Section 4906-5-05
Figures

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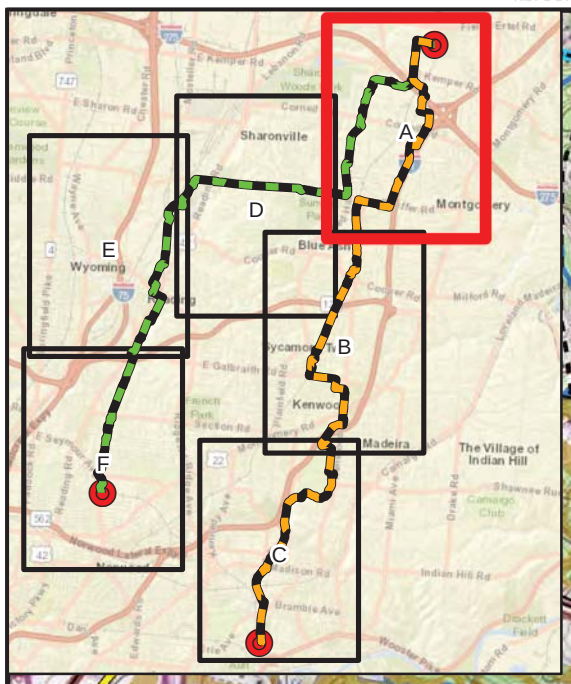

WW Feed Station

Highpoint Park Regulation Station (Proposed)

Sharon Woods Park

FIELDS ERTEL RD

BUTLER WARREN RD

SNIDER RD

E KEMPER RD

I-275 WB EXWY

I-275 EB EXWY

CORNELL RD

CREEK RD

REED HARTMAN HWY

KENWOOD RD

GLENDALE MILFORD RD

PFEIFFER RD

WELLER RD

HOPEWELL RD

MONTGOMERY RD

ZIG ZAG RD

COOPER RD

HUNT RD

BLUE ASH RD

PLANFIELD RD

PLANNED VALVE STATION

PLANNED VALVE STATION

Lake Chetac

Water Tank

Highpoint

Stewart Sch

Recon

Hazelwood

Blue Ash

Evendale

Kenridge

Montgomery

Fairwind Acres

Montgomery Heights

The Village of Indian Hill

North Branch Sycamore Creek

CINCINNATI-BLUE ASH AIRPORT

Plainfield Sch

Drive-in Theater

LEGEND:

- Alternate Route
- Preferred Route
- 1,000 Foot Buffer
- National Register Listied
- National Register Determination of Eligibility
- OGS Cemetery
- NHD Stream
- Existing Pipelines
- Electric_transmissio...
- Railroad
- NWI Wetland
- Park or Recreation Area
- Municipal Boundary
- National Register Boundary

N

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Scale in Feet

BASE MAP SOURCE:
USGS 7.5-minute Topographic Quadrangle
Cincinnati East 1982,
Glendale 1982
Madeira 1983, Mason 1982

DUKE ENERGY

C314V Central Corridor Pipeline Extension Project

FIGURE 5-1A
PROJECT FEATURES AND CULTURAL RESOURCE MAP

PN: 672247	DATE: 2/21/2018
CREATED BY: SA	ch2m.
REVIEWED BY:JJ	

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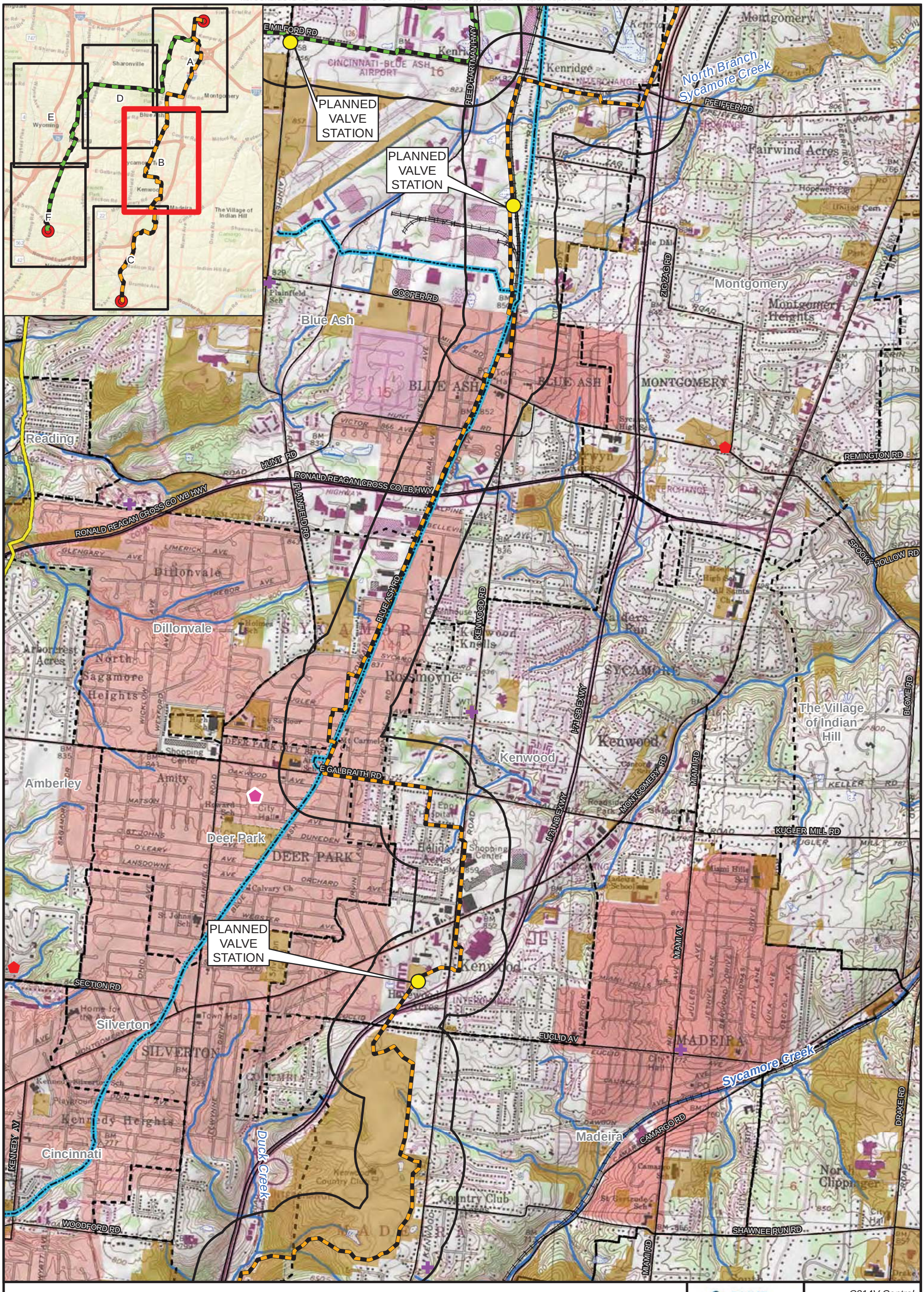

LEGEND:

- Alternate Route
- Preferred Route
- 1,000 Foot Buffer
- National Register Listied
- National Register Determination of Eligibility
- OGS Cemetery
- NHD Stream
- Existing Pipelines
- Electric_transmissio...
- Railroad
- NWI Wetland
- Park or Recreation Area
- Municipal Boundary
- National Register Boundary

N

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Scale in Feet

BASE MAP SOURCE:
USGS 7.5-minute Topographic Quadrangle
Cincinnati East 1982,
Glendale 1982
Madeira 1983, Mason 1982

DUKE ENERGY.

C314V Central Corridor Pipeline Extension Project

FIGURE 5-1B
PROJECT FEATURES AND CULTURAL RESOURCE MAP

PN: 672247	DATE: 2/21/2018
CREATED BY: SA	ch2m.
REVIEWED BY:JJ	

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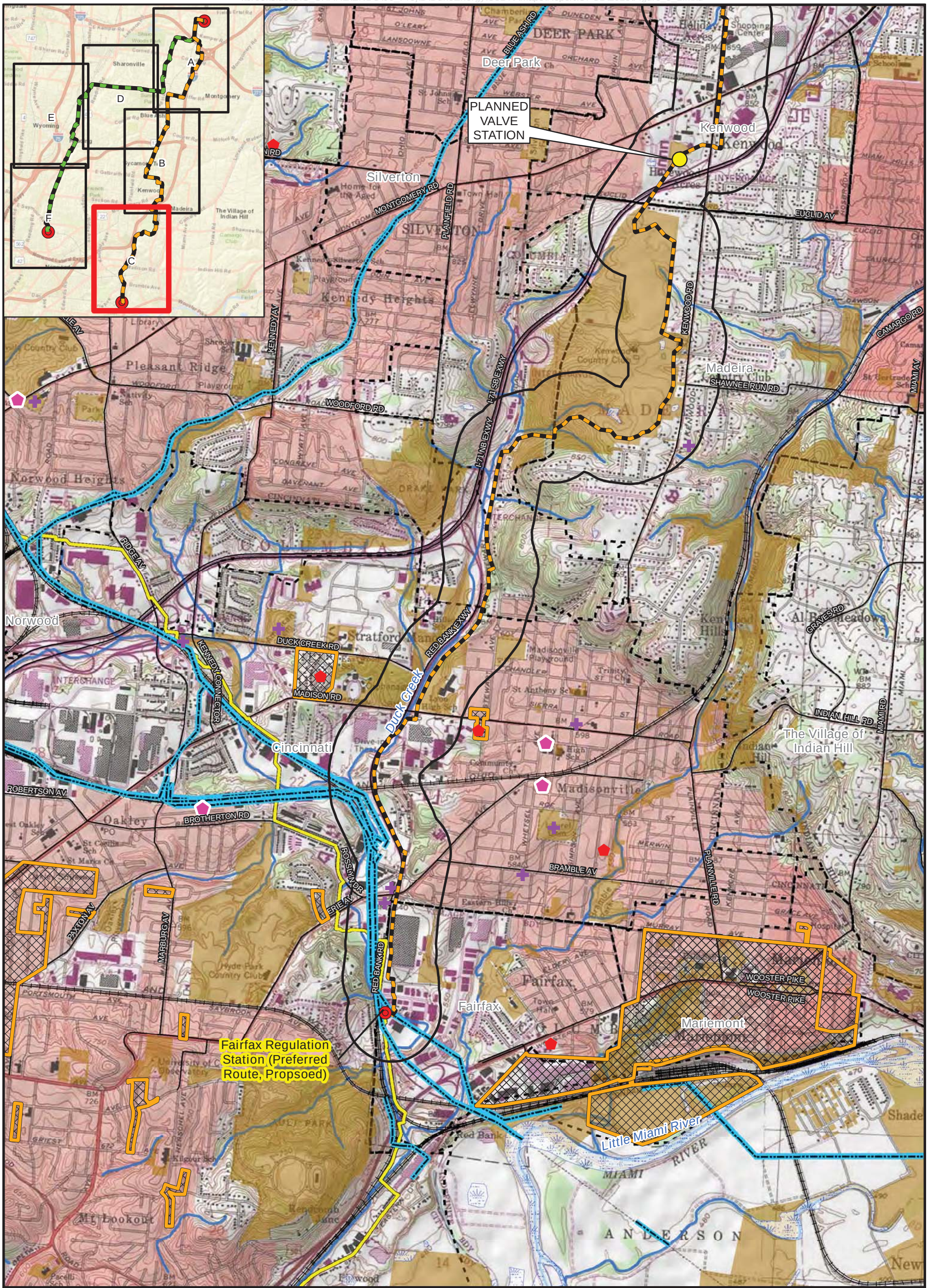

LEGEND:

- Alternate Route
- Preferred Route
- 1,000 Foot Buffer
- National Register Listied
- National Register Determination of Eligibility
- OGS Cemetery
- NHD Stream
- Existing Pipelines
- Electric_transmissio...
- Railroad
- NWI Wetland
- Park or Recreation Area
- Municipal Boundary
- National Register Boundary

N

BASE MAP SOURCE: USGS 7.5-minute Topographic Quadrangle Cincinnati East 1982, Glendale 1982 Madeira 1983, Mason 1982

0 2,000 4,000

Scale in Feet

DUKE ENERGY.

C314V Central Corridor Pipeline Extension Project

FIGURE 5-1C
PROJECT FEATURES AND CULTURAL RESOURCE MAP

PN: 672247	DATE: 2/21/2018
CREATED BY: SA	ch2m.
REVIEWED BY:JJ	

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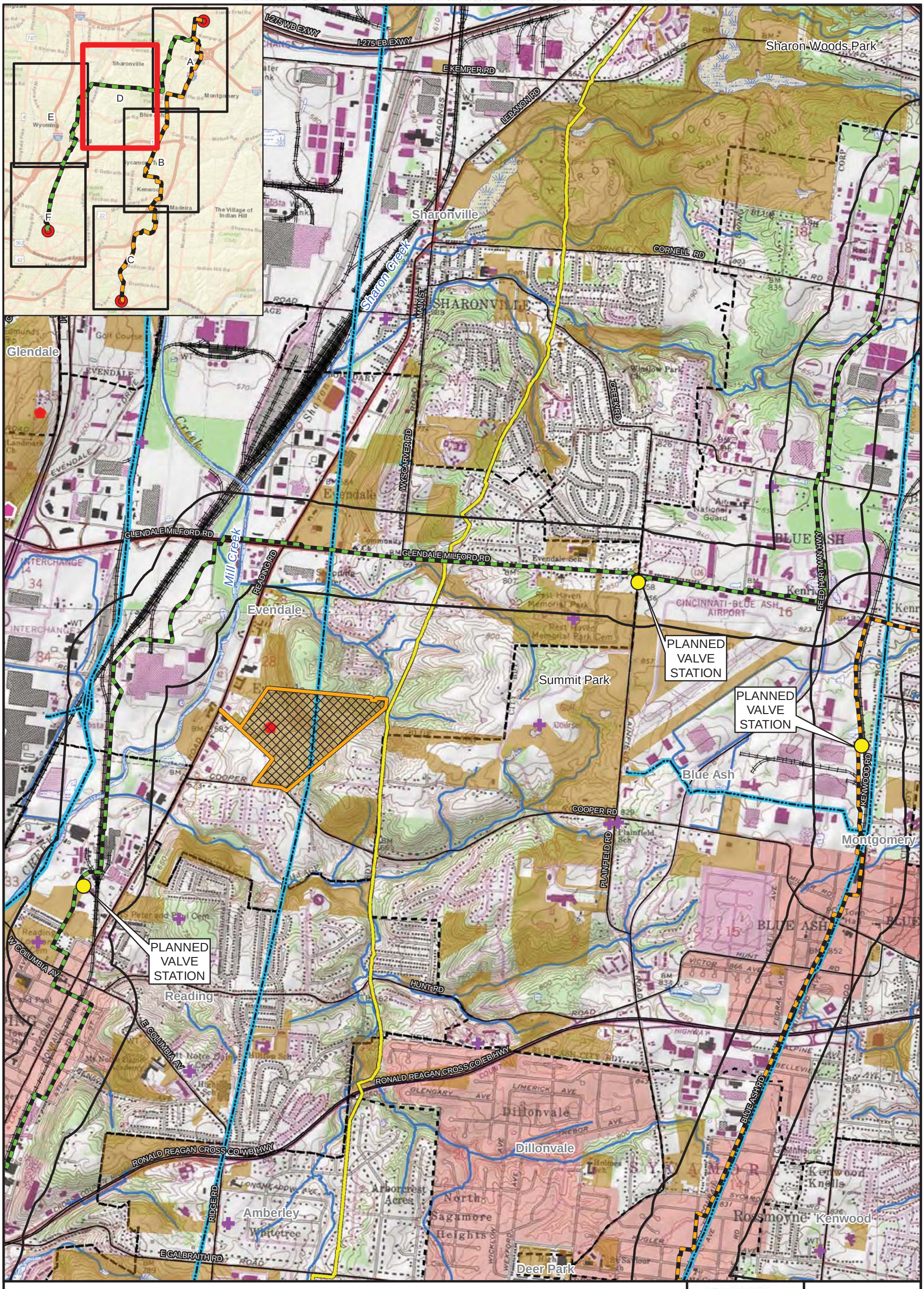

LEGEND:

- Alternate Route
- Preferred Route
- 1,000 Foot Buffer
- National Register Listied
- National Register Determination of Eligibility
- OGS Cemetery
- NHD Stream
- Existing Pipelines
- Electric_transmissio...
- Railroad
- NWI Wetland
- Park or Recreation Area
- Municipal Boundary
- National Register Boundary

N

0 2,000 4,000

Scale in Feet

BASE MAP SOURCE:
USGS 7.5-minute Topographic Quadrangle
Cincinnati East 1982,
Glendale 1982
Madeira 1983, Mason 1982

DUKE ENERGY.

C314V Central Corridor Pipeline Extension Project

FIGURE 5-1D
PROJECT FEATURES AND CULTURAL RESOURCE MAP

PN: 672247	DATE: 2/21/2018
CREATED BY: SA	ch2m.
REVIEWED BY:JJ	

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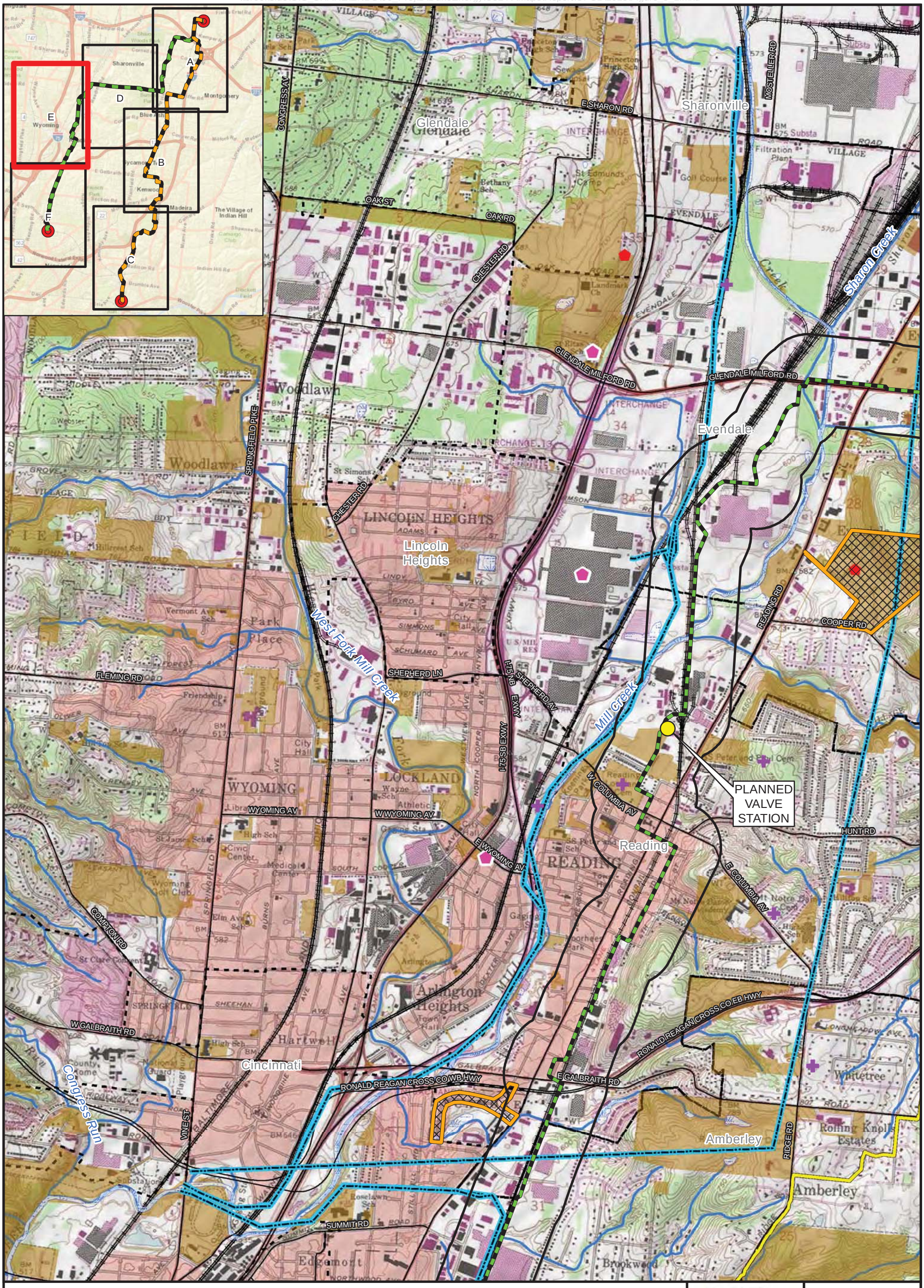


LEGEND:

- Alternate Route
- Preferred Route
- 1,000 Foot Buffer
- National Register Listied
- National Register Determination of Eligibility
- OGS Cemetery
- NHD Stream
- Existing Pipelines
- Electric_transmissio...
- Railroad
- NWI Wetland
- Park or Recreation Area
- Municipal Boundary
- National Register Boundary

N

0 2,000 4,000

Scale in Feet

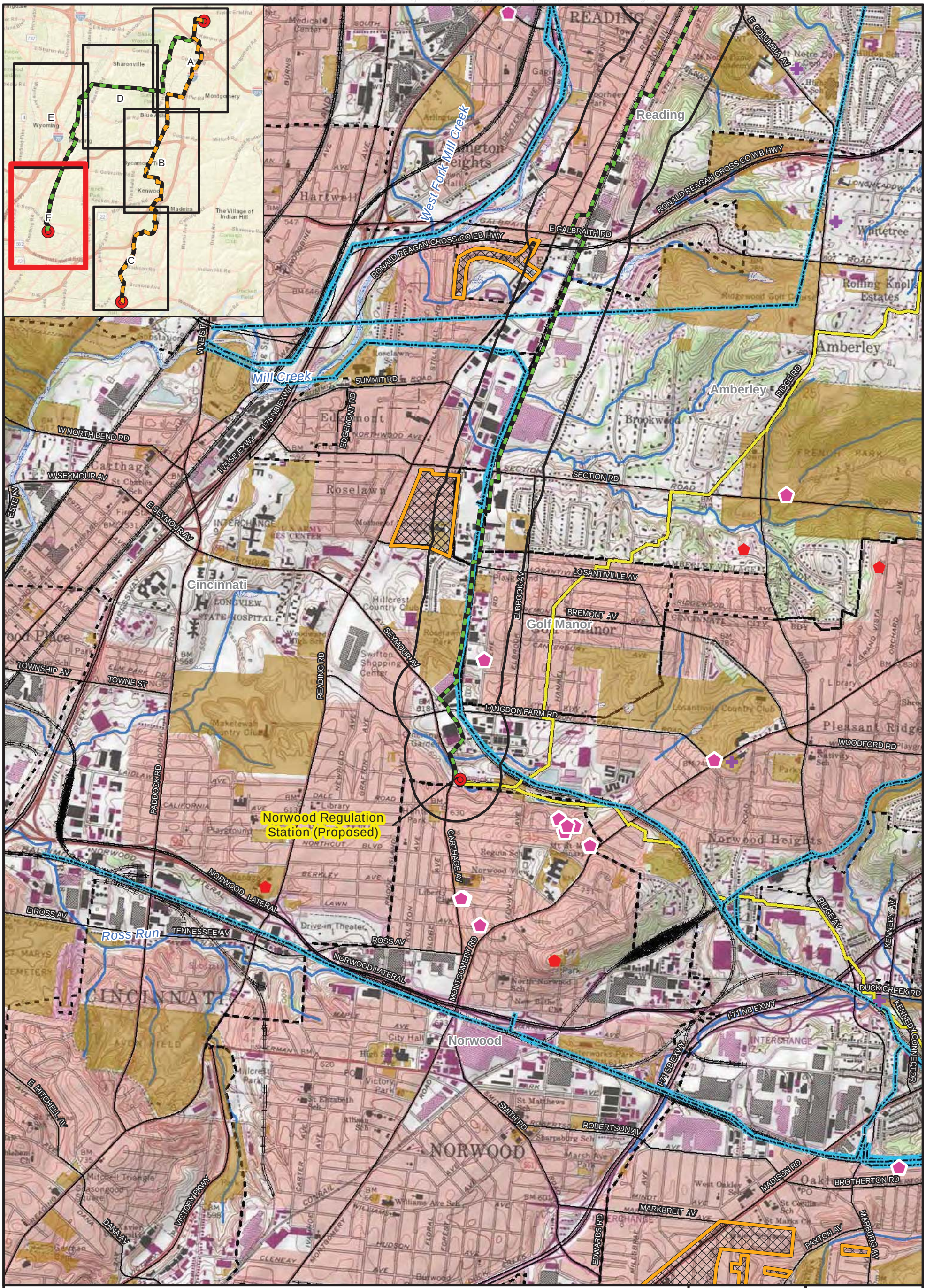
BASE MAP SOURCE:
USGS 7.5-minute
Topographic Quadrangle
Cincinnati East 1982,
Glendale 1982
Madeira 1983, Mason 1982

DUKE ENERGY.

C314V Central Corridor Pipeline Extension Project

FIGURE 5-1E
PROJECT FEATURES AND
CULTURAL RESOURCE MAP

PN: 672247	DATE: 2/21/2018
CREATED BY: SA	ch2m.
REVIEWED BY:JJ	



LEGEND:

- Alternate Route
- Preferred Route
- 1,000 Foot Buffer
- National Register Listied
- National Register Determination of Eligibility
- OGS Cemetery
- NHD Stream
- Existing Pipelines
- Electric_transmissio...
- Railroad
- NWI Wetland
- Park or Recreation Area
- Municipal Boundary
- National Register Boundary

N

BASE MAP SOURCE:
USGS 7.5-minute Topographic Quadrangle
Cincinnati East 1982,
Glendale 1982
Madeira 1983, Mason 1982

0 2,000 4,000

Scale in Feet

DUKE ENERGY.

C314V Central Corridor Pipeline Extension Project

FIGURE 5-1F
PROJECT FEATURES AND CULTURAL RESOURCE MAP

PN: 672247	DATE: 3/15/2018
CREATED BY: SA	ch2m.
REVIEWED BY:JJ	

Section 4906-5-06
Economic Impact and Public Interaction

4906-5-06 ECONOMIC IMPACT AND PUBLIC INTERACTION

(C) CAPITAL AND INTANGIBLE COSTS ESTIMATE FOR NATURAL GAS FACILITY ALTERNATIVES

Estimates of applicable intangible and capital costs for both the Preferred and Alternate Routes of the Project are identified in Table 6-1.

TABLE 6-1
Estimates of Applicable Intangible and Capital Costs for Both the Preferred and Alternate Sites

Account Number	Description	Preferred Route	Alternate Route
	Land and Land Rights	$26.8 million	$19.6 million
	Structures and Improvements	$5.2 million	$0.9 million
	Pipe Equipment	$87.2 million	$82.4 million
	Measuring and Regulating Equipment	$8.7 million	$8.7 million
	ROW Clearing and Roads, Trails or Other Access	$0.3 million	$0.1 million
	TOTAL	$128.2 million	$111.7 million

(D) PUBLIC INTERACTION AND ECONOMIC IMPACT

(5) Tax Revenues

The Preferred and Alternate Routes are located entirely within Hamilton County. Local school districts, park districts, and fire departments will receive tax revenue from the Project. Duke Energy Ohio will pay property taxes on utility facilities in each jurisdiction. The approximate annual property taxes associated with the Preferred and Alternate Routes over the first year after the Project is completed are $3.3 million and $2.9 million, respectively. Based on the 2018 tax rates, the following information includes approximate estimates for these taxing authorities:

Preferred Route:

Hamilton County	$59,765
Sycamore Township	$898,800
Columbia Township	$125,400
Blue Ash	$1,056,700
Cincinnati	$345,400
Deer Park	$40,400
Fairfax	$132,000
Madeira	$198,100
Montgomery	$170,500
Sharonville	$121,600
Silverton	$173,000

Alternate Route:

Hamilton County	$52,098
Sycamore Township	$72,000
Blue Ash	$819,000
Cincinnati	$477,400
Evendale	$670,000
Golf Manor	$27,000
Reading	$612,400
Sharonville	$166,000

Section 4906-5-07
Health and Safety, Land Use, and Regional Development

4906-5-07 HEALTH AND SAFETY, LAND USE, AND REGIONAL DEVELOPMENT

(A) HEALTH AND SAFETY

(4) Noise from Construction, Operation, and Maintenance

(c) Driving of Piles, Rock Breaking or Hammering, and Horizontal Directional Drilling

Driving of piles is not anticipated during construction of the Project. Trenchless construction methods, including both HDD and horizontal boring (e.g., jack and bore), will be used in multiple locations along the Preferred Route and Alternate Route, as summarized in Table 7-1 and Table 7-2.

TABLE 7-1
Preferred Route Proposed Trenchless Construction Locations

Trenchless Bore Number	Location/Name	Proposed Crossing Type	Reason
TB-1	Conrey Road	Bore	Avoid open cut of road
TB-2 (HDD)	Kemper Road	HDD	Unable to bore drainage swale with elevation differences and space constraints on south side
TB-3	Railroad Near Deerfield Road	Bore	Railroad (required)
TB-4	Deerfield Road at Fire Station	Bore	Avoid road disruption at fire station
TB-5	I-275	Bore	Trenchless construction required
TB-6	Cornell Road	Bore	Avoid open cut of road
TB-8 (HDD)	Pfeiffer Road	HDD	Unable to bore box channel because of elevation differences and space constraints; avoid three stream crossings
TB-9	Ursuline Drive	Bore	Avoid open cutting school drive
TB-10	Kenwood Road at Pfeiffer Road	Bore	Avoid open cut of road
TB-11	Railroad at Glendale Milford Road	Bore	Railroad (required)
TB-12	Double railroad spurs	Bore	Railroad (required); avoid open cut of two streams
TB-13	Rail at Catalpa Creek Drive	Bore	Railroad (required)
TB-14	Rail at Cooper Road	Bore	Railroad (required)
TB-16	Hunt Road	Bore	Avoid open cut of road
TB-17 (HDD)	Highway 126	HDD	HDD parallel to railroad due to 30-foot elevation change between highway and embankments
TB-22	Railroad and Blue Ash Road	Bore	Railroad (required)
TB-23	Kenwood Road at Mall	Bore	Avoid open cut of road

TABLE 7-1
Preferred Route Proposed Trenchless Construction Locations

Trenchless Bore Number	Location/Name	Proposed Crossing Type	Reason
TB-24	Montgomery Road	Bore	Avoid open cut of road
TB-25	Kenwood Road at South Mall	Bore	Avoid open cut of road
TB-26 (HDD)	Interstate 71	HDD	Trenchless construction required; elevation differences between road and banks require HDD
TB-27	Kenwood County Club Drive	Bore	Avoid open cut of drive
TB-29	Madison Avenue	Bore	Avoid open cut of road
TB-31	Railroad at Red Bank Expressway	Bore	Railroad (required)
TB-32 (HDD)	Erie Avenue	HDD	Avoid cross slope near power lines and minimal space between utilities from Red Bank Road to Erie Avenue
TB-33	Drive to Red Bank Village	Bore	Avoid open cut of road
TB-34	Cul-de sac at Red Bank	Bore	Avoid blocking drive to businesses
TB-35	Fair Lane	Bore	Avoid blocking drive to businesses
TB-36	Duck Creek	Bore	Cross stream - avoid open cut

HDD = horizontal directional drill

TABLE 7-2
Alternate Route Proposed Trenchless Construction Locations

Trenchless Bore Number	Location/Name	Proposed Crossing Type	Reason
TB-1	Conrey Road	Bore	Avoid open cut of road
TB-2 (HDD)	Kemper Road	HDD	Unable to bore drainage swale with elevation differences and space constraints on south side
TB-3	Interstate 275	Bore	Trenchless construction required
TB-4	Reed Hartman Highway at P&G	Bore	Avoid open cut of road
TB-5	Cornell Road	Bore	Avoid open cut of road
TB-6	Reed Hartman Highway at Cornell	Bore	Avoid open cut of road
TB-7	Osborne Boulevard	Bore	Avoid open cut of road
TB-8	Reed Hartman Highway at Creek Road	Bore	Avoid open cut of road
TB-9	Creek Road	Bore	Avoid open cut of road

TABLE 7-2
Alternate Route Proposed Trenchless Construction Locations

Trenchless Bore Number	Location/Name	Proposed Crossing Type	Reason
TB-10	Plainfield Road	Bore	Avoid open cut of road
TB-11 (HDD)	Reading Road and Mill Creek (at Glendale Milford)	HDD	Cross Reading Road and avoid open cut of Mill Creek
TB-12	Glendale Milford at Mill Creek	Bore	Avoid open cut of road
TB-13	Railroad at Formica	Bore	Railroad (required)
TB-14 (HDD)	Mill Creek	HDD	Trenchless construction required. Wide and possibly deep crossing with room for HDD; avoid open cut of stream.
TB-15	Railroad at Landy Lane	Bore	Railroad (required)
TB-16	Railroad at East Mechanic	Bore	Railroad (required)
TB-17	Railroad at Patheon	Bore	Railroad (required)
TB-18	East Galbraith and Rail	Bore	Avoid open cut of road and Railroad (required)
TB-19	Section Road	Bore	Avoid open cut of road
TB-20	Railroad Crossing Section 1	Bore	Railroad (required)
TB-21	Railroad Crossing Section 2	Bore	Railroad (required)
TB-22	Railroad at Losantiville Avenue	Bore	Railroad (required)

HDD = horizontal directional drill

Rock breaking and hammering activities will occur at all locations where pavement installation is required and appropriate time of day restrictions will be in place to limit the noise disturbance to the public.

The preliminary HDD and bore locations are limited to industrial areas, commercial areas, and the I-71 vicinity for the Preferred Route and in industrial areas, commercial areas, and railroad crossings for the Alternate Route. HDD requires a continuous drilling process to ensure the hole does not collapse or cave in. Once drilling commences, it will not end until complete. HDD installation is not currently proposed beneath any wetlands along either proposed route but will be used to traverse under roads, railroads, and some surface waters. During HDD installation, there is a chance of frac-out where the drilling mud comes to the surface. The probability of frac-out depends on soil type and other subsurface conditions. Frac-out contingency plans will be in-place for Duke Energy Ohio personnel and contractors to respond if a frac-out occurs.

Space constraints near most of the wetlands limit the ability to install pipe by the HDD method since more space for drill rigs and pipe pull-back is required. All proposed HDD and other trenchless construction (bores beneath roads, streams, etc.) locations are presented in Table 7-1 and 7-2 for the Preferred Route and Alternate Route, respectively. The location of each HDD and other bores are depicted on Figures 7-2A through 7-2R.

(B) LAND USE

(2) Impact on Identified Land Uses

Land use in the area crossed by the proposed route alternatives is generally a mix of commercial, industrial, residential, and minimal undeveloped forested and open land typical of suburban metropolitan areas. As both route alternatives move generally from north to south, the topography becomes more varied with hills, ridgetops and valleys, adding challenges to the construction of these sections of the pipeline.

Comparisons of the various land use types and land use features for both route alternatives are included in Tables 7-3 through 7-5. The calculations (e.g., linear feet, acreage, and percentages) of each land use type crossed by the proposed route alternatives (including land uses within the 80-foot-wide construction work area [CWA] and the 30-foot-wide permanent ROW) were determined using GIS software applications and land use data provided by CAGIS. The potential disturbance area during construction activities (e.g., vegetation clearing, pipeline trenching, etc.) consists of the maximum 80-foot-wide construction ROW. The CWA will be re-graded to pre-construction conditions and seeded.

The 80-foot wide maximum CWA along the pipeline is preliminary and conceptual as of this Application submittal. Final locations and extents of additional workspaces will be provided to the OPSB Staff in the final engineering plans once complete. The CWA will be refined once the final route is approved and detailed engineering design and construction plans commence. The use of the 80-foot CWA for purposes of this Application allows for a relative comparison of the various types of land use settings that are present and the approximate extent of areas that may be disturbed during construction of either the Preferred or Alternate Route.

TABLE 7-3
Length and Percent of Land Uses Crossed by Centerline of Route Alternatives

Land Use	Preferred Route		Alternate Route	
	Linear Feet	Percent	Linear Feet	Percent
Delineated Pond	0	0%	0	0.0%
Delineated Stream	138	0.2%	280	0.4%
Delineated Wetland	343	0.5%	571	0.8%
Educational	978	1.3%	420	0.6%
Industrial/Commercial	27,557	37.4%	28,365	41.6%
Institutional	0	0%	0	0.0%
Parks and Recreation	10,808	14.7%	4,582	6.7%
Pavement*	20,765	28.2%	26,106	38.3%
Residential	2,581	3.5%	82	0.1%
Undefined	318	0.4%	257	0.4%
Woodlots	10,146	13.8%	7,538	11.1%
Total	**73,634**	**100%**	**68,201**	**100%**

* Pavement represents road ROW.

TABLE 7-4
Acreage and Percent of Land Uses Crossed by Route Alternatives

Land Use	Preferred Route				Alternate Route			
	CWA [a] Acres	CWA Percent	ROW Acres	ROW Percent	CWA Acres	CWA Percent	ROW Acres	ROW Percent
Delineated Pond	0	0%	0	0%	0.1	0.1%	0.0	0.0%
Delineated Stream	0.5	0.4%	0.1	0.2%	0.5	0.4%	0.2	0.4%
Delineated Wetland	1.1	0.8%	0.3	0.6%	1.0	0.8%	0.4	0.9%
Educational	2.1	1.6%	0.7	1.4%	1.5	1.2%	0.5	1.1%
Industrial/Commercial	46.3	34.3%	18.9	37.4%	47.4	37.9%	18.9	40.2%
Institutional	0.5	0.4%	0.1	0.2%	0.4	0.3%	0.0	0.0%
Parks and Recreation	18.2	13.5%	7.3	14.5%	7.9	6.3%	3.2	6.8%
Pavement [b]	36.5	27.0%	13.9	27.5%	41.6	33.3%	17.3	36.8%
Residential	8.4	6.2%	1.9	3.8%	5.9	4.7%	0.7	1.5%
Undefined	0.3	0.2%	0.2	0.4%	1.6	1.3%	0.2	0.4%
Woodlots	21.1	15.6%	7.1	14.1%	17.1	13.7%	5.6	11.9%
Total	**135.0**	**100%**	**50.5**	**100%**	**125.0**	**100%**	**47.0**	**100%**

[a] CWA = construction work area
[b] Pavement represents road ROW

TABLE 7-5
Number of Land Use Features Near the Route Alternatives

	Route Alternatives	
	Preferred	**Alternate**
Length (in miles)	13.9	12.9
Features within 100 feet of Route Alternatives (centerline)		
Historic Structures (Ohio Historic Structures)	31	4
National Register of Historic Places	0	0
Previously Identified Archaeological Sites	0	0
Residences	115	182
Other Sensitive Land Uses*	5	11
Features within 1,000 feet of Route Alternatives (centerline)		
Historic Structures (Ohio Historic Structures)	230	116
National Register of Historic Places	0	0
Previously Identified Archaeological Sites	0	5
Residences	3,153	2,186
Other Sensitive Land Uses*	45	33
Structures within 200 feet of the Edge of Preliminary Permanent ROW (preliminary ROW is 30-feet wide)	638	666

* Other sensitive land uses include airports, parks/recreation areas, state forests, schools, hospitals, churches, and cemeteries.

Because the Project consists primarily of a buried pipeline, land uses within the CWA and ROW will generally remain unchanged. Most land use impacts are temporary and consist of surface disturbance during construction. Some permanent land use impacts will occur in selected areas because of vegetation clearing within the ROW and conversion of wooded or shrub habitat to herbaceous ground cover. However, in most cases property owners may continue to utilize most of the ROW area for general uses that will not affect the safe and reliable operation of the pipeline.

(a) Residential

Preferred Route: The Preferred Route centerline is located within 1,000 feet of 3,153 residences and within 100 feet of 115 residences. As shown in Table 7-4, residential areas make up approximately 3.8 percent of the Preferred Route permanent ROW (30-foot width) acreage.

Alternate Route: The Alternate Route centerline is located within 1,000 feet of 2,186 residences and within 100 feet of 182 residences. As shown in Table 7-4, residential areas make up approximately 1.5 percent of the Alternate Route permanent ROW acreage.

(b) Industrial/Commercial

Preferred Route: Industrial or commercial land uses make up approximately 37.4 percent of the Preferred Route permanent ROW acreage. This represents the largest proportion of land use within the Preferred Route ROW. The Preferred Route centerline crosses 27,557 feet (37.4 percent of the total length) of land classified as industrial or commercial.

Alternate Route: Industrial or commercial land uses make up approximately 40.2 percent of the Alternate Route permanent ROW acreage. The Alternate Route centerline crosses 28,365 feet (41.6 percent of the total length) of land classified as industrial or commercial.

(c) Educational

Preferred Route: Educational land uses make up approximately 1.4 percent of the Preferred Route permanent ROW acreage

Alternate Route: Educational land uses make up approximately 1.1 percent of the Alternate Route permanent ROW acreage

(d) Institutional

Preferred Route: Institutional land uses make up approximately 0.2 percent of the Preferred Route ROW acreage.

Alternate Route: Institutional land uses make up approximately 0 percent of the Alternate Route ROW acreage.

(e) Parks and Recreation

Preferred Route: Parks and recreational land uses make up approximately 14.5 percent of the Preferred Route permanent ROW acreage.

Alternate Route: Parks and recreational land uses make up approximately 6.8 percent of the Alternate Route permanent ROW acreage.

(f) Pavement

Preferred Route: Paved areas (e.g., road ROW) make up approximately 27.5 percent of the Preferred Route permanent ROW acreage.

Alternate Route: Paved areas (e.g., road ROW) make up approximately 36.8 percent of the Alternate Route permanent ROW acreage.

(g) Woodlots

Preferred Route: Woodlots make up approximately 14.1 percent of the Preferred Route permanent ROW acreage.

Alternate Route: Woodlots make up approximately 11.9 percent of the Alternate Route permanent ROW acreage.

(3) Impact on Identified Nearby Structures

(a) Structures Within 200 Feet of Proposed Right-of-Way

There are 638 structures (residences, commercial businesses, etc.) within 200 feet of the proposed permanent ROW (30-foot width) of the Preferred Route. There are 666 structures within 200 feet of the proposed permanent ROW of Alternate Route. The individual structures and their distances from the proposed permanent ROW boundary are listed in Appendix 7-1 (Table 7-1A and Table 7-1B for the Preferred Route and Alternate Route, respectively) and are illustrated on Figure 7-2. The Figure 7-2 map also indicates the planned regulation stations. These facilities and construction areas, which is required to be shown on a map by Ohio Administrative Code (OAC) 4906-5-05(B)(2)(a), are based on preliminary engineering and are best illustrated on this Figure 7-2 map.

(C) AGRICULTURAL LAND IMPACTS

(2) Impacts to Agricultural Lands and Agricultural Districts

CH2M, as an agent of Duke Energy Ohio, contacted the Hamilton County Auditor to obtain information on the location and ownership of any current Agricultural District lands. The centerline of the Preferred Route crosses no Agricultural District parcels. The Preferred Route is within 1,000 feet of four Agricultural District parcels in Hamilton County (Figure 7-1). The centerline of the Alternate Route crosses no Agricultural District parcels. The Alternate Route is

not within 1,000 feet of any Agricultural District Parcels. The data was received from the Hamilton County Auditor on February 12, 2018. The provided data fulfills the requirement of OAC 4906-5-07 (C)(1)(b), which states this data must be collected not more than 60 days prior to submittal.

(E) CULTURAL AND ARCHAEOLOGICAL RESOURCES

CH2M, as an agent of Duke Energy Ohio, conducted a literature review of known cultural resources, which included data from the Ohio State Historic Preservation Office (OHPO)'s online mapping system. Modifications to the Alternate Route and the fact that the OHPO online mapping system is periodically updated necessitated additional review of records available from the OHPO. As a result, CH2M has updated the cultural resources data contained in this section of the Application for the Preferred and Alternate Route.

(1) Cultural Resources Map

Within Section 4906-5-05 of this Application, Figures 5-1A through 5-1F consists of a map of 1:24,000 scale which illustrates, among other features, the previously recorded cultural resources locations (historic districts, cemeteries, National Register of Historic Places (NRHP) properties, and NRHP-eligible sites) within 1,000 feet of the proposed centerlines of both the Preferred and Alternate Routes. Based on the cultural resources desktop study, there are no scenic rivers or scenic routes/byways (as defined by the Ohio Department of Natural Resources [ODNR] and/or the ODOT) within 1,000 feet of the proposed routes. There is one NRHP-listed district and one Determination of Eligibility (DOE) resource (based on OHPO files) within 1,000 feet of the Alternate Route. The NRHP district, the Cincinnati Street Gas Lamps, contains 1,109 street lamps at various locations throughout Cincinnati. Near the Alternate Route, portions of this NRHP district occur approximately 600 to 700 feet west of the alignment in Roselawn. The DOE resource, Golf Manor, is located 530 feet east of the Alternate Route, along Wiehe Road.

The proposed permanent ROWs of the Preferred Route and Alternate Route cross 7.3 acres and 3.2 acres of recreational areas (parks, golf courses, etc.), respectively. Construction in these areas will be planned to occur outside of the seasonal use windows. These recreational areas will also be fully restored once construction is complete so that long-term use of these areas is unaffected by the Project.

Although not listed in the NRHP, it is important to note that three cemeteries are located within 1,000 feet of the Preferred Route, and three cemeteries are located within 1,000 feet of the Alternate Route.

(2) Cultural Resources in Study Corridor

Cultural resources investigations to date have involved background research utilizing data files from the OHPO online mapping system for both the Preferred and Alternate Routes. This data was used to construct a consultation letter to the OHPO.

For the background research, a one-mile buffer was initially used around both the Preferred and Alternate Routes to identify these previously known cultural resources and to provide information on the probability of identifying cultural resources within the Project footprint. This was later refined to a 1,000-foot buffer on either side of the centerlines of the Preferred and Alternate Routes. The OHPO online mapping database, accessed on February 27 and March 1, 2017, and again on January 22 and February 23, 2018, included a review of the Ohio Archaeological Inventory (OAI), the Ohio Historic Inventory (OHI), DOE files, NRHP properties, historic cemeteries, historic bridges, National Historic Landmarks (NHL), and previous cultural resources surveys.

Within 1,000 feet of the Preferred Route, there were no OAI sites, 230 OHI resources, no DOE files, no NRHP properties, three cemeteries, no historic districts, and no NHLs. Of these, 99 resources are in close proximity (within 250 feet) to the Preferred Route (see Figures 7-1A through 7-1F). Appendix 7-2 contains a table listing the previously identified resources within 250 feet of the Preferred Route centerline.

CH2M closely examined the mapped locations of resources within 250 feet of the Preferred Route against modern street photography and discovered the following anomalies, although additional anomalies may be identified during the architectural and historical resources field survey:

- The EB Thompson House (OHI #HAM0501550) at 11802 Conrey Road in Sharonville is no longer standing. Modern office buildings now stand at this location.

- The Sara Keeler House (OHI # HAM0412050) at 7360 East Kemper Road in Sycamore Township dates from 1875 according to OHI information; however, the house that currently stands at this location dates from the late 20th century.

- The Melanera Swallow House (OHI #HAM0413350) at 11560 Deerfield Road in Sycamore Township has been demolished. The modern Sycamore Township Fire Station stands in its place.

- OHI #HAM0675050, at 10351 Kenwood Road in Blue Ash, has been demolished and replaced by a modern restaurant.

- OHI #HAM0284450, at 9654 Kenwood Road in Blue Ash, is documented as a residence dating from 1905. A modern commercial building currently stands at this location.

- The Ferris House (OHI #HAM0282750) at 4710 Cooper Road in Blue Ash has been demolished. It is now an empty lot.

- OHI #HAM0673350, at 9511 Railroad Avenue in Blue Ash, is recorded as dating from circa 1890. The house at this location dates from circa 1940.

- OHI #HAM0672950, at 9493 Railroad Avenue in Blue Ash, is recorded as dating from circa 1910. The house at this location appears to date from circa 1960s.

- The Stephenson House (OHI # HAM0283850) at 4654 Hunt Road in Blue Ash dates from 1900, according to OHI data. The house at this location dates from circa 1960s.

- The residence at 8661 Lancaster Avenue in Sycamore Township has two associated OHI numbers, OHI #HAM0414850, and OHI #HAM0688150. Data is generally consistent between the two records.

- OHI #HAM0416250, at 8604 Blue Ash Road in Rossmoyne, is documented as a single dwelling dating from 1915. Currently, a modern commercial building stands at this location.

- OHI # HAM0414750 at 4458 Sycamore Avenue in Rossmoyne is described as a 1910 dwelling based on OHI data. The building that stands at this location is a possible circa 1930s garage.

- The David Buxton House (OHI #HAM0415950), at 8463 Vorhees Lane in Rossmoyne, is recorded as dating from 1840. The oldest building on street photography in the vicinity of this location appears to date from circa 1890.

- Happy Hearts Day Care (OHI #HAM0686350), located at 4323 Kugler Mill Road in Sycamore Township, is recorded as dating from circa 1993. This should not be an OHI resource.

- OHI #HAM0419050, at 4600 Galbraith Road in Rossmoyne, is described as a single dwelling dating from 1900. A modern senior living facility currently stands at this location.

- The Caroline Seelmeyer House (OHI #HAM0637250), located at 7769 Kenwood Road in Sycamore Township, is a dwelling and barn dating from 1845. Currently, a modern shopping plaza stands at this location.

- The Usual Ward Methodist Churchyard and cemetery (OGSID # 4583) along Red Bank Road is now a modern development.

- Dedrick Farm (cemetery), just south of Usual Ward Methodist Churchyard, is a modern industrial facility.

The review of modern street photography indicates that a number of known cultural resources appear to have been destroyed and/or replaced by modern development. As a result, no extant known cultural resources were identified within the Project footprint of the Preferred Route.

Within 1,000 feet of the Alternate Route, there were five OAI sites, 116 OHI resources, one DOE file, three cemeteries, and one historic district. One resource, the Reading-Lockland/Reading Protestant/Presbyterian Cemetery is located adjacent to the Project centerline. Of the remaining resources, 18 are within 250 feet the Alternate Route (see Figures 7-1A through 7-1F). Appendix 7-2 contains a table listing the previously identified resources within 250 feet of the Alternate Route centerline.

CH2M closely examined the mapped locations of resources within 250 feet of the Alternate Route against modern street photography and discovered the following anomalies:

- The EB Thompson House (OHI #HAM0501550), at 11802 Conrey Road in Sharonville, is no longer standing. Modern office buildings now stand at this location.

- The Sara Keeler House (OHI #HAM0412050), at 7360 East Kemper Road in Sycamore Township, dates from 1875 according to OHI information; however, the house that currently stands at this location dates from the late 20th century.

- OHI #HAM0521150, at 24 West Pleasant Street in Reading, is a house that dates from 1850. The current house at this location is heavily altered and may date from circa 1900.

- The Old School Presbyterian Church (OHI #HAM0521450), located at 26 West Columbia Avenue in Reading, is recorded as a church that dates from 1843. This location is occupied by a circa-1960 house.

- Our Lady of the Sacred Heart (documented as both OHI #HAM0521550 and OHI #HAM0521650), located at 15 West Columbia Avenue in Reading, has construction dates of 1907 and 1955. This lot is currently occupied by a modern commercial building.

- The Nevison-Weiskopf Company (OHI #HAM0525050), located at 8740 Reading Road in Reading, has been demolished. The site is now an empty lot.

- The Emerald Lumber Company (OHI #HAM0465850), located at 2100 Losantiville Avenue in Golf Manor, has been demolished. The site is now an empty lot.

The review of modern street photography indicates that a number of known cultural resources appear to have been destroyed and/or replaced by modern development. As a result, only one extant cultural resource was identified within the Project footprint of the Alternate Route.

A Project summary and consultation document were submitted to the OHPO on September 23, 2016 requesting preliminary comments on additional cultural resources work for the Project. This initial consultation included project information, along with maps of the Preferred and Alternate Routes, and a summary of the known cultural resources within one mile of the routes. The OHPO responded by letter dated October 19, 2016, recommending that a cultural resources survey be conducted within the area of potential effect (APE) for the Project. Subsequent to December 2016 alignment revisions, a revised Project summary and consultation document was submitted to the OHPO, on February 23, 2017. This document contained updated information on previously identified cultural resources and cultural resources surveys, as well as a proposed scope of work for cultural resources investigations for the Project. Given periodic updates to the OHPO online

mapping system, CH2M also submitted a supplemental letter to the OHPO on March 13, 2017, summarizing the additional cultural resources within 250 feet of the Preferred Route. The OHPO responded by email dated March 17, 2018, concurring with the research design for architectural and historical survey and recommending that the Phase I archaeological research design be geared toward a historic/urban archaeological research design, as described in the *Archaeological Guidelines*, with an emphasis on documentary research and historic mapping. An updated consultation document, including updated background research and Phase I research design focusing on historic/urban archaeology based on the revised Alternate Route will be submitted to the OHPO in the near future. Any additional cultural resources work as required by the OHPO will only be conducted on the approved Alternate Route.