and type unknown
Wayne	OH-WA-013.0000	52.0	52.0	Drain tiles; size and type unknown
Wayne	OH-WA-011.0000	52.0	52.3	Drain tiles; size and type unknown
Wayne	OH-WA-011.0010	52.3	52.3	Drain tiles; size and type unknown
Wayne	OH-WA-016.0000	52.2	52.3	Drain tiles; size and type unknown
Wayne	OH-WA-018.0000 OH-WA-018.0000-TAR-1-52.6 OH-WA-018.0000-VS	52.3	52.9	Drain tiles; size and type unknown
Wayne	OH-WA-024.0000 OH-WA-001-SA-1-SPRD1	53.0	53.2	Drain tiles; size and type unknown
Wayne	OH-WA-030.0300 OH-WA-030.0300-AB-1	54.2	54.3	Drain tiles; size and type unknown
Wayne	OH-WA-037.0000	54.5	54.6	Drain tiles; size and type unknown
Wayne	OH-WA-039.0000	54.6	54.8	Drain tiles; 4" to 6" plastic; 4' to 6' depth
Wayne	OH-WA-040.0000	54.8	55.1	Drain tiles; 4" to 6" plastic; 4' to 6' depth
Wayne	OH-WA-041.0000	55.1	55.6	Drain tiles; 4" to 6" plastic; 4' to 6' depth
Wayne	OH-WA-042.0000	55.6	55.7	Drain tiles; size and type unknown
Wayne	OH-WA-048.0000	55.7	55.8	Drain tiles; size and type unknown
Wayne	OH-WA-049.0000	55.8	56.1	Drain tiles; size and type unknown
Wayne	OH-WA-050.0000 OH-WA-050.0000-TAR-4-56.2	56.1	56.3	Drain tiles; 4" to 8" plastic and clay; 4' to 5' depth
Medina	OH-ME-001.0000 OH-ME-001.0000-VS	56.6	56.8	Drain tiles; 4" to 8" clay, plastic and wood; 4' to 6' depth
Medina	OH-ME-004.0000	56.8	57.1	Drain tiles; 4" to 8" clay, plastic and wood; 4' to 6' depth
Medina	OH-ME-005.0000	57.1	57.2	Drain tiles; 4" to 8" clay, plastic and wood; 4' to 6' depth
Wayne	OH-WA-058.0000 OH-WA-058.0000-TAR-5-57.5 OH-WA-058.0000-PAR-1-57.5	57.4	57.6	Drain tiles; 4" to 8" unknown tile; 4' to 6' depth
Wayne	OH-WA-059.0000 OH-WA-059.0000-PAR-1-57.5 OH-WA-059.0000-AB-1.5	57.6	57.7	Drain tiles; size and type unknown
Medina	OH-ME-009.0000	57.7	57.9	Drain tiles; 4" to 10" plastic and clay; 4' to 7' depth
Medina	OH-ME-010.0000	57.9	58.0	Drain tiles; 4" to 10" plastic and clay; 4' to 7' depth
Medina	OH-ME-012.0000 OH-ME-012.0000-PAR-1-58.1 OH-ME-012.0000-MLV-5	58.0	58.3	Drain tiles; 4" to 10" plastic and clay; 4' to 7' depth
Medina	OH-ME-014.0000	58.4	58.4	Drain tiles; 4" to 10" plastic and clay; 4' to 6' depth
Medina	OH-ME-015.0000	58.4	58.9	Drain tiles; 4" to 10" plastic and clay; 4' to 6' depth
Medina	OH-ME-016.0000 OH-ME-016.0000-HTAR-1	58.9	59.2	Drain tiles; size and type unknown
Medina	OH-ME-018.0000	59.3	59.4	Drain tiles; size and type unknown
Medina	OH-ME-021.0000	59.5	59.7	Drain tiles; size and type unknown
Medina	OH-ME-023.0000	59.7	59.8	Drain tiles; size and type unknown
Medina	OH-ME-024.0000	59.8	59.8	Drain tiles; size and type unknown
Medina	OH-ME-025.0000	59.8	59.9	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Medina	OH-ME-026.0000	59.9	59.9	Drain tiles; size and type unknown
Medina	OH-ME-027.0000	59.9	60.0	Drain tiles; size and type unknown
Medina	OH-ME-028.0000	60.0	60.1	Drain tiles; size and type unknown
Medina	OH-ME-029.0000	60.1	60.3	Drain tiles; size and type unknown
Medina	OH-ME-031.0000	60.3	60.4	Drain tiles; size and type unknown
Medina	OH-ME-032.0000	60.4	60.8	Drain tiles; size and type unknown
Medina	OH-ME-033.0000	60.8	60.8	Drain tiles; size and type unknown
Medina	OH-ME-034.0000	60.8	61.3	Drain tiles; type unknown; 2' to 8' depth
Medina	OH-ME-035.0000	61.3	61.3	Drain tiles; type unknown; 2' to 8' depth
Medina	OH-ME-036.0010	61.3	61.4	Drain tiles; size and type unknown
Medina	OH-ME-037.0000	61.4	61.4	Drain tiles; size and type unknown
Medina	OH-ME-039.0000	61.4	61.4	Drain tiles; size and type unknown
Medina	OH-ME-040.0000	61.4	61.5	Drain tiles; size and type unknown
Medina	OH-ME-041.0000	61.5	61.5	Drain tiles; size and type unknown
Medina	OH-ME-042.0000	61.5	61.5	Drain tiles; size and type unknown
Medina	OH-ME-043.0000	61.5	61.7	Drain tiles; size and type unknown
Medina	OH-ME-044.0000	61.7	62.0	Drain tiles; size and type unknown
Medina	OH-ME-045.0000	62.0	62.1	Drain tiles; 4" clay; 3' depth
Medina	OH-ME-046.0000	62.1	62.6	Drain tiles; size and type unknown
Medina	OH-ME-048.0000	62.6	62.7	Drain tiles; 12" clay
Medina	OH-ME-049.0000	62.7	62.8	Drain tiles; 12" clay
Medina	OH-ME-050.0000	62.8	62.9	Drain tiles; size and type unknown
Medina	OH-ME-051.0000	62.9	62.9	Drain tiles; 12" clay
Medina	OH-ME-053.0000	62.9	63.0	Drain tiles; size and type unknown
Medina	OH-ME-054.0000 OH-ME-054.0000-TAR-2-63.1	63.0	63.2	Drain tiles; 3' plastic; 3' to 6' depth
Medina	OH-ME-056.0000	63.2	63.3	Drain tiles; size and type unknown
Medina	OH-ME-057.0000 OH-ME-057.0000-CS OH-ME-057.0000-PAR-2-63.4	63.3	63.6	Drain tiles; 4" to 6" clay and plastic; 2' to 4' depth
Medina	OH-ME-058.0000	63.6	63.8	Drain tiles; size and type unknown
Medina	OH-ME-059.0000 OH-ME-059.0000-TAR-3-63.8 OH-ME-000.0001-SA-2-SPRD2	63.8	63.8	Drain tiles; size and type unknown
Medina	OH-ME-060.0000	63.8	64.2	Drain tiles; 6" to 12" plastic and clay
Medina	OH-ME-062.0000	64.2	64.3	Drain tiles; 6" to 12" plastic and clay
Medina	OH-ME-063.0000	64.3	64.4	Drain tiles; 6" to 12" plastic and clay
Medina	OH-ME-065.0000	64.4	65.0	Drain tiles; size and type unknown
Medina	OH-ME-066.0000 OH-ME-066.0000-TAR-4-64.9	65.0	65.2	Drain tiles; size unknown, clay; 3' depth
Medina	OH-ME-068.0000	65.2	65.3	Drain tiles; size unknown, clay
Medina	OH-ME-069.0000	65.3	65.3	Drain tiles; size unknown, clay
Medina	OH-ME-070.0000	65.3	65.4	Drain tiles; size unknown, clay
Medina	OH-ME-071.0000	65.4	65.5	Drain tiles; size unknown, clay and plastic; 2' to 4' depth
Medina	OH-ME-072.0000	65.5	65.5	Drain tiles; size and type unknown
Medina	OH-ME-073.0000	65.5	65.6	Drain tiles; size and type unknown
Medina	OH-ME-074.0000	65.6	65.6	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Medina	OH-ME-075.0000 OH-ME-075.0000-VS	65.6	65.8	Drain tiles; size and type unknown
Medina	OH-ME-077.0000	65.8	65.9	Drain tiles; size and type unknown
Medina	OH-ME-079.0000	65.9	66.0	Drain tiles; size and type unknown
Medina	OH-ME-081.0000	66.0	66.2	Drain tiles; 4" clay and plastic
Medina	OH-ME-082.0000 OH-ME-082.0000-TAR-4-5-66.4	66.2	66.7	Drain tiles; 4" clay and plastic
Medina	OH-ME-084.0000	66.7	66.9	Drain tiles; size and type unknown
Medina	OH-ME-085.0000	66.9	67.0	Drain tiles; size and type unknown
Medina	OH-ME-086.0000	67.0	67.1	Drain tiles; size and type unknown
Medina	OH-ME-086.0010	67.0	67.1	Drain tiles; size and type unknown
Medina	OH-ME-088.0000	67.1	67.2	Drain tiles; size and type unknown
Medina	OH-ME-089.0000	67.2	67.4	Drain tiles; size and type unknown
Medina	OH-ME-093.0000	67.5	67.6	Drain tiles; size and type unknown
Medina	OH-ME-112.0000 OH-ME-112.0000-TAR-6-68.3 OH-ME-112.0000-TAR-7-68.6	68.6	68.7	Drain tiles; size and type unknown
Medina	OH-ME-114.0000	68.7	68.7	Drain tiles; size unknown, clay
Medina	OH-ME-116.0000	68.8	68.8	Drain tiles; size and type unknown
Medina	OH-ME-123.0000	68.9	68.9	Drain tiles; size and type unknown
Medina	OH-ME-122.0000	68.9	69.0	Drain tiles; size and type unknown
Medina	OH-ME-124.0102-TAR-9-69.5 OH-ME-000.0001-SA-8-SPRD2	69.4	69.4	Drain tiles; size and type unknown
Medina	OH-ME-133.0000	69.9	70.0	Storm drain; equal to or greater than 12"
Medina	OH-ME-135.0000 OH-ME-135.0000-TAR-10-70.1	70.0	70.3	Storm drain; equal to or greater than 12"
Medina	OH-ME-136.0000 OH-ME-000.0001-SA-9-SPRD2 OH-ME-136.0000-TAR-11-70.8a	70.3	70.8	Drain tiles; size and type unknown
Medina	OH-ME-138.0000 OH-ME-138.0000-TAR-12-70.8B	70.8	70.9	Drain tiles; 4" plastic
Medina	OH-ME-140.0000 OH-ME-140.0000-TAR-13-70.9 OH-ME-000.0001-SA-11-SPRD2	70.9	71.1	Drain tiles; 4" plastic
Medina	OH-ME-143.0000	71.3	71.4	Drain tiles; 10" clay and 4' plastic, up to 6' depth; 40' center in crop fields
Medina	OH-ME-144.0000 OH-ME-144.0000-HTAR-2 OH-ME-144.0000-PAR-3-71.8	71.4	71.8	Drain tiles; 10" clay and 4' plastic, up to 6' depth; 40' center in crop fields
Medina	OH-ME-145.0000 OH-ME-145.0000-MLV-6 OH-ME-145.0000-PAR-3-71.8	71.8	71.9	Drain tiles; 10" clay and 4' plastic, up to 6' depth; 40' center in crop fields
Medina	OH-ME-147.0000	71.9	72.5	Drain tiles; 4" plastic
Medina	OH-ME-147.0000-AB-2	71.9	72.5	Drain tiles; 4" plastic
Medina	OH-ME-156.0000 OH-ME-156.0000-TAR-14-72.8 OH-ME-000.0001-SA-12-SPRD2	72.8	72.9	Drain tiles; 4" plastic
Medina	OH-ME-159.0000 OH-ME-159.0000-TAR-15-73.1 OH-ME-000.0001-SA-13-SPRD2 OH-ME-000.0001-SA-14-SPRD2	73.1	73.3	Drain tiles; 4" plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Medina	OH-ME-160.0000 OH-ME-160.0000-TAR-16-73.6	73.3	73.6	Sprinkler system; 4 to 5 drain culverts under; approximately 8' to 10' diameter
Medina	OH-ME-164.0000	73.7	73.9	Drain tiles; size and type unknown
Medina	OH-ME-167.0000	74.0	74.1	Drain tiles; size and type unknown
Medina	OH-ME-169.0000	74.1	74.6	Drain tiles; size and type unknown
Medina	OH-ME-172.0000 OH-ME-172.0000-VS	75.0	75.4	Drain tiles; 10" type unknown; 3' depth
Medina	OH-ME-173.0000	75.4	75.5	Drain tiles; 10" type unknown; 3' depth
Medina	OH-ME-175.0000	75.5	75.6	Drain tiles; size and type unknown
Medina	OH-ME-176.0000	75.6	75.6	Drain tiles; 4" clay
Medina	OH-ME-177.0000 OH-ME-177.0000-TAR-17-75.8 OH-ME-000.0001-SA-15-SPRD2	75.6	76.0	Drain tiles; 4" clay
Medina	OH-ME-178.0000 OH-ME-178.0000-TAR-18-76.1	76.0	76.3	Drain tiles; size and type unknown
Medina	OH-ME-179.0000	76.3	76.3	Drain tiles; size and type unknown
Medina	OH-ME-182.0000	76.5	76.7	Drain tiles; size and type unknown
Medina	OH-ME-183.0000 OH-ME-183.0000-TAR-19-76.8A OH-ME-183.0000-TAR-20-76.8B OH-ME-000.0010-CERT-Y-1-SPRD-2	76.7	77.0	Drain tiles; size unknown, clay; 3' depth
Medina	OH-ME-185.0000	77.0	77.4	Drain tiles; size and type unknown
Medina	OH-ME-186.0000	77.4	77.4	Drain tiles; size and type unknown
Medina	OH-ME-187.0000	77.4	77.7	Drain tiles; size and type unknown
Medina	OH-ME-188.0000	77.7	77.9	Drain tiles; size unknown; clay
Medina	OH-ME-189.0000	77.9	78.0	Drain tiles; size and type unknown
Medina	OH-ME-191.0000	78.0	78.2	Drain tiles; size and type unknown
Medina	OH-ME-192.0000	78.2	78.6	Drain tiles; size and type unknown
Medina	OH-ME-193.0000	78.6	78.6	Drain tiles; size and type unknown
Medina	OH-ME-194.0000	78.6	78.7	Drain tiles; size and type unknown
Medina	OH-ME-195.0000	78.7	79.0	Drain tiles; size and type unknown
Medina	OH-ME-197.0000	79.1	79.2	Drain tiles; size and type unknown
Medina	OH-ME-198.0000	79.1	79.2	Drain tiles; size and type unknown
Medina	OH-ME-199.0000	79.2	79.5	Drain tiles; size and type unknown
Medina	OH-ME-200.0000	79.5	79.6	Drain tiles; size and type unknown
Medina	OH-ME-202.0000	79.6	79.9	Drain tiles; size and type unknown
Medina	OH-ME-203.0000	79.9	80.1	Drain tiles; size and type unknown
Medina	OH-ME-204.0000	80.1	80.2	Drain tiles; size and type unknown
Medina	OH-ME-205.0000	80.2	80.4	Drain tiles; size and type unknown
Medina	OH-ME-206.0000	80.4	80.5	Drain tiles; size and type unknown
Lorain	OH-LO-001.0000	80.5	81.0	Drain tiles; size unknown, plastic
Lorain	OH-LO-002.0000	81.0	81.2	Drain tiles; size and type unknown
Lorain	OH-LO-004.0000	81.2	81.5	Drain tiles; size and type unknown
Lorain	OH-LO-007.0000	81.5	81.7	Drain tiles; size and type unknown
Lorain	OH-LO-008.0000	81.7	81.8	Drain tiles; size and type unknown
Lorain	OH-LO-009.0000	81.8	82.0	Drain tiles; size and type unknown
Lorain	OH-LO-010.0000	82.0	82.2	Drain tiles; size and type unknown
Lorain	OH-LO-011.0000	82.2	82.2	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Lorain	OH-LO-012.0000	82.2	82.5	Drain tiles; size and type unknown
Lorain	OH-LO-013.0000	82.5	82.6	Drain tiles; size and type unknown
Lorain	OH-LO-015.0000	82.6	82.7	Drain tiles; size and type unknown
Lorain	OH-LO-018.0000	82.7	83.2	Drain tiles; size and type unknown
Lorain	OH-LO-019.0000	83.2	83.3	Drain tiles; size and type unknown
Lorain	OH-LO-022.0000	83.4	83.7	Drain tiles; 4" plastic and clay; 2.5' depth
Lorain	OH-LO-026.0000	83.9	84.4	Drain tiles; 4" plastic and clay; 2' to 4' depth
Lorain	OH-LO-027.0000	84.4	84.5	Drain tiles; size and type unknown
Lorain	OH-LO-028.0000	84.5	84.7	Drain tiles; size and type unknown
Lorain	OH-LO-030.0000	84.7	84.9	Drain tiles; 4" plastic and clay; 2.5' depth
Lorain	OH-LO-032.0000	85.3	85.3	Drain tiles; 4" plastic and clay; 2.5' depth
Lorain	OH-LO-033.0000 OH-LO-033.0000-TAR-1-85.5	85.2	85.7	Drain tiles; 4" plastic and clay; 2.5' depth
Lorain	OH-LO-033.0010-TAR-1-85.5	85.5	85.5	Drain tiles; size and type unknown
Lorain	OH-LO-034.0000	85.7	85.8	Drain tiles; size and type unknown
Lorain	OH-LO-035.0000 OH-LO-035.0000-AB-3 OH-LO-035.0000-TAR-2-85.9a	85.8	85.9	Drain tiles; size and type unknown
Lorain	OH-LO-037.0000 OH-LO-037.0000-TAR-3-85.8b OH-LO-001.0001-SA-2-SPRD2	85.9	86.2	Drain tiles; size and type unknown
Lorain	OH-LO-038.0000 OH-LO-038.0000-HTAR-1	86.2	86.4	Drain tiles; size and type unknown
Lorain	OH-LO-039.0000 OH-LO-039.0000-HTAR-1	86.4	86.5	Drain tiles; 4" plastic and clay; 2.5' depth
Lorain	OH-LO-040.0000	86.5	86.7	Drain tiles; 4" plastic and clay; 2.5' depth
Lorain	OH-LO-041.0000 OH-LO-041.0000-TAR-4-87.0 OH-LO-000.0001-SA-3-SPRD2	86.7	87.1	Drain tiles; 4" plastic and clay; 2' to 2.5' depth
Lorain	OH-LO-046.0000	87.1	87.3	Drain tiles; 4" plastic and clay; 2.5' depth
Lorain	OH-LO-047.0000	87.3	87.5	Drain tiles; 4" plastic and clay; 2.5' depth
Lorain	OH-LO-048.0000	87.5	87.7	Drain tiles; 4" plastic and clay; 2.5' depth
Lorain	OH-LO-050.0000 OH-LO-050.0000-VS	87.7	88.2	Drain tiles; size and type unknown
Lorain	OH-LO-052.0000	88.2	88.2	Drain tiles; size and type unknown
Lorain	OH-LO-053.0000	88.2	88.4	Drain tiles; size and type unknown
Lorain	OH-LO-054.0000	88.4	88.4	Drain tiles; size and type unknown
Lorain	OH-LO-055.0000	88.4	88.5	Drain tiles; 4" to 6" plastic and clay; 2.5' depth
Lorain	OH-LO-056.0000	88.5	88.5	Drain tiles; 4" to 6" plastic and clay; 2.5' depth
Lorain	OH-LO-057.0000	88.5	88.7	Drain tiles; size and type unknown; 2.5' depth
Lorain	OH-LO-058.0000	88.7	89.1	Drain tiles; size and type unknown; 2.5' depth
Lorain	OH-LO-059.0000	89.1	89.2	Drain tiles; 4" plastic; 2.5' depth
Lorain	OH-LO-062.0000 OH-LO-062.0000-MLV-7 OH-LO-062.0000-PAR-1-89.2	89.2	89.8	Drain tiles; 4" plastic and clay; 2.5' to 3' depth
Lorain	OH-LO-063.0000	89.8	90.2	Drain tiles; 4" plastic and clay; 2.5' depth
Lorain	OH-LO-068.0000	91.2	91.4	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Lorain	OH-LO-070.0000	91.4	91.4	Drain tiles; size and type unknown
Lorain	OH-LO-071.0000 OH-LO-071.0000-TAR-5-91.4	91.4	91.8	Drain tiles; size and type unknown
Lorain	OH-LO-071.0010 OH-LO-071.0010-TAR-5-91.4	91.4	91.8	Drain tiles; 4" plastic and clay; 2' to 3' depth
Lorain	OH-LO-072.0000	91.8	91.8	Drain tiles; 4" clay
Lorain	OH-LO-073.0000 OH-LO-073.0000-TAR-6-92.1 OH-LO-000.0001-SA-6-SPRD2	91.8	92.1	Drain tiles; 4" clay
Lorain	OH-LO-074.0000 OH-LO-074.0000-HTAR-2 OH-LO-074.0000-TAR-6-92.1 OH-LO-074.0000-TAR-6.5-92	92.1	92.4	Drain tiles; 4" clay
Lorain	OH-LO-076.0000 OH-LO-076.0000-TAR-7-92.5	92.4	92.7	Drain tiles; size unknown, clay; 3' depth
Lorain	OH-LO-077.0000	92.7	92.8	Drain tiles; 4" plastic
Lorain	OH-LO-078.0000	92.8	93.0	Drain tiles; size and type unknown
Lorain	OH-LO-079.0000	93.0	93.4	Drain tiles; size and type unknown
Lorain	OH-LO-081.0000	93.4	93.4	Drain tiles; 4" plastic and clay; 2' to 3' depth
Lorain	OH-LO-083.0000	93.5	93.6	Drain tiles; 4" clay
Lorain	OH-LO-084.0000	93.6	94.1	Drain tiles; 4" clay
Lorain	OH-LO-085.0000	94.1	94.2	Drain tiles; 4" clay
Lorain	OH-LO-088.0000	94.4	94.6	Drain tiles; 4" clay
Lorain	OH-LO-091.0000	94.6	95.2	Drain tiles; 4" plastic and clay; 3' depth
Lorain	OH-LO-092.0000	95.2	95.4	Drain tiles; 4" plastic and clay; 3' depth
Lorain	OH-LO-094.0000	95.4	95.5	Drain tiles; 4" to 6" plastic; 3' depth
Lorain	OH-LO-095.0000	95.5	95.6	Drain tiles; 4" to 6" plastic; 3' depth
Lorain	OH-LO-096.0000 OH-LO-096.0000-TAR-8-95.7	95.6	95.8	Drain tiles; size and type unknown
Lorain	OH-LO-097.0000	95.8	95.8	Drain tiles; size and type unknown
Lorain	OH-LO-098.0000	95.8	96.0	Drain tiles; 4" to 6" plastic
Lorain	OH-LO-098.0010	95.8	95.8	Drain tiles; size and type unknown
Lorain	OH-LO-098.0020	95.8	96.0	Drain tiles; size and type unknown
Lorain	OH-LO-099.0000	96.0	96.0	Drain tiles; size and type unknown
Lorain	OH-LO-099.0010	96.0	96.0	Drain tiles; size and type unknown
Lorain	OH-LO-100.0000	96.0	96.2	Drain tiles; size and type unknown
Lorain	OH-LO-100.0010	96.0	96.2	Drain tiles; size and type unknown
Lorain	OH-LO-101.0000	96.2	96.3	Drain tiles; size and type unknown
Lorain	OH-LO-101.0010	96.2	96.3	Drain tiles; size and type unknown
Lorain	OH-LO-103.0000	96.4	96.4	Drain tiles; 12" plastic and clay; 1.5' to 4' depth
Lorain	OH-LO-104.0000	96.4	96.7	Drain tiles; size and type unknown
Lorain	OH-LO-105.0000 OH-LO-105.0000-MLV-8 OH-LO-105.0000-PAR-2-96.8	96.7	96.8	Drain tiles; size and type unknown
Lorain	OH-LO-107.0000	96.8	97.0	Drain tiles; size and type unknown
Lorain	OH-LO-108.0000	97.0	97.3	Drain tiles; size and type unknown
Lorain	OH-LO-109.0000	97.3	97.7	Drain tiles; size unknown; clay and plastic
Lorain	OH-LO-111.0000	97.7	98.0	Drain tiles; size and type unknown
Lorain	OH-LO-112.0000	98.0	98.1	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Lorain	OH-LO-114.0000	98.1	98.4	Drain tiles; size unknown; clay and plastic
Lorain	OH-LO-118.0000	98.5	98.8	Drain tiles; size and type unknown
Lorain	OH-LO-120.0000 OH-LO-120.0000-TAR-8.1-99.2A	99.1	99.2	Drain tiles; size and type unknown
Lorain	OH-LO-122.0000 OH-LO-122.0000-TAR-8.1-99.2B	99.2	99.6	Drain tiles; size and type unknown
Lorain	OH-LO-123.0000	99.6	99.7	Drain tiles; size and type unknown
Lorain	OH-LO-124.0000 OH-LO-124.0000-AB-4	99.7	100.0	Drain tiles; size and type unknown
Lorain	OH-LO-124.0100-AB-4	99.7	99.7	Drain tiles; size and type unknown
Lorain	OH-LO-126.0000	100.0	100.3	Drain tiles; 4" clay and plastic
Lorain	OH-LO-127.0000	100.3	100.4	Drain tiles; 4" clay and plastic
Lorain	OH-LO-130.0000	100.6	100.7	Drain tiles; 4" clay and plastic
Lorain	OH-LO-131.0000	100.8	101.0	Drain tiles; 4" clay and plastic
Lorain	OH-LO-132.0000	101.0	101.1	Drain tiles; 4" clay and plastic
Lorain	OH-LO-133.0000	101.1	101.3	Drain tiles; 4" clay and plastic
Huron	OH-HU-002.0000	101.3	101.6	Drain tiles; 4" clay and plastic
Huron	OH-HU-003.0000	101.6	101.6	Drain tiles; 4" clay and plastic
Huron	OH-HU-004.0000	101.6	101.8	Drain tiles; 4" clay and plastic
Huron	OH-HU-005.0000	101.8	101.8	Drain tiles; 4" clay and plastic
Huron	OH-HU-006.0000	101.8	102.3	Drain tiles; 4" clay and plastic
Huron	OH-HU-008.0000	102.4	102.9	Drain tiles; 4" clay and plastic
Huron	OH-HU-009.0000	102.9	103.0	Drain tiles; 4" clay and plastic
Huron	OH-HU-010.0000	103.0	103.1	Drain tiles; 4" clay and plastic
Huron	OH-HU-011.0000	103.1	103.2	Drain tiles; 4" clay and plastic
Huron	OH-HU-012.0000	103.2	103.4	Drain tiles; 4" clay and plastic
Huron	OH-HU-013.0000	103.4	103.7	Drain tiles; 4" plastic
Huron	OH-HU-014.0000	103.7	103.9	Drain tiles; 4" clay and plastic
Huron	OH-HU-016.0000	103.9	104.0	Drain tiles; 4" clay and plastic
Huron	OH-HU-017.0000	104.0	104.0	Drain tiles; 4" clay and plastic
Huron	OH-HU-018.0000	104.0	104.2	Drain tiles; 4" clay and plastic
Huron	OH-HU-019.0000	104.2	104.4	Drain tiles; 4" clay and plastic
Huron	OH-HU-020.0000	104.4	104.6	Drain tiles; 4" clay and plastic
Huron	OH-HU-023.0000	104.6	104.7	Drain tiles; size and type unknown
Huron	OH-HU-024.0000	104.7	104.7	Drain tiles; 4" clay and plastic
Erie	OH-ER-001.0000	104.7	104.7	Drain tiles; size and type unknown
Erie	OH-ER-002.0000	104.7	105.0	Drain tiles; size and type unknown
Erie	OH-ER-003.0000	105.0	105.4	Drain tiles; size and type unknown
Erie	OH-ER-004.0000	105.4	105.5	Drain tiles; size unknown; clay and plastic
Erie	OH-ER-005.0000	105.5	105.9	Drain tiles; size unknown; clay and plastic
Erie	OH-ER-007.0000	105.9	105.9	Drain tiles; 4" to 10" plastic; 2.5' to 3' depth
Erie	OH-ER-008.0000	105.9	106.1	Drain tiles; size and type unknown
Erie	OH-ER-010.0000	106.1	106.2	Drain tiles; size and type unknown
Erie	OH-ER-011.0000	106.2	106.5	Drain tiles; size unknown; PVC and clay; 2' depth
Erie	OH-ER-012.0000	106.5	106.6	Drain tiles; size and type unknown
Erie	OH-ER-013.0000	106.6	106.7	Drain tiles; size unknown, clay and plastic
Erie	OH-ER-014.0000	106.7	106.8	Drain tiles; PVC and clay; 2' to 3' depth

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Erie	OH-ER-015.0000	106.8	107.0	Drain tiles; size unknown; clay and plastic
Erie	OH-ER-016.0000	107.0	107.3	Drain tiles; size unknown; clay and plastic
Erie	OH-ER-017.0000	107.3	107.6	Drain tiles; size unknown; clay and plastic
Erie	OH-ER-019.0000	107.6	107.8	Drain tiles; size and type unknown
Erie	OH-ER-020.0000	107.8	108.0	Drain tiles; size unknown; clay and plastic
Erie	OH-ER-021.0000	108.0	108.0	Drain tiles; size and type unknown
Erie	OH-ER-022.0000	108.0	108.4	Drain tiles; size and type unknown
Erie	OH-ER-023.0000	108.4	108.6	Drain tiles; size and type unknown
Erie	OH-ER-022.0010	108.4	108.6	Drain tiles; PVC and clay; 2' to 3' depth
Erie	OH-ER-025.0000	108.7	109.0	Drain tiles; size unknown, clay and plastic
Erie	OH-ER-026.0000	109.0	109.1	Drain tiles; size unknown, clay and plastic
Erie	OH-ER-027.0000	109.1	109.2	Drain tiles; size and type unknown
Erie	OH-ER-028.0000	109.2	109.4	Drain tiles; size and type unknown
Erie	OH-ER-029.0000	109.4	109.6	Drain tiles; PVC and clay; 2' depth
Erie	OH-ER-030.0000	109.6	109.6	Drain tiles; size and type unknown
Erie	OH-ER-031.0000	109.6	109.8	Drain tiles; size and type unknown
Erie	OH-ER-032.0000	109.8	109.8	Drain tiles; size and type unknown
Erie	OH-ER-033.0000	109.8	110.2	Drain tiles; size and type unknown
Erie	OH-ER-034.0000	110.2	110.2	Drain tiles; size and type unknown
Erie	OH-ER-037.0000 OH-ER-037.0000-TAR-1-110.2 OH-ER-000.0001-SA-1-SPRD2	110.3	110.6	Drain tiles; size and type unknown
Erie	OH-ER-040.0000	110.6	110.8	Drain tiles; size and type unknown
Erie	OH-ER-041.0000	110.8	110.8	Drain tiles; size and type unknown
Erie	OH-ER-042.0000	110.8	110.9	Drain tiles; 4" clay and plastic; 2' to 4' depth
Erie	OH-ER-044.0000	111.1	111.4	Drain tiles; 4" clay and plastic; 2' to 4' depth
Erie	OH-ER-046.0000	111.4	111.5	Drain tiles; 4" clay and plastic; 3' to 4' depth
Erie	OH-ER-047.0000 OH-ER-047.0000-TAR-2-111.6	111.5	111.7	Drain tiles; size and type unknown
Erie	OH-ER-053.0000	111.9	111.9	Drain tiles; size and type unknown
Erie	OH-ER-055.0000	111.9	112.1	Drain tiles; size and type unknown
Erie	OH-ER-059.0000	112.1	112.4	Drain tiles; 4" to 8" plastic
Erie	OH-ER-060.0000	112.4	112.9	Drain tiles; 8" to 10" plastic; 2' to 4' depth
Erie	OH-ER-061.0000	112.9	113.1	Drain tiles; size and type unknown
Erie	OH-ER-061.0010	113.1	113.1	Drain tiles; size and type unknown
Erie	OH-ER-062.0010	113.1	113.3	Drain tiles; size and type unknown
Erie	OH-ER-063.0000	113.1	113.3	Drain tiles; size and type unknown
Erie	OH-ER-064.0000	113.3	113.8	Drain tiles; 4" to 8" clay and plastic; 2' to 3' depth
Erie	OH-ER-067.0000	114.0	114.4	Drain tiles; 4" to 6" clay and plastic; 2' to 3' depth
Erie	OH-ER-068.0000	114.4	114.6	Drain tiles; 4" to 6" clay and plastic; 2' to 3' depth
Erie	OH-ER-070.0000 OH-ER-070.0000-AB-5	114.6	114.8	Drain tiles; 4" clay and plastic; 3' depth
Erie	OH-ER-071.0000	114.8	115.0	Drain tiles; 4" to 8" plastic and clay; 2.5' to 3' depth
Erie	OH-ER-073.0000	115.0	115.2	Drain tiles; 4" to 8" plastic and clay; 2.5' to 3' in depth

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Erie	OH-ER-074.0000	115.2	115.4	Drain tiles; 4" to 8" plastic and clay; 3' depth
Erie	OH-ER-075.0000	115.4	115.6	Drain tiles; size and type unknown
Erie	OH-ER-076.0000 OH-ER-076.0000-TAR-3-115.8 OH-ER-000.0001-SA-2-SPRD2	115.6	115.9	Drain tiles; 4" to 6" clay and 7" plastic; 3' depth
Erie	OH-ER-078.0000 OH-ER-078.0000-TAR-4-115.9 OH-ER-000.0001-SA-2.5-SPRD2	115.9	116.1	Drain tiles; size and type unknown
Erie	OH-ER-080.0000	115.9	116.3	Drain tiles; 4" to 6" clay and 7" plastic; 3' depth
Erie	OH-ER-082.0000 OH-ER-082.0000-MLV-9 OH-ER-082.0000-PAR-1-116.3 OH-ER-000.0001-SA-4-SPRD2 OH-ER-082.0000-TAR-5-116.5	116.3	116.5	Drain tiles; 4" to 6" clay and 7" plastic; 3' depth
Erie	OH-ER-083.0000	116.5	116.5	Drain tiles; size and type unknown
Erie	OH-ER-085.0000	116.6	116.7	Drain tiles; size and type unknown
Erie	OH-ER-086.0000 OH-ER-086.0000-TAR-6-116.8	116.7	116.9	Drain tiles; size and type unknown
Erie	OH-ER-087.0000	116.9	116.9	Drain tiles; 4" plastic
Erie	OH-ER-091.0000 OH-ER-091.0000-TAR-7-117.6 OH-ER-000.0001-SA-5-SPRD2	117.2	117.7	Drain tiles; 4" plastic
Erie	OH-ER-092.0000 OH-ER-092.0000-TAR-8-117.8	117.7	118.1	Drain tiles; 4" plastic and clay
Erie	OH-ER-096.0000	118.3	118.4	Drain tiles; size and type unknown
Erie	OH-ER-101.0000	119.2	119.4	Drain tiles; size and type unknown
Erie	OH-ER-102.0010	119.4	119.4	Drain tiles; size and type unknown
Erie	OH-ER-104.0000	119.4	119.5	Drain tiles; 4" plastic
Erie	OH-ER-106.0000 OH-ER-106.0000-TAR-10-119.8	119.5	119.8	Drain tiles; 4" to 6" clay and plastic
Erie	OH-ER-106.0010 OH-ER-106.0010-TAR-10-119.8	119.5	120.0	Drain tiles; 4" to 6" clay and plastic
Erie	OH-ER-107.0000	119.8	120.1	Drain tiles; 4" and 6" clay
Erie	OH-ER-108.0000	120.0	120.1	Drain tiles; 4" plastic
Erie	OH-ER-109.0000 OH-ER-109.0000-VS	120.1	120.3	Drain tiles; 4" and 6" clay
Erie	OH-ER-110.0000	120.3	120.4	Drain tiles; size unknown, clay
Erie	OH-ER-113.0000	120.9	121.3	Drain tiles; 4" to 6" clay and plastic
Erie	OH-ER-114.0000	121.3	121.6	Drain tiles; 4" to 6" clay and plastic
Erie	OH-ER-115.0000	121.6	122.1	Drain tiles; 4" clay; 2' depth
Erie	OH-ER-116.0000	122.1	122.7	Drain tiles; size and type unknown
Erie	OH-ER-118.0000	122.1	122.3	Drain tiles; 4" to 6" clay and plastic
Erie	OH-ER-119.0000	122.1	122.3	Drain tiles; size and type unknown
Erie	OH-ER-120.0000	122.3	122.5	Drain tiles; size and type unknown
Erie	OH-ER-121.0000	122.5	122.7	Drain tiles; size and type unknown
Erie	OH-ER-122.0000	122.7	123.1	Drain tiles; 6" and 8" plastic and clay
Erie	OH-ER-123.0000	123.1	123.2	Drain tiles; 6" and 8" plastic and clay
Erie	OH-ER-125.0000 OH-ER-125.0000-HTAR-2 OH-ER-125.0000-TAR-11-124.0	123.3	123.6	Drain tiles; 4" to 6" clay and plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Erie	OH-ER-128.0000 OH-ER-128.0000-TAR-11-124.0	123.6	124.0	Drain tiles; 4" to 6" clay and plastic
Erie	OH-ER-129.0000	124.0	124.4	Drain tiles; 4" to 8" clay and plastic
Erie	OH-ER-130.0000	124.4	124.8	Drain tiles; 4" to 6" clay and plastic
Erie	OH-ER-132.0000 OH-ER-132.0000-MLV-10 OH-ER-132.0000-PAR-2-124.8	124.8	124.9	Drain tiles; 4" to 6" clay and plastic
Erie	OH-ER-133.0000	124.9	125.4	Drain tiles; 4" to 8" clay and plastic
Erie	OH-ER-134.0000	125.4	125.7	Drain tiles; 4" to 6" plastic
Erie	OH-ER-135.0000	125.7	125.8	Drain tiles; 4" to 6" plastic
Erie	OH-ER-141.0000	125.9	126.2	Drain tiles; size and type unknown
Erie	OH-ER-142.0000	126.1	126.2	Drain tiles; size and type unknown
Erie	OH-ER-144.0000	126.3	126.7	Drain tiles; size and type unknown
Erie	OH-ER-144.0020	126.5	126.7	Drain tiles; size and type unknown
Erie	OH-ER-146.0000	126.7	126.8	Drain tiles; size and type unknown
Erie	OH-ER-146.0010	126.7	126.8	Drain tiles; size and type unknown
Erie	OH-ER-146.0020	126.7	126.8	Drain tiles; size and type unknown
Erie	OH-ER-147.0000	126.8	127.3	Drain tiles; size and type unknown
Erie	OH-ER-148.0000	127.3	127.3	Drain tiles; size and type unknown
Erie	OH-ER-149.0000	127.3	127.3	Drain tiles; size and type unknown
Erie	OH-ER-150.0000	127.3	127.6	Drain tiles; size and type unknown
Erie	OH-ER-150.0100	127.6	127.7	Drain tiles; size and type unknown
Erie	OH-ER-153.0000	127.8	127.9	Drain tiles; size and type unknown
Erie	OH-ER-154.0000 OH-ER-154.0000-TAR-12-128.3 OH-ER-000.0001-SA-7-SPRD2	127.9	128.3	Drain tiles; size and type unknown
Erie	OH-ER-158.0000 OH-ER-158.0000-MR OH-ER-158.0000-PAR-3-128.8 OH-ER-158.0000-VS	128.7	128.8	Drain tiles; size and type unknown
Erie	OH-ER-160.0000 OH-ER-160.0000-TAR-14-128.9 OH-ER-000.0001-SA-8-SPRD2	128.8	129.2	Drain tiles; size and type unknown
Erie	OH-ER-161.0000	129.2	129.6	Drain tiles; size and type unknown
Erie	OH-ER-162.0000	129.6	129.7	Drain tiles; size and type unknown
Erie	OH-ER-163.0000 OH-ER-163.0000-AB-6	129.7	130.0	Drain tiles; size and type unknown
Erie	OH-ER-165.0000	130.1	130.2	Drain tiles; size and type unknown
Erie	OH-ER-166.0000	130.2	130.4	Drain tiles; size and type unknown
Erie	OH-ER-167.0000	130.4	130.5	Drain tiles; size and type unknown
Erie	OH-ER-168.0000	130.5	130.6	Drain tiles; size and type unknown
Erie	OH-ER-169.0000	130.6	130.8	Drain tiles; size and type unknown
Erie	OH-ER-171.0000	130.8	131.1	Drain tiles; size and type unknown
Erie	OH-ER-172.0000	131.1	131.5	Drain tiles; size and type unknown
Sandusky	OH-SA-002.0000 OH-SA-000.0001-SA-1-SPRD2	131.5	131.7	Drain tiles; size and type unknown
Sandusky	OH-SA-003.0000	131.7	131.9	Drain tiles; size and type unknown
Sandusky	OH-SA-004.0000	131.9	132.0	Drain tiles; 2' to 5' point wells
Sandusky	OH-SA-005.0000	132.0	132.1	Drain tiles; 2" to 10" clay and plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Sandusky	OH-SA-006.0000	132.1	132.2	Drain tiles; 2" to 10" clay and plastic
Sandusky	OH-SA-007.0000	132.2	132.5	Drain tiles; 2" to 10" clay and plastic
Sandusky	OH-SA-008.0000 OH-SA-008.0000-TAR-1-132.7 OH-SA-000.0001-SA-2-SPRD2	132.5	132.7	Drain tiles; 2" to 10" clay
Sandusky	OH-SA-010.0000	132.7	132.8	Drain tiles; 4" to 8" clay and plastic; 2' to 4' depth
Sandusky	OH-SA-011.0000	132.8	133.1	Drain tiles; size unknown; clay
Sandusky	OH-SA-012.0000 OH-SA-012.0000-TAR-2-133.3 OH-SA-000.0001-SA-3-SPRD3	133.1	133.4	Drain tiles; 4" to 8" plastic
Sandusky	OH-SA-014.0000	133.4	133.5	Drain tiles; 4" plastic; 1.5' to 2' depth
Sandusky	OH-SA-013.0100	133.5	133.7	Drain tiles; size and type unknown
Sandusky	OH-SA-016.0000	133.5	133.9	Drain tiles; 6" clay; 2.5' depth
Sandusky	OH-SA-017.0010 OH-SA-017.0010-CS	133.9	134.1	Drain tiles; 4" clay, plastic, and concrete; 3' to 5' depth
Sandusky	OH-SA-017.0020 OH-SA-017.0020-CS	133.9	134.1	Drain tiles; 4" clay, plastic, and concrete; 3' to 5' depth
Sandusky	OH-SA-017.0000 OH-SA-017.0000-CS OH-SA-017.0000-PAR-0.5-134.1	133.9	134.1	Drain tiles; 4" clay, plastic, and concrete; 3' to 5' depth
Sandusky	OH-SA-019.0000	134.1	134.4	Drain tiles; 4" clay, plastic, and concrete; 3' to 5' depth
Sandusky	OH-SA-019.0010	134.1	134.4	Drain tiles; size and type unknown
Sandusky	OH-SA-022.0000	134.6	135.4	Drain tiles; 4" to 8" plastic; 2.5' depth
Sandusky	OH-SA-024.0000	135.4	135.9	Drain tiles; size and type unknown
Sandusky	OH-SA-025.0000	135.9	136.4	Drain tiles; 4" to 8" plastic; 2.5' depth
Sandusky	OH-SA-027.0000	136.4	136.9	Drain tiles; up to 10" plastic and clay
Sandusky	OH-SA-028.0000	136.9	137.4	Drain tiles; 4" plastic; 2.5' depth
Sandusky	OH-SA-030.0000	137.4	137.5	Drain tiles; size unknown; plastic and clay
Sandusky	OH-SA-031.0000	137.5	137.9	Drain tiles; size and type unknown
Sandusky	OH-SA-032.0000	137.9	138.0	Drain tiles; 4" plastic; 2.5' depth
Sandusky	OH-SA-033.0000	138.0	138.3	Drain tiles; size and type unknown
Sandusky	OH-SA-034.0000	138.3	138.4	Drain tiles; 4" plastic; 2.5' depth
Sandusky	OH-SA-035.0000	138.4	138.6	Drain tiles; 4" clay
Sandusky	OH-SA-037.0000	138.6	138.7	Drain tiles; size and type unknown
Sandusky	OH-SA-038.0000 OH-SA-038.0000-TAR-3-138.7 OH-SA-000.0001-SA-4-SPRD3	138.7	137.9	Drain tiles; size and type unknown
Sandusky	OH-SA-039.0000	138.8	139.1	Drain tiles; size and type unknown
Sandusky	OH-SA-040.0000	139.1	139.3	Drain tiles; size and type unknown
Sandusky	OH-SA-042.0000	139.3	139.5	Drain tiles; size and type unknown
Sandusky	OH-SA-042.0010	139.3	139.5	Drain tiles; size and type unknown
Sandusky	OH-SA-043.0000	139.5	139.6	Drain tiles; size and type unknown
Sandusky	OH-SA-045.0000	139.6	139.8	Drain tiles; 4" clay and plastic
Sandusky	OH-SA-047.0000	139.9	139.9	Drain tiles; 4" to 6" corrugated
Sandusky	OH-SA-048.0000	139.9	140.1	Drain tiles; 4" and 8" clay; 3' depth
Sandusky	OH-SA-050.0000	140.1	140.7	Drain tiles; size and type unknown
Sandusky	OH-SA-052.0000	140.7	140.7	Drain tiles; 4" and 8" plastic; 2.7' depth
Sandusky	OH-SA-054.0000	140.8	141.3	Drain tiles; 4" and 8" plastic; 2.5' depth

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Sandusky	OH-SA-056.0000	141.3	141.6	Drain tiles; 4" plastic; 2' depth
Sandusky	OH-SA-059.0000	141.6	141.9	Drain tiles; 4" plastic; 2' depth
Sandusky	OH-SA-061.0000	141.9	142.2	Drain tiles; 4" plastic; 2' depth
Sandusky	OH-SA-062.0000	142.2	142.5	Drain tiles; 4" and 8" plastic and clay; 3' depth
Sandusky	OH-SA-063.0000	142.5	142.6	Drain tiles; 4" and 8" plastic and clay; 3' depth
Sandusky	OH-SA-064.0000	142.6	142.7	Drain tiles; 4" and 8" plastic and clay; 3' depth
Sandusky	OH-SA-065.0000	142.7	142.7	Drain tiles; 4",6", and 8" plastic; 2.5' depth
Sandusky	OH-SA-067.0000	142.7	142.8	Drain tiles; 4",6", and 8" plastic; 2.5' depth
Sandusky	OH-SA-068.0000	142.8	143.0	Drain tiles; 4",6", and 8" plastic; 2.5' depth
Sandusky	OH-SA-072.0000	143.3	143.5	Drain tiles; size unknown; clay
Sandusky	OH-SA-073.0000	143.5	143.7	Drain tiles; size unknown; clay
Sandusky	OH-SA-076.0000	143.9	144.2	Drain tiles; 4" and 8" plastic; 3' depth
Sandusky	OH-SA-077.0000	144.2	144.3	Drain tiles; size and type unknown
Sandusky	OH-SA-078.0000	144.3	144.4	Drain tiles; size and type unknown
Sandusky	OH-SA-080.0000	144.4	144.7	Drain tiles; 4" and 8" plastic; 3' depth
Sandusky	OH-SA-081.0000 OH-SA-081.0000-AB-1	144.7	145.2	Drain tiles; 4" and 8" plastic; 3' depth
Sandusky	OH-SA-100.0000	146.6	146.7	Drain tiles; 6", 8", and 10" plastic
Sandusky	OH-SA-101.0000	146.7	147.0	Drain Tile; 4" clay, concrete, and plastic
Sandusky	OH-SA-102.0000	147.0	147.2	Drain tiles; 6" clay; 2.7' depth
Sandusky	OH-SA-105.0000	147.5	147.6	Drain tiles; 4" and 8" plastic; 2.5' depth
Sandusky	OH-SA-107.0000 OH-SA-107.0000-TAR-7-147.7 OH-SA-000.0001-SA-5-SPRD3	147.6	147.7	Drain tiles; 4" to 8" clay; 3' in depth
Sandusky	OH-SA-108.0000	147.7	148.1	Drain tiles; size and type unknown
Sandusky	OH-SA-109.0000	148.1	148.2	Drain tiles; 4" plastic; 2.7' depth
Sandusky	OH-SA-110.0000	148.2	148.3	Drain tiles; 4" plastic; 2.7' depth
Sandusky	OH-SA-112.0000	148.3	148.8	Drain tiles; 4" plastic; 2.7' depth
Sandusky	OH-SA-113.0000	148.8	149.0	Drain tiles; 4" and 8" clay and concrete; 2.7' depth
Sandusky	OH-SA-114.0000	149.0	149.3	Drain tiles; 4" and 8" clay and concrete; 2.7' depth
Sandusky	OH-SA-115.0000	149.3	149.4	Drain tiles; 4" and 8" clay and concrete; 2.7' depth
Sandusky	OH-SA-116.0000	149.4	149.6	Drain tiles; size and type unknown
Sandusky	OH-SA-118.0000	149.6	149.8	Drain tiles; size and type unknown
Sandusky	OH-SA-119.0000	149.8	150.0	Drain tiles; size and type unknown
Sandusky	OH-SA-120.0000	150.0	150.3	Drain tiles; 4" plastic; 3' depth
Sandusky	OH-SA-122.0000	150.3	150.5	Drain tiles; 4" plastic; 2' depth
Sandusky	OH-SA-122.0010	150.3	150.5	Drain tiles; 4" plastic; 3' depth
Sandusky	OH-SA-123.0000	150.5	150.7	Drain tiles; 4" plastic; 2.7' depth
Sandusky	OH-SA-125.0000	150.7	151.2	Drain tiles; 4" to 8" plastic; 2.5' depth
Sandusky	OH-SA-126.0000	151.2	151.3	Drain tiles; size and type unknown
Sandusky	OH-SA-128.0000	151.3	151.4	Drain tiles; size and type unknown
Sandusky	OH-SA-129.0000	151.4	151.5	Drain tiles; 4" and 8" plastic; 2.8' depth
Sandusky	OH-SA-130.0000	151.5	151.7	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Sandusky	OH-SA-132.0000 OH-SA-132.0000-MLV-11 OH-SA-132.0000-PAR-1.5-151.7	151.7	151.8	Drain tiles; 4" plastic; 2.7' depth
Sandusky	OH-SA-134.0000	151.9	152.2	Drain tiles; 4" clay and plastic; 3.3' depth
Sandusky	OH-SA-135.0000	152.2	152.5	Drain tiles; 8" plastic; 2.5' depth
Sandusky	OH-SA-136.0000	152.5	152.7	Drain tiles; 4" and 8" plastic; 3' depth
Sandusky	OH-SA-137.0000	152.7	152.7	Drain tiles; 4" and 8" plastic; 3' depth
Sandusky	OH-SA-139.0000	152.7	152.9	Drain tiles; 4" clay
Sandusky	OH-SA-140.0000	152.9	153.0	Drain tiles; 4" plastic; 2' depth
Sandusky	OH-SA-141.0000	153.0	153.2	Drain tiles; 4" plastic; 2' depth
Sandusky	OH-SA-142.0000	153.2	153.5	Drain tiles; size and type unknown
Sandusky	OH-SA-143.0000	153.5	153.7	Drain tiles; 4" plastic; 2.7' depth
Sandusky	OH-SA-145.0000	153.8	154.0	Drain tiles; 4" plastic; 2.7' depth
Sandusky	OH-SA-146.0000	154.0	154.1	Drain tiles; 4" plastic; 2.5' depth
Sandusky	OH-SA-147.0000	154.1	154.1	Drain tiles; 4" plastic
Sandusky	OH-SA-150.0000	154.3	154.6	Drain tiles; 4" clay; 1.7' depth
Sandusky	OH-SA-151.0000	154.6	154.7	Drain tiles; size and type unknown
Sandusky	OH-SA-153.0000	154.7	154.8	Drain tiles; size and type unknown
Sandusky	OH-SA-154.0000	154.8	154.9	Drain tiles; size and type unknown
Sandusky	OH-SA-155.0000	154.9	155.0	Drain tiles; size and type unknown
Sandusky	OH-SA-156.0000 OH-SA-156.0000-TAR-8-155.1 OH-SA-000.0001-SA-6-SPRD3	155.0	155.4	Drain tiles; 10" clay main, 4" to 6" plastic
Sandusky	OH-SA-157.0000	155.4	155.6	Drain tiles; size and type unknown
Sandusky	OH-SA-158.0000	155.6	155.6	Drain tiles; size unknown, plastic
Sandusky	OH-SA-159.0000	155.6	155.9	Drain tiles; 4" plastic
Sandusky	OH-SA-161.0000	155.9	156.3	Drain tiles; size and type unknown
Sandusky	OH-SA-163.0000	156.4	156.6	Drain tiles; size and type unknown
Sandusky	OH-SA-164.0000	156.6	156.9	Drain tiles; 4" plastic; 3' to 4' depth
Sandusky	OH-SA-165.0000	156.9	157.1	Drain tiles; size unknown – possible 6" clay
Sandusky	OH-SA-167.0000	157.1	157.4	Drain tiles; size and type unknown
Sandusky	OH-SA-171.0000	157.7	157.9	Drain tiles; size and type unknown
Sandusky	OH-SA-174.0000	158.2	158.4	Drain tiles; 6" clay; 2' depth
Sandusky	OH-SA-175.0000 OH-SA-175.0000-TAR-9-158.6	158.4	158.6	Drain tiles; 4" clay and plastic; 2' to 3' depth
Sandusky	OH-SA-176.0000 OH-SA-176.0000-TAR-9-158.6 OH-SA-000.0001-SA-7.1-SPRD3	158.6	158.9	Drain tiles; 4" clay and plastic; 2' to 3' depth
Sandusky	OH-SA-177.0000 OH-SA-177.0000-AB-2	158.9	159.0	Drain tiles; 2" and 4" clay; 2' depth
Sandusky	OH-SA-179.0000 OH-SA-179.0000-PAR-9.1-159.3	159.0	159.2	Drain tiles; 4" clay and plastic; 2' to 4' depth
Sandusky	OH-SA-180.0000 OH-SA-180.0000-PAR-9.1-159.3 OH-SA-180.0000-MR OH-SA-180.0000-VS	159.2	159.4	Drain tiles; 4" clay and plastic; 2' to 4' depth
Sandusky	OH-SA-181.0000	159.4	159.4	Drain tiles; 2" and 4" clay; 2' depth
Sandusky	OH-SA-189.0000/	160.3	160.4	Drain tiles; 8" plastic; 2' to 3' depth
Sandusky	OH-SA-190.0000	160.4	160.8	Drain tiles; 8" plastic; 2' to 3' depth
Sandusky	OH-SA-191.0000	160.8	160.8	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Sandusky	OH-SA-192.0000	160.8	161.1	Drain tiles; size unknown; clay
Sandusky	OH-SA-194.0000	161.1	161.4	Drain tiles; size unknown; clay
Sandusky	OH-SA-195.0000	161.4	161.4	Drain tiles; 6" and 8" plastic; 3' depth
Sandusky	OH-SA-196.0000	161.4	161.4	Drain tiles; 6" and 8" plastic; 3' depth
Sandusky	OH-SA-197.0000	161.4	161.7	Drain tiles; 6" and 8" plastic; 3' depth
Sandusky	OH-SA-198.0000	161.7	161.9	Drain tiles; 4" clay and plastic; 3' depth
Sandusky	OH-SA-200.0000	161.9	162.2	Drain tiles; 4" clay; 3' depth
Sandusky	OH-SA-201.0000	162.2	162.4	Drain tiles; 6" and 8" plastic; 3' depth
Sandusky	OH-SA-204.0000 OH-SA-204.0000-HTAR-1	162.4	162.5	Drain tiles; size and type unknown
Sandusky	OH-SA-207.0000	162.5	162.8	Drain tiles; 6" clay; 2' depth
Sandusky	OH-SA-208.0000	162.8	162.9	Drain tiles; 4" clay; 1.5' depth
Sandusky	OH-SA-212.0000	163.1	163.2	Drain tiles; 4" and 8" plastic and clay; 2' to 4' depth
Sandusky	OH-SA-216.0000	163.6	163.6	Drain tiles; 4" clay; 2' to 4' depth
Sandusky	OH-SA-217.0000	163.6	163.7	Drain tiles; 4" clay; 2' to 4' depth
Sandusky	OH-SA-218.0000	163.7	163.7	Drain tiles; 4" clay; 2.5' depth
Wood	OH-WO-002.0000	163.7	164.0	Drain tiles; 4" clay
Wood	OH-WO-002.0010	163.7	163.8	Drain tiles; 4" to 6" clay; 2' to 3' depth
Wood	OH-WO-003.0000 OH-WO-003.0000-TAR-1-163.9 OH-WO-000.0001-SA-1-SPRD3	163.8	164.0	Drain tiles; 3" to 4" clay; 3' to 4' depth
Wood	OH-WO-004.0000	164.0	164.1	Drain tiles; size and type unknown
Wood	OH-WO-005.0000	164.1	164.2	Drain tiles; size and type unknown
Wood	OH-WO-006.0000	164.2	164.5	Drain tiles; 4" plastic
Wood	OH-WO-009.0000	164.7	164.9	No drain tile on the south side of existing pipeline
Wood	OH-WO-011.0000	165.0	165.1	Drain tiles; size and type unknown
Wood	OH-WO-013.0000	165.1	165.2	Drain tiles; size and type unknown
Wood	OH-WO-014.0000	165.2	165.4	Drain tiles; size and type unknown
Wood	OH-WO-014.0010	165.2	165.4	Drain tiles; size and type unknown
Wood	OH-WO-015.0000 OH-WO-015.0000-TAR-2-165.5	165.4	165.6	Drain tiles; 4" plastic; 3' depth
Wood	OH-WO-016.0000	165.6	165.7	Drain tiles; 4" and 6" clay and plastic
Wood	OH-WO-017.0000	165.7	165.8	Drain tiles; 4" and 6" plastic
Wood	OH-WO-018.0000	165.8	166.0	Drain tiles; 4" plastic
Wood	OH-WO-021.0000	166.1	166.1	Drain tiles; size and type unknown
Wood	OH-WO-022.0000 OH-WO-022.0000-VS	166.1	166.6	Drain tiles; size and type unknown
Wood	OH-WO-023.0000	166.6	166.7	Drain tiles; size and type unknown
Wood	OH-WO-024.0000 OH-WO-024.0000-TAR-3-166.8	166.7	166.7	Drain tiles; size and type unknown
Wood	OH-WO-026.0000	166.8	167.2	Drain tiles; size and type unknown
Wood	OH-WO-028.0000	167.2	167.4	Drain tiles; size and type unknown
Wood	OH-WO-029.0000	167.4	167.8	Drain tiles; size and type unknown
Wood	OH-WO-029.0010	167.4	167.4	Drain tiles; 4" clay and concrete; 3' depth
Wood	OH-WO-030.0000	167.7	167.8	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Wood	OH-WO-031.0000 OH-WO-031.0000-PAR-1-167.8 OH-WO-031.0000-MLV-12	167.8	167.8	Drain tiles; 4" plastic; 2.5' to 3' depth
Wood	OH-WO-033.0000	167.8	168.0	Drain tiles; 4" clay; 2.5' to 3' depth
Wood	OH-WO-034.0000	168.0	168.1	Drain tiles; 4" clay; 2.5' to 3' depth
Wood	OH-WO-035.0000	168.1	168.2	Drain tiles; 4" clay; 2.5' to 3' depth
Wood	OH-WO-036.0000	168.2	168.3	Drain tiles; 4" clay; 2.5' to 3' depth
Wood	OH-WO-037.0000	168.3	168.4	Drain tiles; 4" clay; 3.5' depth
Wood	OH-WO-039.0000	168.4	168.4	Drain tiles; 4" clay; 3.5' depth
Wood	OH-WO-040.0000	168.4	168.9	Drain tiles; size unknown, clay and concrete; 4' depth
Wood	OH-WO-041.0000	168.9	169.4	Drain tiles; 4" clay
Wood	OH-WO-043.0000	169.4	169.9	Drain tiles; 4" plastic
Wood	OH-WO-044.0000	169.9	170.2	Drain tiles; 4" plastic
Wood	OH-WO-045.0000 OH-WO-045.0000-VS	170.2	170.4	Drain tiles; 4" plastic
Wood	OH-WO-047.0000	170.4	170.7	Drain tiles; 4" to 8"; type unknown
Wood	OH-WO-049.0000	170.7	170.8	Drain tiles; size and type unknown
Wood	OH-WO-051.0000	170.8	170.9	Drain tiles; size and type unknown
Wood	OH-WO-052.0000	170.9	170.9	Drain tiles; size and type unknown
Wood	OH-WO-053.0000 OH-WO-053.0000-TAR-4-171.2	170.9	171.2	Drain tiles; size and type unknown
Wood	OH-WO-054.0000 OH-WO-054.0000-TAR-4-171.2 OH-WO-000.0001-SA-5-SPRD3	171.2	171.4	Drain tiles; 4" plastic
Wood	OH-WO-055.0000	171.4	171.4	Drain tiles; 4" plastic
Wood	OH-WO-057.0000	171.4	171.7	Drain tiles; 4" clay and plastic
Wood	OH-WO-058.0000	171.4	171.7	Drain tiles; 4" plastic
Wood	OH-WO-059.0000	171.7	171.8	Drain tiles; 4" clay and plastic
Wood	OH-WO-060.0000	171.8	171.8	Drain tiles; 4" clay and plastic
Wood	OH-WO-061.0000	171.8	171.9	Drain tiles; 3" to 6" clay, plastic, and cement
Wood	OH-WO-062.0000	171.9	172.0	Drain tiles; size and type unknown
Wood	OH-WO-063.0000	172.0	172.2	Drain tiles; 4" clay and plastic
Wood	OH-WO-064.0000	172.2	172.2	Drain tiles; size unknown, clay and plastic
Wood	OH-WO-065.0000	172.2	172.3	Drain tiles; size unknown, clay and plastic
Wood	OH-WO-066.0000	172.3	172.5	Drain tiles; 4" clay, concrete, and plastic
Wood	OH-WO-067.0000	172.5	172.5	Drain tiles; size and type unknown
Wood	OH-WO-068.0000	172.5	172.6	Drain tiles; size and type unknown
Wood	OH-WO-070.0000	172.6	172.8	Drain tiles; 4" clay, concrete, and plastic
Wood	OH-WO-071.0000	172.8	172.9	Drain tiles; 4" plastic
Wood	OH-WO-072.0000	172.9	173.0	Drain tiles; 4" plastic
Wood	OH-WO-073.0000	173.0	173.3	Drain tiles; 4" plastic
Wood	OH-WO-076.0010	173.4	173.5	Drain tiles; size and type unknown
Wood	OH-WO-079.0000	173.6	173.7	Drain tiles; 4" plastic
Wood	OH-WO-084.0000	174.0	174.0	Drain tiles; 4" to 10" clay
Wood	OH-WO-085.0000	174.0	174.2	Drain tiles; 4" to 10" clay
Wood	OH-WO-086.0000	174.2	174.5	Drain tiles; 4" plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Wood	OH-WO-088.0000 OH-WO-088.0000-AB-3 OH-WO-088.0000-TAR-6-174.5	174.5	174.6	Drain tiles; 4" plastic
Wood	OH-WO-088.0100-AB-3	174.5	174.6	Drain tiles; 4" plastic
Wood	OH-WO-089.0000	174.6	174.7	Drain tiles; 4" plastic
Wood	OH-WO-090.0000	174.7	174.7	Drain tiles; 4" plastic
Wood	OH-WO-091.0000	174.7	174.9	Drain tiles; 4" plastic
Wood	OH-WO-092.0000 OH-WO-000.0001-SA-6-SPRD3	174.9	175.0	Drain tiles; size and type unknown
Wood	OH-WO-093.0000 OH-WO-093.0000-TAR-7-175.1 OH-WO-000.0001-SA-6.1-SPRD3	175.0	175.1	Drain tiles; size and type unknown
Wood	OH-WO-095.0000	175.2	175.2	Drain tiles; size and type unknown
Wood	OH-WO-096.0000	175.2	175.4	Drain tiles; size and type unknown
Wood	OH-WO-097.0000	175.4	175.4	Drain tiles; 4" clay, concrete, and plastic
Wood	OH-WO-099.0000	175.4	175.6	Drain tiles; size unknown, plastic
Wood	OH-WO-101.0000	175.6	176.1	Drain tiles; 4" to 6" plastic
Wood	OH-WO-102.0000	176.1	176.2	Drain tiles; 4" to 6" plastic
Wood	OH-WO-103.0000	176.2	176.6	Drain tiles; size unknown; clay
Wood	OH-WO-105.0000	176.6	176.8	Drain tiles; 4" clay and plastic
Wood	OH-WO-106.0000	176.8	176.9	Drain tiles; 4" clay and plastic
Wood	OH-WO-107.0000	176.9	176.9	Drain tiles; 4" clay and plastic
Wood	OH-WO-108.0000	176.9	177.0	Drain tiles; 4" clay and plastic
Wood	OH-WO-109.0000	177.0	177.0	Drain tiles; 4" clay and plastic
Wood	OH-WO-110.0000	177.0	177.3	Drain tiles; 4" to 6" plastic
Wood	OH-WO-112.0000	177.3	177.7	Drain tiles; size and type unknown
Wood	OH-WO-113.0000	177.7	177.8	Drain tiles; 4" to 6" plastic
Wood	OH-WO-114.0000	177.8	177.8	Drain tiles; 4" clay and plastic
Wood	OH-WO-115.0000	177.8	178.1	Drain tiles; 4" clay and plastic
Wood	OH-WO-117.0000	178.1	178.3	Drain tiles; 4" clay and plastic
Wood	OH-WO-118.0000	178.3	178.4	Drain tiles; 4" clay and plastic
Wood	OH-WO-119.0000	178.4	178.4	Drain tiles; size and type unknown
Wood	OH-WO-120.0000	178.4	178.5	Drain tiles; 4" clay
Wood	OH-WO-122.0000	178.6	178.8	Drain tiles; 4" clay
Wood	OH-WO-123.0000 OH-WO-123.0000-TAR-8-179.1 OH-WO-000.0001-SA-7-SPRD3	178.8	179.1	Drain tiles; 4" clay, concrete, and plastic
Wood	OH-WO-125.0000 OH-WO-125.0000-TAR-9-179.2	179.1	179.2	Drain tiles; 4" clay and plastic
Wood	OH-WO-126.0000	179.2	179.3	Drain tiles; 4" clay and plastic
Wood	OH-WO-127.0000	179.3	179.3	Drain tiles; 4" plastic
Wood	OH-WO-128.0000	179.3	179.5	Drain tiles; 4" and 10" clay, cement, and PVC; 2.25' to 3.1' depth
Wood	OH-WO-129.0000	179.5	179.5	Drain tiles; 4"; type unknown
Wood	OH-WO-130.0000	179.5	179.7	Drain tiles; 6" clay; 4' depth
Wood	OH-WO-131.0000 OH-WO-131.0000-TAR-10-179.9 OH-WO-131.0000-TAR-11-180.1	179.7	180.2	Drain tiles; 4" to 6" clay; 4' depth
Wood	OH-WO-134.0000	180.2	180.5	Drain tiles; size and type unknown
Wood	OH-WO-135.0000	180.5	180.7	Drain tiles; size and type unknown

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Wood	OH-WO-137.0000	180.8	181.0	Drain tiles; size and type unknown
Wood	OH-WO-139.0000	181.0	181.2	Drain tiles; size and type unknown
Wood	OH-WO-141.0000 OH-WO-141.0000-HTAR-1 OH-WO-141.0000-TAR-12-181.3	181.2	181.4	Drain tiles; size and type unknown
Lucas	OH-LC-016.0000	181.8	182.1	Drain tiles; 4" clay and plastic
Lucas	OH-LC-017.0000 OH-LC-017.0000-TAR-1-182.1 OH-LC-000.0001-SA-1-SPRD3 OH-LC-017.0000-VS	182.1	182.1	Drain tiles; 4" clay
Lucas	OH-LC-019.0000	182.1	182.4	Drain tiles; 4" clay
Lucas	OH-LC-020.0000	182.4	182.6	Drain tiles; size and type unknown
Lucas	OH-LC-021.0000	182.6	182.8	Drain tiles; size and type unknown
Lucas	OH-LC-022.0000	182.8	182.9	Drain tiles; 3" plastic
Lucas	OH-LC-023.0000	182.9	183.1	Drain tiles; 3" to 4" plastic
Lucas	OH-LC-025.0000	183.1	183.3	Drain tiles; 4" clay
Lucas	OH-LC-027.0000	183.4	183.5	Drain tiles; 4" clay
Lucas	OH-LC-028.0000 OH-LC-028.0000-CS	183.4	183.6	Drain tiles; 4" clay and plastic
Lucas	OH-LC-029.0000	183.6	183.7	Drain tiles; 3" to 4" plastic
Lucas	OH-LC-030.0000	183.7	184.0	Drain tiles; 3" to 4" plastic and clay
Lucas	OH-LC-031.0000	184.0	184.1	Drain tiles; 4" to 5" plastic and clay
Lucas	OH-LC-032.0000	184.1	184.2	Drain tiles; 4" to 6" plastic, some clay
Lucas	OH-LC-034.0000	184.3	184.5	Drain tiles; 4" clay
Lucas	OH-LC-035.0000	184.5	184.8	Drain tiles; 3" to 4" plastic and clay
Lucas	OH-LC-037.0000 OH-LC-037.0000-TAR-2-185.3	184.8	185.2	Drain tiles; 3" to 4" clay
Lucas	OH-LC-038.0000 OH-LC-038.0000-TAR-2-185.3	185.2	185.3	Drain tiles; 3" to 4" plastic and clay
Lucas	OH-LC-041.0000	185.3	185.5	Drain tiles; 4" clay
Lucas	OH-LC-042.0000	185.5	185.8	Drain tiles; size and type unknown
Lucas	OH-LC-043.0000	185.8	186.0	Drain tiles; 4" clay
Lucas	OH-LC-044.0000	186.0	186.3	Drain tiles; 4" clay
Lucas	OH-LC-046.0000	186.3	186.6	Drain tiles; 4" to 5" clay
Lucas	OH-LC-047.0000	186.6	186.6	Drain tiles; 4" to 5" clay
Lucas	OH-LC-048.0000	186.6	186.8	Drain tiles; 4" to 5" clay
Lucas	OH-LC-049.0000	186.8	187.1	Drain tiles; 4" to 5" plastic and clay
Lucas	OH-LC-050.0000	187.1	187.3	Drain tiles; 4" to 6" plastic and clay
Lucas	OH-LC-052.0000	187.3	187.6	Drain tiles; 6" plastic
Lucas	OH-LC-055.0000	187.9	188.1	Drain tiles; 4" to 5" plastic and clay
Lucas	OH-LC-056.0000	188.1	188.4	Drain tiles; 4" clay
Lucas	OH-LC-058.0000	188.4	188.6	Drain tiles; 4" to 6" plastic and clay
Lucas	OH-LC-059.0000	188.6	188.6	Drain tiles; 4" to 6" plastic and clay
Lucas	OH-LC-060.0000	188.6	188.8	Drain tiles; 4" to 6" plastic and clay
Lucas	OH-LC-061.0000	188.8	188.9	Drain tiles; 4" and 6" plastic
Lucas	OH-LC-063.0000	188.9	189.1	Drain tiles; 4" and 5" plastic
Lucas	OH-LC-064.0000 OH-LC-064.0000-PAR-2-189.2 OH-LC-064.0000-MLV-13	189.1	189.3	Drain tiles; 6" plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Henry	OH-HY-002.0000	189.4	189.7	Drain tiles; size and type unknown
Henry	OH-HY-004.0000	189.8	190.0	Drain tiles; 4" to 6" plastic
Henry	OH-HY-006.0000	190.0	190.2	Drain tiles; size and type unknown
Fulton	OH-FU-001.0000	190.2	190.5	Drain tiles; size and type unknown
Fulton	OH-FU-003.0000/	190.5	190.9	Drain tiles; size and type unknown
Fulton	OH-FU-004.0000	190.9	191.5	Drain tiles; 4" plastic
Fulton	OH-FU-006.0000 OH-FU-006.0000-AB-1	191.5	191.6	Drain tiles; size and type unknown
Fulton	OH-FU-007.0000	191.6	192.0	Drain tiles; size and type unknown
Fulton	OH-FU-008.0000	192.0	192.3	Drain tiles; size and type unknown
Fulton	OH-FU-010.0000	192.3	192.8	Drain tiles; size and type unknown
Fulton	OH-FU-012.0000	192.8	193.0	Drain tiles; size and type unknown
Fulton	OH-FU-013.0000	193.0	193.3	Drain tiles; size and type unknown
Fulton	OH-FU-017.0000	193.8	194.1	Drain tiles; size and type unknown
Fulton	OH-FU-018.0000	194.1	194.3	Drain tiles; 4" PVC and 8" main
Fulton	OH-FU-019.0000	194.3	194.8	Drain tiles; 4" PVC
Fulton	OH-FU-021.0000	194.8	195.1	Drain tiles; size and type unknown
Fulton	OH-FU-022.0000	195.1	195.3	Drain tiles; size and type unknown
Fulton	OH-FU-023.0000	195.3	195.6	Drain tiles; 4" and 6" sand slot and clay
Fulton	OH-FU-025.0000	195.6	195.9	Drain tiles; 4" and 6" PVC and clay
Fulton	OH-FU-027.0000	195.9	196.2	Drain tiles; 4" PVC
Fulton	OH-FU-029.0000	196.2	196.7	Drain tiles; 4" and 3" PVC and clay
Fulton	OH-FU-030.0000	196.7	196.8	Drain tiles; 4", 8", and 10" plastic; 4' to 5' depth
Fulton	OH-FU-031.0000	196.8	197.3	Drain tiles; 4", 8", and 10" plastic; 4' to 5' depth
Fulton	OH-FU-033.0000	197.3	197.8	Drain tiles; size and type unknown
Fulton	OH-FU-033.0010	197.8	197.8	Drain tiles; size and type unknown
Fulton	OH-FU-035.0000	197.9	198.0	Drain tiles; 4" and 10" clay and PVC
Fulton	OH-FU-036.0000	198.0	198.0	Drain tiles; 4" and 10" clay and PVC
Fulton	OH-FU-037.0000	198.0	198.3	Drain tiles; size and type unknown
Fulton	OH-FU-039.0000	198.3	198.8	Drain tiles; 4" and 10" PVC
Fulton	OH-FU-040.0000	198.8	199.0	Drain tiles; 4" and 10" PVC
Fulton	OH-FU-042.0000	199.1	199.3	Drain tiles; 4" and 10" PVC
Fulton	OH-FU-044.0000 OH-FU-044.0000-VS	199.3	199.4	Drain tiles; 20" plastic and clay
Fulton	OH-FU-045.0000	199.4	199.6	Drain tiles; size and type unknown
Fulton	OH-FU-046.0000	199.6	199.7	Drain tiles; 4" PVC
Fulton	OH-FU-047.0000	199.7	200.0	Drain tiles; 4" PVC and clay
Fulton	OH-FU-049.0000	200.0	200.2	Drain tiles; size and type unknown
Fulton	OH-FU-050.0000	200.2	200.2	Drain tiles; 4" feed, 6" main; plastic
Fulton	OH-FU-051.0000 OH-FU-051.0000-TAR-1-200.7	200.2	200.5	Drain tiles; 20" plastic and clay
Fulton	OH-FU-052.0000 OH-FU-052.0000-TAR-1-200.7 OH-FU-000.0001-SA-1-SPRD3	200.5	200.6	Drain tiles; 20" plastic and clay
Fulton	OH-FU-053.0000 OH-FU-053.0000-TAR-1-200.7	200.6	200.8	Drain tiles; 20" plastic and clay
Fulton	OH-FU-054.0000	200.8	200.9	Drain tiles; 4" clay and plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Fulton	OH-FU-057.0000	200.9	201.4	Drain tiles; size unknown, plastic
Fulton	OH-FU-058.0000	201.4	201.6	Drain tiles; 4" clay and plastic
Fulton	OH-FU-061.0000	201.6	201.8	Drain tiles; size and type unknown
Fulton	OH-FU-062.0000	201.8	202.2	Drain tiles; size and type unknown
Fulton	OH-FU-063.0000	202.2	202.7	Drain tiles; 4", 8", and 10" clay, plastic, and concrete
Fulton	OH-FU-065.0000	202.7	202.8	Drain tiles; 4" PVC; 4' depth
Fulton	OH-FU-066.0000	202.8	203.0	Drain tiles; 4" PVC; 4' depth
Fulton	OH-FU-067.0000	203.0	203.2	Drain tiles; 4" PVC; 4' depth
Fulton	OH-FU-068.0000	203.2	203.4	Drain tiles; 4" PVC; 4' depth
Fulton	OH-FU-069.0000	203.4	203.8	Drain tiles; 4" PVC; 4' depth
Fulton	OH-FU-071.0000	203.8	203.9	Drain tiles; 4", 6", and 8" plastic and clay
Fulton	OH-FU-072.0000	203.9	204.3	Drain tiles; 4" to 6" clay and PVC; 4' depth
Fulton	OH-FU-073.0000	204.3	204.4	Drain tiles; 4" to 6" clay and PVC; 4' depth
Fulton	OH-FU-075.0000	204.4	204.8	Drain tiles; 4" PVC; 2' to 3' depth
Fulton	OH-FU-076.0000	204.8	204.9	Drain tiles; 4" clay and plastic; 26" to 30" depth
Fulton	OH-FU-078.0000	204.9	205.3	Drain tiles; 4" clay and plastic; 26" to 30" depth
Fulton	OH-FU-079.0000	204.9	205.3	Drain tiles; 4" PVC; 2' to 3' depth
Fulton	OH-FU-080.0000	205.3	205.5	Drain tiles; 8" PVC and clay; 4' depth
Fulton	OH-FU-081.0000	205.5	206.0	Drain tiles; 4" clay and plastic; 3' depth
Fulton	OH-FU-083.0000 OH-FU-083.0000-AB-2	206.0	206.2	Drain tiles; 4" PVC; 2' to 3' depth
Fulton	OH-FU-084.0000	206.2	206.5	Drain tiles; 4", 6", and 8" plastic and clay; 2' to 3' depth
Fulton	OH-FU-085.0000	206.5	206.7	Drain tiles; 4", 6", and 8" plastic and clay; 2' to 3' depth
Fulton	OH-FU-086.0000	206.7	207.0	Drain tiles; 4", 6", and 8" plastic and clay; 2' to 3' depth
Fulton	OH-FU-088.0000/	207.0	207.2	Drain tiles; 4", 6", and 8" plastic and clay; 2' to 3' depth
Fulton	OH-FU-089.0000	207.2	207.4	Drain tiles; 4" plastic and clay; 3' depth
Fulton	OH-FU-090.0000	207.4	207.8	Drain tiles; 4", 6", and 8" plastic and clay; 2' to 3' depth
Fulton	OH-FU-092.0000	207.8	207.9	Drain tiles; 4", 6", and 8" plastic and clay; 2' to 3' depth
Fulton	OH-FU-093.0000	207.8	207.9	Drain tiles; 12" plastic
Fulton	OH-FU-094.0000	207.9	208.0	Drain tiles; size unknown, plastic
Fulton	OH-FU-095.0000 OH-FU-095.0000-TAR-2-208.2 OH-FU-000.0001-SA-2-SPRD3 OH-FU-000.0001-SA-3-SPRD3	208.0	208.2	Drain tiles; size and type unknown
Fulton	OH-FU-096.0000	208.2	208.3	Drain tiles; size and type unknown
MICHIGAN				
Mainline				
Lenawee	MI-LE-001.0000 MI-LE-001.0000-TAR-1-208.3 MI-LE-000.0001-SA-1-SPRD4 MI-LE-000.0001-SA-2-SPRD4 MI-LE-003.0000-MLV-14	208.3	208.5	Drain tiles; 4" clay and plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Lenawee	MI-LE-002.0000	208.5	208.7	Drain tiles; 4" clay and plastic
Lenawee	MI-LE-003.0000 MI-LE-003.0000-MLV-15 MI-LE-003.0000-PAR-1-208.9	208.7	209.0	Drain tiles; 4" clay and plastic
Lenawee	MI-LE-005.0000	209.0	209.5	Drain tiles; 4" and 6" clay
Lenawee	MI-LE-006.0000	209.5	209.7	Drain tiles; 4" and 8" clay and plastic
Lenawee	MI-LE-007.0000	209.7	210.0	Drain tiles; 4" and 8" clay and plastic
Lenawee	MI-LE-010.0000	210.0	210.2	Drain tiles; 4" and 8" clay and plastic
Lenawee	MI-LE-011.0000	210.2	210.5	Drain tiles; 4" clay
Lenawee	MI-LE-012.0000	210.5	211.0	Drain tiles; 4" and 8" clay and plastic
Lenawee	MI-LE-014.0000	211.0	211.5	Drain tiles; 4" and 8" clay and plastic
Lenawee	MI-LE-015.0000	211.5	212.0	Drain tiles; 4" plastic
Lenawee	MI-LE-017.0000	212.0	212.5	Drain tiles; 4" and 8" clay and plastic
Lenawee	MI-LE-018.0000	212.5	213.0	Drain tiles; 4" plastic
Lenawee	MI-LE-020.0000	213.0	213.5	Drain tiles; 4" and 6" plastic
Lenawee	MI-LE-021.0000	213.5	214.0	Drain tiles; 4" and 6" clay and plastic
Lenawee	MI-LE-023.0000	214.0	214.3	Drain tiles; 4" and 6" clay and plastic
Lenawee	MI-LE-024.0000	214.3	214.5	Drain tiles; 4" and 6" clay and plastic
Lenawee	MI-LE-025.0000	214.5	214.8	Drain tiles; 4" and 6" clay and plastic
Lenawee	MI-LE-026.0000	215.1	215.2	Drain tiles; 4" clay
Lenawee	MI-LE-027.0000	215.8	215.9	Drain tiles; 4" plastic
Lenawee	MI-LE-030.0000	215.9	216.0	Drain tiles; size and type unknown
Lenawee	MI-LE-031.0000	216.0	216.3	Drain tiles; 4" and 8" clay and plastic
Lenawee	MI-LE-032.0000	216.3	216.7	Drain tiles; 4" and 8" clay and plastic
Lenawee	MI-LE-034.0000	216.7	216.8	Drain tiles; 4" clay
Lenawee	MI-LE-035.0000	216.8	217.1	Drain tiles; 4" and 8" plastic
Lenawee	MI-LE-038.0000	217.1	217.4	Drain tiles; 4", 6", and 8" plastic
Lenawee	MI-LE-039.0000	217.4	217.9	Drain tiles; 4" plastic
Lenawee	MI-LE-040.0000	217.9	218.4	Drain tiles; 4" clay
Lenawee	MI-LE-042.0000	218.4	218.9	Drain tiles; 4" plastic
Lenawee	MI-LE-043.0000	218.9	219.0	Drain tiles; 4" clay
Lenawee	MI-LE-044.0000	219.0	219.2	Drain tiles; 4" clay
Lenawee	MI-LE-045.0000	219.2	219.3	Drain tiles; 4" clay
Lenawee	MI-LE-046.0000	219.3	219.5	Drain tiles; 4" clay
Lenawee	MI-LE-047.0000	219.6	219.8	Drain tiles; size and type unknown
Lenawee	MI-LE-049.0010	219.6	219.8	Drain tiles; 4" clay
Lenawee	MI-LE-050.0000	219.8	220.1	Drain tiles; 4" clay and 4" and 8" plastic
Lenawee	MI-LE-052.0000	220.1	220.2	Drain tiles; 4" clay and 4" and 8" plastic
Lenawee	MI-LE-053.0000	220.2	220.4	Drain tiles; 4" clay
Lenawee	MI-LE-054.0000	220.4	220.4	Drain tiles; 4" clay
Lenawee	MI-LE-055.0010	220.4	220.4	Drain tiles; 4" clay
Lenawee	MI-LE-056.0000	220.4	220.6	Drain tiles; 4" clay
Lenawee	MI-LE-057.0000	220.6	220.7	Drain tiles; 4" clay
Lenawee	MI-LE-059.0000 MI-LE-059.0000-AB-1 MI-LE-059.0000-TAR-2-220.7	220.7	221.0	Drain tiles; 4" and 8" plastic
Lenawee	MI-LE-059.0100-AB-1	220.7	221.0	Drain tiles; 4" clay
Lenawee	MI-LE-060.0000	221.0	221.0	Drain tiles; 4" clay and 4" and 8" plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Lenawee	MI-LE-061.0000	221.0	221.2	Drain tiles; 4" to 8" plastic
Lenawee	MI-LE-062.0000	221.2	221.2	Drain tiles; 4" clay and 4" and 8" plastic
Lenawee	MI-LE-063.0000	221.2	221.3	Drain tiles; 4" to 6" clay
Lenawee	MI-LE-065.0000	221.3	221.6	Drain tiles; 4" to 8" plastic
Lenawee	MI-LE-066.0000	221.6	221.8	Drain tiles; 4" to 6" clay
Lenawee	MI-LE-067.0000	221.8	222.0	Drain tiles; 4" to 8" plastic
Lenawee	MI-LE-069.0000	222.1	222.2	Drain tiles; 4" to 6" clay
Lenawee	MI-LE-070.0000	222.2	222.7	Drain tiles; 6" plastic, 4" metal
Lenawee	MI-LE-072.0000	222.7	222.8	Drain tiles; size and type unknown
Lenawee	MI-LE-073.0000	222.8	223.1	Drain tiles; 4" clay and plastic
Lenawee	MI-LE-074.0000	223.1	223.2	Drain tiles; size unknown, plastic
Lenawee	MI-LE-076.0000	223.3	223.5	Drain tiles; 4" clay and plastic
Lenawee	MI-LE-077.0000	223.5	223.8	Drain tiles; size unknown, plastic
Lenawee	MI-LE-078.0000	223.8	224.1	Drain tiles; 4" clay and plastic
Lenawee	MI-LE-079.0000	224.1	224.1	Drain tiles; 4" clay and plastic
Lenawee	MI-LE-080.0000	224.1	224.4	Drain tiles; 4" clay and plastic
Lenawee	MI-LE-082.0000	224.4	224.6	Drain tiles; size and type unknown
Lenawee	MI-LE-083.0000	224.6	224.9	Drain tiles; size unknown, plastic
Lenawee	MI-LE-084.0000	224.9	225.0	Drain tiles; 8" and 4" plastic
Lenawee	MI-LE-086.0000	225.0	225.1	Drain tiles; 8" and 4" plastic
Lenawee	MI-LE-087.0000	225.1	225.5	Drain tiles; 3" to 12" plastic
Lenawee	MI-LE-088.0000	225.5	225.6	Drain tiles; size and type unknown
Lenawee	MI-LE-091.0000	225.7	226.1	Drain tiles; 6" clay
Lenawee	MI-LE-092.0000	226.1	226.3	Drain tiles; 4" clay
Lenawee	MI-LE-093.0000 MI-LE-093.0000-TAR-3-226.4	226.3	226.6	Drain tiles; 10" plastic
Lenawee	MI-LE-095.0000	226.7	227.0	Drain tiles; 10" plastic
Lenawee	MI-LE-097.0000	227.0	227.2	Drain tiles; size and type unknown
Lenawee	MI-LE-098.0000	227.2	227.5	Drain tiles; 10" plastic
Lenawee	MI-LE-100.0000	227.6	227.6	Drain tiles; 4" clay and plastic
Lenawee	MI-LE-101.0000	227.6	227.9	Drain tiles; 4" clay and plastic
Lenawee	MI-LE-000.0010-CERT-Y-1-SPRD-4	N/A	N/A	Drain tiles; 6" clay
Lenawee	MI-LE-102.0000	227.9	228.0	Drain tiles; 8" clay and plastic
Lenawee	MI-LE-103.0000 MI-LE-103.0000-PAR-2-228.2 MI-LE-103.0000-MLV-15	228.0	228.2	Drain tiles; 3" to 4" clay and plastic
Lenawee	MI-LE-105.0000	228.2	228.5	Drain tiles; size and type unknown
Lenawee	MI-LE-106.0000	228.5	228.5	Drain tiles; size and type unknown
Lenawee	MI-LE-106.0010	228.5	228.5	Drain tiles; size and type unknown
Lenawee	MI-LE-107.0000	228.5	228.8	Drain tiles; 4" clay and plastic
Lenawee	MI-LE-108.0000	228.8	229.4	Drain tiles; 4" to 12" plastic
Lenawee	MI-LE-110.0000	229.4	229.5	Drain tiles; size unknown; clay and plastic
Lenawee	MI-LE-111.0000 MI-LE-111.0000-TAR-4-229.6 MI-LE-000.0001-SA-4-SPRD4	229.5	229.8	Drain tiles; 4", 5", 6", and 8" clay and plastic
Lenawee	MI-LE-112.0000	229.8	229.9	Drain tiles; multiple sizes; clay and plastic
Lenawee	MI-LE-113.0000	229.9	230.1	Drain tiles; multiple sizes; clay and plastic
Lenawee	MI-LE-115.0000	230.1	230.3	Drain tiles; multiple sizes; clay and plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Lenawee	MI-LE-116.0000	230.3	230.4	Drain tiles; 4" clay
Monroe	MI-MR-002.0000	230.4	230.5	Drain tiles; 4" to 6" clay and plastic
Monroe	MI-MR-003.0000	230.5	230.7	Drain tiles; multiple sizes; clay and plastic
Monroe	MI-MR-006.0000 MI-MR-006.0000-TAR-1-230.7	230.7	230.8	Drain tiles; size unknown, plastic
Monroe	MI-MR-007.0000	230.8	231.1	Drain tiles; multiple sizes; clay and plastic
Monroe	MI-MR-008.0000	231.1	231.2	Drain tiles; size and type unknown
Monroe	MI-MR-010.0000	231.3	231.3	Drain tiles; multiple sizes; clay and plastic
Monroe	MI-MR-012.0000	231.3	231.8	Drain tiles; size and type unknown
Monroe	MI-MR-013.0000	231.8	231.9	Drain tiles; size unknown; clay
Monroe	MI-MR-015.0000	231.9	232.2	Drain tiles; size unknown; clay
Monroe	MI-MR-016.0000	232.2	232.2	Drain tiles; 4" plastic
Monroe	MI-MR-018.0000	232.2	232.3	Drain tiles; 4" to 8" plastic
Monroe	MI-MR-019.0000	232.3	232.5	Drain tiles; 4" to 6" plastic
Monroe	MI-MR-021.0000	232.5	232.7	Drain tiles; multiple sizes; clay and plastic
Monroe	MI-MR-022.0000	232.7	232.8	Drain tiles; multiple sizes; clay and plastic
Monroe	MI-MR-023.0000	232.8	233.0	Drain tiles; 4" clay
Monroe	MI-MR-025.0000	233.1	233.1	Drain tiles; 4" to 8" plastic
Monroe	MI-MR-027.0000	233.1	233.2	Drain tiles; size and type unknown
Monroe	MI-MR-028.0000	233.2	233.3	Drain tiles; size unknown; clay
Monroe	MI-MR-029.0000	233.4	233.7	Drain tiles; size and type unknown
Monroe	MI-MR-030.0000	233.7	233.8	Drain tiles; size and type unknown
Monroe	MI-MR-031.0000	233.8	234.0	Drain tiles; size and type unknown
Monroe	MI-MR-032.0000	234.0	234.0	Drain tiles; 6" plastic
Monroe	MI-MR-033.0000	234.0	234.3	Drain tiles; 6" plastic
Monroe	MI-MR-035.0000	234.3	234.6	Drain tiles; size unknown; clay
Monroe	MI-MR-039.0000	234.6	235.0	Drain tiles; size and type unknown
Monroe	MI-MR-040.0000	235.0	235.2	Drain tiles; size and type unknown
Monroe	MI-MR-041.0000	235.2	235.4	Drain tiles; multiple sizes; plastic
Monroe	MI-MR-042.0000	235.4	235.7	Drain tiles; size and type unknown
Monroe	MI-MR-043.0000	235.7	235.7	Drain tiles; size and type unknown
Monroe	MI-MR-044.0000	235.7	236.0	Drain tiles; size and type unknown
Monroe	MI-MR-045.0000 MI-MR-045.0000-AB-2	236.0	236.3	Drain tiles; size and type unknown
Monroe	MI-MR-048.0000	236.3	236.6	Drain tiles; size and type unknown
Monroe	MI-MR-049.0000	236.6	236.8	Drain tiles; multiple sizes; clay and plastic
Washtenaw	MI-WA-001.0000 MI-WA-001.0000-TAR-1-237.2	236.9	237.3	Drain tiles; 8" and 4" clay and plastic
Washtenaw	MI-WA-001.0001-TAR-1-237.2	236.8	237.3	Drain tiles; 8" and 4" clay and plastic
Washtenaw	MI-WA-002.0000 MI-WA-002.0000-HTAR-1	237.3	237.5	Drain tiles; 8" and 4" clay and plastic
Washtenaw	MI-WA-003.0000	237.6	237.9	Drain tiles; 8" and 4" clay and plastic
Washtenaw	MI-WA-005.0000	237.9	238.0	Drain tiles; size and type unknown
Washtenaw	MI-WA-006.0000	238.0	238.2	Drain tiles; 8" and 4" clay and plastic
Washtenaw	MI-WA-008.0000	238.2	238.5	Drain tiles; 8" mains and 4" runs; clay and plastic
Washtenaw	MI-WA-009.0010	238.5	238.7	Drain tiles; size and type unknown
Washtenaw	MI-WA-010.0000	238.5	238.7	Drain tiles; 8" and 4" clay and plastic

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Washtenaw	MI-WA-011.0000	238.7	238.9	Drain tiles; 4" plastic
Washtenaw	MI-WA-012.0000	238.9	239.2	Drain tiles; 4" to 6" cement
Washtenaw	MI-WA-013.0000	239.2	239.3	Drain tiles; size and type unknown
Washtenaw	MI-WA-015.0000	239.3	239.6	Drain tiles; 4" to 6" clay
Washtenaw	MI-WA-016.0010-TAR-2-239.6	239.6	239.6	Drain tiles; size and type unknown
Washtenaw	MI-WA-018.0000	239.7	240.0	Drain tiles; size and type unknown
Washtenaw	MI-WA-018.0010	239.9	239.9	Drain tiles; 4" plastic
Washtenaw	MI-WA-020.0000	240.0	240.1	Drain tiles; size and type unknown
Washtenaw	MI-WA-021.0000	240.1	240.1	Drain tiles; size and type unknown
Washtenaw	MI-WA-022.0000	240.1	240.5	Drain tiles; size and type unknown
Washtenaw	MI-WA-023.0000	240.5	240.7	Drain tiles; 4" to 6" plastic
Washtenaw	MI-WA-024.0000	240.7	240.8	Drain tiles; size and type unknown
Washtenaw	MI-WA-025.0000	240.8	241.2	Drain tiles; 4" and 6" plastic
Washtenaw	MI-WA-027.0000	241.2	241.2	Drain tiles; 4" and 6" plastic
Washtenaw	MI-WA-028.0000	241.2	241.5	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-029.0000	241.5	241.6	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-030.0000	241.8	241.8	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-032.0000	241.8	242.1	Drain tiles; 4" to 6" plastic
Washtenaw	MI-WA-033.0000	242.1	242.3	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-035.0000 MI-WA-035.0000-TAR-3-242.4 MI-WA-000.0001-SA-3-SPRD4	242.3	242.5	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-036.0000	242.5	242.8	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-037.0000	242.8	242.9	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-038.0000	242.9	243.0	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-039.0000	243.0	243.0	Drain tiles; size and type unknown
Washtenaw	MI-WA-040.0000	243.0	243.1	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-041.0000	243.1	243.3	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-043.0000	243.3	243.8	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-045.0000	243.8	243.9	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-046.0000	243.9	244.3	Drain tiles; size and type unknown
Washtenaw	MI-WA-047.0000	244.3	244.4	Drain tiles; 4" and 6" clay and plastic
Washtenaw	MI-WA-048.0000	244.4	244.7	Drain tiles; 4" to 6" clay
Washtenaw	MI-WA-049.0000	244.7	244.9	Drain tiles; size and type unknown
Washtenaw	MI-WA-051.0000	245.0	245.2	Drain tiles; size and type unknown
Washtenaw	MI-WA-055.0000	245.3	245.3	Drain tiles; size and type unknown
Washtenaw	MI-WA-056.0000	245.3	245.4	Drain tiles; size and type unknown
Washtenaw	MI-WA-057.0000	245.4	245.5	Drain tiles; size and type unknown
Washtenaw	MI-WA-058.0000	245.5	245.6	Drain tiles; size and type unknown
Washtenaw	MI-WA-059.0000	245.6	245.6	Drain tiles; size and type unknown
Washtenaw	MI-WA-060.0000	245.6	245.7	Drain tiles; size and type unknown
Washtenaw	MI-WA-063.0000 MI-WA-063.0000-TAR-4-246.2	245.8	246.3	Drain tiles; 8" and 4" clay
Washtenaw	MI-WA-064.0000 MI-WA-064.0000-AB-1	246.3	246.6	Drain tiles; 4" clay
Washtenaw	MI-WA-064.0010 MI-WA-064.0010-AB-1	246.3	246.6	Drain tiles; size and type unknown
Washtenaw	MI-WA-066.0000	246.6	247.1	Drain tiles; 4" clay

APPENDIX K-5 (cont'd)

Agricultural Drain Tiles and Irrigation Systems Crossed by the NGT Project

State, Facility, County	Tract Number(s)	Milepost Start [a]	Milepost End [a]	Drain or Irrigation Description
Mainline (cont'd)				
Washtenaw	MI-WA-067.0000 MI-WA-067.0000-PAR-1-247.4 MI-WA-000.0001-SA-5-SPRD4 MI-WA-067.0000-MLV-16	247.1	247.4	Drain tiles; 4" clay
Washtenaw	MI-WA-068.0010	247.4	247.4	Drain tiles; 4" corrugated
Washtenaw	MI-WA-074.0010	247.9	248.0	Drain tiles; size unknown; clay and corrugated
Washtenaw	MI-WA-076.0000	247.9	248.0	Drain tiles; size unknown; clay and corrugated
Washtenaw	MI-WA-077.0000	248.0	248.0	Drain tiles; size unknown; clay and corrugated
Washtenaw	MI-WA-078.0000	248.0	248.0	Drain tiles; size unknown; clay and corrugated
Washtenaw	MI-WA-079.0000	248.0	248.1	Drain tiles; size unknown; clay and corrugated
Washtenaw	MI-WA-080.0000	248.1	248.1	Drain tiles; size unknown; clay and corrugated
Washtenaw	MI-WA-081.0000	248.1	248.1	Drain tiles; size unknown; clay and corrugated
Washtenaw	MI-WA-081.0010	248.1	248.1	Drain tiles; size unknown; clay and corrugated
Washtenaw	MI-WA-087.0000	248.4	248.4	Drain tiles; size unknown, clay
Washtenaw	MI-WA-089.0000	248.5	248.5	Drain tiles; size and type unknown
Washtenaw	MI-WA-091.0000	248.5	248.6	Drain tiles; size and type unknown
Washtenaw	MI-WA-091.0100	248.5	248.6	Drain tiles; size and type unknown
Washtenaw	MI-WA-092.0000	248.6	248.7	Drain tiles; 8" clay
Washtenaw	MI-WA-094.0000	248.7	248.9	Drain tiles; 8" clay

a Mileposts are approximate.

APPENDIX K-6

ROADWAYS CROSSED BY THE NGT PROJECT

APPENDIX K-6

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
OHIO					
TGP Interconnecting Pipeline					
Columbiana	0.1	County Road 842	Gravel	Public	Open-Cut
Columbiana	0.1	Unnamed	Gravel	Private	Open-Cut
Columbiana	0.6	Hagan Road	Gravel	Public	Open-Cut
Columbiana	0.6	Tunnel Hill Road	Paved	Public	Open-Cut
Mainline					
Columbiana	1.1	Mechanicstown Road	Paved	Public	Bore
Columbiana	1.7	Unnamed	Dirt	Private	Open-Cut
Columbiana	1.8	Driveway	Gravel	Private	Open-Cut
Columbiana	2.0	U.S. Highway 30	Paved	Public	Bore
Columbiana	2.2	Campbell Road	Gravel	Public	Open-Cut
Columbiana	2.3	Driveway	Gravel	Private	Open-Cut
Columbiana	2.7	Unnamed	Dirt	Private	Open-Cut
Columbiana	2.8	Unnamed	Dirt	Private	Open-Cut
Columbiana	2.9	Unnamed	Dirt	Private	Open-Cut
Columbiana	3.3	Campbell Road	Paved	Public	Open-Cut
Columbiana	3.5	Buffalo Road	Paved	Public	Open-Cut
Columbiana	4.6	Driveway	Dirt	Private	Open-Cut
Columbiana	4.6	Driveway	Dirt	Private	Open-Cut
Columbiana	4.9	Driveway	Gravel	Private	Open-Cut
Columbiana	4.9	County Road 813	Gravel	Public	Bore
Columbiana	5.0	County Road 812 Weaver Road	Paved	Public	Open-Cut
Columbiana	5.6	County Road 402	Paved	Public	Open-Cut
Columbiana	5.6	Driveway	Gravel	Private	Open-Cut
Columbiana	6.1	Unnamed	Dirt	Private	Open-Cut
Columbiana	6.3	County Road 710	Paved	Public	Open-Cut
Columbiana	6.4	Unnamed	Gravel	Private	Open-Cut
Columbiana	7.2	Unnamed	Gravel	Private	Open-Cut
Columbiana	7.3	Unnamed	Gravel	Private	Open-Cut
Columbiana	7.6	Field Road	Gravel	Private	Open-Cut
Columbiana	7.7	State Highway 172	Paved	Public	Bore
Columbiana	8.0	Driveway	Paved	Private	HDD
Columbiana	8.0	Knox School Road	Paved	Public	HDD
Columbiana	8.2	Unnamed	Dirt	Private	HDD
Columbiana	9.9	Driveway	Gravel	Private	Open-Cut
Columbiana	10.0	County Road 705	Paved	Public	Bore
Columbiana	10.0	Mountz Road	Paved	Public	Open-Cut
Columbiana	10.1	Driveway	Gravel	Private	Open-Cut
Columbiana	10.5	County Road 703	Paved	Public	Open-Cut
Columbiana	10.7	Unnamed	Dirt	Private	Open-Cut
Columbiana	11.3	County Road 701	Paved	Public	Bore
Columbiana	12.4	Georgetown Road	Paved	Public	Bore
Columbiana	12.5	Mahoning Avenue	Paved	Public	Open-Cut
Stark	13.2	Bowman Street NE	Paved	Public	Bore

APPENDIX K-6 (cont'd)

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
Mainline (cont'd)					
Stark	13.3	Field Road	Dirt	Private	Open-Cut
Stark	13.3	Field Road	Dirt	Private	Open-Cut
Stark	14.0	Salem Church Street NE	Paved	Public	Open-Cut
Stark	14.1	State Highway 183	Paved	Public	Bore
Stark	14.8	Cenfield Street NE	Paved	Public	Bore
Stark	15.8	Driveway	Gravel	Private	Open-Cut
Stark	16.2	Beechwood Avenue	Paved	Public	Bore
Stark	16.7	Fredrick Avenue NE	Paved	Public	Open-Cut
Stark	17.8	Cartway Street NE	Dirt	Private	Bore
Stark	18.3	Easton Street NE	Paved	Public	Bore
Stark	18.6	Oakhill Avenue NE	Paved	Public	Bore
Stark	19.2	Unnamed	Dirt	Private	Open-Cut
Stark	19.6	Parks Avenue	Paved	Public	Bore
Stark	20.4	U.S. Highway 62	Paved	Public	Bore
Stark	20.8	Schmucker Avenue NE	Gravel	Public	Open-Cut
Stark	21.2	Beech Street NE	Paved	Public	Bore
Stark	21.7	State Highway 173	Paved	Public	Bore
Stark	22.0	Columbus Road	Paved	Public	Bore
Stark	22.2	Marlboro Avenue	Paved	Public	Bore
Stark	23.2	French Avenue	Paved	Public	Bore
Stark	23.5	Paris Avenue	Paved	Public	Bore
Stark	24.2	State Highway 44	Paved	Public	Bore
Stark	24.9	Unnamed	Dirt	Private	Open-Cut
Stark	25.0	Preston Avenue	Gravel	Public	Open-Cut
Stark	25.5	St. Peters Church Road	Paved	Public	Open-Cut
Stark	26.4	Immel Avenue	Paved	Public	Open-Cut
Stark	26.8	Field Road	Grass	Private	Open-Cut
Stark	26.9	Field Road	Grass	Private	Open-Cut
Stark	27.2	Gans Avenue NE	Paved	Public	Bore
Stark	28.2	Middlebranch Avenue NE	Paved	Public	Bore
Stark	29.3	State Highway 43	Paved	Public	Open-Cut
Stark	30.0	Field Road	Grass	Private	Open-Cut
Stark	30.3	Market Avenue N.	Paved	Public	Bore
Stark	30.8	Coblentz Avenue NW	Paved	Public	Bore
Stark	31.6	Field Road	Gravel	Private	Open-Cut
Stark	31.7	Field Road	Dirt	Private	Open-Cut
Stark	31.9	Midway Street NW	Paved	Public	Bore
Stark	32.1	County Road U	Paved	Public	Bore
Stark	32.8	Dotwood Street NW	Paved	Public	Open-Cut
Stark	33.0	Wright Road NW	Paved	Public	Open-Cut
Stark	33.1	Cleveland Avenue NW	Paved	Public	Bore
Stark	33.2	Driveway	Paved	Private	Open-Cut
Stark	33.2	Crosby Street NW	Paved	Public	Bore
Stark	33.2	Driveway	Paved	Private	Open-Cut

APPENDIX K-6 (cont'd)

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
Mainline (cont'd)					
Stark	34.0	Cain Street NW	Paved	Public	Bore
Summit	34.4	Field Road	Dirt	Private	Open-Cut
Summit	35.0	Mayfair Road	Paved	Public	Bore
Summit	35.5	Interstate 77	Paved	Public	Bore
Summit	36.8	Greensburg Road	Paved	Public	Bore
Summit	37.4	Massillon Road	Paved	Public	Open-Cut
Summit	37.8	Koons Road	Paved	Public	Open-Cut
Summit	38.3	Thursby Road	Paved	Public	Open-Cut
Summit	38.6	Unnamed	Paved	Private	Open-Cut
Summit	38.6	Driveway	Paved	Private	Open-Cut
Summit	39.0	Koons Road	Paved	Public	Open-Cut
Summit	39.8	Arlington Road	Paved	Public	Open-Cut
Summit	39.8	Field Road	Dirt	Private	Open-Cut
Summit	40.2	Killinger Road	Paved	Public	Open-Cut
Summit	40.8	Driveway	Gravel	Private	Open-Cut
Summit	41.2	Christman Road	Paved	Public	HDD
Summit	41.5	Driveway	Paved	Private	Open-Cut
Summit	41.5	E. Comet Road	Paved	Public	Open-Cut
Summit	42.1	Driveway	Gravel	Private	Open-Cut
Summit	42.1	S. Main Street	Paved	Public	Bore
Summit	42.2	Unnamed	Paved	Private	Open-Cut
Summit	42.7	S. Myers Road	Paved	Public	Open-Cut
Summit	43.6	Manchester Road	Paved	Public	Open-Cut
Summit	43.7	Driveway	Gravel	Private	Open-Cut
Summit	44.3	Hampsher Road	Paved	Public	Open-Cut
Summit	44.9	Grove Road	Paved	Public	Bore
Summit	45.5	W. Nimisila Road	Paved	Public	Bore
Summit	46.2	Rheam Road	Paved	Public	Open-Cut
Summit	46.3	Driveway	Gravel	Private	Open-Cut
Summit	46.8	Unnamed	Paved	Private	Open-Cut
Summit	46.8	Center Road	Paved	Public	Open-Cut
Summit	46.9	Driveway	Dirt	Private	Open-Cut
Summit	46.9	Driveway	Dirt	Private	Open-Cut
Summit	47.9	Van Buren Road	Paved	Public	HDD
Summit	48.8	Fairland Road	Paved	Public	Open-Cut
Summit	49.4	S. Cleveland Massillon Road	Paved	Public	Open-Cut
Summit	49.9	Kungle Road	Paved	Public	Open-Cut
Summit	50.4	Taylor Road	Paved	Public	Bore
Wayne	50.6	Driveway	Dirt	Private	Open-Cut
Wayne	50.9	Driveway	Dirt	Private	Open-Cut
Wayne	50.9	Driveway	Dirt	Private	Open-Cut
Wayne	51.1	State Highway 21	Paved	Public	Bore
Wayne	51.4	Hametown Road	Paved	Public	Bore
Wayne	52.0	Grill Road	Paved	Public	Bore

APPENDIX K-6 (cont'd)

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
Mainline (cont'd)					
Wayne	52.4	Unnamed	Gravel	Private	Open-Cut
Wayne	52.9	County Road 61	Paved	Public	Open-Cut
Wayne	53.0	County Road 5A	Paved	Public	Bore
Wayne	53.2	Unnamed	Dirt	Private	Open-Cut
Wayne	53.5	County Road 209	Paved	Public	Bore
Wayne	53.6	State Highway 585	Paved	Public	Bore
Wayne	54.1	County Road 100	Paved	Public	Bore
Wayne	54.6	County Road 94	Paved	Public	Bore
Wayne	55.0	Field Road	Dirt	Private	Open-Cut
Wayne	55.7	State Highway 94	Paved	Public	Bore
Wayne	56.2	Driveway	Dirt	Private	Open-Cut
Wayne	56.6	Hatfield Road	Paved	Public	Open-Cut
Wayne	56.6	Eastern Road	Paved	Public	Open-Cut
Medina	56.8	Rittman Road	Paved	Public	Bore
Medina	57.2	Eastern Road	Paved	Public	Bore
Medina	57.3	State Highway 57	Paved	Public	Bore
Medina	57.7	County Road 150	Paved	Public	Bore
Medina	58.0	County Road 18	Paved	Public	Bore
Medina	58.3	County Road 145	Paved	Public	Bore
Medina	58.7	Driveway	Dirt	Private	Open-Cut
Medina	59.4	Mennonite Road	Paved	Public	Open-Cut
Medina	60.3	Acme Road	Paved	Public	Bore
Medina	61.3	Rawiga Road	Paved	Public	Bore
Medina	61.4	Seville Road	Paved	Public	Bore
Medina	62.6	Greenwich Road	Paved	Public	Bore
Medina	63.1	Driveway	Dirt	Private	Open-Cut
Medina	63.2	Interstate 76	Paved	Public	Bore
Medina	63.8	Field Road	Dirt	Private	Open-Cut
Medina	64.2	Guilford Road	Paved	Public	Bore
Medina	64.4	Blake Road	Paved	Public	Bore
Medina	65.8	Hubbard Valley Road	Paved	Public	Bore
Medina	65.9	Good Road	Paved	Public	Bore
Medina	66.0	Interstate 71	Paved	Public	Bore
Medina	66.7	Wooster Pike Road	Paved	Public	Bore
Medina	67.1	Summer Ridge Drive	Paved	Private	Open-Cut
Medina	68.3	County Road 40	Paved	Public	Bore
Medina	68.3	County Road 50	Paved	Public	Bore
Medina	68.8	Driveway	Paved	Private	Open-Cut
Medina	69.3	Lake Road	Paved	Public	Bore
Medina	70.8	Driveway	Gravel	Private	Open-Cut
Medina	70.9	State Highway 162	Paved	Public	Bore
Medina	71.2	Driveway	Dirt	Private	HDD
Medina	71.4	Unnamed	Dirt	Private	HDD
Medina	71.8	Driveway	Gravel	Private	Open-Cut

APPENDIX K-6 (cont'd)

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
Mainline (cont'd)					
Medina	71.9	Lafayette Road	Paved	Public	Bore
Medina	72.5	Carlton Road	Paved	Public	Bore
Medina	73.2	Field Road	Dirt	Private	Open-Cut
Medina	73.7	W. Smith Road	Paved	Public	Open-Cut
Medina	74.1	Branch Road	Paved	Public	Bore
Medina	75.0	Stone Road	Paved	Public	Open-Cut
Medina	75.3	Driveway	Dirt	Private	Open-Cut
Medina	75.8	Field Road	Dirt	Private	Open-Cut
Medina	76.1	Driveway	Gravel	Private	Open-Cut
Medina	76.3	Beck Road	Paved	Public	Open-Cut
Medina	76.8	Unnamed	Dirt	Private	Open-Cut
Medina	77.0	State Highway 18	Paved	Public	Bore
Medina	78.0	Spieth Road	Paved	Public	Bore
Medina	79.1	Erhart Road	Paved	Public	Bore
Medina	79.6	Kennedy Road	Paved	Public	Bore
Lorain	81.2	Neff Road	Paved	Public	Bore
Lorain	82.6	State Highway 83	Paved	Public	Bore
Lorain	82.7	Law Road	Paved	Public	Bore
Lorain	83.9	Mennel Road	Paved	Public	Bore
Lorain	84.7	State Highway 303	Paved	Public	Bore
Lorain	85.9	County Road 49	Paved	Public	Bore
Lorain	87.1	County Road 26	Paved	Public	Bore
Lorain	88.2	Wheeler Road	Paved	Public	Bore
Lorain	89.2	State Highway 301	Paved	Public	Bore
Lorain	90.3	County Road 48	Paved	Public	Bore
Lorain	91.4	Diagonal Road	Paved	Public	Bore
Lorain	91.3	Unnamed	Grass	Private	Open-Cut
Lorain	92.4	County Road 38	Paved	Public	HDD
Lorain	93.4	County Road 75 Hallauer Road	Paved	Public	Bore
Lorain	93.4	U.S. Highway 20	Paved	Public	Bore
Lorain	94.6	State Highway 58	Paved	Public	Bore
Lorain	95.4	Unnamed	Gravel	Private	Open-Cut
Lorain	96.8	Quarry Road	Paved	Public	Bore
Lorain	97.7	County Road 51	Paved	Public	Bore
Lorain	98.5	Gifford Road	Paved	Public	Bore
Lorain	99.2	State Highway 511	Paved	Public	Bore
Lorain	100.0	Baird Road	Paved	Public	Bore
Lorain	100.6	County Road 34	Paved	Public	Bore
Huron	101.3	County Line Road	Paved	Public	Bore
Huron	102.4	County Road 63	Paved	Public	Open-Cut
Huron	103.9	State Highway 60	Paved	Public	Bore
Huron	104.6	W. River Road	Paved	Public	HDD
Erie	105.9	Florence Wakeman Road	Paved	Public	Open-Cut
Erie	106.1	Burr Road	Paved	Public	Bore

APPENDIX K-6 (cont'd)

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
Mainline (cont'd)					
Erie	107.6	County Road 59	Paved	Public	Bore
Erie	108.6	State Highway 113	Paved	Public	Bore
Erie	110.2	County Road 17	Paved	Public	HDD
Erie	110.3	Interstate 80	Paved	Public	HDD
Erie	110.3	Thorpe Road	Dirt	Private	Open-Cut
Erie	111.1	County Road 134	Paved	Public	Bore
Erie	112.1	County Road 13	Paved	Public	Bore
Erie	112.1	State Highway 61	Paved	Public	Bore
Erie	113.1	County Road 132	Paved	Public	Bore
Erie	113.7	Unnamed	Gravel	Private	Open-Cut
Erie	113.8	County Road 131	Paved	Public	Bore
Erie	114.5	Driveway	Dirt	Private	Open-Cut
Erie	114.6	County Road 128	Paved	Public	Bore
Erie	115.0	County Road 127	Paved	Public	Bore
Erie	116.3	County Road 126	Paved	Public	Bore
Erie	116.6	Driveway	Gravel	Private	Open-Cut
Erie	117.2	State Highway 13	Paved	Public	HDD
Erie	118.1	Hoover Road	Paved	Public	Bore
Erie	118.7	Driveway	Gravel	Private	Open-Cut
Erie	119.2	County Road 123	Paved	Public	Bore
Erie	119.4	Driveway	Gravel	Private	Open-Cut
Erie	119.4	Driveway	Gravel	Private	Open-Cut
Erie	119.5	Driveway	Gravel	Private	Open-Cut
Erie	119.5	U.S. Highway 250 N.	Paved	Public	Bore
Erie	120.4	Patrol Road	Paved	Private	Open-Cut
Erie	120.5	Driveway	Paved	Private	Open-Cut
Erie	120.9	County Road 13	Paved	Public	Bore
Erie	122.1	Thomas Road	Paved	Public	Bore
Erie	123.2	County Road 44 Ransom Road	Paved	Public	Bore
Erie	124.0	Driveway	Gravel	Private	Open-Cut
Erie	124.8	County Road 43	Paved	Public	Bore
Erie	125.8	County Road 108	Paved	Public	Bore
Erie	126.2	State Highway 99	Paved	Public	Bore
Erie	126.7	State Highway 4	Paved	Public	Bore
Erie	127.4	Driveway	Paved	Private	Open-Cut
Erie	127.7	Portland Road	Paved	Public	Bore
Erie	128.4	Maple Avenue	Paved	Public	Bore
Erie	128.8	Billings Road	Paved	Public	Bore
Erie	130.1	Deyo Road	Paved	Public	Bore
Erie	130.6	Driveway	Paved	Private	Open-Cut
Erie	130.8	State Highway 269	Paved	Public	Bore
Sandusky	131.5	County Road 1 County Road 312	Paved	Public	Bore
Sandusky	132.7	Interstate 80	Paved	Public	Bore

APPENDIX K-6 (cont'd)

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
Mainline (cont'd)					
Sandusky	133.3	Unnamed	Dirt	Private	Open-Cut
Sandusky	133.4	County Road 302	Paved	Public	Open-Cut
Sandusky	133.5	State Highway 101	Paved	Public	Bore
Sandusky	134.1	County Road 294	Paved	Public	Bore
Sandusky	135.4	County Road 278	Paved	Public	Open-Cut
Sandusky	136.4	County Road 268	Paved	Public	Bore
Sandusky	137.4	County Road 260	Paved	Public	Bore
Sandusky	137.5	County Road 233	Paved	Public	Bore
Sandusky	138.6	State Highway 510	Paved	Public	Bore
Sandusky	139.3	State Highway 412	Paved	Public	Bore
Sandusky	139.6	County Road 244	Paved	Public	Open-Cut
Sandusky	140.1	County Road 238	Paved	Public	Open-Cut
Sandusky	140.7	County Road 232	Paved	Public	Bore
Sandusky	140.7	County Road 241	Paved	Public	Open-Cut
Sandusky	141.3	County Road 226	Paved	Public	Open-Cut
Sandusky	141.6	County Road 239	Paved	Public	Bore
Sandusky	141.9	County Road 222	Paved	Public	Open-Cut
Sandusky	142.7	U.S. Highway 6	Paved	Public	Bore
Sandusky	143.3	County Road 202	Paved	Public	Bore
Sandusky	143.9	County Road 198	Paved	Public	Bore
Sandusky	144.4	County Road 188	Paved	Public	Bore
Sandusky	144.8	Interstate 80	Paved	Public	Bore
Sandusky	145.2	County Road 234	Paved	Public	Bore
Sandusky	146.2	State Highway 53	Paved	Public	Bore
Sandusky	146.5	County Road 170	Paved	Public	Bore
Sandusky	147.2	Interstate 80	Paved	Public	Bore
Sandusky	147.5	County Road 89	Paved	Public	Bore
Sandusky	148.3	State Highway 19	Paved	Public	Bore
Sandusky	149.6	County Road 142	Paved	Public	Open-Cut
Sandusky	150.3	County Road 128	Paved	Public	Bore
Sandusky	150.7	County Road 122	Paved	Public	Bore
Sandusky	151.7	County Road 106	Paved	Public	Bore
Sandusky	152.7	State Highway 590	Paved	Public	Bore
Sandusky	153.8	County Road 92	Paved	Public	Bore
Sandusky	154.2	State Highway 20	Paved	Public	Bore
Sandusky	154.4	Unnamed	Dirt	Private	Open-Cut
Sandusky	154.7	County Road 87 Long Road	Paved	Public	Bore
Sandusky	155.9	County Road 74	Paved	Public	Bore
Sandusky	157.1	County Road 66	Paved	Public	Bore
Sandusky	157.5	Driveway	Gravel	Private	Open-Cut
Sandusky	157.6	Driveway	Gravel	Private	Open-Cut
Sandusky	157.6	County Road 62	Paved	Public	Bore
Sandusky	158.2	State Highway 300	Paved	Public	Bore
Sandusky	158.6	Unnamed	Dirt	Private	Open-Cut

APPENDIX K-6 (cont'd)

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
Mainline (cont'd)					
Sandusky	158.9	Unnamed	Paved	Private	Open-Cut
Sandusky	159.0	County Road 93	Paved	Public	Open-Cut
Sandusky	159.7	County Road 38	Paved	Public	Open-Cut
Sandusky	160.3	County Road 32	Paved	Public	Bore
Sandusky	161.1	County Road 48	Paved	Public	Open-Cut
Sandusky	161.4	Driveway	Gravel	Private	Open-Cut
Sandusky	161.9	County Road 24	Paved	Public	Open-Cut
Sandusky	162.3	County Road 117	Paved	Public	HDD
Sandusky	162.6	State Highway 105	Paved	Public	HDD
Sandusky	163.1	County Road 139	Paved	Public	Bore
Wood	163.7	U.S. Highway 23	Paved	Public	Bore
Wood	164.5	State Highway 582	Paved	Public	Bore
Wood	164.9	County Road 16	Paved	Public	Bore
Wood	166.1	County Road 15	Paved	Public	Bore
Wood	166.3	Unnamed	Grass	Private	Open-Cut
Wood	167.2	County Road 111	Paved	Public	Bore
Wood	167.8	County Road 292	Paved	Public	Bore
Wood	168.4	County Road 11	Paved	Public	Bore
Wood	169.4	County Road 10	Paved	Public	Bore
Wood	170.4	Caris Road	Paved	Public	Open-Cut
Wood	170.8	County Road 272	Paved	Public	Open-Cut
Wood	172.6	State Highway 199	Paved	Public	Bore
Wood	173.5	Carter Road	Paved	Public	Bore
Wood	174.5	County Road 92	Paved	Public	Bore
Wood	175.1	Interstate 75	Paved	Public	Bore
Wood	175.4	Getz Road	Dirt	Private	Open-Cut
Wood	175.6	County Road 90	Paved	Public	Open-Cut
Wood	176.6	State Highway 25	Paved	Public	Bore
Wood	176.9	Driveway	Gravel	Private	Open-Cut
Wood	177.3	County Road 99 Pargillis Road	Paved	Public	Open-Cut
Wood	178.1	County Road 97 Hull Prairie Road	Paved	Public	Bore
Wood	179.9	State Highway 64	Paved	Public	HDD
Wood	181.0	County Road 235	Paved	Public	Bore
Wood	181.2	State Highway 65	Paved	Public	HDD
Lucas	181.8	Driveway	Paved	Private	HDD
Lucas	181.8	U.S. Highway 24	Paved	Public	HDD
Lucas	182.1	Driveway	Gravel	Private	Open-Cut
Lucas	182.1	Driveway	Gravel	Private	Open-Cut
Lucas	183.1	County Road 137	Paved	Public	Bore
Lucas	183.4	U.S. Highway 24	Paved	Public	Bore
Lucas	184.3	County Road 221	Paved	Public	Bore
Lucas	184.8	County Road 152	Paved	Public	Bore
Lucas	185.3	Heller Road	Paved	Public	Bore

APPENDIX K-6 (cont'd)

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
Mainline (cont'd)					
Lucas	185.3	Field Road	Gravel	Private	Open-Cut
Lucas	186.3	State Highway 295	Paved	Public	Bore
Lucas	187.3	Yawberg Road	Paved	Public	Open-Cut
Lucas	187.9	County Road 111	Paved	Public	Bore
Lucas	188.4	Manore Road	Paved	Public	Bore
Lucas	188.9	County Road 109	Paved	Public	Bore
Lucas	189.3	County Road 1	Paved	Public	Bore
Henry	190.2	County Road W County Road A	Paved	Public	Bore
Fulton	190.5	County Road 2	Paved	Public	Bore
Fulton	191.5	County Road B	Paved	Public	Bore
Fulton	191.6	Driveway	Dirt	Private	Open-Cut
Fulton	192.3	County Road 3	Paved	Public	Open-Cut
Fulton	192.8	County Road C	Paved	Public	Bore
Fulton	193.8	County Road D	Paved	Public	Bore
Fulton	194.8	County Road E	Paved	Public	Bore
Fulton	195.6	County Road EF	Paved	Public	Bore
Fulton	196.2	County Road F	Paved	Public	Bore
Fulton	197.3	U.S. Highway 20A	Paved	Public	Bore
Fulton	198.3	County Road H	Paved	Public	Bore
Fulton	199.1	Interstate 80	Paved	Public	Bore
Fulton	199.3	County Road J	Paved	Public	Bore
Fulton	200.0	County Road 3	Paved	Public	Bore
Fulton	200.9	State Highway 64	Paved	Public	Bore
Fulton	201.6	County Road L	Paved	Public	Bore
Fulton	202.7	County Road M	Paved	Public	Open-Cut
Fulton	203.8	County Road N	Paved	Public	Bore
Fulton	204.4	County Road 2	Paved	Public	Bore
Fulton	204.9	U.S. Highway 20	Paved	Public	Bore
Fulton	206.0	County Road S	Paved	Public	Bore
Fulton	207.0	County Road T	Paved	Public	Bore
Fulton	207.8	County Road U	Gravel	Public	Bore
MICHIGAN					
Mainline					
Lenawee	209.0	Yankee Road	Paved	Public	Bore
Lenawee	210.0	E. Mulberry Road	Paved	Public	Bore
Lenawee	211.0	E. Ridgeville Road	Paved	Public	Open-Cut
Lenawee	212.0	E. Weston Road	Paved	Public	Open-Cut
Lenawee	213.0	Fike Road	Paved	Public	Open-Cut
Lenawee	214.0	E. Horton Road	Paved	Public	Open-Cut
Lenawee	215.1	Beamer Road	Paved	Public	HDD
Lenawee	215.8	E. Gorman Road	Gravel	Public	Open-Cut
Lenawee	216.7	State Highway 223	Paved	Public	Bore
Lenawee	217.1	Driggs Road	Paved	Public	Bore
Lenawee	218.4	Rouget Road	Paved	Public	Open-Cut

APPENDIX K-6 (cont'd)

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
Mainline (cont'd)					
Lenawee	219.2	Pope Road	Dirt	Private	Open-Cut
Lenawee	219.6	S. Wellsville Highway	Paved	Public	Bore
Lenawee	220.1	Deerfield Road	Paved	Public	Bore
Lenawee	220.7	Forche Road	Paved	Public	Open-Cut
Lenawee	221.3	S. Blissfield Highway	Paved	Public	Bore
Lenawee	222.1	McMahon Road	Paved	Public	Open-Cut
Lenawee	222.7	Garno Road	Paved	Public	Open-Cut
Lenawee	223.2	Laberdee Road	Gravel	Public	Open-Cut
Lenawee	224.4	Holloway Road	Paved	Public	Bore
Lenawee	225.0	Britton Highway	Paved	Public	Bore
Lenawee	225.6	Sutton Road	Gravel	Public	Open-Cut
Lenawee	226.7	Hoagland Highway	Gravel	Public	Open-Cut
Lenawee	227.0	Pocklington Road	Gravel	Public	Open-Cut
Lenawee	227.5	Downing Highway	Gravel	Public	Open-Cut
Lenawee	228.2	State Highway 50 Monroe Road	Paved	Public	Bore
Lenawee	229.4	Kniffen Road	Gravel	Public	Open-Cut
Lenawee	230.1	Downing Highway	Gravel	Public	Open-Cut
Lenawee Monroe	230.4	N. County Line Highway	Paved	Public	Open-Cut
Monroe	230.7	Milwaukee Road	Paved	Public	Open-Cut
Monroe	231.3	Couper Road	Gravel	Public	Open-Cut
Monroe	231.3	Couper Road	Gravel	Public	Open-Cut
Monroe	232.2	Far Road	Gravel	Public	Open-Cut
Monroe	232.5	Cone Road	Paved	Public	Bore
Monroe	233.1	Welch Road	Gravel	Public	Bore
Monroe	234.3	Hickory Road	Paved	Public	Bore
Monroe	234.6	Dennison Road	Paved	Public	Bore
Monroe	235.7	Field Road	Grass	Private	Open-Cut
Monroe	236.3	Redman Road	Paved	Public	Bore
Monroe	236.3	Petersburg Road	Gravel	Public	Bore
Washtenaw	237.6	Mooreville Road	Paved	Public	HDD
Washtenaw	238.2	Platt Road	Paved	Public	Bore
Washtenaw	239.2	Unknown	Gravel	Private	Open-Cut
Washtenaw	239.3	Willow Road	Paved	Public	Bore
Washtenaw	239.6	State Highway 23	Paved	Public	Bore
Washtenaw	240.0	Carpenter Road	Paved	Public	Bore
Washtenaw	241.1	N. Sanford Road	Paved	Public	Bore
Washtenaw	241.8	Mc Crone Road	Gravel	Public	Open-Cut
Washtenaw	242.3	Judd Road	Gravel	Public	Open-Cut
Washtenaw	243.3	Pitman Road	Gravel	Public	Open-Cut
Washtenaw	243.8	Hitchingham Road	Gravel	Public	Open-Cut
Washtenaw	245.0	Whittaker Road	Paved	Public	Bore
Washtenaw	245.2	Willis Road	Paved	Public	Bore
Washtenaw	246.6	Tuttle Hill Road	Gravel	Public	Open-Cut

APPENDIX K-6 (cont'd)

Roadways Crossed by the NGT Project

State, Facility, County	Approximate Milepost	Road Name	Road Surface	Public or Private	Proposed Construction Method
Mainline (cont'd)					
Washtenaw	247.4	Bemis Road	Dirt	Public	Bore
Washtenaw	248.0	Bunton Road	Paved	Public	Bore
Washtenaw	248.1	Martz Road	Paved	Public	Bore
Washtenaw	248.7	Mc Kean Road	Paved	Public	Bore
Washtenaw	249.7	Unnamed	Gravel	Private	Open-Cut
Washtenaw	250.1	Driveway	Paved	Private	Open-Cut
Washtenaw	250.2	Textile Road	Paved	Public	Bore
Washtenaw	251.1	Bridge Road	Paved	Public	HDD
Washtenaw	251.1	Unnamed	Gravel	Private	HDD
Washtenaw	251.4	S. Grove Street	Paved	Public	Bore
Washtenaw	251.7	Lakeview Avenue	Paved	Public	HDD
Washtenaw	251.7	Wiard Road S.	Paved	Public	HDD
Washtenaw	251.7	Interstate 94	Paved	Public	HDD
Washtenaw	251.7	Wiard Road N.	Paved	Public	HDD
Washtenaw	252.0	Coolidge Avenue	Paved	Public	Open-Cut
Washtenaw	252.2	State Street	Paved	Public	Open-Cut
Washtenaw	252.3	Watson Street	Paved	Public	Open-Cut
Washtenaw	252.4	Wiard Road	Paved	Public	Bore
Washtenaw	252.4	Wiard Road – Connecting Road	Paved	Public	Bore
Washtenaw	252.8	Tyler Road	Paved	Public	Bore
Washtenaw	252.9	Wiard Road – Connecting Road	Paved	Public	Bore
Washtenaw	252.9	Wiard Road – Connecting Road	Paved	Public	Bore
Washtenaw	253.2	Airport Drive	Paved	Public	Bore
Washtenaw	253.3	Wiard Road	Paved	Public	Bore
Washtenaw	253.5	Driveway	Paved	Private	Open-Cut
Washtenaw	253.6	Driveway	Paved	Private	Open-Cut
Washtenaw	253.7	Thoroughbred Road	Paved	Private	Open-Cut
Washtenaw	253.8	Northern Drive	Paved	Private	Open-Cut
Washtenaw	254.0	Eastbound U.S. Highway 12 Exit Ramp	Paved	Public	HDD
Washtenaw	254.2	Eastbound U.S. Highway 12	Paved	Public	HDD
Washtenaw	254.2	Westbound U.S. Highway 12 Overpass	Paved	Public	HDD
Washtenaw	254.3	Westbound U.S. Highway 12	Paved	Public	HDD
Washtenaw	254.8	Unnamed	Dirt	Private	Open-Cut
Washtenaw	255.0	Driveway	Dirt	Private	Open-Cut
Washtenaw	255.0	Driveway	Gravel	Private	Open-Cut

APPENDIX K-7

ROADWAYS CROSSED BY THE TEAL PROJECT

APPENDIX K-7

Roadways Crossed by the TEAL Project

State, County, Facility	MP	Road Name	Road Surface	Public or Private	Proposed Construction Method
OHIO					
Monroe County					
Proposed Pipeline Loop	0.1	Headley Ridge Road	Paved	Public	Open cut
	1.0	Unnamed Road	Dirt	Private	Open cut
	1.4	Brock Ridge Road	Paved	Public	Open cut
	2.6	Cain Ridge Road	Paved	Public	Open cut
	3.5	Dry Ridge Road	Paved	Public	Open cut
	3.6	State Route OH-556	Paved	Public	Bore

APPENDIX L

SOCIOECONOMIC TABLES

APPENDIX L-1

AVERAGE DAILY TRAFFIC COUNTS ON ROADS IN THE NGT PROJECT AREA

APPENDIX L-1

Average Daily Traffic Counts on Roads in the NGT Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
OHIO			
TGP Interconnecting Pipeline			
Columbiana	0.1	CR 842	Not Available
Columbiana	N/A	State Route 644	1,670
Columbiana	0.6	Hagan Road	Not Available
Columbiana	0.6	Tunnel Hill Road	Not Available
Mainline Pipeline			
Columbiana	1.1	Mechanicstown Road	193
Columbiana	2.0	US 30	7,250
Columbiana	2.0	Campbell Road	Not Available
Columbiana	3.3	Campbell Road	Not Available
Columbiana	3.5	Buffalo Road	Not Available
Columbiana	4.9	CR 813	Not Available
Columbiana	5.0	CR 812/Weaver Road	129
Columbiana	5.6	CR 402	1,280
Columbiana	6.3	CR 710	Not Available
Columbiana	7.7	SH 172	2,920
Columbiana	8.0	Knox School Road	Not Available
Columbiana	10.0	CR 705	22
Columbiana	10.0	Mountz Road	208
Columbiana	10.5	CR 703	135
Columbiana	11.3	CR 701	1,228
Columbiana	12.4	Georgetown Road	Not Available
Columbiana	12.5	Mahoning Avenue	Not Available
Stark	13.2	Bowman Street NE	Not Available
Stark	14.0	Salem Church Street NE	Not Available
Stark	14.1	SH 183	6,300
Stark	14.8	Cenfield Street NE	Not Available
Stark	16.0	Beechwood Avenue	2,600
Stark	16.0	Fredrick Avenue NE	Not Available
Stark	17.8	Cartway Street NE	Not Available
Stark	18.3	Easton Street NE	2,100
Stark	18.6	Oakhill Avenue NE	Not Available
Stark	19.6	Parks Avenue	Not Available
Stark	20.4	US 62	20,000
Stark	20.8	Schmucker Avenue NE	Not Available
Stark	21.2	Beech Street NE	2,200
Stark	21.7	SH 173	8,000
Stark	22.0	Columbus Road	893
Stark	22.2	Marlboro Avenue	670
Stark	23.2	French Avenue	Not Available
Stark	23.5	Paris Avenue	1,000
Stark	24.2	SH 44	6,950
Stark	25.0	Preston Ave	Not Available
Stark	25.5	St. Peters Church Road	Not Available
Stark	26.4	Immel Avenue	Not Available
Stark	27.2	Gans Avenue NE	Not Available
Stark	28.2	Middlebranch Avenue NE	2,254
Stark	29.3	SH 43	4,811

APPENDIX L-1 (cont'd)

Average Daily Traffic Counts on Roads in the NGT Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
Mainline Pipeline (cont'd)			
Stark	30.3	Market Avenue N	6,105
Stark	30.8	Coblentz Avenue NW	Not Available
Stark	31.9	Midway Street NW	Not Available
Stark	32.1	CR U	Not Available
Stark	32.8	Dotwood Street NW	Not Available
Stark	33.0	Wright Road NW	1,055
Stark	33.1	Cleveland Avenue NW	12,300
Stark	33.2	Crosby Street NW	Not Available
Stark	34.0	Cain Street NW	Not Available
Stark	N/A	SH 619	10,700
Mahoning	N/A	OH 45	5,506
Mahoning	N/A	Gladstone Rd	Not Available
Mahoning	N/A	N Bailey Rd	4,262
Mahoning	N/A	I-76	34,880
Stark	N/A	OH 225	6,602
Stark	N/A	US 62T	8,464
Stark	N/A	OH 173	5,400
Summit	35.0	Mayfair Road	4,176
Summit	35.5	I-77	75,355
Summit	36.0	Greensburg Road	7,500
Summit	37.4	Massillon Road	9,600
Summit	37.8	Koons Road	Not Available
Summit	38.3	Thursby Road	Not Available
Summit	39.0	Koons Road	Not Available
Summit	39.0	Arlington Road	4,300
Summit	40.0	Killinger Road	Not Available
Summit	41.0	Christman Road	Not Available
Summit	41.5	E Comet Road	Not Available
Summit	42.1	S Main Street	4,699
Summit	42.7	S Myers Road	Not Available
Summit	N/A	ST Route 236	2,170
Summit	43.0	Manchester Road	8,700
Summit	44.3	Hampsher Road	Not Available
Summit	44.9	Grove Road	Not Available
Summit	45.5	W Nimisila Road	Not Available
Summit	46.2	Rheam Road	Not Available
Summit	46.8	Center Road	4,610
Summit	47.9	Van Buren Road	1,006
Summit	48.8	Fairland Road	Not Available
Summit	49.4	S Cleveland Massillon Road	3,008
Summit	49.0	Kungle Road	Not Available
Summit	50.4	Taylor Road	765
Summit	N/A	SH 619	10,000
Summit	N/A	Snyder Avenue	6,750
Summit	N/A	W Wooster Road	9,500
Summit	N/A	I-76	47,200
Summit	N/A	HWY 585	19,000
Summit	N/A	SH 21	31,000

APPENDIX L-1 (cont'd)

Average Daily Traffic Counts on Roads in the NGT Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
Mainline Pipeline (cont'd)			
Wayne	51.0	SH 21	12,940
Wayne	51.0	Hametown Road	475
Wayne	52.0	Grill Road	358
Wayne	52.0	CR 61	1,300
Wayne	53.0	CR 5A	4,000
Wayne	53.5	CR 209	6,657
Wayne	53.6	SH 585	19,000
Wayne	54.0	CR 94	358
Wayne	54.1	CR 100	1,231
Wayne	55.7	SH 94	1,453
Wayne	56.6	Hatfield Road	216
Wayne	56.6	Eastern Road	1,738
Wayne	N/A	SH 57	9,000
Wayne	N/A	Edwards Road	3,300
Wayne	N/A	Collier Road	1,700
Wayne	N/A	Doylestown Road	4,500
Trumbull	N/A	OH 45	6,770
Portage	N/A	I-76	30,580
Portage	N/A	OH 225	4,670
Portage	N/A	US 224	6,559
Medina	56.8	Rittman Road	1,901
Medina	57.0	SH 57	10,000
Medina	57.7	CR 150	1,660
Medina	58.0	CR 18	174
Medina	58.3	CR 145	1,100
Medina	59.0	Mennonite Road	1,800
Medina	60.3	Acme Road	98
Medina	61.3	Rawiga Road	573
Medina	61.4	Seville Road	1,800
Medina	62.6	Greenwich Road	650
Medina	63.2	I-76	35,000
Medina	64.2	Guilford Road	460
Medina	64.4	Blake Road	1,048
Medina	65.8	Hubbard Valley Road	145
Medina	65.9	Good Road	486
Medina	66.0	I-71	50,000
Medina	66.7	Wooster Pike Road	10,000
Medina	67.1	Summer Ridge Drive	Not Available
Medina	68.3	CR 40	1,647
Medina	68.3	CR 50	765
Medina	69.0	Lake Road	1,968
Medina	70.9	SH 162	3,500
Medina	71.9	Lafayette Road	7,000
Medina	72.5	Carlton Road	364
Medina	73.7	W. Smith Road	966
Medina	74.1	Branch Road	5,300
Medina	75.0	Stone Road	680
Medina	76.3	Beck Road	267

APPENDIX L-1 (cont'd)

Average Daily Traffic Counts on Roads in the NGT Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
Mainline Pipeline (cont'd)			
Medina	77.0	SH 18	7,500
Medina	78.0	Spieth Road	650
Medina	79.1	Erhart Road	176
Medina	79.6	Kennedy Road	28
Medina	N/A	Avon Belden Road	5,200
Lorain	81.2	Neff Road	Not Available
Lorain	82.6	SH 83	5,400
Lorain	82.7	Law Road	Not Available
Lorain	83.9	Mennell Road	813
Lorain	84.7	SH 303	2,700
Lorain	85.9	CR 49	Not Available
Lorain	87.1	CR 26	2,413
Lorain	88.2	Wheeler Road	Not Available
Lorain	89.2	SH 301	8,663
Lorain	90.0	CR 48	1,286
Lorain	91.0	Diagonal Road	1,862
Lorain	92.4	CR 38	Not Available
Lorain	93.4	Hallauer Road /CR 75	Not Available
Lorain	93.4	US 20	25,000
Lorain	94.6	SH 58	10,000
Lorain	96.8	Quarry Road	Not Available
Lorain	97.7	CR 51	Not Available
Lorain	98.0	Gifford Road	Not Available
Lorain	99.2	SH 511	1,660
Lorain	100.0	Baird Road	Not Available
Lorain	100.6	CR 34	Not Available
Lorain	N/A	I-80	40,000
Lorain	N/A	CR 302	4,000
Lorain	N/A	SH 113	3,000
Cuyahoga	N/A	I-71	90,000
Cuyahoga	N/A	I-80	40,000
Huron	101.3	County Line Road	Not Available
Huron	102.4	CR 63	604
Huron	103.9	SH 60	1,500
Huron	104.6	West Road	566
Huron	N/A	US Route 20	4,500
Huron	N/A	OH 598	1,293
Huron	N/A	OH 61	4,580
Erie	105.9	Florence Wakeman Road	1,000
Erie	106.1	Burr Road	Not Available
Erie	107.6	CR 59	Not Available
Erie	108.6	SH 113	3,000
Erie	110.2	CR 17	557
Erie	110.3	I-80	40,000
Erie	111.1	CR 134	Not Available
Erie	112.0	CR 13	1,500
Erie	112.0	SH 61	2,760
Erie	113.1	CR 132	1,625

APPENDIX L-1 (cont'd)

Average Daily Traffic Counts on Roads in the NGT Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
Mainline Pipeline (cont'd)			
Erie	113.8	CR 131	372
Erie	114.6	CR 128	294
Erie	115.0	CR 127	260
Erie	116.3	CR 126	624
Erie	117.2	SH 13	4,060
Erie	118.1	Hoover Road	483
Erie	119.2	CR 123	1,251
Erie	119.5	US Highway 250 N	14,000
Erie	120.4	Patrol Road	Not Available
Erie	120.5	Patrol Road	Not Available
Erie	120.9	CR 13	2,111
Erie	122.1	Thomas Road	363
Erie	123.2	Ransom Rd/CR 44	38
Erie	124.8	CR 43	445
Erie	125.8	CR 108	Not Available
Erie	126.2	SH 99	2,800
Erie	126.7	SH 4	10,000
Erie	127.7	Portland Road	2,700
Erie	128.4	Maple Avenue	99
Erie	128.8	Billings Road	141
Erie	130.1	Deyo Road	Not Available
Erie	130.8	State Hwy 269	3,700
Erie	N/A	SH 60	3,000
Erie	N/A	Florence Wakeman Rd	Not Available
Erie	N/A	Joppa Rd	472
Erie	N/A	OH 61	2,975
Erie	N/A	OH 113	2,065
Marion	N/A	OH 309	9,072
Marion	N/A	OH 98	2,756
Crawford	N/A	OH 98	3.940
Crawford	N/A	OH 598	1,054
Richland	N/A	OH 598	919
Sandusky	131.5	CR 1/ CR 312	505
Sandusky	132.7	I-80	40,000
Sandusky	133.4	CR 302	200
Sandusky	133.5	SH 101	2,600
Sandusky	134.1	CR 294	272
Sandusky	135.4	CR 278	193
Sandusky	136.0	CR 268	410
Sandusky	137.0	CR 260	443
Sandusky	137.5	CR 233	Not Available
Sandusky	138.6	SH 510	1,480
Sandusky	139.3	SH 412	1,800
Sandusky	139.6	CR 244	Not Available
Sandusky	140.1	CR 238	Not Available
Sandusky	140.0	CR 232	218
Sandusky	140.0	CR 241	Not Available
Sandusky	141.3	CR 226	Not Available

APPENDIX L-1 (cont'd)

Average Daily Traffic Counts on Roads in the NGT Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
Mainline Pipeline (cont'd)			
Sandusky	141.6	CR 239	Not Available
Sandusky	141.9	CR 222	Not Available
Sandusky	142.7	US 6	7,000
Sandusky	143.3	CR 202	Not Available
Sandusky	143.9	CR 198	200
Sandusky	144.4	CR 188	Not Available
Sandusky	144.8	I-80	40,396
Sandusky	145.2	CR 234	Not Available
Sandusky	146.0	SH 53	10,000
Sandusky	146.5	CR 170	304
Sandusky	147.2	I-80	41,748
Sandusky	147.5	CR 89	855
Sandusky	148.3	SH 19	4,400
Sandusky	149.6	CR 142	Not Available
Sandusky	150.3	CR 128	934
Sandusky	150.7	CR 122	Not Available
Sandusky	151.7	CR 106	221
Sandusky	152.7	SH 590	1,658
Sandusky	153.8	CR 92	Not Available
Sandusky	154.2	SH 20	10,163
Sandusky	154.7	CR 87/Long Road	Not Available
Sandusky	155.9	CR 74	142
Sandusky	157.1	CR 66	625
Sandusky	157.6	CR 62	142
Sandusky	158.2	SH 300	1,488
Sandusky	159.0	CR 93	Not Available
Sandusky	159.7	CR 38	Not Available
Sandusky	160.3	CR 32	703
Sandusky	161.1	CR 48	Not Available
Sandusky	161.0	CR 24	Not Available
Sandusky	162.0	CR117	922
Sandusky	162.0	SH 105	1,600
Sandusky	163.1	CR 139	Not Available
Sandusky	N/A	SH 582	520
Wood	163.7	US 23	13,000
Wood	164.5	SH 582	3,000
Wood	164.9	CR 16	Not Available
Wood	166.1	CR 15	2,064
Wood	167.2	CR 111	1,042
Wood	167.8	CR 292	Not Available
Wood	168.4	CR 11	1,113
Wood	169.4	CR 10	567
Wood	170.4	Caris Road	236
Wood	170.8	CR 272	Not Available
Wood	172.6	SH 199	2,300
Wood	173.5	Carter Road	Not Available
Wood	174.5	CR 92	645
Wood	175.1	I-75	54,000

APPENDIX L-1 (cont'd)

Average Daily Traffic Counts on Roads in the NGT Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
Mainline Pipeline (cont'd)			
Wood	175.6	CR 90	1,074
Wood	176.6	SH 25	9,000
Wood	177.0	CR 99/Pargillis Rd	Not Available
Wood	178.0	CR 97/Hull Prairie Rd	513
Wood	179.9	SH 64	4,470
Wood	181.0	CR 235	Not Available
Wood	181.2	SH 65	3,200
Wood	N/A	Interstate 475	48,150
Wood	N/A	I-75	61,050
Wood	N/A	OH 582	5,279
Wood	N/A	OH 25	8,410
Lucas	181.8	US 24	27,000
Lucas	183.1	CR 137	205
Lucas	183.4	HWY 24	16,210
Lucas	184.3	CR 221	56
Lucas	184.8	CR 152	56
Lucas	185.3	Heller Road	358
Lucas	186.3	SH 295	1,000
Lucas	187.3	Yawberg Road	248
Lucas	187.9	CR 111	405
Lucas	188.4	Manore Road	119
Lucas	188.9	CR 109	894
Lucas	189.3	CR 1	Not Available
Lucas	N/A	US 64	3,000
Lucas	N/A	US 20A	17,300
Lucas	N/A	I-90/I-80	23,000
Lucas	N/A	I-475	65,000
Lucas	N/A	US 23	60,000
Lucas	N/A	US 20	10,000
Lucas	N/A	St Lawrence Dr	Not Available
Lucas	N/A	John Q Carey Dr	Not Available
Lucas	N/A	George Hardy Dr	Not Available
Lucas	N/A	Tiffin St	761
Lucas	N/A	Millard Ave	731
Lucas	N/A	Front St	12,170
Lucas	N/A	Oak St	8,431
Lucas	N/A	Woodville Rd	20,865
Lucas	N/A	Clayton St	20,865
Lucas	N/A	S Summit St	24,466
Lucas	N/A	Broadway St	17,693
Lucas	N/A	Logan St	1,600
Lucas	N/A	S Erie St	1,370
Lucas	N/A	I-280	57,757
Lucas	N/A	I-75	72,000
Lucas	N/A	I-475	90,691
Lucas	N/A	US 23	61,448
Henry	190.2	CR W /County Road A	1,050
Fulton	190.0	CR 2	Not Available

APPENDIX L-1 (cont'd)

Average Daily Traffic Counts on Roads in the NGT Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
Mainline Pipeline (cont'd)			
Fulton	191.5	CR B	490
Fulton	192.3	CR 3	607
Fulton	192.8	CR C	Not Available
Fulton	193.8	CR D	Not Available
Fulton	194.8	CR E	Not Available
Fulton	195.6	CR EF	226
Fulton	196.2	CR F	Not Available
Fulton	197.3	US 20A	18,000
Fulton	198.3	CR H	Not Available
Fulton	199.1	I-80	13,000
Fulton	199.3	CR J	328
Fulton	200.0	CR 3	Not Available
Fulton	200.9	SH 64	750
Fulton	201.6	CR L	Not Available
Fulton	202.7	CR M	Not Available
Fulton	203.0	CR N	Not Available
Fulton	204.0	CR 2	Not Available
Fulton	204.9	US 20	5,000
Fulton	206.0	CR S	Not Available
Fulton	207.0	CR T	268
Fulton	207.8	CR U	1,700
MICHIGAN			
Mainline			
Lenawee	209.0	Yankee Road	Not Available
Lenawee	210.0	E Mulberry Road	3,048
Lenawee	211.0	E Ridgeville Road	Not Available
Lenawee	212.0	E Weston Road	856
Lenawee	213.0	Fike Road	Not Available
Lenawee	214.0	E Horton Road	Not Available
Lenawee	215.1	Beamer Road	1,207
Lenawee	215.8	E Gorman Road	229
Lenawee	216.7	SH 223	10,000
Lenawee	217.1	Driggs Road	Not Available
Lenawee	218.4	Rouget Road	3,100
Lenawee	219.0	Pope Road	Not Available
Lenawee	219.0	Wellsville Highway	Not Available
Lenawee	220.1	Deerfield Road	3,800
Lenawee	220.7	Forche Road	Not Available
Lenawee	221.3	S Blissfield Highway	2,200
Lenawee	222.1	McMahon Road	Not Available
Lenawee	222.7	Garno Road	Not Available
Lenawee	223.2	Laberdee Road	Not Available
Lenawee	224.4	Holloway Road	500
Lenawee	225.0	Britton Highway	789
Lenawee	225.6	Sutton Road	Not Available
Lenawee	226.7	Hoagland Highway	Not Available
Lenawee	227.0	Pocklington Road	Not Available
Lenawee	227.5	Downing Highway	Not Available

APPENDIX L-1 (cont'd)

Average Daily Traffic Counts on Roads in the NGT Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
Mainline Pipeline (cont'd)			
Lenawee	228.2	SH 50	7,000
Lenawee	229.4	Kniffen Road	Not Available
Lenawee	230.1	Downing Highway	Not Available
Lenawee	N/A	Bucholtz Highway	306
Lenawee	N/A	Rogers Highway	1,700
Lenawee	N/A	Ridge Highway	3,300
Lenawee	N/A	Brewer Road	500
Lenawee/Monroe	230.4	N County Line Hwy	201
Monroe	N/A	N County Line Hwy	Not Available
Monroe	230.7	Milwaukee Road	61
Monroe	231.3	Couper Road	Not Available
Monroe	232.2	Far Road	Not Available
Monroe	232.5	Cone Road	1,699
Monroe	233.1	Welch Road	Not Available
Monroe	234.0	Hickory Road	Not Available
Monroe	234.0	Dennison Road	500
Monroe	236.0	Redman Road	518
Monroe	236.0	Petersburg Road	Not Available
Monroe	N/A	SH 23	35,000
Monroe	N/A	SH 223	7,500
Monroe	N/A	SH 50	7,000
Monroe	N/A	US 23	43,300
Monroe	N/A	Tecumseh Rd	7,700
Washtenaw	237.6	Mooreville Road	2,912
Washtenaw	238.2	Platt Road	3,430
Washtenaw	239.3	Willow Road	2,707
Washtenaw	239.6	SH 23	58,000
Washtenaw	240.0	Carpenter Road	4,265
Washtenaw	241.1	Sanford Road	Not Available
Washtenaw	241.8	McCrone Road	Not Available
Washtenaw	242.3	Judd Road	Not Available
Washtenaw	243.3	Pitman Road	Not Available
Washtenaw	243.8	Hitchingham Road	Not Available
Washtenaw	245.0	Whittaker Road	6,694
Washtenaw	245.2	Willis Road	5,100
Washtenaw	246.6	Tuttle Hill Road	Not Available
Washtenaw	247.4	Bemis Road	733
Washtenaw	248.0	Bunton Road	Not Available
Washtenaw	248.1	Martz Road	Not Available
Washtenaw	248.7	McKean Road	Not Available
Washtenaw	250.2	Textile Road	11,221
Washtenaw	251.1	Bridge Road	7,603
Washtenaw	251.4	S Grove Street	3,564
Washtenaw	251.7	Lakeview Avenue	Not Available
Washtenaw	251.7	Willow Run Fwy S	Not Available
Washtenaw	251.7	I-94	96,000
Washtenaw	251.7	Willow Run Fwy N	Not Available
Washtenaw	252.0	Coolidge Avenue	Not Available

APPENDIX L-1 (cont'd)

Average Daily Traffic Counts on Roads in the NGT Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
Mainline Pipeline (cont'd)			
Washtenaw	252.2	State Street	334
Washtenaw	252.3	Watson Street	Not Available
Washtenaw	252.4	Wiard Rd	3,213
Washtenaw	252.4	Connecting Road	Not Available
Washtenaw	252.8	Tyler Road	1,820
Washtenaw	252.9	Ramp	3,213
Washtenaw	252.9	Connecting Rd	Not Available
Washtenaw	253.0	Airport Dr	1,024
Washtenaw	253.0	Wiard Rd	Not Available
Washtenaw	253.0	Thoroughbred Rd	Not Available
Washtenaw	253.0	Northern Dr	Not Available
Washtenaw	254.0	US 12 Ramp	20,000
Washtenaw	254.0	US-12 Eastbound	23,945
Washtenaw	254.0	US 12 Overpass	Not Available
Washtenaw	254.0	US Hwy 12 Westbound	23,900
Washtenaw	N/A	Wiard Road	3,200
Washtenaw	N/A	Ridge Highway	6,600
Washtenaw	N/A	Dennison Road	500
Washtenaw	N/A	Mooreville Road	7,000
Washtenaw	N/A	Stony Creek Road	5,800
Washtenaw	N/A	Rawsonville Road	12,000

a Approximate milepost along the pipeline rounded to the nearest tenth. If a milepost number is not applicable (N/A), then the road does not cross the pipeline route.

Sources: Ohio: ODOT, 2015a; 2015b.
Michigan: MDOT, 2015; State of Michigan, 2013.

APPENDIX L-2

AVERAGE DAILY TRAFFIC COUNTS ON ROADS IN THE TEAL PROJECT AREA

APPENDIX L-2

Average Daily Traffic Counts on Roads in the TEAL Project Area

State, Facility, County	Milepost [a]	Road Name	Average Daily Traffic Count
OHIO			
Loopline			
Monroe	N/A	Ohio State Route 145	1,690
Monroe	N/A	Township Hwy 945	Not Available
Monroe	0.1	Headley Ridge Road	216
Monroe	1.4	Brock Ridge Road	Not Available
Monroe	2.6	Cain Ridge Road	Not Available
Monroe	N/A	Township Hwy 702	Not Available
Monroe	3.5	Dry Ridge Road	Not Available
Monroe	N/A	German Ridge Road	442
Monroe	N/A	Krebs Hill Road	516
Monroe	3.6	Ohio State Route 556	800
Connecting Pipeline			
Columbiana	N/A	US 30	7,250
Columbiana	N/A	Ohio State Route 644	1,670
Columbiana	N/A	Hagen Road	Not Available
Columbiana	N/A	Tunnel Hill Road	Not Available
Proposed Salineville Compressor Station			
Columbiana	N/A	US 30	7,250
Columbiana	N/A	Ohio State Route 644	1,670
Columbiana	N/A	Ohio State Route 518	720
Columbiana	N/A	Yellow Creek Church Road	Not Available
Line 73 Launcher/Receiver Site			
Monroe	N/A	Krebs Hill Road	516
Monroe	N/A	Steiger Ridge Road	Not Available
Line 73 Regulator Site			
Monroe	N/A	German Ridge Road	442
Monroe	N/A	Township Hwy 211	Not Available
Monroe	N/A	Township Hwy 210	Not Available

a Approximate milepost along the pipeline rounded to the nearest 0.1 of a mile. If a milepost number is not applicable (N/A), then the road does not cross the pipeline route.

Sources: ODOT, 2015a; 2015b.

APPENDIX L-3

RACIAL, ETHNIC, AND POVERTY STATISTICS FOR CENSUS TRACTS WITHIN 1 MILE OF THE NGT PIPELINE AND MAJOR ABOVEGROUND FACILITIES IN OHIO

APPENDIX L-3

Racial, Ethnic, and Poverty Statistics for Census Tracts Within 1 Mile of the NGT Pipeline and Major Aboveground Facilities in Ohio

Location	Total Population [a]	White (%) [a, b]	African American (%) [a]	Native American & Alaska Native (%) [a]	Asian (%) [a]	Native Hawaiian & Pacific Islander (%) [a]	Other Race (%) [a]	Two or More Races (%) [a]	Hispanic or Latino Origin - Any Race (%) [a]	Total Minority Population (%) [a]	Percent Below Poverty Level (%) [c]
FEDERAL											
U.S.	311,536,594	74	12.6	0.8	4.9	0.2	4.7	2.8	16.6	26.0	15.4
STATE											
Ohio	11,290,586	82.9	12.1	0.2	1.7	0.0	0.8	2.2	3.2	17.1	15.8
LOCAL											
Carroll County *											
CT 7201	3,544	98.3	0.0	0.0	0.0	0.0	1.1	0.6	1.1	1.7	6.4
Columbiana County											
CT 9509	3,921	97.2	1.1	0.0	0.6	0.0	0.0	0.9	0.2	2.8	6.1
CT 9510 [d]	5,633	95.7	1.6	0.0	1.1	0.0	0.3	0.3	1.1	4.3	16.0
CT 9512 [d]	4,926	96.3	0.0	1.2	0.0	0.0	0.1	1.9	0.5	3.7	12.2
Erie County											
CT 403	6,090	95.1	0.4	0.4	0.5	0.1	1.0	2.3	1.4	4.9	12.6
CT 417	6,470	93.0	0.0	0.1	0.3	0.0	0.4	1.7	5.4	7.0	8.1
CT 418	6,360	95.3	0.6	0.2	0.5	0.0	0.0	2.2	1.3	4.7	5.8
Fulton County											
CT 401	3,095	94.0	0.5	0.0	0.1	0.0	2.7	2.0	3.2	6.0	9.5
CT 402	4,596	95.5	0.8	0.2	0.0	0.0	0.3	0.2	3.4	4.5	6.7
CT 403	4,891	96.6	0.0	0.0	0.6	0.0	0.1	1.6	1.2	3.4	10.1
Henry County											
CT 1	4,892	93.6	0.9	0.2	0.1	0.3	0.3	0.7	4.3	6.4	10.9
Huron County											
CT 9154	4,818	97.7	0.0	0.7	0.0	0.0	0.1	0.9	0.8	2.3	10.4
Lorain County											
CT 571	3,790	91.0	0.7	0.0	0.1	0.0	0.1	0.8	7.3	9.0	7.0
CT 601	3,720	63.9	24.4	0.0	0.6	0.0	0.5	9.2	5.3	36.1	12.4
CT 602	5,489	75.5	10.8	0.1	4.2	0.1	0.2	7.7	2.4	24.5	18.6
CT 771	3,450	95.8	0.9	0.0	0.3	0.0	0.0	0.0	3.0	4.2	7.3
CT 921	2,438	94.4	0.3	0.0	0.7	0.0	0.0	0.8	4.3	5.6	5.5
CT 931	2,958	97.1	0.1	1.2	0.0	0.0	0.4	0.5	1.1	2.9	8.7
CT 941	8,159	96.6	0.3	0.0	0.2	0.0	0.0	1.2	1.7	3.4	4.2
CT 951	8,822	80.6	15.0	0.4	0.6	0.0	0.8	1.7	1.9	19.4	2.2
Lucas County											

APPENDIX L-3 (cont'd)

Racial, Ethnic, and Poverty Statistics for Census Tracts Within 1 Mile of the NGT Pipeline and Major Aboveground Facilities in Ohio

Location	Total Population [a]	White (%) [a, b]	African American (%) [a]	Native American & Alaska Native (%) [a]	Asian (%) [a]	Native Hawaiian & Pacific Islander (%) [a]	Other Race (%) [a]	Two or More Races (%) [a]	Hispanic or Latino Origin - Any Race (%) [a]	Total Minority Population (%) [a]	Percent Below Poverty Level (%) [c]
LOCAL (cont'd)											
Lucas County											
CT 89.01	5,133	94.4	1.1	1.0	1.0	0.0	0.0	0.9	3.0	5.6	6.3
CT 89.02 [d]	6,242	92.3	0.6	0.0	4.2	0.0	0.2	0.5	2.6	7.7	4.9
CT 93	1,772	99.3	0.6	0.0	0.0	0.0	0.0	0.1	0.0	0.7	4.9
CT 96	3,348	94.1	0.6	0.4	2.6	0.0	0.1	0.3	2.9	5.9	7.3
Medina County											
CT 4020	5,176	94.5	0.0	0.3	0.0	0.0	0.3	0.3	4.8	5.5	4.9
CT 4030.01	3,283	96.9	0.0	0.8	0.0	0.0	1.9	0.4	0.0	3.1	8.5
CT 4030.02	3,135	95.9	0.7	0.0	0.2	0.0	0.0	1.4	1.9	4.1	3.0
CT 4070	6,380	94.6	0.3	0.0	2.3	0.0	0.7	1.6	1.1	5.4	2.5
CT 4081	7,209	86.7	9.2	0.9	0.0	0.0	0.0	1.4	2.1	13.3	12.2
CT 4082.01	4,220	89.5	4.3	0.0	0.3	0.0	4.2	0.2	2.4	10.5	18.0
CT 4090.02	4,591	93.7	1.4	0.0	0.9	0.0	1.4	2.1	1.7	6.3	7.4
CT 4120	4,243	98.9	0.1	0.0	0.1	0.0	0.0	0.4	0.5	1.1	2.8
CT 4130 [d]	5,496	97.5	0.2	0.0	0.2	0.0	1.1	0.6	0.4	2.5	5.0
CT 4172	7,306	95.1	0.0	1.1	0.3	0.0	0.0	2.0	1.9	4.9	4.3
CT 4173	4,699	94.5	0.4	0.0	0.9	0.0	1.1	3.1	0.9	5.5	13.0
Sandusky County											
CT 9608	3,534	96.7	0.2	0.0	0.5	0.0	0.7	0.7	1.9	3.3	7.4
CT 9609	3,434	94.6	0.4	0.0	0.0	0.0	0.6	1.3	4.1	5.4	10.4
CT 9610	4,081	90.0	0.2	0.9	1.6	0.8	0.2	2.0	5.9	10.0	9.5
CT 9621 [d]	4,897	97.2	0.3	0.0	0.1	0.0	0.2	1.5	0.9	2.8	8.9
Stark County											
CT 7109	4,356	94.9	2.4	0.0	0.0	0.0	0.0	2.7	0.1	5.1	3.6
CT 7110	7,229	96.2	0.7	0.0	0.0	0.0	0.0	3.0	0.1	3.8	5.7
CT 7111.12	5,414	98.3	0.0	0.0	1.1	0.0	0.5	0.0	0.2	1.7	1.7
CT 7111.21	6,552	92.1	1.1	0.0	1.3	0.0	0.0	2.8	2.6	7.9	2.3
CT 7111.22	5,802	92.1	0.6	0.0	5.4	0.0	0.4	0.0	1.9	7.9	10.8
CT 7112.11	6,695	97.5	0.5	0.0	0.0	0.0	0.3	1.7	0.2	2.5	8.7
CT 7113.11	8,046	91.0	1.1	0.0	3.4	0.0	0.1	2.9	2.4	9.0	3.7
CT 7121.02	7,406	87.8	2.4	0.0	0.2	0.0	1.1	6.5	2.1	12.2	11.8
CT 7127	5,502	99.0	0.0	0.0	0.2	0.0	0.0	0.1	0.6	1.0	6.3

APPENDIX L-3 (cont'd)

Racial, Ethnic, and Poverty Statistics for Census Tracts Within 1 Mile of the NGT Pipeline and Major Aboveground Facilities in Ohio

Location	Total Population [a]	White (%) [a, b]	African American (%) [a]	Native American & Alaska Native (%) [a]	Asian (%) [a]	Native Hawaiian & Pacific Islander (%) [a]	Other Race (%) [a]	Two or More Races (%) [a]	Hispanic or Latino Origin - Any Race (%) [a]	Total Minority Population (%) [a]	Percent Below Poverty Level (%) [c]
LOCAL (cont'd)											
CT 7128	4,780	96.7	0.5	0.0	0.4	0.0	0.0	1.5	0.9	3.3	8.8
Summit County											
CT 5314.01	7,176	97.3	0.3	0.0	0.1	0.0	0.0	1.8	0.5	2.7	5.3
CT 5315	8,186	92.1	0.9	0.0	3.8	0.0	0.0	2.0	1.3	7.9	5.5
CT 5316.02	3,032	98.1	0.0	0.5	1.4	0.0	0.0	0.0	0.0	1.9	1.1
CT 5317.01	3,552	96.1	1.4	0.0	0.4	0.0	0.0	0.5	1.5	3.9	6.5
CT 5317.02	4,421	99.1	0.0	0.2	0.0	0.0	0.0	0.0	0.7	0.9	8.8
CT 5320.01	3,697	95.1	2.7	0.0	0.0	0.0	0.3	0.3	1.9	4.9	8.6
CT 5329.99	5,977	89.3	4.9	0.0	2.1	0.0	0.0	3.3	0.5	10.7	9.4
Wayne County											
CT 29.01	3,588	97.2	0.3	0.0	0.4	0.0	0.0	1.2	1.5	2.8	8.2
CT 29.02	5,099	95.7	1.9	0.0	0.0	0.0	0.0	0.8	2.5	4.3	4.6
CT 34	3,228	94.1	0.8	0.0	1.1	0.0	0.0	3.9	0.0	5.9	17.7
CT 35	3,522	98.9	0.0	0.5	0.0	0.0	0.0	0.6	0.0	1.1	6.9
Wood County											
CT 207	6,611	92.1	1.0	0.0	2.7	0.0	2.4	0.0	2.6	7.9	18.0
CT 210	3,913	96.2	0.1	0.0	0.3	0.0	1.9	0.7	3.4	3.8	6.0
CT 211	3,930	89.6	0.3	0.2	1.0	0.0	1.1	4.0	6.3	10.4	8.7
CT 212	5,649	91.8	1.4	0.0	1.6	0.0	0.5	2.3	2.9	8.2	4.5

a U.S. Census Bureau, 2013c.
b White Alone, Not Hispanic or Latino
c U.S. Census Bureau, 2013d.
d Census tract contains an aboveground facility.
* Includes census tracts within one mile of the proposed pipeline facilities and major aboveground facilities, but Carroll County does not contain any NGT Project facilities.
Grey highlighted values indicate percentage exceeds thresholds defined in text, and is an environmental justice population.

APPENDIX L-4

RACIAL, ETHNIC, AND POVERTY STATISTICS FOR CENSUS TRACTS WITHIN 1 MILE OF THE NGT PIPELINE AND MAJOR ABOVEGROUND FACILITIES IN MICHIGAN

APPENDIX L-4

Racial, Ethnic, and Poverty Statistics for Census Tracts within 1 Mile of the NGT Pipeline and Major Aboveground Facilities in Michigan

Location	Total Population [a]	White (%) [a, b]	African American (%) [a]	Native American & Alaska Native (%) [a]	Asian (%) [a]	Native Hawaiian & Pacific Islander (%) [a]	Other Race (%) [a]	Two or More Races (%) [a]	Hispanic or Latino Origin – Any Race (%) [a]	Total Minority Population (%) [a]	Percent Below Poverty Level (%) [c]
FEDERAL											
U.S.	311,536,594	74	12.6	0.8	4.9	0.2	4.7	2.8	16.6	26.0	15.4
STATE											
Michigan	9,886,095	79.3	14	0.6	2.5	0.0	1.1	2.5	4.5	20.7	16.8
LOCAL											
Lenawee County											
CT 601	3,581	93.4	1.6	0.3	0.8	0.0	0.1	2.1	2.3	6.6	8.4
CT 612	1,776	91.2	0.0	0.0	0.1	0.0	0.6	3.2	6.4	8.8	9.1
CT 620	2,872	89.6	0.5	0.6	0.0	0.0	1.1	4.2	6.9	10.4	10.5
CT 621	4,385	93.7	0.0	0.0	0.0	0.0	1.3	2.3	5.0	6.3	9.0
CT 622	2,603	93.4	0.0	0.0	0.8	0.0	4.6	0.0	2.7	6.6	15.0
Monroe County											
CT 8307	3,482	94.7	1.1	0.0	0.0	0.0	0.0	0.9	3.9	5.3	7.3
CT 8308	6,718	96.9	0.0	0.1	0.6	0.0	0.2	1.8	0.8	3.1	16.5
Washtenaw County											
CT 4074	5,376	37.8	40.2	0.8	2.6	0.0	3.2	11.1	7.4	62.2	21.7
CT 4119 [d]	3,938	59.0	30.8	1.4	0.9	0.0	0.3	5.0	3.4	41.0	25.8
CT 4120	3,991	69.0	17.6	0.5	0.2	0.0	0.3	9.2	4.3	31.0	19.2
CT 4121	3,456	53.7	31.6	1.9	0.5	0.0	0.0	6.3	6.9	46.3	22.0
CT 4123	2,928	22.4	68.3	0.6	0.5	0.0	0.0	7.4	0.8	77.6	17.6
CT 4126	2,710	55.8	31.7	0.6	2.3	0.0	0.5	5.2	4.5	44.2	17.9
CT 4127	4,972	56.5	29.1	2.0	4.4	0.0	0.0	5.8	4.6	43.5	21.0
CT 4130	3,685	46.6	47.7	0.0	1.6	0.0	0.4	0.9	3.1	53.4	15.1
CT 4132	4,151	72.5	17.5	0.0	0.0	0.0	0.6	7.0	6.1	27.5	14.0
CT 4134.02	5,244	66.3	23.0	0.2	3.8	0.0	1.5	4.7	2.8	33.7	2.4
CT 4200	3,469	85.2	5.1	0.4	0.0	0.0	0.3	7.2	2.0	14.8	7.3
CT 4202	3,304	88.4	5.7	0.0	0.2	0.0	1.6	3.8	0.2	11.6	5.9
CT 4211	3,797	89.2	0.0	0.0	1.9	0.0	0.0	4.6	4.3	10.8	5.1
CT 4219	1,350	35.2	43.0	2.0	0.0	0.0	7.3	5.9	17.2	64.8	0.0
CT 4222	7,250	91.8	0.7	0.0	1.1	0.0	0.9	2.6	3.5	8.2	2.3
CT 9840	58	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.8
Wayne County											
CT 5645.04	6,099	67.1	12.1	0.0	15.2	0.0	0.3	2.4	3.3	32.9	6.0

APPENDIX L-4 (cont'd)

Racial, Ethnic, and Poverty Statistics for Census Tracts within 1 Mile of the NGT Pipeline and Major Aboveground Facilities in Michigan

Location	Total Population [a]	White (%) [a, b]	African American (%) [a]	Native American & Alaska Native (%) [a]	Asian (%) [a]	Native Hawaiian & Pacific Islander (%) [a]	Other Race (%) [a]	Two or More Races (%) [a]	Hispanic or Latino Origin – Any Race (%) [a]	Total Minority Population (%) [a]	Percent Below Poverty Level (%) [c]
LOCAL (cont'd)											
CT 5881	2,457	86.7	6.5	0.0	0.0	0.0	1.0	5.5	2.7	13.3	19.0
CT 5882	3,080	47.6	44.8	0.3	0.7	0.0	1.3	2.6	3.4	52.4	20.2
CT 5883	5,325	79.3	15.5	0.0	1.5	0.0	0.0	2.8	1.2	20.7	5.5
CT 5894	5,613	84.1	8.7	0.0	0.0	0.0	0.0	1.5	5.7	15.9	13.1

a U.S. Census Bureau, 2013a
b White Alone, Not Hispanic or Latino
c U.S. Census Bureau, 2013b
d Census tract contains an aboveground facility
Grey highlight = Values indicate percentage exceeds thresholds defined in text and is an environmental justice population

APPENDIX L-5

RACIAL, ETHNIC, AND POVERTY STATISTICS FOR CENSUS TRACTS WITHIN 1 MILE OF THE TEAL PIPELINE AND MAJOR ABOVEGROUND FACILITIES

APPENDIX L-5

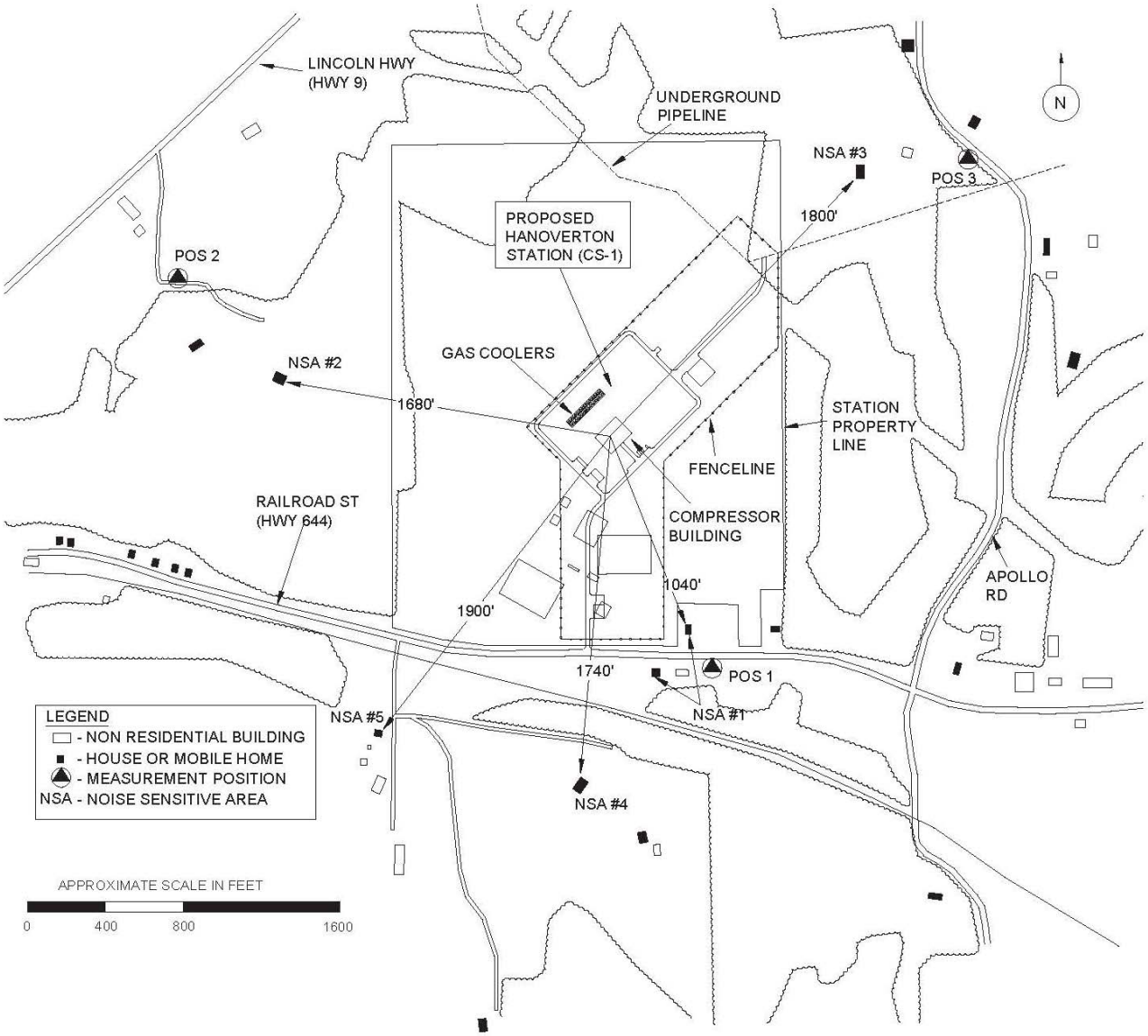
Racial, Ethnic, and Poverty Statistics for Census Tracts Within 1 Mile of the TEAL Pipeline and Major Aboveground Facilities

Location	Total Population [a]	White (%) [a, b]	African American (%) [a]	Native American & Alaska Native (%) [a]	Asian (%) [a]	Native Hawaiian & Pacific Islander (%) [a]	Other Race (%) [a]	Two or More Races (%) [a]	Hispanic or Latino Origin – Any Race (%) [a]	Total Minority Population (%) [a]	Percent Below Poverty Level (%) [a]
FEDERAL											
U.S.	311,536,594	74	12.6	0.8	4.9	0.2	4.7	2.8	16.6	26.0	15.4
STATE											
Ohio	11,290,586	82.9	12.1	0.2	1.7	0.0	0.8	2.2	3.2	17.1	15.8
LOCAL											
Belmont County											
CT 101	4,268	93.6	3.2	0.0	0.0	0.0	0.1	3.2	0.0	6.4	16.8
CT 103 [d]	3,245	99.7	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	8.3
Carroll County*											
CT 7201	3,544	98.3	0.0	0.0	0.0	0.0	1.1	0.6	1.1	1.7	6.4
Columbiana County											
CT 9510	5,633	95.7	1.6	0.0	1.1	0.0	0.3	0.3	1.1	4.3	16.0
CT 9512 [d]	4,926	96.3	0.0	1.2	0.0	0.0	0.1	1.9	0.5	3.7	12.2
Jefferson County*											
CT 121	2,894	99.0	0.3	0.0	0.0	0.0	0.0	0.5	0.1	1.0	11.4
Monroe County											
CT 9666	3,373	98.6	0.0	0.2	0.0	0.0	0.0	0.9	0.3	1.4	14.8
CT 9667	3,737	95.6	0.4	0.3	0.0	0.0	0.0	3.1	1.3	4.4	13.9

a U.S. Census Bureau, 2013a
b White Alone, Not Hispanic or Latino
c U.S. Census Bureau, 2013b
d Census tract contains an aboveground facility
* Includes census tracts within 1 mile of the proposed pipeline facilities and major aboveground facilities, but Carroll and Jefferson Counties do not contain any project facilities
Grey highlight = Values indicate percentage exceeds thresholds defined in text and is an environmental justice population

APPENDIX M

NSA FIGURES



NGT and TEAL Projects
Noise-Sensitive Areas near the Hanoverton Compressor Station

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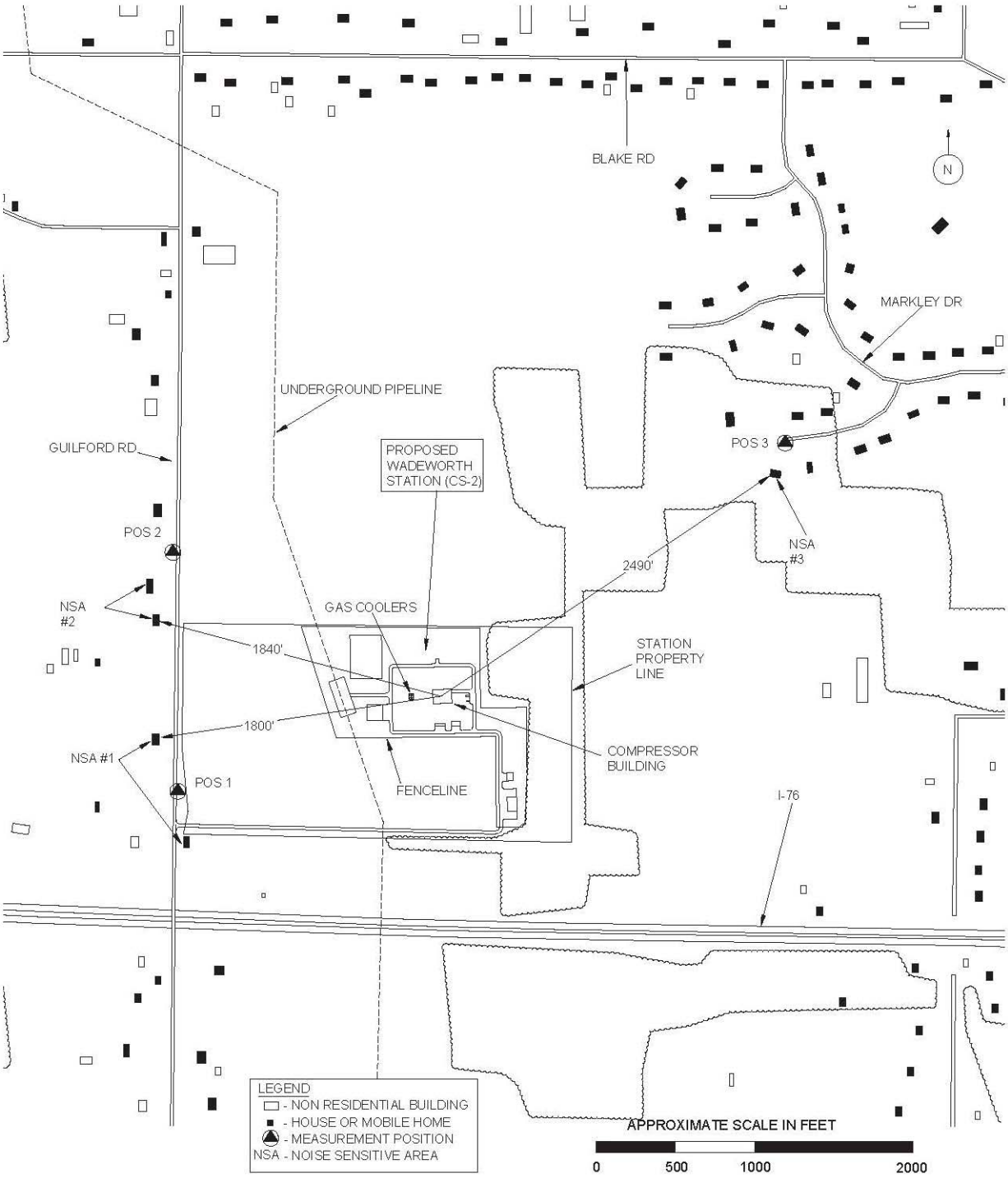

NGT and TEAL Projects
Noise Sensitive Areas near the Wadsworth Compressor Station

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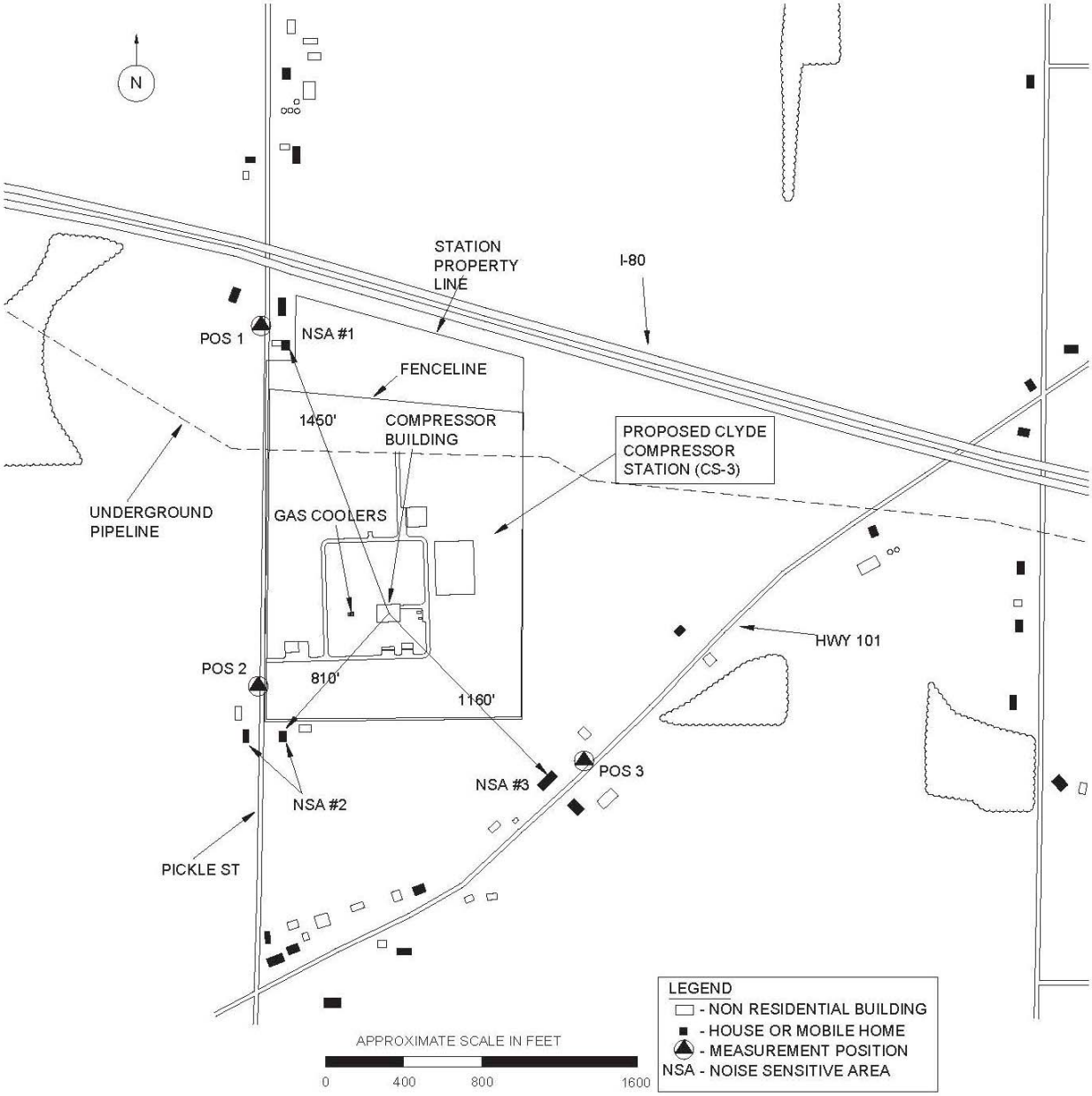

NGT and TEAL Projects
Noise-Sensitive Areas near the Clyde Compressor Station

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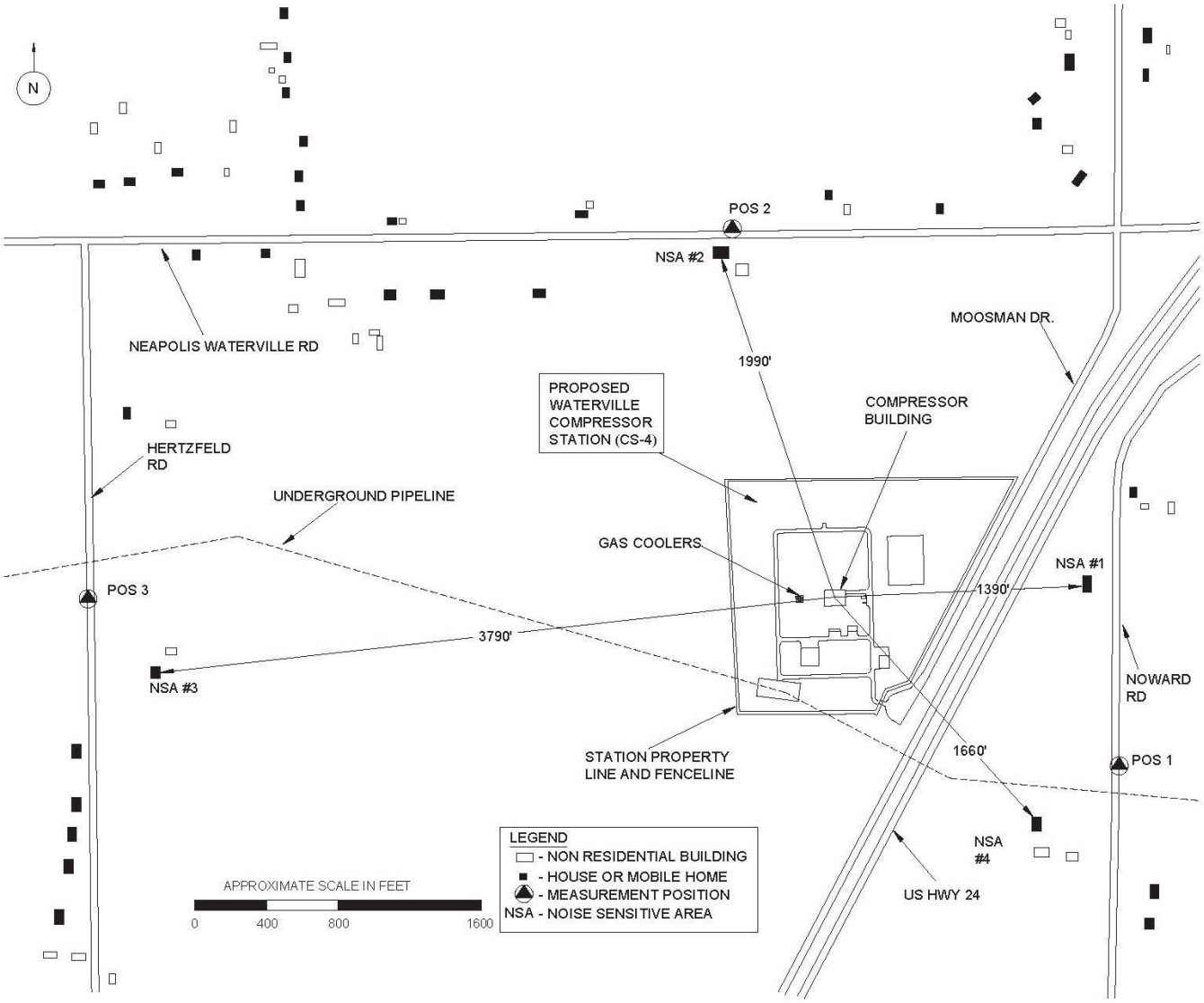

NGT and TEAL Projects
Noise-Sensitive Areas near the Waterville Compressor Station

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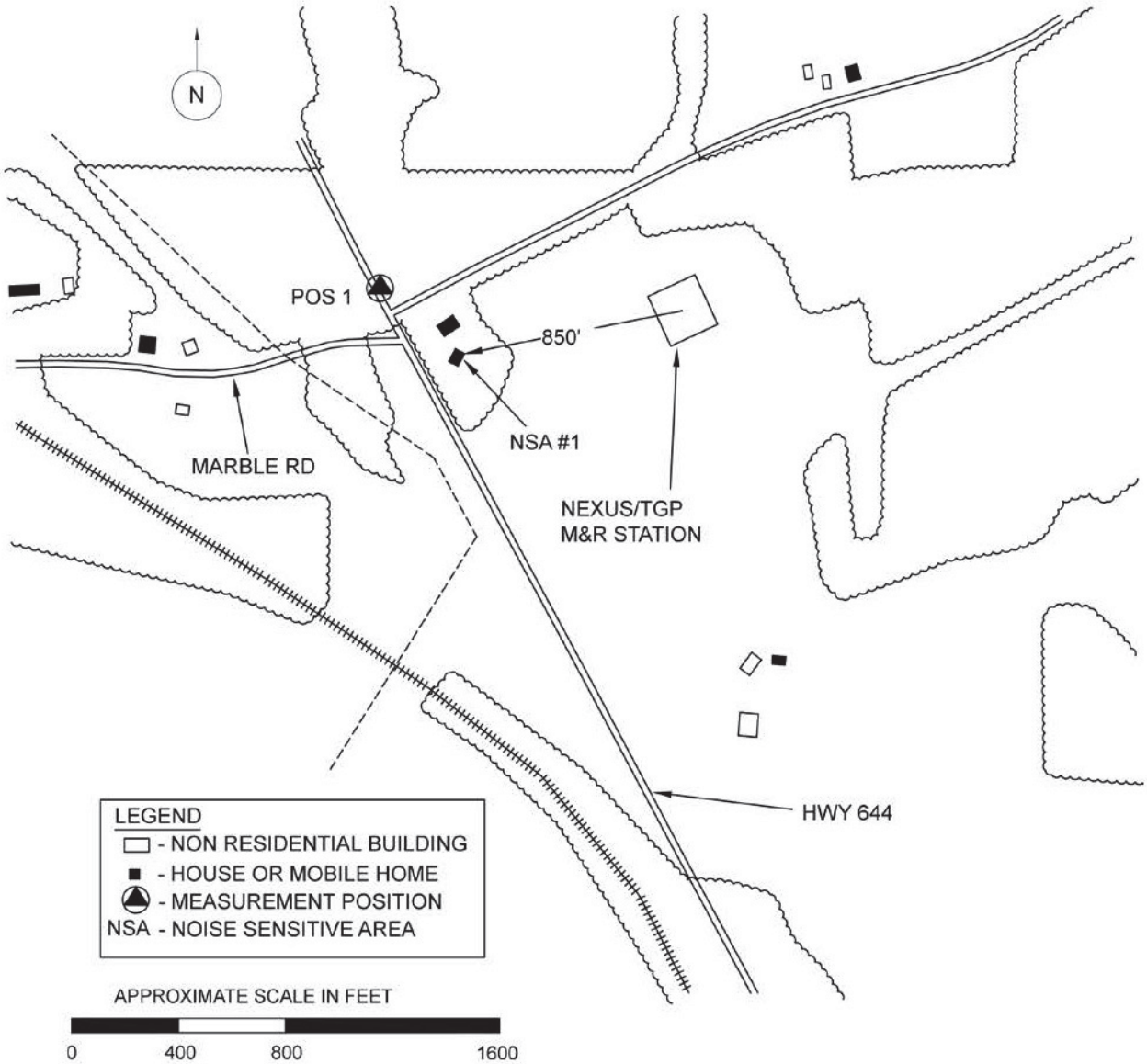

NGT and TEAL Projects
Noise-Sensitive Areas near the MR01 M and R Station

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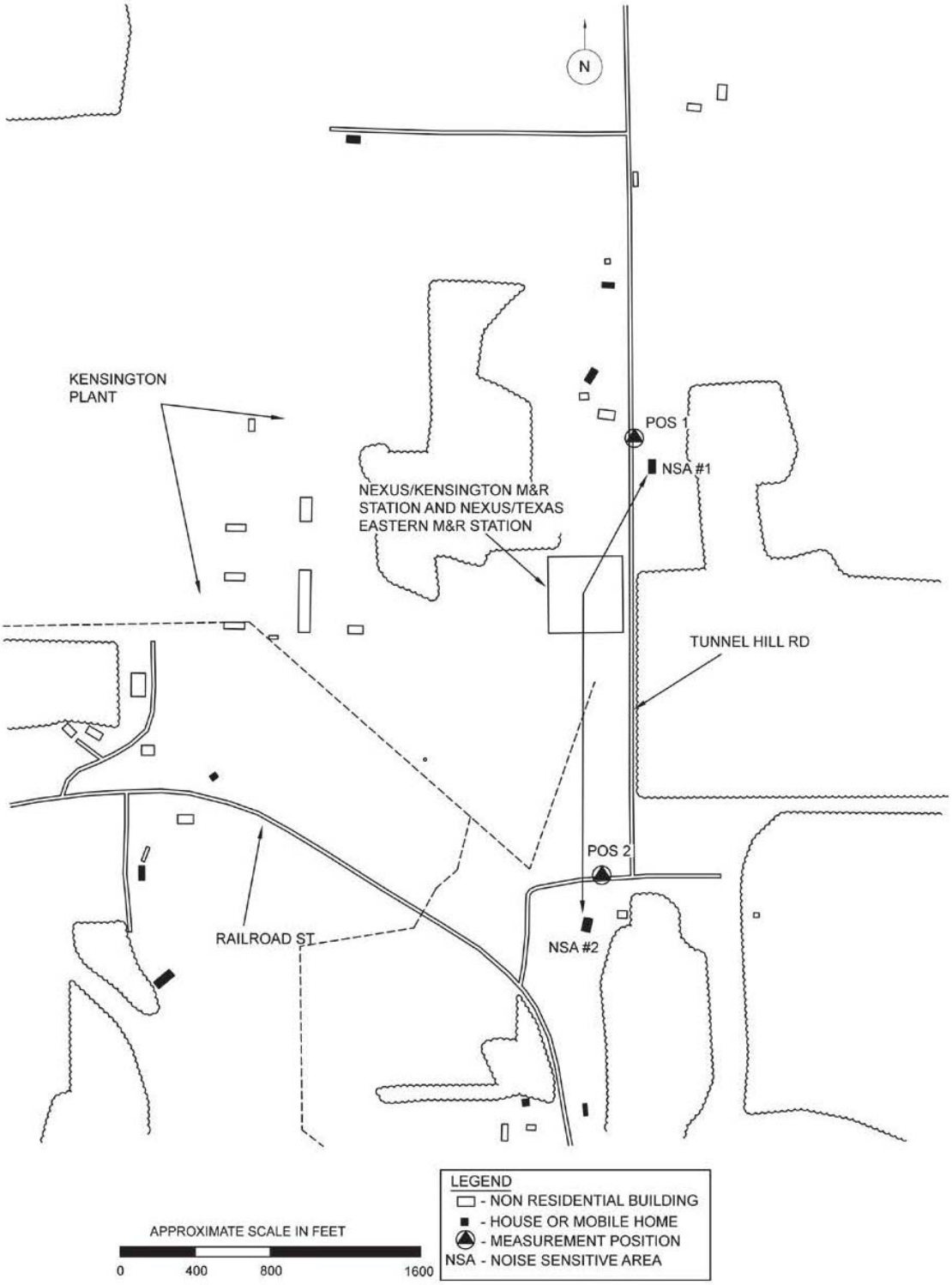

NGT and TEAL Projects
Noise-Sensitive Areas near the MR02 and MR03 M and R Stations

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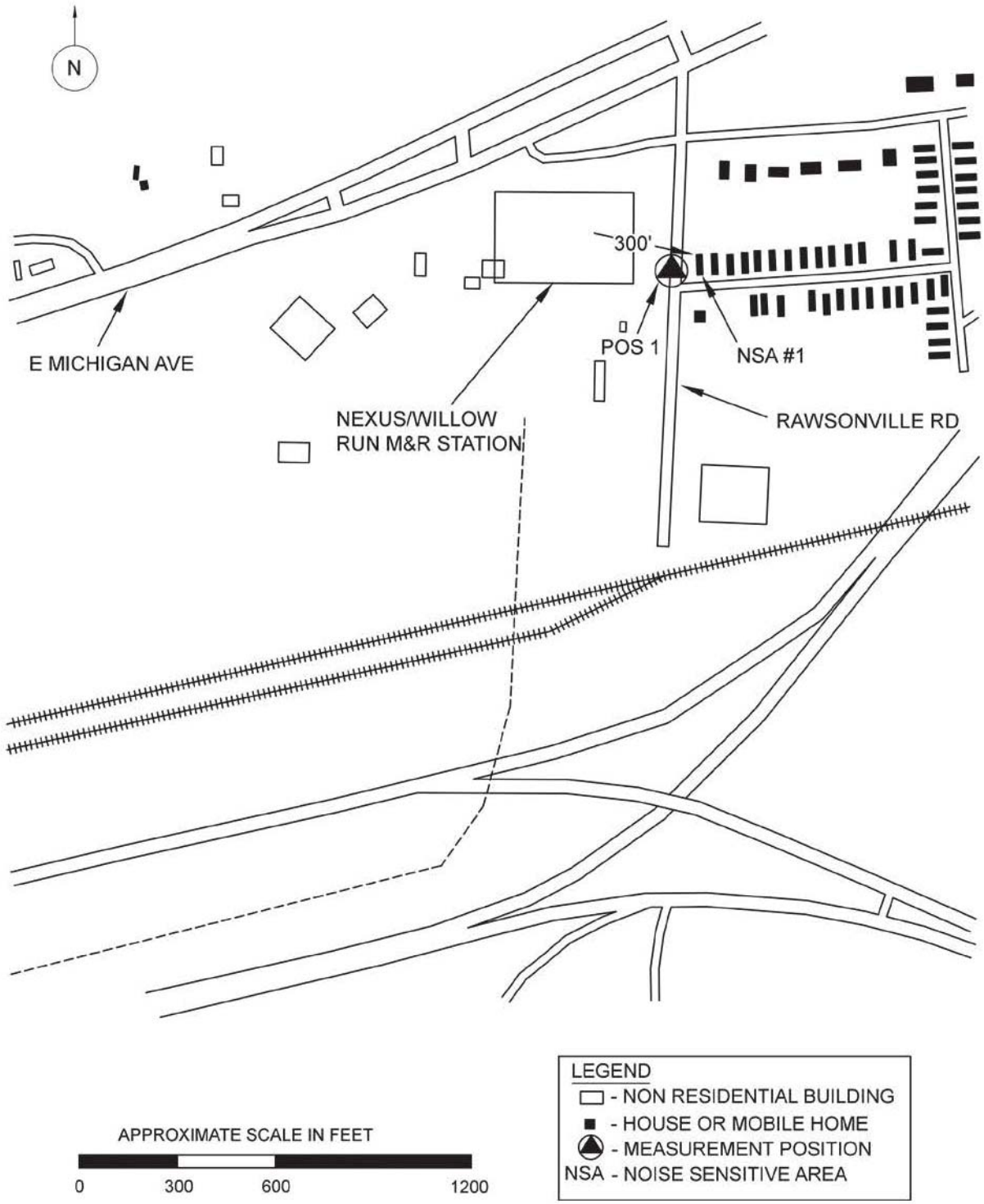

NGT and TEAL Projects
Noise-Sensitive Areas near the MR04 M and R Station

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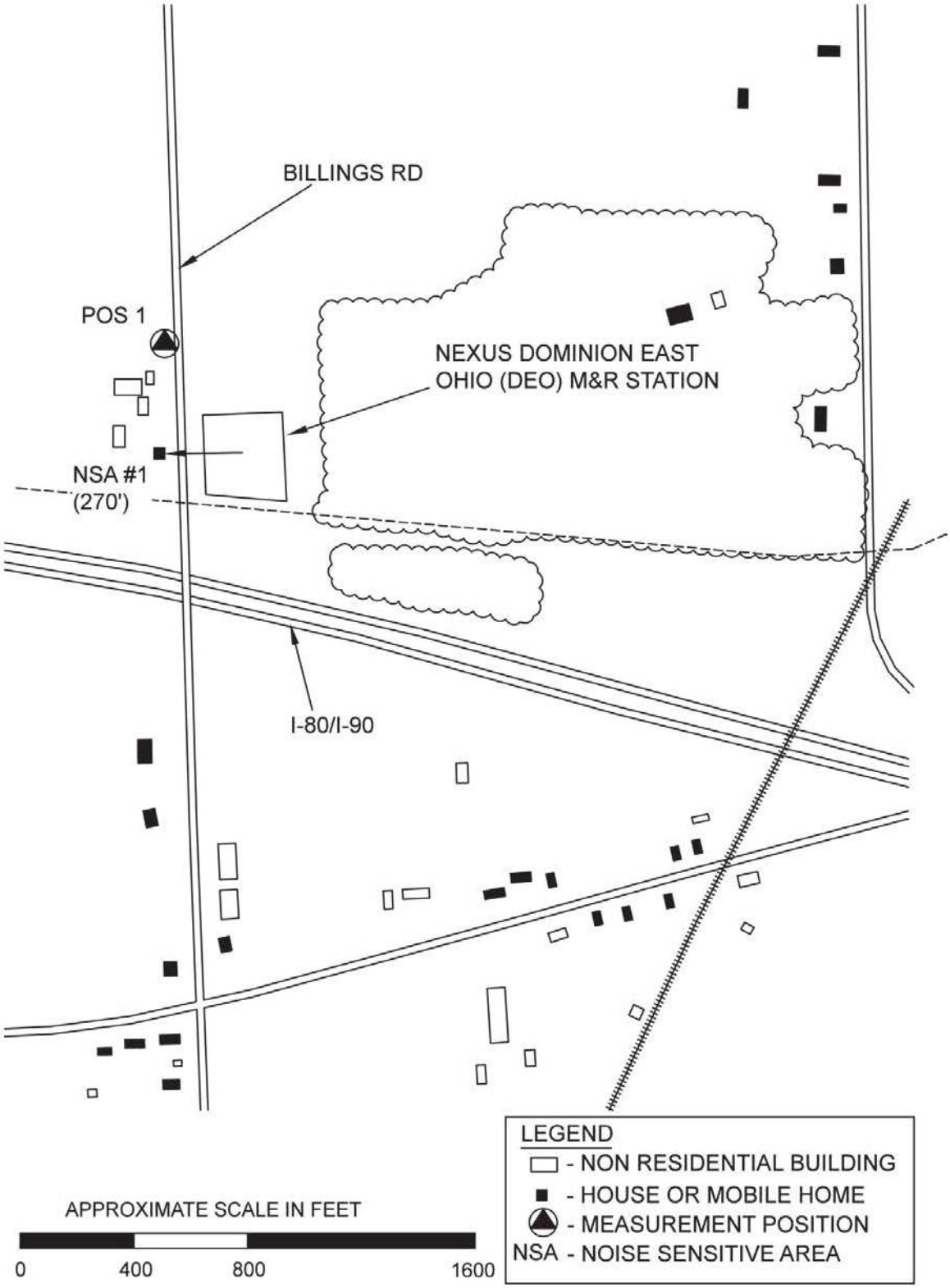

NGT and TEAL Projects
Noise-Sensitive Areas near the MR05 M and R Station

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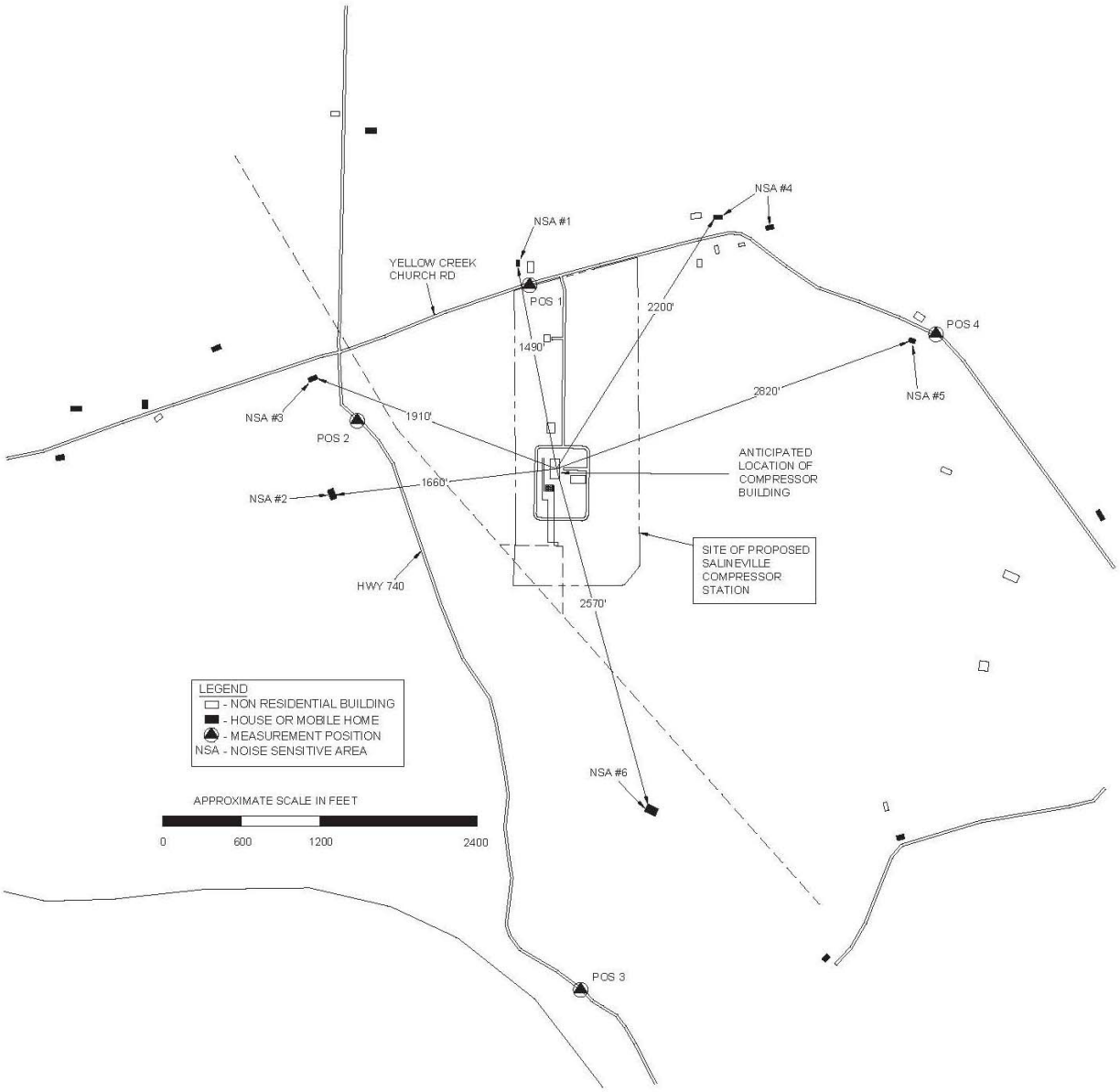

NGT and TEAL Projects
Noise-Sensitive Areas near the Salineville Compressor Station

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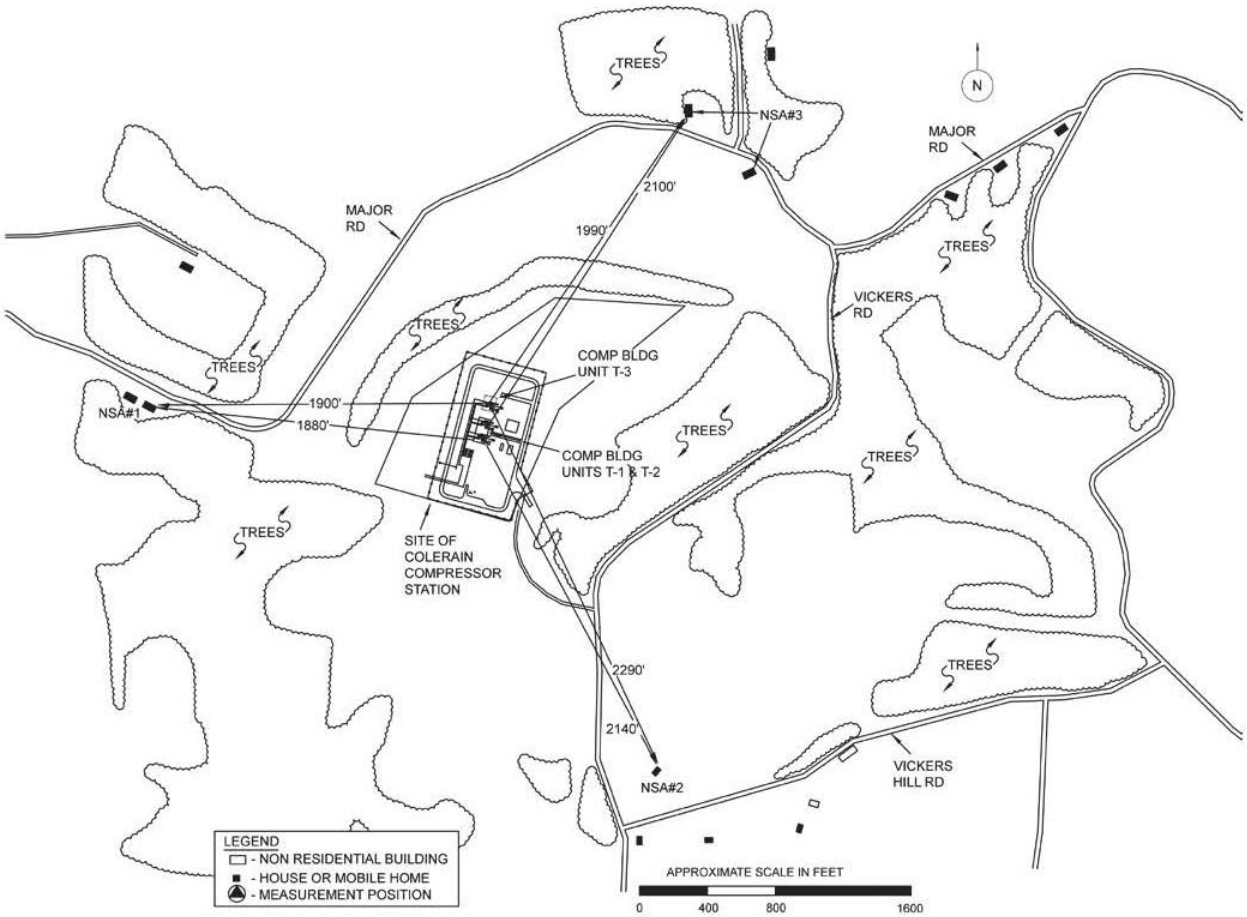

NGT and TEAL Projects
Noise-Sensitive Areas near the Colerain Compressor Station

Date: (2/19/2016) Source: Z:\Clients\Q_R\Spectra\NexusArcGIS\2016\01\DEIS\Noise\Figure_4.12.2-10.mxd

APPENDIX N

RECENTLY COMPLETED, CURRENT, AND POTENTIAL FUTURE PROJECTS NEAR THE NGT AND TEAL PROJECTS

APPENDIX N

Recently Completed, Current, and Potential Future Projects near the NGT and TEAL Projects

Company, Project, County, State	Approximate Distance from Project Facilities (mi)	Project Description	Project Status
NGT PROJECT			
Texas Eastern Transmission LP Ohio Pipeline Energy Network Project Columbiana County, OH	0.3	Approximately 76 miles of new 30-inch mainline pipeline and ancillary facilities in Ohio, including a new compressor station in Colerain Township and reverse flow modifications at existing compressor stations along Texas Eastern's existing mainline in Ohio, Kentucky, Mississippi, and Louisiana.	Under construction with a planned in-service date of November 2015. FERC Docket No. CP14-68-000
State Route (SR) 14F Columbiana County, OH	10	Construct new four-lane limited access highway from US Route 62 in Columbiana County to SR 11 in Mahoning County.	Ongoing 2005 to 2025.
US Route 62 (Hubbard Arterial) Highway Work Columbiana County, OH	10	Construct new four-lane arterial from US Route 62F to Interstate 80.	Ongoing 2014-2030.
US Route 30 Highway Work Columbiana and Stark Counties, OH	0	Construct new four-lane limited access highway from SR 44 to SR 9.	Ongoing 2011-2030.
Columbia Pipeline Group Pipeline Improvement Project Stark County, OH	6.5 to 12	Replacement of more than 20,000 feet of gas pipeline in North Lawrence and Navarre.	Work is ongoing and will continue into 2017.
Energy Transfer Rover Pipeline Project Carroll, Stark, Wayne, Wood, Fulton, Lucas Counties, OH	25	Project consists of 711 miles of 24-inch, 30-inch, 36-inch and 42-inch pipelines with 10 supply laterals, 3 mainlines, 9 compressor stations, and associated meter stations and other aboveground facilities in parts of West Virginia, Pennsylvania, and Ohio.	Construction is requested to begin summer 2016 with an in-service date of Q1/Q2 2017. FERC Docket No. CP15-93-000
FirstEnergy Transmission Glenwillow-Bruce Mansfield Project Columbiana County, OH	8	Project involves building 114.5 miles of new 345-kV transmission line through Trumbull, Columbiana, Mahoning, Portage, Summit and Cuyahoga Counties in Ohio and Beaver County in Pennsylvania. A new substation will be constructed in Glenwillow, Ohio.	In service June 2015.
CAK International Business Park Development Summit County, OH	--	Project involves future development of existing commercial industrial park. Lots have not been developed but are available for sale.	Construction schedule unknown.
Kinder Morgan Utopia East Project Stark, Wayne, Huron, Sandusky, Wood, Henry, Lucas, and Fulton Counties, OH	MP 0 to 195	Involves construction of 240-mile, 12-inch diameter pipeline from Harrison County, Ohio to Kinder Morgan's existing pipeline and facilities in Fulton County, Ohio, where the company would then move product eastward to Windsor, Ontario, Canada. The Utopia East system would transport previously refined or fractionated natural gas liquids, including ethane and ethane-propane mixtures.	Construction is planned to begin in November 2016 with an in-service date of January 2018.
Woods at Silver Creek Ltd. Residential Subdivision Wayne County, OH	0.1	Tract OH-WA-026.0000. Woods at Silver Creek Ltd. – Township approved 65 allotments for future development.	Approved by Township since 2003. Construction schedule unknown.
A R Lockhart Development Co. Shopping Center, Apartment Complex, Residential Development Project Wayne and Medina Counties, OH	0	Tracts OH-WA-030.0000, OH-ME-030.0000-TAR-3-53.6, OH-ME-030.0100, OH-WA-000.0001-SA-2-SPRD-2. Project contingent upon developer installing sewage line. Plans have been filed with the county, but zoning has not been approved.	Plans filed with the county.

APPENDIX N (cont'd)

Recently Completed, Current, and Potential Future Projects near the NGT and TEAL Projects

Company, Project, County, State	Approximate Distance from Project Facilities (mi)	Project Description	Project Status
NGT PROJECT (cont'd)			
Wadsworth Airport Expansion Medina County, OH	0	South of property. Tract OH-ME-007.0000. Airport expansion plans are from 2008. The airport master plan (February 2009) essentially rebuilds the north-south runway to a distance of 5,000 feet.	Unknown. According to the City, the project will begin in the next 4-5 years.
Damar Valley LLC **Residential Subdivision Project** Medina County, OH	0	Tract OH-ME-016.0000. Project proposed on 68-acre property.	Potential future project; however, no plans have been filed by the landowner.
Private Landowner **Residential Subdivision Project** Medina County, OH	0	Tracts OH-ME-060.0000, OH-ME-062.0000, OH-ME-063.0000. Plans to subdivide property along road frontage on Blake and Guilford roads.	Potential future project; however, no plans have been filed by the landowner.
Private Landowner **Residential Subdivision Project** Medina County, OH	0	Tract OH-ME-077.0000. Plans to subdivide 40-acre lot.	Potential future project; however, no plans have been filed by the landowner.
VGL Properties LLC **Property Development** Medina County, OH	0	Tracts OH-ME-116.0000, OH-ME-117.0000. Stone driveways and paths to be created for outdoor public attractions.	In process of obtaining permits.
TransCanada **ANR East Pipeline Project** Wayne County, OH	23.7	Pipeline would consist of approximately 320 miles of large diameter, 1,440 pounds per square inch gauge maximum allowable operating pressure pipeline with up to 140,000 horsepower of compression and a daily capacity between 1.2 and 2.0 billion cubic feet.	TransCanada has not entered the FERC's pre-filing process.
Columbia Pipeline Group **Pipeline Improvement Project** Medina County, OH	4	Columbia Gas is replacing more than 10,000 feet of gas pipeline.	Completed in October 2015.
Columbia Pipeline Group **Pipeline Improvement Project** Lorain County, OH	1	Columbia Gas is replacing more than 16,000 feet of gas pipeline.	Completed in 2014.
Widen and rehab SR 57 between Ohio Turnpike and I-90 in City of Elyria Lorain County, OH	5	Widening and rehabilitation of SR 57 to occur between the Ohio Turnpike and I-90 in the city of Elyria. Project will also include reconfiguration of the SR 57 and I-90 interchange and removal of the 49th St. bridge. Two lanes will be maintained on SR 57 during construction; however, 49th Street will be closed indefinitely. Midway Mall Boulevard and Griswold Road will be closed during construction.	Construction started in May 2014 and is expected to be completed in summer 2016.
West Park, LLC **Commercial Park Project** Lorain County, OH	0	Tracts OH-LO-094.0000, OH-LO-095.0000. Plans for 35-acre commercial park to be updated and/or renovated.	Potential future project; no plans filed. Recently sold to Western Land Conservancy.
Columbia Pipeline Group **Pipeline Improvement Project** Lorain County, OH	1	Replacing more than 16,000 feet of gas pipeline in two locations.	Completed in 2014.
Columbia Pipeline Group **Pipeline Improvement Project** Huron County, OH	6.5	Replacing more than 10,000 feet of gas pipeline in Willard.	Completed in 2015.

APPENDIX N (cont'd)

Recently Completed, Current, and Potential Future Projects near the NGT and TEAL Projects

Company, Project, County, State	Approximate Distance from Project Facilities (mi)	Project Description	Project Status
NGT PROJECT (cont'd)			
Columbia Pipeline Group Pipeline Improvement Project Huron County, OH	20	Replacing more than 10,000 feet of gas pipeline in Norwalk.	Completed in 2015.
2015 Road Construction Project Huron County, OH	5	Construct bridge replacement by Lovers Lane.	Completion expected on October 31, 2015.
Avery Commerce Park, LLC Commercial Park Project Erie County, OH	0.2	Tract OH-ER-106.0020-TAR-7. Plans for 67-acre commercial park to be updated and/or renovated.	Potential future project; however, no plans have been filed by the landowner.
Columbia Pipeline Group Pipeline Improvement Project Erie County, OH	6.2	Replacing more than 25,000 feet of gas pipeline in the vicinity of Hayes Avenue.	Completed in 2015.
FirstEnergy Transmission Hayes-West Fremont Project Erie County, OH	0.5	Approximately 30 miles of new 138-kV transmission line extending from a new substation (Hayes Substation) in Erie County to an existing West Fremont Substation in Sandusky County.	Construction is proposed to start in May 2017 with an in-service date of August 31, 2018.
2014 Construction Projects on I-90 Sandusky County, OH	0	Projects will involve base pavement replacement from Milepost 101.2 to 107.3. Resurfacing will occur in both east and westbound lanes.	Estimated completion date is November 2015.
State of Ohio and Sandusky County creating new intersection/road Sandusky County, OH	0.1	Involves construction of a new intersection at 53 and Ohio Turnpike about 800 feet south of proposed pipeline. New intersection at turnpike would intersect the proposed pipeline route.	Construction planned for 2016.
Ohio DOT Anthony Wayne Bridge (SR 2) Widening Project Lucas County, OH	11	The Anthony Wayne Bridge (SR 2) over the Maumee River in downtown Toledo is closed through September 2015 for bridge reconstruction. Work includes re-decking the bridge, replacing existing truss spans, improving substructures, installing new street lighting, and rebuilding sidewalks, railings, and fencing.	Started in July 2014 and proposed to be completed by December 2015.
Ohio DOT I-75 Reconstruction Project Lucas County, OH	11	Involves reconstructing over 3 miles of pavement from Dorr Street to Central Avenue in downtown Toledo. Will also add a third lane to 32 miles of I-75.	Started in summer 2014 and proposed to be completed by summer 2016.
Columbia Pipeline Group Pipeline Improvement Project Lucas County, OH	10.6	Replacing more than 95,000 feet of gas pipeline in the Toledo area.	Completed 2015.
Jefferson Street Widening and Improvement Project Wood County, OH	5	Widen and reconstruct 1,848 feet of pavement and construct 492 feet of new pavement on Jefferson Street, install curbs and gutters, major drainage improvements, culvert crossing of Kohl Ditch, sidewalks, extend waterline and sanitary sewer, extend left turn lane on SR 25, widen corner radii at Waters Edge Drive/Williams Road intersection.	Phase A completed in 2014. Phase B to be performed and completed in 2015.
FirstEnergy Transmission Dowling Substation and Transmission Line Project Wood County, OH	5	Includes extending an existing transmission line by 150 feet and constructing a new substation in Wood County.	In-service in June 2015.

APPENDIX N (cont'd)

Recently Completed, Current, and Potential Future Projects near the NGT and TEAL Projects

Company, Project, County, State	Approximate Distance from Project Facilities (mi)	Project Description	Project Status
NGT PROJECT (cont'd)			
Columbia Pipeline Group Pipeline Improvement Project Wood County, OH	6.7	Replacing more than 25,000 feet of gas pipeline in Bowling Green area.	Completed in 2015.
Browning Masonic Community, Inc. Retirement Home Build Out Lucas County, OH	0	Tracts OH-LC-016.0000, OH-LC-017.0000, OH-LC-017.0000-TAR-1-182.1, OH-LC-019.0000, OH-LC-000.0001-SA-1-SPRD3, OH-LC-019.0000-VS. Plans to build a retirement community with housing and other facilities on the property.	Plans filed.
Noward Road Rebuild Project Lucas County, OH	1	Rebuilding Waterville Township RD 137 (Noward) between Highway 64 and Neopolis Waterville Rd.	Construction planned for spring 2017.
2014 Lucas Culvert Projects Lucas County, OH	1	Lucas County will replace culverts in the following locations: 935 Jeffers Road, 989 Perry Road, and 1038 Manore Road.	Completed in 2014.
Ohio DOT I-475 Bridge Widening Project Lucas County, OH	4	Replace and widen three bridges on I-475. Bridges are located over Wolf Creek, Norfolk Southern Railroad tracks, and Angola Road.	Proposed to be completed in August 2016.
Ohio DOT McCord Rd Railroad Grade Separation Project Lucas County, OH	5	Involves building an underpass at the Norfolk Southern railroad and constructing a roundabout at the intersection of McCord Road and North Mall Drive/Hill Street.	Started in June 2014 and proposed to be completed by November 2016.
Ohio DOT I-475/US23 Improvement Project Lucas County, OH	5	Involves improving movements at the I-475/U.S. 23 systems interchange, including adding through-lanes from southbound U.S. 23 to I-475 and correcting weave movement from eastbound I-475 to southbound U.S. 23 and Central Avenue.	Two-year construction project began in August 2015.
2015 Monroe County Road Construction Projects Monroe County, MI	Varies	Monroe 2015 Road Construction.	Completed 2015.
Crescent Hills Associates, LLC Residential Subdivision Project Monroe County, MI	0	Tract MI-MR-049.0000-SC. Planned subdivision expansion would take up entire parcel. There are two existing lines.	Potential future project; however, no plans have been filed by the landowner.
2015 and 2016 Road Construction Projects Washtenaw County, MI	1	Washtenaw County Road Construction.	Ongoing 2016.
2015 Washtenaw County Road Construction Projects Washtenaw County, MI	Varies	Washtenaw 2015 Road Construction.	Completed.
Bridge Replacement and Construction Project Washtenaw County, MI	3.4	Small bridge along Arkona Road in Saline is being replaced.	Completed 2015.
Subdivision Expansion Washtenaw County, MI	0	Tract MI-WA-048.0000. Easterly expansion of the subdivision is proposed on the property to the west of the parcel.	Tentatively breaking ground on road construction in spring 2016.

APPENDIX N (cont'd)

Recently Completed, Current, and Potential Future Projects near the NGT and TEAL Projects

Company, Project, County, State	Approximate Distance from Project Facilities (mi)	Project Description	Project Status
NGT PROJECT (cont'd)			
2014 Monroe County Road Construction Projects Monroe County, MI	Varies	Monroe 2014 Road Construction.	Ongoing.
Planned Apartment Complex and Gas/Service Station Washtenaw County, MI	0	Tracts MI-WA-112.0000, MI-WA-112.0000-TAR-9.251.1, MI-WA-112.0000-HTAR-2. Apartment complex and restaurant construction proposed along southern portion of the lake. Gas station and retail space proposed in northeast corner of property.	Plans filed with Ypsilanti Township.
Utica/Point Pleasant Shale Horizontal Wells Stark, Wayne, Columbiana, and Medina Counties, OH	Varies	About 650 drilling permits have been issued. Wells are in various stages of production (permitted, drilling, or producing). (Data pulled March 2016.)	Ongoing.
TEAL PROJECT			
Energy Transfer Rover Pipeline Project Outside of TEAL counties	0.1	Consists of 711 miles of 24-inch, 30-inch, 36-inch and 42-inch pipelines consisting of 10 supply laterals, 3 mainlines, 9 compressor stations, and associated meter stations and other aboveground facilities in parts of West Virginia, Pennsylvania, and Ohio.	Construction is requested to begin summer 2016 with an in-service date of Q1/Q2 2017. FERC Docket No. CP15-93-000
Slope Maintenance and Slide Repair Monroe County, OH	9.9	Rock slope maintenance on SR 800 and slide repair on SR 255.	Completed in 2015.
Culvert Construction and Repair Monroe County, OH	9.2	Culvert construction, reconstruction, and repair on SR 78.	Construction scheduled for 2015.
Texas Eastern Transmission LP Access South Project, Adair Southwest Project, and Lebanon Extension Project Monroe, Noble, Meigs, and Athens Counties, OH	0.7	Includes proposed modifications to existing facilities along its pipeline system in Pennsylvania, Ohio, Kentucky, Tennessee, Alabama, and Mississippi. The facilities are expected to be located primarily within Texas Eastern's current footprint. They include 15.8 miles of 36-inch pipeline loop segments, most of which will be either within or adjacent to Texas Eastern's current right-of-way. Modifications to existing aboveground facilities at 12 compressor stations include installation of additional electric horsepower and other improvements.	Construction is planned to begin in March 2017. The projected in-service date is November 1, 2017.
Road Resurfacing Monroe County, OH	8.0	Road resurfacing on SR 724, and SR 26/800.	Construction scheduled for 2015.
Columbia Gas Transmission, LLC Leach XPress Project Monroe County, OH	0.1	Involves construction of approximately 157 miles of 30-inch and 36-inch natural gas pipelines, along with associated compression and other appurtenant facilities, in southeastern Ohio and West Virginia's northern panhandle.	Construction is planned to begin in late 2016, with a targeted in-service date during the second half of 2017. FERC Docket No. PF14-23.
Road resurfacing Belmont County, OH	2.2	Two-lane road resurfacing along SRs 7, 9, 145, 147, 148, 149, and US 40.	Completed in 2015.
Road and Historic Bridge Enhancement Belmont County, OH	6.8	County Road 7 streetscape in Shadyside and bike path tunnel under US 40.	Completed November 2015.

APPENDIX N (cont'd)

Recently Completed, Current, and Potential Future Projects near the NGT and TEAL Projects

Company, Project, County, State	Approximate Distance from Project Facilities (mi)	Project Description	Project Status
TEAL PROJECT (cont'd)			
US 40 Road Enhancement Belmont County, OH	4.5	US 40 enhancement (sidewalks and resurfacing).	Completed October 2015.
I-70 Bridge Replacement Projects Belmont County, OH	6.0	Three structures to be replaced at Bridgeport interchange, including Marion St. Bridge over I-70 and the eastbound on- and off-ramp structures to I-70. Various Marion St. and ramp closures during construction.	Completed November 2015.
Various local bridge and culvert projects Belmont County, OH	3.9	Bridge repair, replacement, historic enhancement, and culvert replacement and repair.	Construction scheduled throughout 2015.
Slope Repair Belmont County, OH	9.5	Slope repair on SR 149.	Construction scheduled for March to July 2015.
SR 7 at I-470 Ramp Intersection Belmont County, OH	7.5	Safety improvement project, including signals at I-470 ramp intersection. Traffic will be maintained.	Completed October 2015.
Slope Repair Jefferson County, OH	8.7	Two projects within 5 miles from Rush Run to north of Brilliant. SR 7 has been reduced to one lane due to multiple rock slides on both sides of Brilliant since 2011.	Construction ongoing from April 2015 to June 2018.
Texas Eastern Transmission LP Ohio Pipeline Energy Network Project Columbiana, Jefferson, Belmont, and Monroe Counties, OH	0.0	Approximately 76 miles of new 30-inch mainline pipeline and ancillary facilities in Ohio, including a new compressor station in Colerain Township and reverse flow modifications at existing compressor stations along Texas Eastern's existing mainline in Ohio, Kentucky, Mississippi and Louisiana.	In-service in November 2015.
TransCanada ANR East Pipeline Project Outside of TEAL counties	0.5	Pipeline would consist of approximately 320 miles of large diameter, 1,440 pounds per square inch gauge maximum allowable operating pressure pipeline with up to 140,000 horsepower of compression and a daily capacity between 1.2 and 2.0 billion cubic feet.	TransCanada has not entered the FERC's pre-filing process.
SRs 164 and 644 Columbiana and Jefferson Counties, OH	2.3	SR 164 will be resurfaced from Bergholz's north corporation line through Salineville and SR 644 will be resurfaced north of Salinesville's corporation.	Completed in 2015.
FirstEnergy Transmission Glenwillow-Bruce Mansfield Project Columbiana County, OH	16.5	Project involves building 114.5 miles of new 345-kV transmission line through Trumbull, Columbiana, Mahoning, Portage, Summit, and Cuyahoga Counties in Ohio and Beaver County in Pennsylvania. A new substation will be constructed in Glenwillow, Ohio.	In-service June 2015.
Culvert Replacement Columbiana County, OH	3.7	Culvert Replacement on SR 164.	Completed in 2015.
US Route 30 Highway Work Columbiana County, OH	1.9	Construct new four-lane limited access highway from SR 44 to SR 9.	Ongoing from 2011-2030.
Columbia Gas Transmission, LLC E. Chestnut Street Pipeline Relocation Columbiana County, OH	8.3	Replacing 4,159 feet of pipe.	In progress – June 2015.

APPENDIX N (cont'd)

Recently Completed, Current, and Potential Future Projects near the NGT and TEAL Projects

Company, Project, County, State	Approximate Distance from Project Facilities (mi)	Project Description	Project Status
TEAL PROJECT (cont'd)			
Bridge Enhancement Columbiana County, OH	8.4	Historic bowstring bridge renovation and enhancement at County Fairgrounds.	Construction scheduled for March to August 2015.
Columbia Gas Transmission, LLC Sunset Drive Pipeline Replacement Columbiana County, OH	7.8	Replacing 1,232 feet of pipe.	Completed in June 2015.
Road Resurfacing Columbiana County, OH	3.7	Road resurfacing of SRs 164 and 45.	Construction scheduled for May to August 2015.
Utica/Point Pleasant Shale Horizontal Wells Columbiana, Jefferson, Belmont, and Monroe Counties, OH	Varies	About 650 drilling permits have been issued. Wells are in various stages of production (permitted, drilling, or producing). (Data pulled March 2016.)	Ongoing.
Marcellus Shale Horizontal Wells Jefferson, Belmont, and Monroe Counties, OH	Varies	At least 43 wells permitted, of which 22 have been drilled and 14 are producing.	Ongoing.

Sources: Columbia Pipeline Group, 2015; ODOT, 2015c; FirstEnergy Corporation, 2016b; Somerset Gas Transmission Company, LLC, 2013.

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