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1.0 Introduction

Duke Energy is proposing to construct the Walton to Big Bone Pipeline Project (Project), located in Boone County, Kentucky (KY) (Figure 1). The proposed Project involves the construction of approximately 10.25 miles of eight-inch diameter pipeline and a 0.75-mile pipeline section also eight inches in diameter, as well as a 100-foot by 100-foot metering/valve station.

GAI Consultants, Inc. (GAI), on behalf of Duke Energy, conducted wetland delineations and stream investigations of the Project study areas in October 2015. GAI identified approximate boundaries of waterbodies and wetlands located within a 20-foot wide corridor centered on the existing centerline within road right-of-way (ROW) only. One non-road adjacent section of the provided alignment was not reviewed due to access restrictions. This report describes the methods and results of the environmental field survey within the Project study areas.

2.0 Methods

Wetland delineations were conducted in accordance with the 1987 United States Army Corps of Engineers (USACE) *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0) (USACE, 2012). Wetlands were classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979). Classification of the indicator status of vegetation is based on *The National Wetland Plant List:* 2014 Update of Wetland Ratings (Lichvar, et al. 2014).

The Study Area was investigated for the presence of streams and wetlands. Each field-identified jurisdictional perennial and intermittent drainage was evaluated using the KY Site Characterization and High Gradient Habitat Assessment procedure as outlined in the *Standard Methods for Assessing Biological Integrity of Surface Waters in Kentucky* (KY Division of Water [KDOW], 2008) and in the *Methods for Assessing Habitat in Wadeable Waters* (KDOW, 2011). Both of these procedure revisions apply to the stream assessments in this region of Kentucky, and both utilize the same assessment form and criteria, with only minor differences. The completed High Gradient Bioassessment Stream Data Sheets are included in Appendix A.

The growing season in the Project area is generally between March and December in Boone County, KY (United States Department of Agriculture, Natural Resource Conservation [USDA-NRCS], 2014). Field observations were supplemented with an intensive review of United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping, USDA-NRCS soils mapping, historical aerial photography (Google Earth), and local landscape topography/morphology to provide a determination of wetlands present within the study area. Professional judgment was used to determine whether hydrophytic vegetation and hydric soils existed within the identified wetlands if on-site data was ambiguous.

Each wetland and waterbody feature (if identified) was given a unique map designation and each boundary flag location was recorded using a Trimble GEO XH model global positioning system mapping grade unit with the capability of sub-meter accuracy. Judgmental upland and wetland soil test pits were taken within the study corridor at the discretion of the delineator to confirm the presence or absence of wetlands in areas with exhibiting wetland indicators. If identified, wetland boundaries and stream centerlines were mapped. Streams with a top-of-bank width of greater than 10 feet had a left and right top-of-bank mapped.

3.0 Regulatory Discussion

3.1 Waters of the United States

"Waters of the U.S." are within the jurisdiction of the USACE under the Clean Water Act (CWA). "Waters of the U.S." is a broad term, which includes waters that are used or could be used for interstate commerce. This includes wetlands, ponds, lakes, territorial seas, rivers, tributary streams including any definable intermittent waterways, and some ditches below the ordinary high water mark (OHWM). Also included are manmade waterbodies such as quarries and ponds, which are no longer actively being mined or constructed and are connected to other "waters". Wetlands, mudflats, vegetated shallows, riffle and pool complexes, coral reefs, sanctuaries, and refuges are all considered special aquatic sites which involve more rigorous regulatory permitting requirements. A specific, detailed definition of "Waters of the U.S." can be found in the Federal Register (33 CFR 328.3).

On January 9, 2001 the U.S. Supreme Court issued a decision, Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers (No. 99-1178). The decision reduces the regulation of isolated wetlands under Section 404 of the CWA, which assigns the USACE authority to issue permits for the discharge of dredge or fill material into "Waters of the U.S." Prior to the SWANCC decision, the USACE had adopted a regulatory definition of "Waters of the U.S." that afforded federal protection for almost all of the nation's wetlands. The Supreme Court decision interpreted that the USACE's jurisdiction is restricted to navigable waters, their tributaries, and wetlands that are adjacent to these navigable waterways and tributaries. The decision leaves the majority of "isolated" wetlands unregulated by the CWA. Therefore, most wetlands that are not adjacent to, or contiguous with, any other "Waters of the U.S." via a surface drain such as a swale, ditch, or stream are considered isolated and thus no longer jurisdictional by the USACE.

On June 19, 2006, the U.S. Supreme Court issued decisions in regards to John A. Rapanos v. United States (No. 04-1034) and June Carabell v. United States (04-1384), et al. The plurality decision created two 'tests' for determining CWA jurisdiction: the permanent flow of water test (set out by Justice Scalia) and the "significant nexus" test (set out by Justice Kennedy). On June 5, 2007 the USACE and Environmental Protection Agency issued joint guidance on how to interpret and apply the Court's ruling. According to this guidance, the USACE will assert jurisdiction over traditionally navigable waters (TNWs), adjacent wetlands, and non-navigable tributaries of TNWs that have "relatively permanent" flow, and wetlands that border these waters, regardless of whether or not they are separated by roads, berms, and similar barriers. In addition, the USACE will use a case-by-case "significant nexus" analysis to determine whether waters and their adjacent wetlands are jurisdictional. A "significant nexus" can be found where waters, including adjacent wetlands, alter the physical, biological, or chemical integrity of the traditionally navigable water based on consideration of several factors.

3.2 Waters of the State

"Waters of the State" are within the jurisdiction of the KY Department for Environmental Protection, KDOW. They are generally defined as surface and underground waterbodies, which extend through or exist wholly in the State, which includes, but is not limited to, streams and both isolated and non-isolated wetlands. Private ponds, or any pond, reservoir, or facility built for reduction of pollutants prior to discharge are not included in this definition. In addition to "Waters of the U.S.", the KDOW also regulates and issues permits for isolated wetland impacts. The State relies on the USACE decision regarding wetland determinations and delineations including whether or not a wetland is isolated or non-isolated.

To evaluate potential streams within the Study Area, GAI first reviewed existing United States Geological Survey (USGS) topographic maps, aerial photography, National Hydrography Dataset stream

data, and site contour data, prior to the extensive field reconnaissance that was performed in October 2015.

The completed High Gradient Bioassessment Stream Data Sheets for each stream channel are provided in Appendix A. These forms were completed for perennial and intermittent streams only. A 50 foot survey reach was utilized as the survey could be viewed from road ROW. The mapped location of each jurisdictional channel is shown on Figure 2. Additionally, The Kentucky Administrative Regulation (KAR) *401 KAR 10:026 Designation of Uses of Surface Waters* database was searched to potentially identify any of the Study Area's streams as special use waters. The KAR states that "waters that are not specifically listed...are designated for the use of warm water aquatic habitat."

Regulatory activities under the CWA (1972) and amendments of 1977 provide authority for states to issue water quality standards for all waters of the United States including upstream to the highest reaches of tributary streams. In addition, the CWA amendments require knowledge of the potential fish or biological community that can be supported in a stream or river, including upstream headwaters. The High Gradient Bioassessment Stream Data Sheet content is designed to evaluate the quality of in-stream and riparian habitat based on specific features. The availability of quality habitat directly influences the biological integrity of a stream reach. Information obtained from the habitat assessment can generally be used to supplement biological and physiochemical data collected where necessary when determining the overall health of the stream reach and the stream-use designation. Biological and physiochemical sampling was not completed.

Two different habitat assessment field data sheets are used in the Kentucky stream assessment procedure. For streams where riffles should naturally be present (e.g. most stream reaches of the Central Appalachian, Western Allegheny, Southwestern Appalachian and Interior Plateau ecoregions would qualify), the high-gradient habitat assessment field data sheet should be used. In low-gradient streams where rocky riffles are not naturally present (e.g. most stream reaches in the Mississippi Valley Plain and the Interior River Lowland ecoregions would qualify), the low-gradient habitat assessment field data sheet should be used. The high gradient was determined to be the most suitable for the Study Area, which is located within the Outer Bluegrass Ecoregion.

The visually-based habitat evaluation consists of ten parameters that characterize in- stream habitat, channel morphology, bank stability, and riparian vegetation for each sampling location. For each parameter, the investigator determines which of the following conditions exist at the sampling reach: Optimal, Suboptimal, Marginal or Poor and assigns a parameter score within the condition category chosen above as follows: Optimal (20-16), Suboptimal (15-11), Marginal (10-6) or Poor (5-0). The investigator then totals all parameter ratings to obtain a final habitat ranking. Completed High Gradient Bioassessment Stream Data Sheets for the streams delineated during the field survey are provided in Appendix A.

4.0 Results

USGS mapping (USGS 1984, 1987, 1992) indicates that the western portion of the Project area (approximately from the Project's western terminus to the intersection of Beaver Road and United States Routes 127 and 42) is comprised of a dissected landscape of steep hillsides and the Big Bone Creek stream valley. The eastern portion of the Project area is flatter, consisting of low, rolling hills. Land use consists primarily of a rural landscape of forests, farms, and residential areas.

The Project study area is found within the following watersheds:

- Big Bone Creek (Hydrologic Unit Code [HUC] 050902031003); and
- Mud Lick Creek (050902031001).

The USFWS's NWI was reviewed for potential wetland locations. These maps identify potential wetlands on-site. The NWI maps were prepared from high altitude photography and in most cases were not field verified. As a result wetlands are sometimes erroneously identified, missed, or misidentified within this data set. The presence of an NWI wetland does not necessarily constitute the presence of a wetland meeting USACE criteria. The NWI map of the area (Figure 1) identified one feature (Freshwater Pond) crossed by the study area. The NWI classification crossed by the study area is PUBHh (Palustrine/Unconsolidated Bottom/Permanently Flooded/Diked/Impounded).

Twenty seven streams and no wetlands were identified within the study area (Figure 2).

Streams designated for special protection in Kentucky are known as "Special Waters" (Cold Water Aquatic Habitat, Exceptional Waters, Reference Reach Waters, Outstanding State Resource Waters, Outstanding National Resource Waters, State Wild Rivers, and Federal Wild and Scenic Rivers). One stream, Big Bone Creek (SKY-CDK-006) is designated as an Outstanding State Resource Water. There were no USACE Section 10 Waters listed as navigable.

In support of field findings, identified waterbodies are summarized in Table 1. Color photographs of each feature accompany the table. High Gradient Bioassessment Stream Data Sheets were completed during this investigation and are included as Appendix A. Additional data was recorded for all stream features including top of bank (TOB) width and depth and width and depth at OHWM. Additionally, the substrate characteristics and adjacent riparian buffer vegetation were documented for each stream feature on the recorded field sheets. Descriptions of the soils found within the study area are presented in Appendix B.

5.0 Conclusions

Wetland delineations and stream investigations of Duke Energy's Walton to Big Bone Pipeline Project study areas were conducted in October 2015 within a 20-foot wide corridor centered on the existing centerline. Twenty seven streams and no wetlands were identified within the study area. The results of the field study are provided in this report.

All statements in this document pertaining to the jurisdictional status of streams and wetlands with regard to USACE and state regulations represent the opinion of GAI and are based on present USACE guidance. The jurisdictional status of these features may be confirmed a USACE Jurisdictional Determination and/or by state agencies.

6.0 References

Cowardin, D. M., V. Carter, F. C. Golet, and E. T. La Roe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* United States Department of the Interior, Fish and Wildlife Service. Publication No. FWS/OBS-79/31. Washington, D.C.

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United States Geological Survey (USGS). 1984b. Union, Kentucky, 7.5-Minute Topographic Quadrangle (1:24,000).

United States Geological Survey (USGS). 1987. Independence, Kentucky, 7.5-Minute Topographic Quadrangle (1:24,000).

United States Geological Survey (USGS). 1992. Rising Sun, Kentucky, 7.5-Minute Topographic Quadrangle (1:24,000).

TABLE 1
Waterbodies Identified Within the Project Study Area

Table 1.
Waterbodies Identified within the Project Study Area

Feature Designation[1]	Latitude[2]	Longitude[2]	Name	Type	OHWM Width (ft)	OHWM Depth (ft)	TOB Width (ft)	TOB Depth (ft)	Length Within Study Area[3] (ft)	Kentucky or Federal Special Listing[4]	Open Ended
SKY-CDK-001	38.88303	-84.71081	UNT to Big Bone Creek	Ephemeral	2	0.5	3	1	0.17	No	Y
SKY-CDK-002	38.882929	-84.710698	UNT to Big Bone Creek	Ephemeral	1.5	0.33	2	1.5	N/A	No	Y
SKY-CDK-003	38.883549	-84.712842	UNT to Big Bone Creek	Ephemeral	3	0.25	3	1.5	102.24	No	Y
SKY-CDK-004	38.883609	-84.71288	UNT to Big Bone Creek	Ephemeral	3	0.33	3	1.5	14.93	No	Y
SKY-CDK-005	38.884475	-84.716338	UNT to Big Bone Creek	Ephemeral	4	0.83	5	2.5	N/A	No	Y
SKY-CDK-006	38.884952	-84.729726	Big Bone Creek	Perennial	50	8	120	25	21.22	Yes – OSRW[5]	Y
SKY-CDK-007	38.88496	-84.736193	UNT to Big Bone Creek	Perennial	8	2.5	10	3	11.23	No	Y
SKY-CDK-008	38.888311	-84.75515	Gum Branch	Perennial	20	10	50	15	20.92	No	Y
SKY-CDK-009	38.88786	-84.756352	UNT to Gum Branch	Ephemeral	2	0.33	3	2	79.42	No	Y
SKY-CDK-010	38.887878	-84.756212	UNT to Gum Branch	Perennial	8	2	10	6	7.16	No	Y
SKY-CDK-011	38.889099	-84.74891	UNT to Big Bone Creek	Intermittent	4	0.5	5	1.5	N/A	No	Y
SKY-CDK-012	38.879394	-84.701392	Beaver Branch	Perennial	7	0.25	9	3	7.75	No	Y
SKY-CDK-013	38.897369	-84.662568	UNT to Mud Lick Creek	Perennial	13	4	14	6	N/A	No	Y
SKY-CDK-014	38.893747	-84.673277	UNT to Mud Lick Creek	Perennial	4	1.16	5	2.5	N/A	No	Y
SKY-CDK-015	38.879982	-84.697841	UNT to Beaver Branch	Ephemeral	4	0.25	5	2	N/A	No	Y
SKY-CDK-016	38.888829	-84.685389	UNT to Mud Lick Creek	Perennial	11	2	12	2.5	17.47	No	Y
SKY-CDK-017	38.899087	-84.65313	Mud Lick Creek	Perennial	10	5	30	7	27.74	No	Y
SKY-CDK-018	38.898322	-84.650852	UNT to Mud Lick Creek	Perennial	25	5	30	6	22.83	No	Y
SKY-CDK-019	38.906064	-84.642176	UNT to Mud Lick Creek	Ephemeral	3	0.33	4	1.5	10.12	No	Y
SKY-CDK-020	38.895195	-84.648059	UNT to Mud Lick Creek	Perennial	9	1.16	12	5	13.43	No	Y
SKY-CDK-021	38.891331	-84.643072	UNT to Mud Lick Creek	Ephemeral	3	0.33	4	1.5	21.12	No	Y
SKY-CDK-022	38.889844	-84.640177	UNT to Mud Lick Creek	Perennial	12	0.41	14	1.5	12.20	No	Y
SKY-CDK-023	38.887761	-84.632876	UNT to Mud Lick Creek	Ephemeral	3	0.25	4	1	18.61	No	Y
SKY-CDK-024	38.889555	-84.626828	UNT to Mud Lick Creek	Intermittent	6	0.33	8	2	12.90	No	Y
SKY-CDK-025	38.88976	-84.62581	UNT to Mud Lick Creek	Ephemeral	6	0.25	7	1.5	6.54	No	Y
SKY-CDK-026	38.890126	-84.624155	UNT to Mud Lick Creek	Perennial	6	0.41	7	2	21.28	No	Y
SKY-CDK-027	38.890165	-84.623638	UNT to Mud Lick Creek	Intermittent	5	0.41	10	4	6.75638.8	No	Y
Total Stream within Study Area (feet)									**456.04**		

Notes:

1 GAI map designation.

2 Decimal degrees; Coordinates provided in NAD 83.

3 Extent of stream or open water within study area. Stream or open water may extend beyond these limits if noted as open ended. "N/A" in this column signifies that the stream is located outside of the study corridor and therefore, has no delineated length within the 20' study corridor.

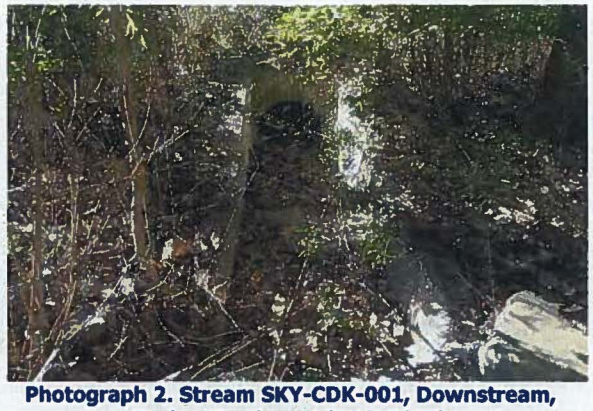
4 KDOW Wild Rivers List for Kentucky. Kentucky Register 401 KAR 4:100. Accessed October 2015.

5 KDOW Outstanding State Resource Waters (OSRW) as shown on the KDOW Kentucky Watershed Viewer accessible at: http://eppcgis.ky.gov/flexviewers/watershed/. Accessed October 2015.

WATERBODY PHOTOGRAPHS

Waterbody Photographs

Photograph 1. Stream SKY-CDK-001, Upstream, Facing Southeast (10/15/15)



Photograph 2. Stream SKY-CDK-001, Downstream, Facing Northwest (10/15/15)

Photograph 3. Stream SKY-CDK-002, Upstream, Facing Southeast (10/15/15)

Photograph 4. Stream SKY-CDK-002, Downstream, Facing Northwest (10/15/15)

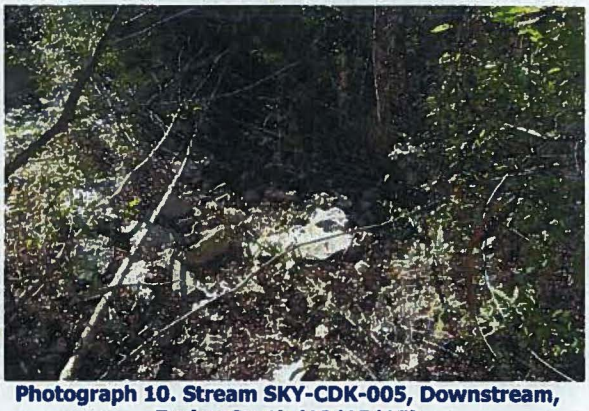
Photograph 5. Stream SKY-CDK-003, Upstream, Facing Southeast (10/15/15)

Photograph 6. Stream SKY-CDK-003, Downstream, Facing Northwest (10/15/15)

Photograph 7. Stream SKY-CDK-004, Upstream, Facing East (10/15/15)

Photograph 8. Stream SKY-CDK-004, Downstream, Facing West (10/15/15)

Photograph 9. Stream SKY-CDK-005, Upstream, Facing North (10/15/15)



Photograph 10. Stream SKY-CDK-005, Downstream, Facing South (10/15/15)

Photograph 11. Stream SKY-CDK-006, Upstream, Facing Northeast (10/15/15)

Photograph 12. Stream SKY-CDK-006, Downstream, Facing Southeast (10/15/15)

Photograph 13. Stream SKY-CDK-007, Upstream, Facing east-Northeast (10/15/15)

Photograph 14. Stream SKY-CDK-007, Downstream, Facing West-Southwest (10/15/15)

Photograph 15. Stream SKY-CDK-008, Upstream, Facing North (10/15/15)

Photograph 16. Stream SKY-CDK-008, Downstream, Facing South (10/15/15)

Photograph 17. Stream SKY-CDK-009, Upstream, Facing West (10/15/15)

Photograph 18. Stream SKY-CDK-009, Downstream, Facing East (10/15/15)

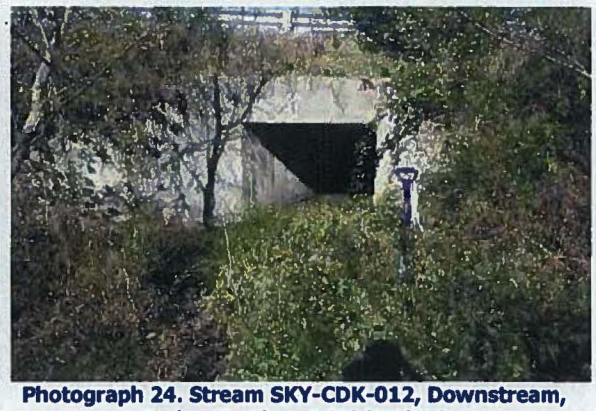
Photograph 19. Stream SKY-CDK-010, Upstream, Facing North (10/15/15)

Photograph 20. Stream SKY-CDK-010, Downstream, Facing South (10/15/15)

Photograph 21. Stream SKY-CDK-011, Upstream, Facing North (10/15/15)

Photograph 22. Stream SKY-CDK-011, Downstream, Facing South (10/15/15)

Photograph 23. Stream SKY-CDK-012, Upstream, Facing Southwest (10/15/15)



Photograph 24. Stream SKY-CDK-012, Downstream, Facing Northeast (10/15/15)

Photograph 25. Stream SKY-CDK-013, Upstream, Facing North (10/15/15)

Photograph 26. Stream SKY-CDK-013, Downstream, Facing South (10/15/15)

Photograph 27. Stream SKY-CDK-014, Upstream, Facing North (10/15/15)

Photograph 28. Stream SKY-CDK-014, Downstream, Facing South (10/15/15)

Photograph 29. Stream SKY-CDK-015, Upstream, Facing Northeast (10/16/15)

Photograph 30. Stream SKY-CDK-015, Downstream, Facing Southwest (10/16/15)

Photograph 31. Stream SKY-CDK-016, Upstream, Facing North (10/16/15)

Photograph 32. Stream SKY-CDK-016, Downstream, Facing South (10/16/15)

Photograph 33. Stream SKY-CDK-017, Upstream, Facing North (10/16/15)

Photograph 34. Stream SKY-CDK-017, Downstream, Facing South (10/16/15)

Photograph 35. Stream SKY-CDK-018, Upstream, Facing East-Northeast (10/16/15)

Photograph 36. Stream SKY-CDK-018, Downstream, Facing Southwest (10/16/15)

Photograph 37. Stream SKY-CDK-019, Upstream, Facing Northwest (10/16/15)

Photograph 38. Stream SKY-CDK-019, Downstream, Facing Southeast (10/16/15)

Photograph 39. Stream SKY-CDK-020, Upstream, Facing Northeast (10/16/15)

Photograph 40. Stream SKY-CDK-020, Downstream, Facing Southwest (10/16/15)

Photograph 41. Stream SKY-CDK-021, Upstream, Facing Northeast (10/16/15)

Photograph 42. Stream SKY-CDK-021, Downstream, Facing Southwest(10/16/15)

Photograph 43. Stream SKY-CDK-022, Upstream, Facing Northeast (10/16/15)

Photograph 44. Stream SKY-CDK-022, Downstream, Facing Southwest (10/16/15)

Photograph 45. Stream SKY-CDK-023, Upstream, Facing North (10/16/15)

Photograph 46. Stream SKY-CDK-023, Downstream, Facing South (10/16/15)

Photograph 47. Stream SKY-CDK-024, Upstream, Facing North (10/16/15)

Photograph 48. Stream SKY-CDK-024, Downstream, Facing South (10/16/15)

Photograph 49. Stream SKY-CDK-025, Upstream, Facing North (10/16/15)

Photograph 50. Stream SKY-CDK-025, Downstream, Facing South (10/16/15)

Photograph 51. Stream SKY-CDK-026, Upstream, Facing North (10/16/15)

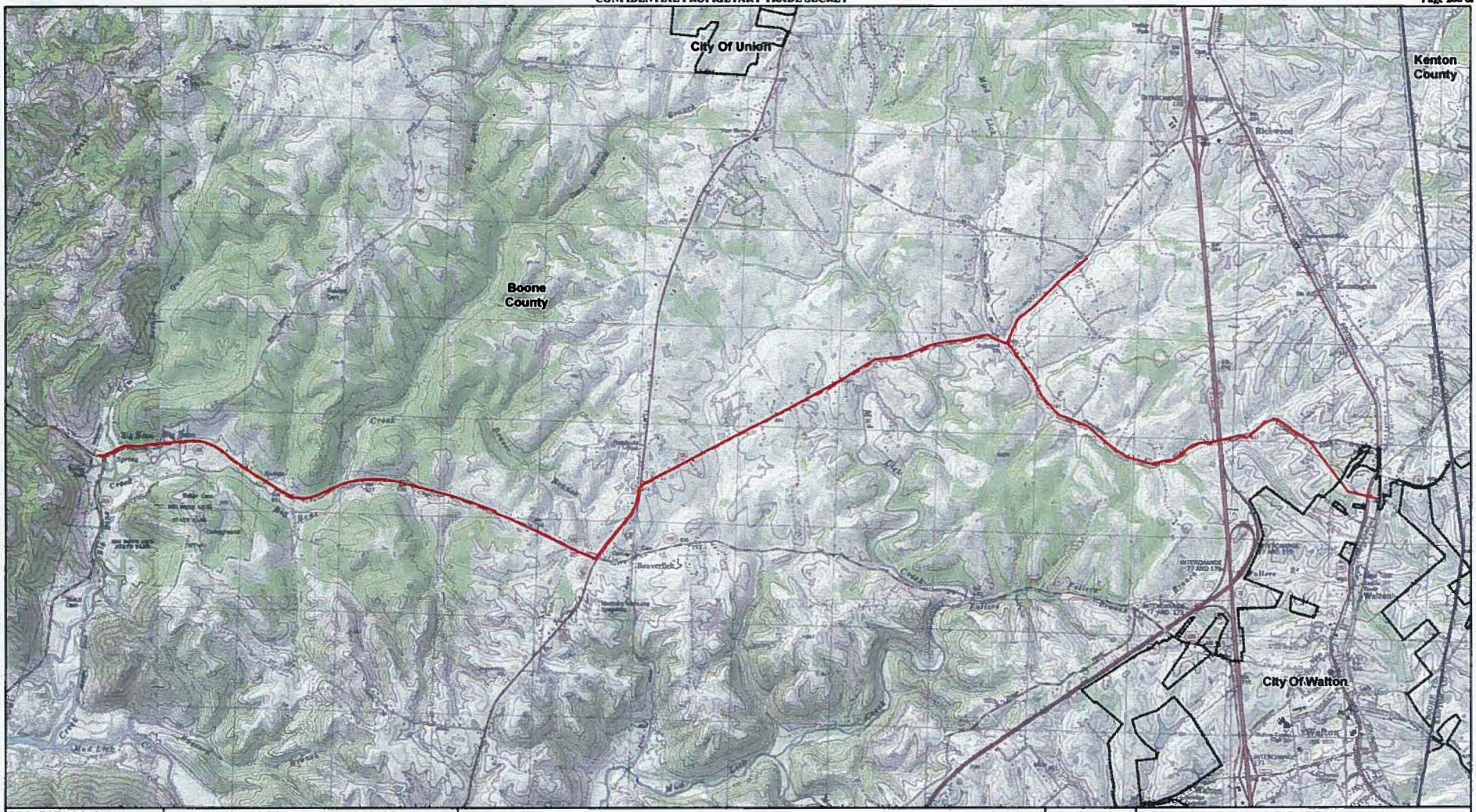
Photograph 52. Stream SKY-CDK-026, Downstream, Facing South (10/16/15)

Photograph 53. Stream SKY-CDK-027, Upstream, Facing Northeast (10/16/15)

Photograph 54. Stream SKY-CDK-027, Downstream, Facing Southwest (10/16/15)

FIGURES

CONFIDENTIAL PROPRIETARY TRADE SECRET



PROJECT LOCATION

BOONE COUNTY, KENTUCKY

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: UNION (1982), VERONA (1982), RISING SUN (1982), PATRIOT (1982), WALTON (1982), AND INDEPENDENCE (1982), KENTUCKY, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2015.

N

0 1,500 3,000 Feet

Route Centerline
Municipal Boundary
County Boundary

DUKE ENERGY.

gai consultants

FIGURE 1
PROJECT VICINITY

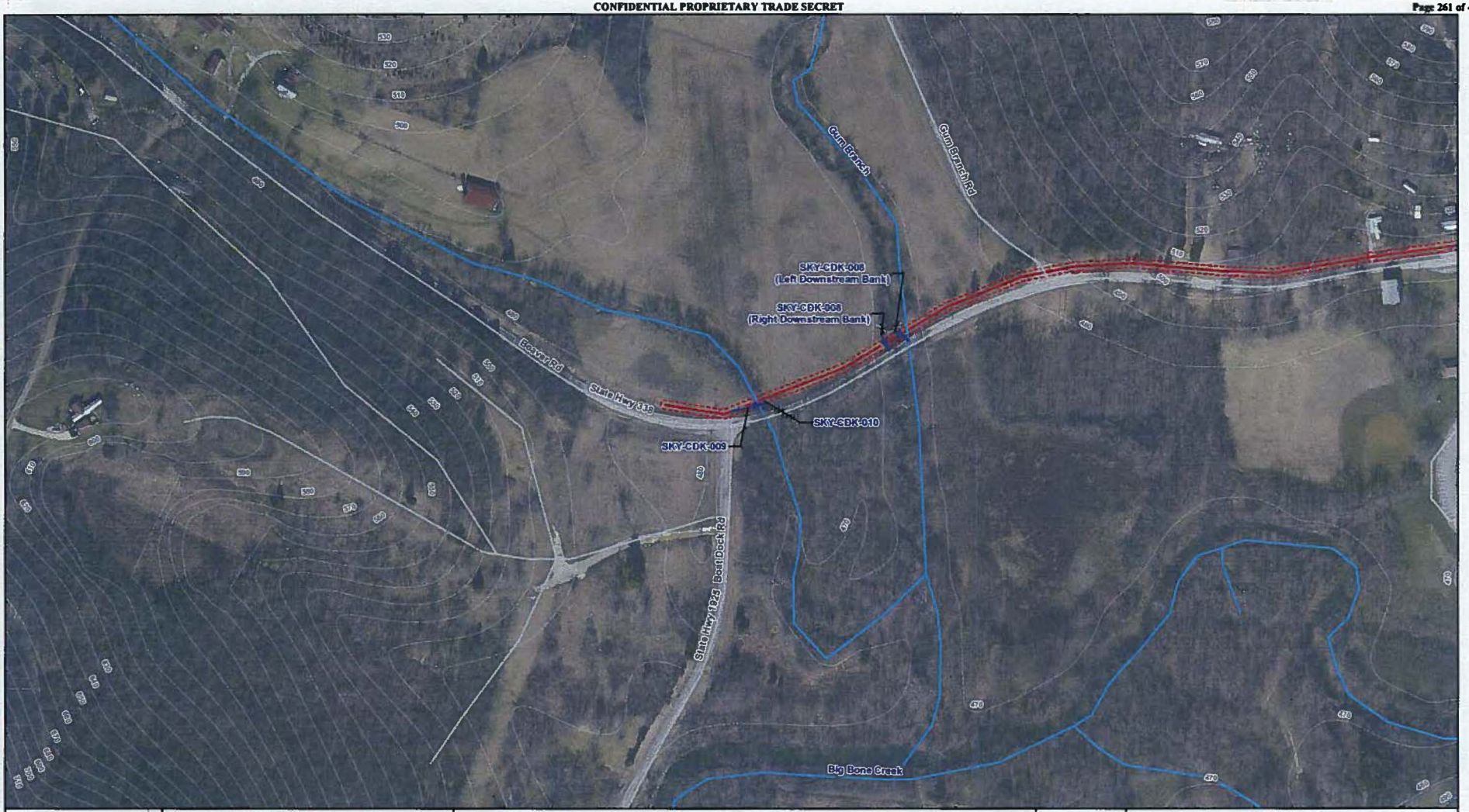
Wetland Delineation and Stream Identification Report

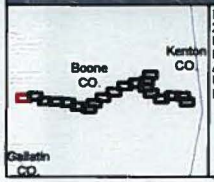
Duke Walton-Big Bone Pipeline

DRAWN BY: WCP	DATE: 11/5/2015
CHECKED: MRW	APPROVED: MRW

Z:\Energy\2014\G141890.03 - Duke Walton-Big Bone Pipe\GIS\MXD\WDSIR\G141890_03_WDSIR_Project_Vicinity_2015_11_03.mxd

CONFIDENTIAL PROPRIETARY TRADE SECRET





REFERENCE: ESRI WORLD IMAGERY, 2012. OBTAINED THROUGH ESRI WORLD IMAGERY, MICROSOFT CORPORATION, ACCESSED 11/2015. USGS NHD, 2015; ROADS, 2013; NED 10FT CONTOURS, 2014.

N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

DUKE ENERGY.

gai consultants

FIGURE 2
RESOURCE LOCATION

SHEET 1 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

DRAWN BY: WCP	DATE: 11/5/2015
CHECKED: MRW	APPROVED: MRW

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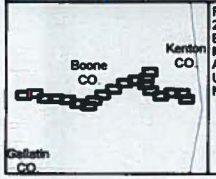
CONFIDENTIAL PROPRIETARY TRADE SECRET



REFERENCE: ESRI WORLD IMAGERY, 2012, OBTAINED THROUGH ESRI WORLD IMAGERY, MICROSOFT CORPORATION, ACCESSED 11/2015. USGS NHD, 2015; ROADS, 2013; NED 10FT CONTOURS, 2014.

N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

DUKE ENERGY.

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FIGURE 2
RESOURCE LOCATION

SHEET 2 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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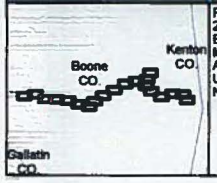

REFERENCE: ESRI WORLD IMAGERY, 2012. OBTAINED THROUGH ESRI WORLD IMAGERY, MICROSOFT CORPORATION, ACCESSED 11/2015. USGS NHD, 2015; ROADS, 2013; NED 10FT CONTOURS, 2014.

N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

DUKE ENERGY.

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FIGURE 2
RESOURCE LOCATION

SHEET 3 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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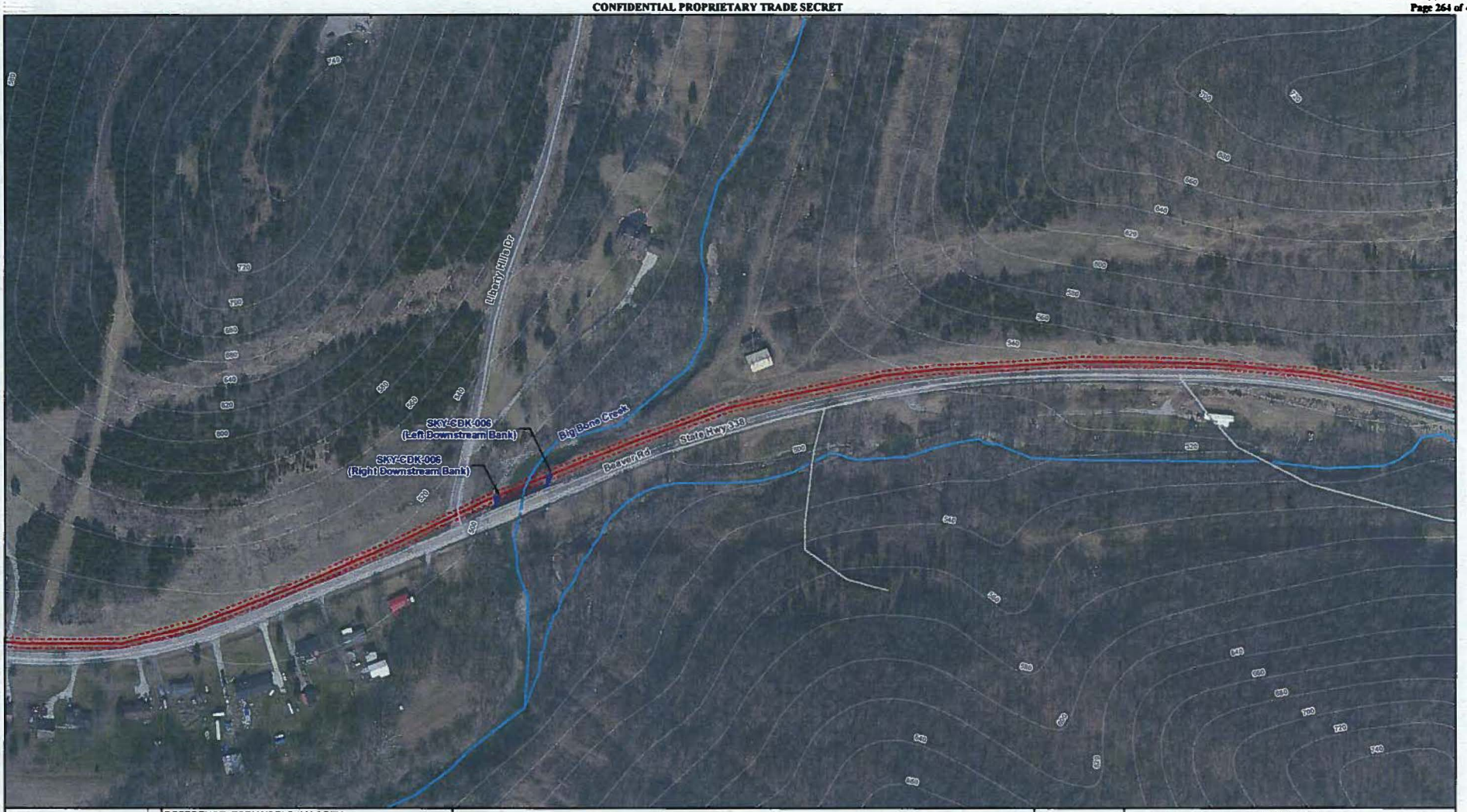

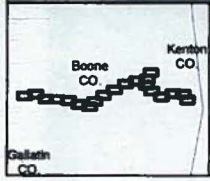

REFERENCE: ESRI WORLD IMAGERY, 2012, OBTAINED THROUGH ESRI WORLD IMAGERY, MICROSOFT CORPORATION, ACCESSED 11/2015. USGS NHD, 2015; ROADS, 2013; NED 10FT CONTOURS, 2014.

N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

DUKE ENERGY.

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FIGURE 2
RESOURCE LOCATION

SHEET 4 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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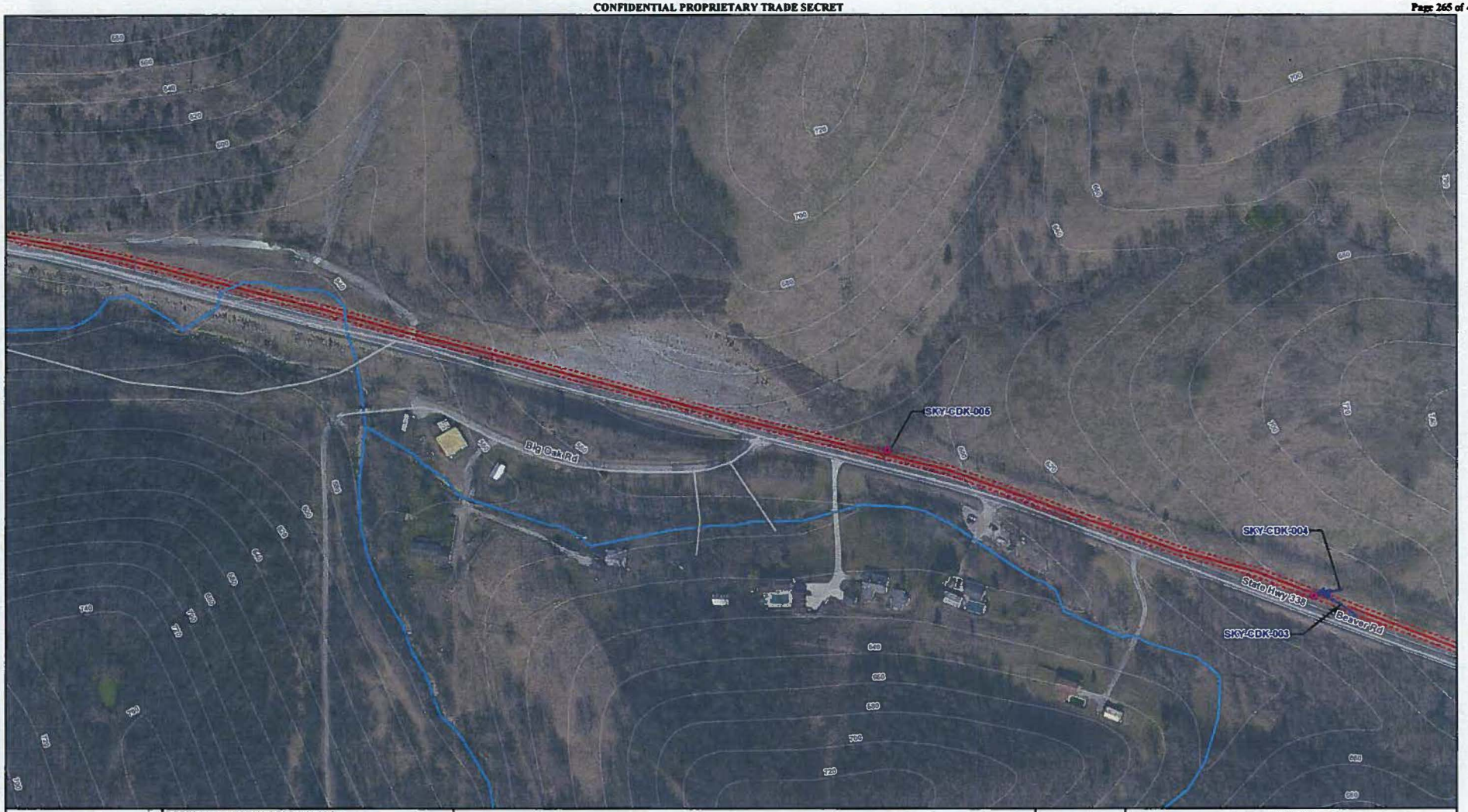

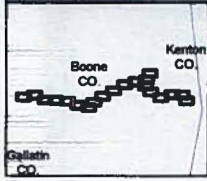

REFERENCE: ESRI WORLD IMAGERY, 2012. OBTAINED THROUGH ESRI WORLD IMAGERY, MICROSOFT CORPORATION, ACCESSED 11/2015. USGS NHD, 2015; ROADS, 2013; NED 10FT CONTOURS, 2014.

N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

DUKE ENERGY.

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FIGURE 2
RESOURCE LOCATION

SHEET 5 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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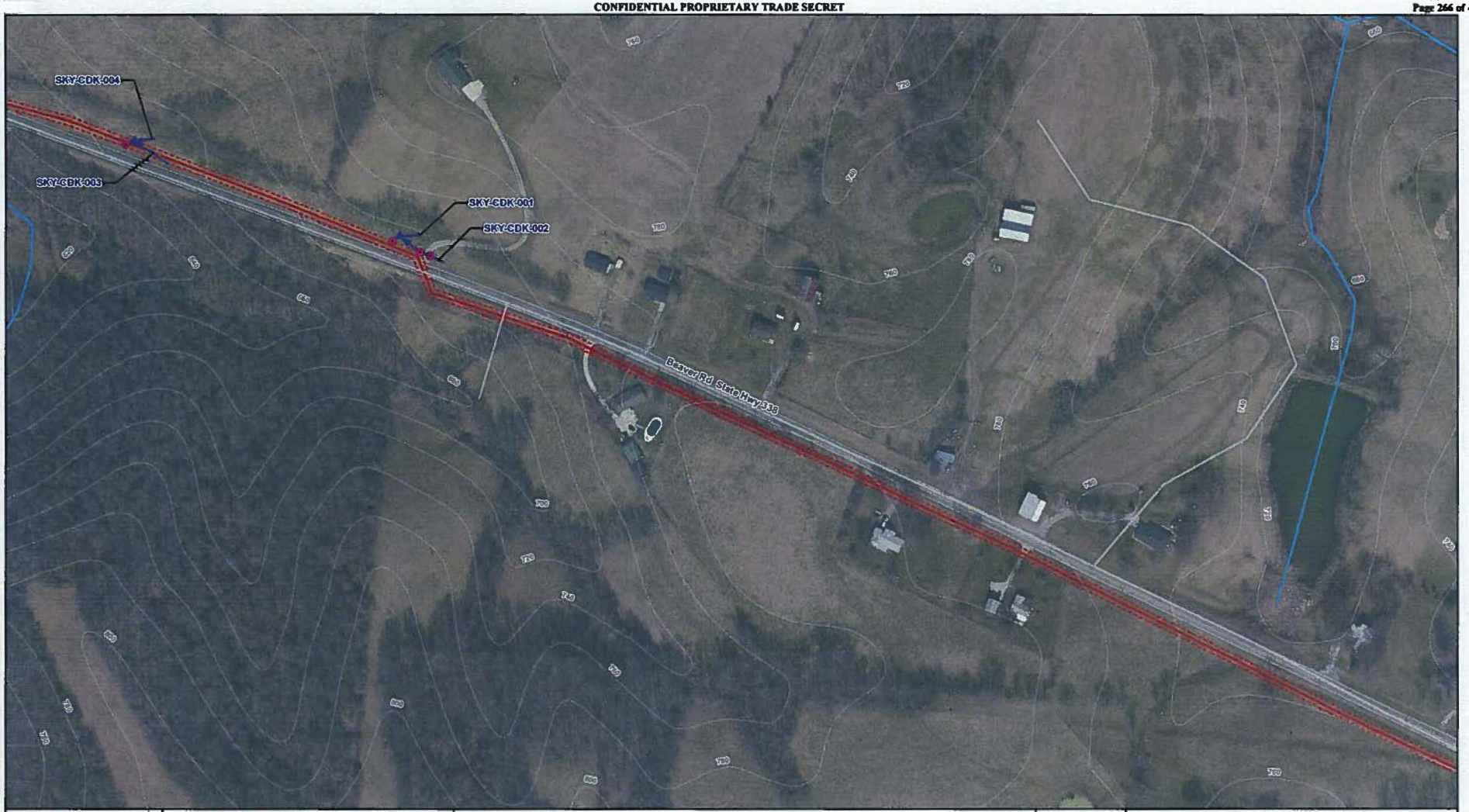

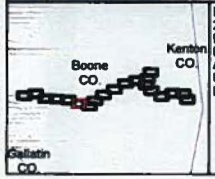

REFERENCE: ESRI WORLD IMAGERY, 2012, OBTAINED THROUGH ESRI WORLD IMAGERY, MICROSOFT CORPORATION, ACCESSED 11/2015. USGS NHD, 2015; ROADS, 2013; NED 10FT CONTOURS, 2014.

N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 6 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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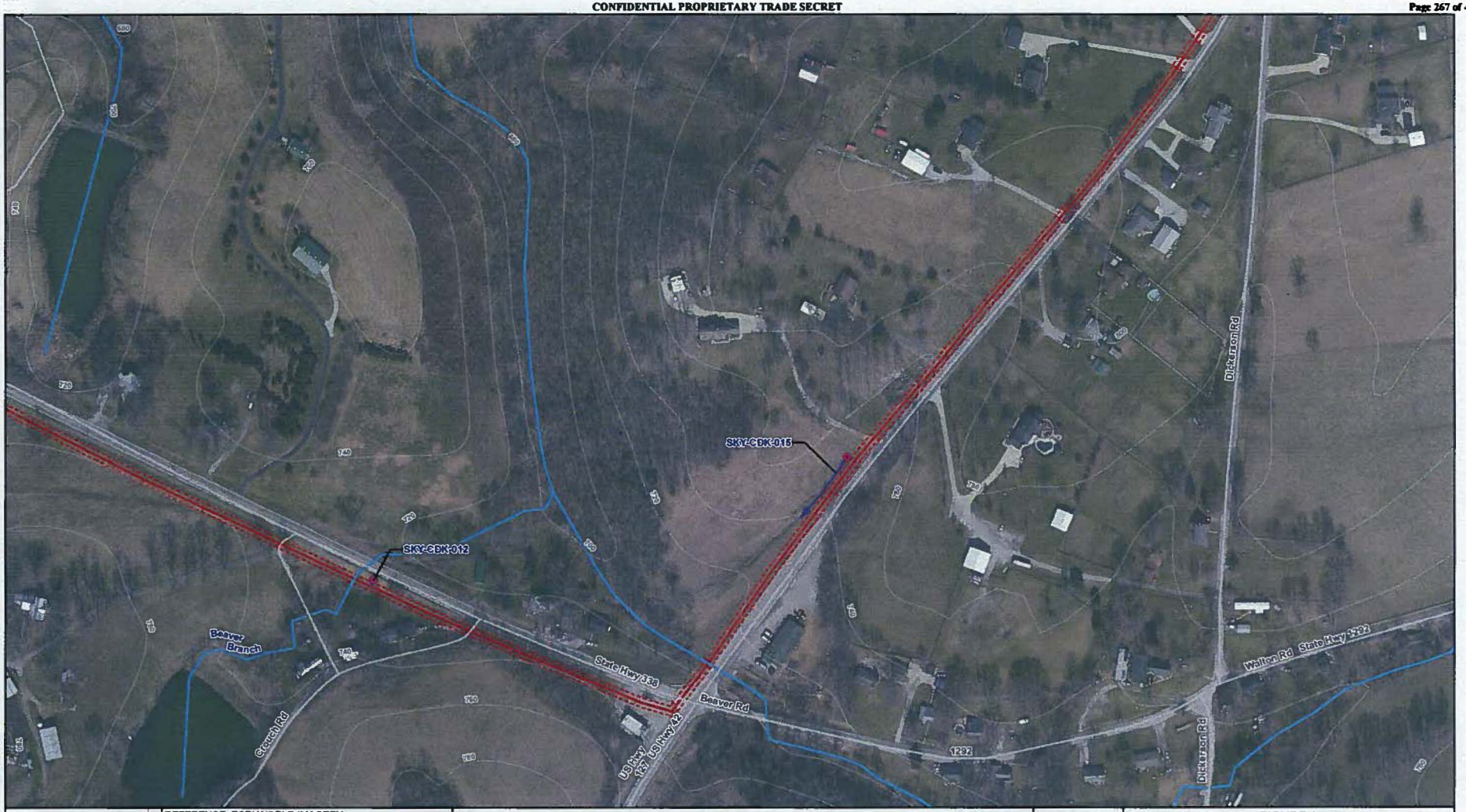

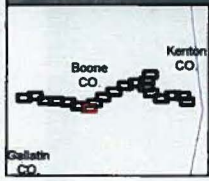

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N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 7 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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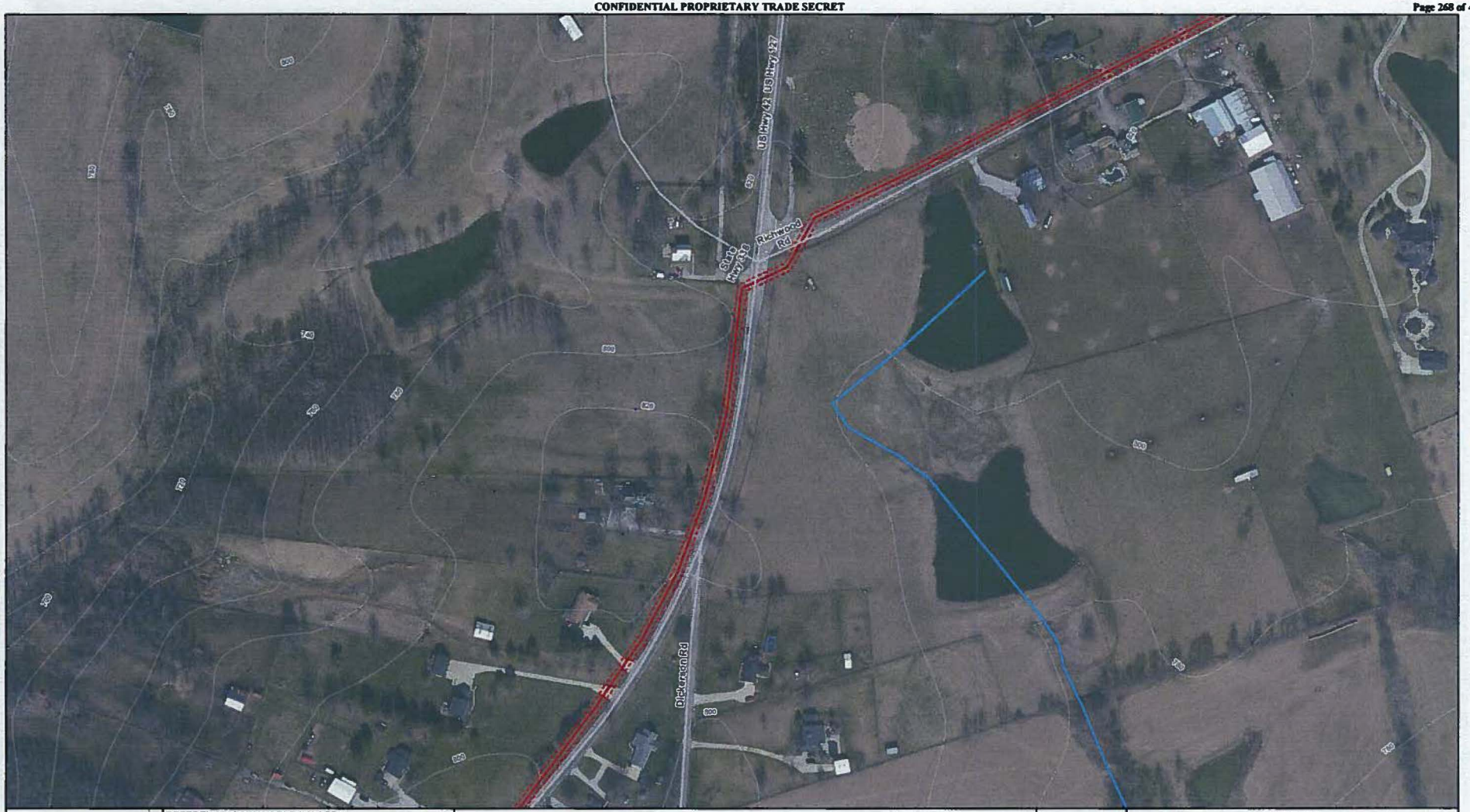

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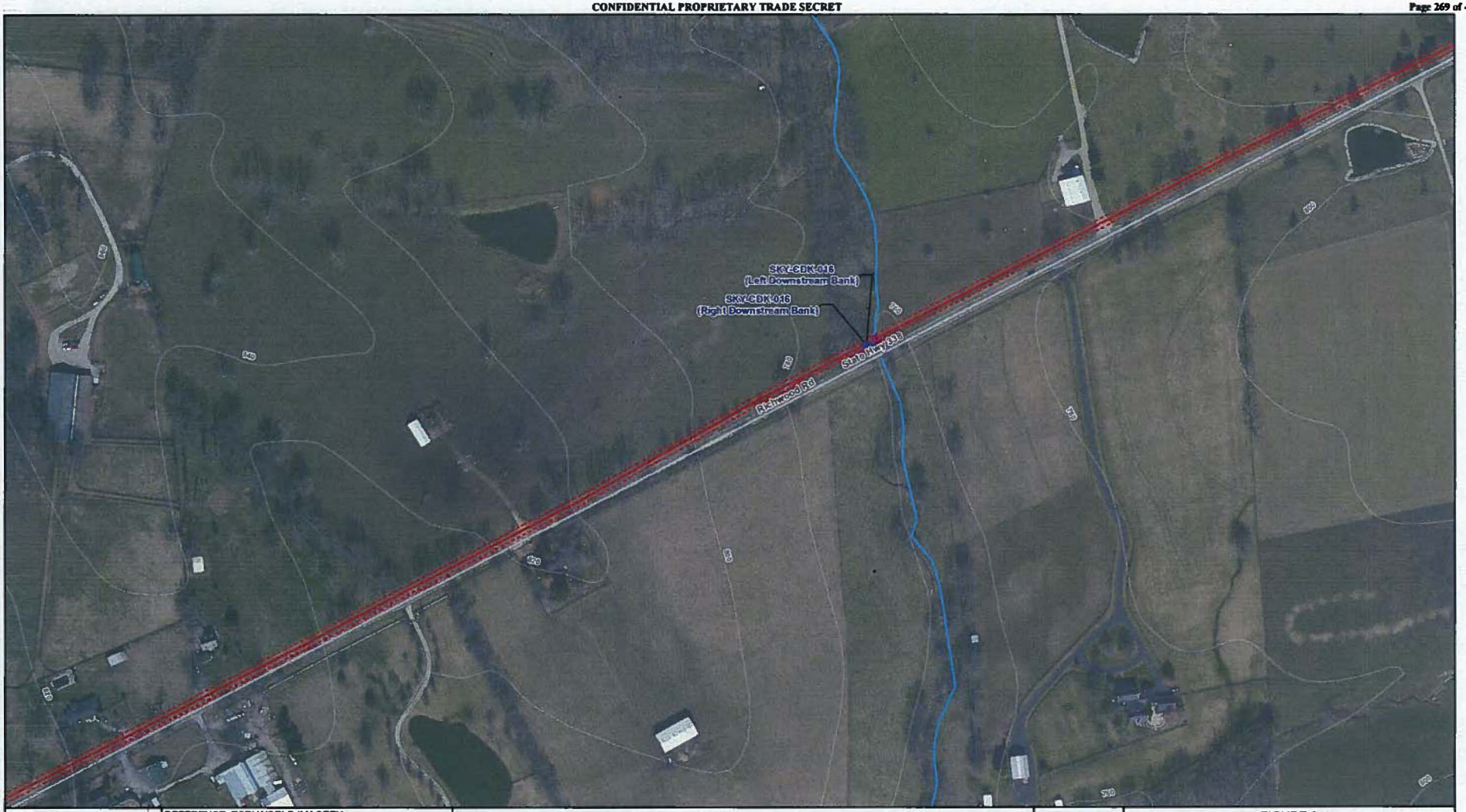

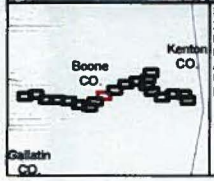

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N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 9 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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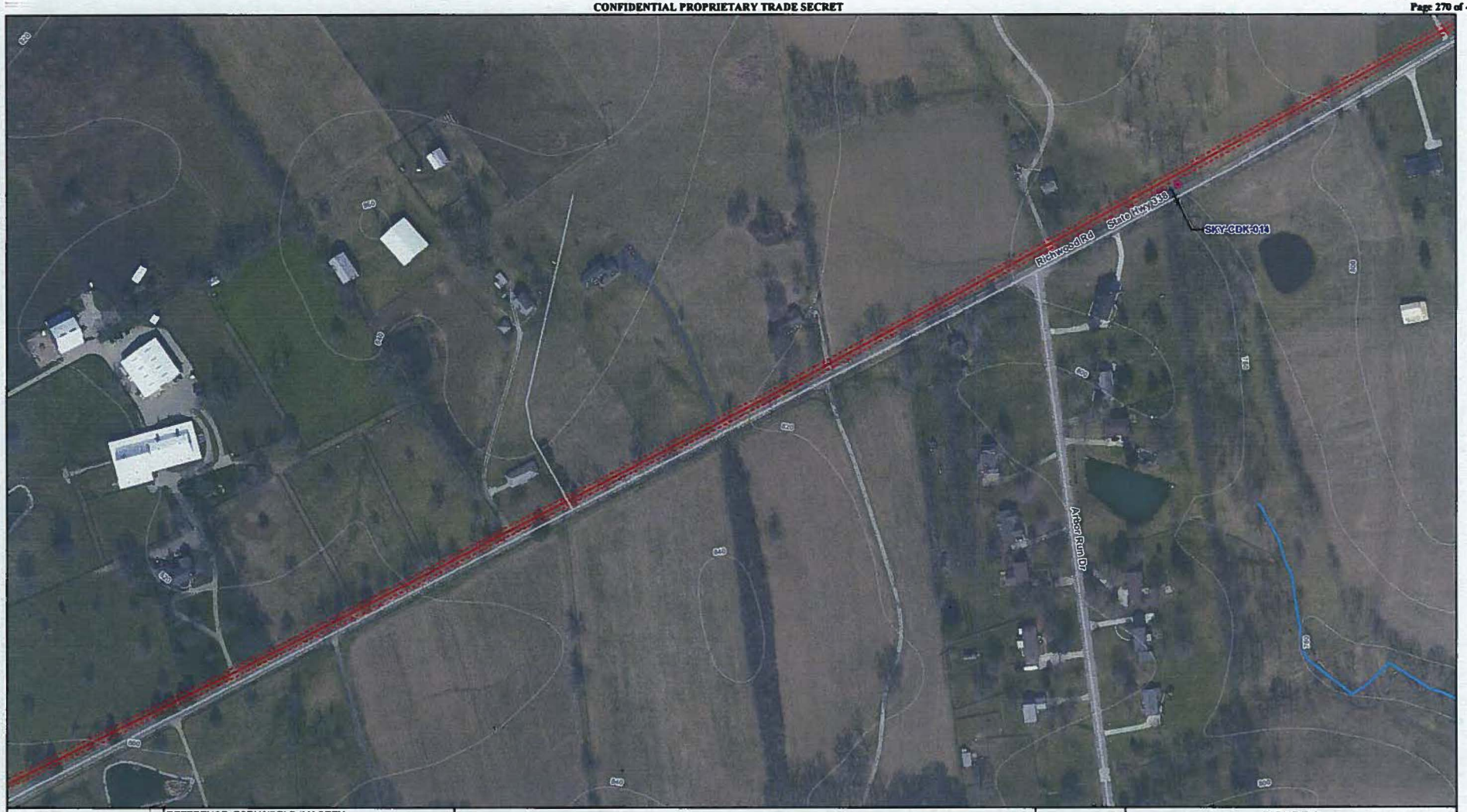

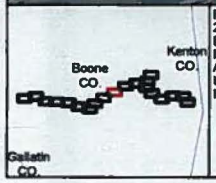

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N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 10 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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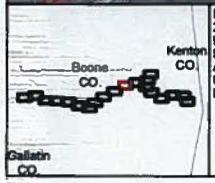

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USGS NHD, 2015; ROADS, 2013; NED 10FT CONTOURS, 2014.

N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 11 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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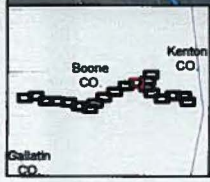

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N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 12 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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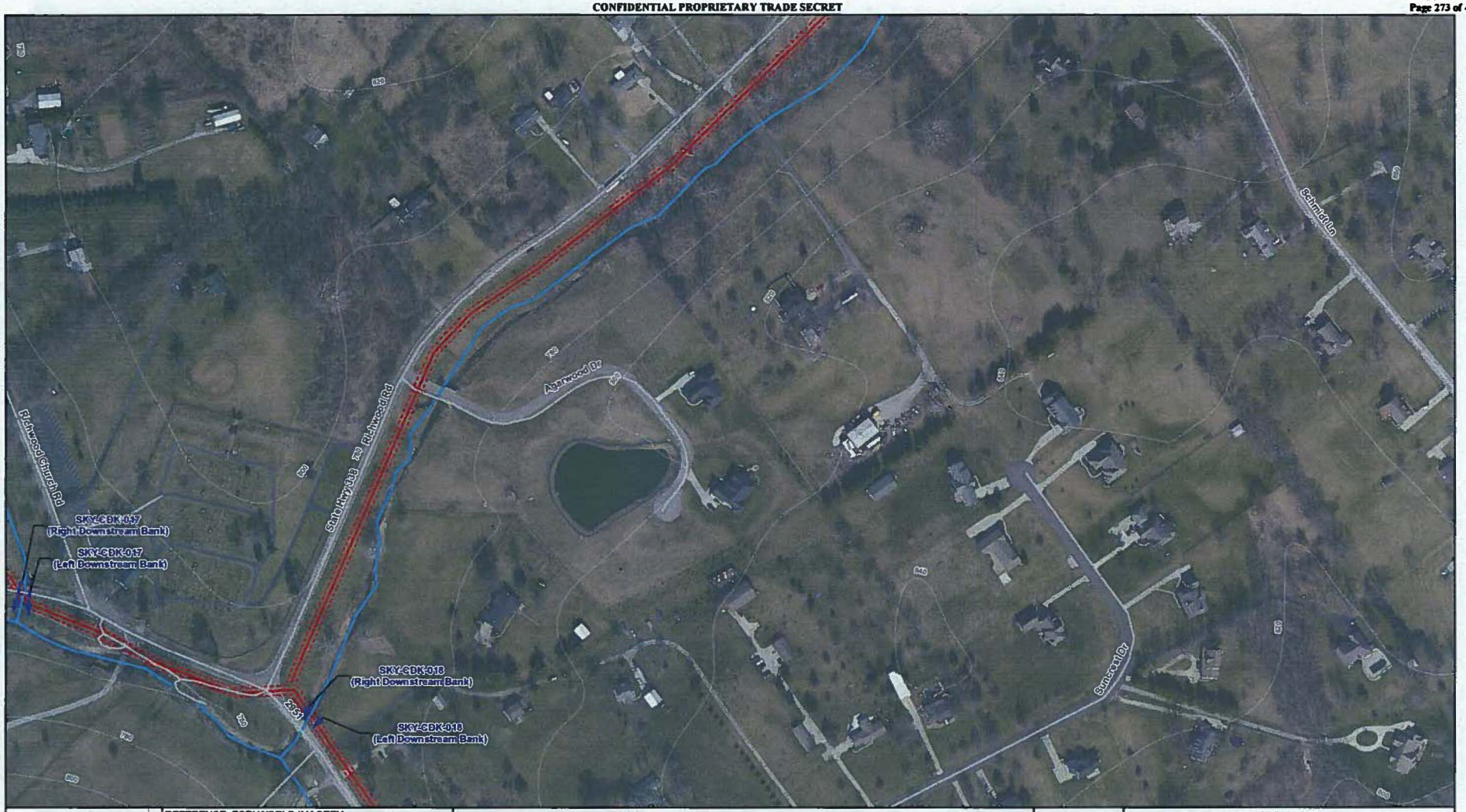

Boone CO.
Kenton CO.
Gallatin CO.

REFERENCE: ESRI WORLD IMAGERY, 2012, OBTAINED THROUGH ESRI WORLD IMAGERY, MICROSOFT CORPORATION, ACCESSED 11/2015. USGS NHD, 2015; ROADS, 2013; NED 10FT CONTOURS, 2014.

N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 13 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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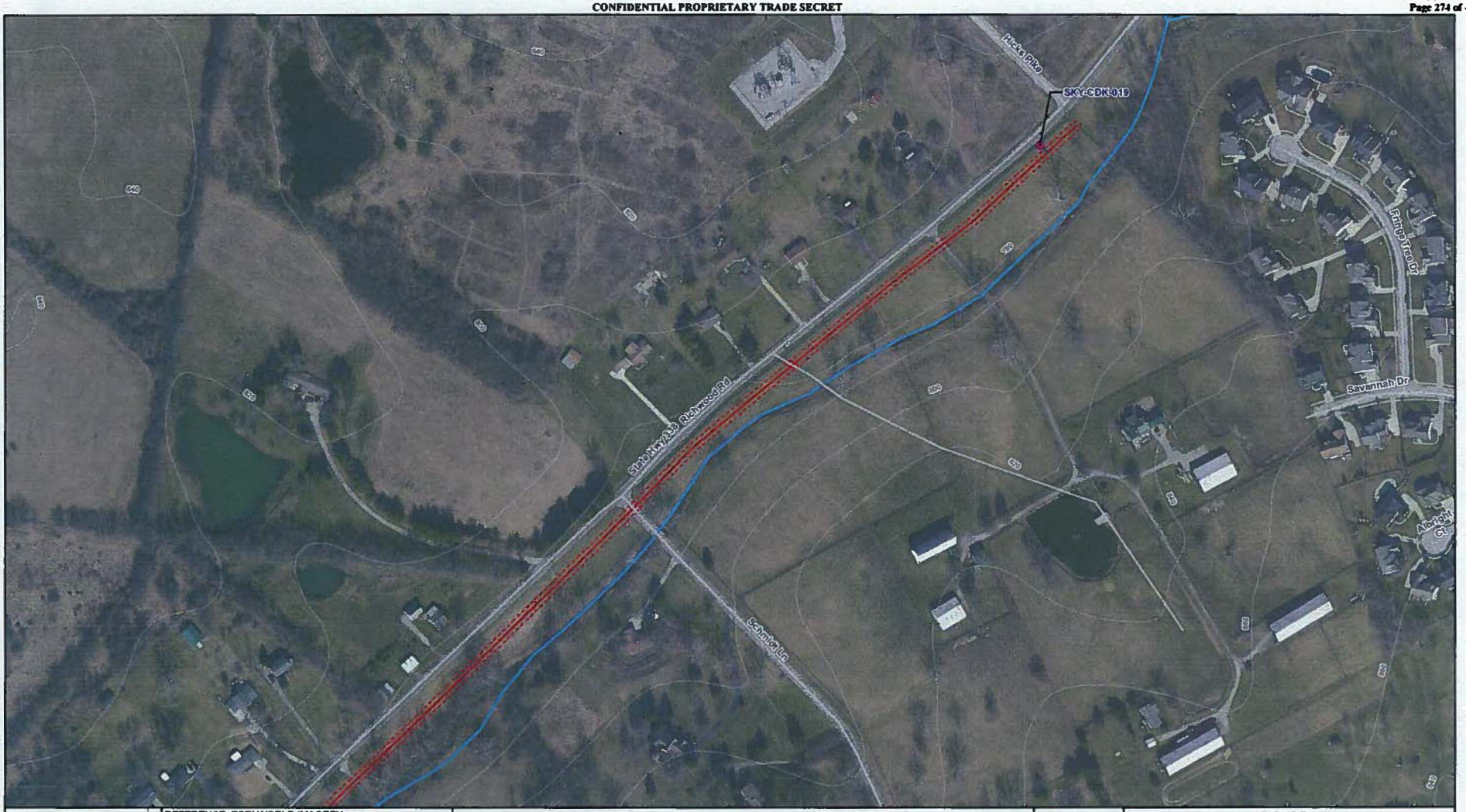

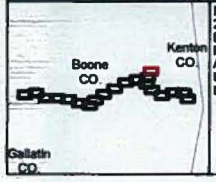

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N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 14 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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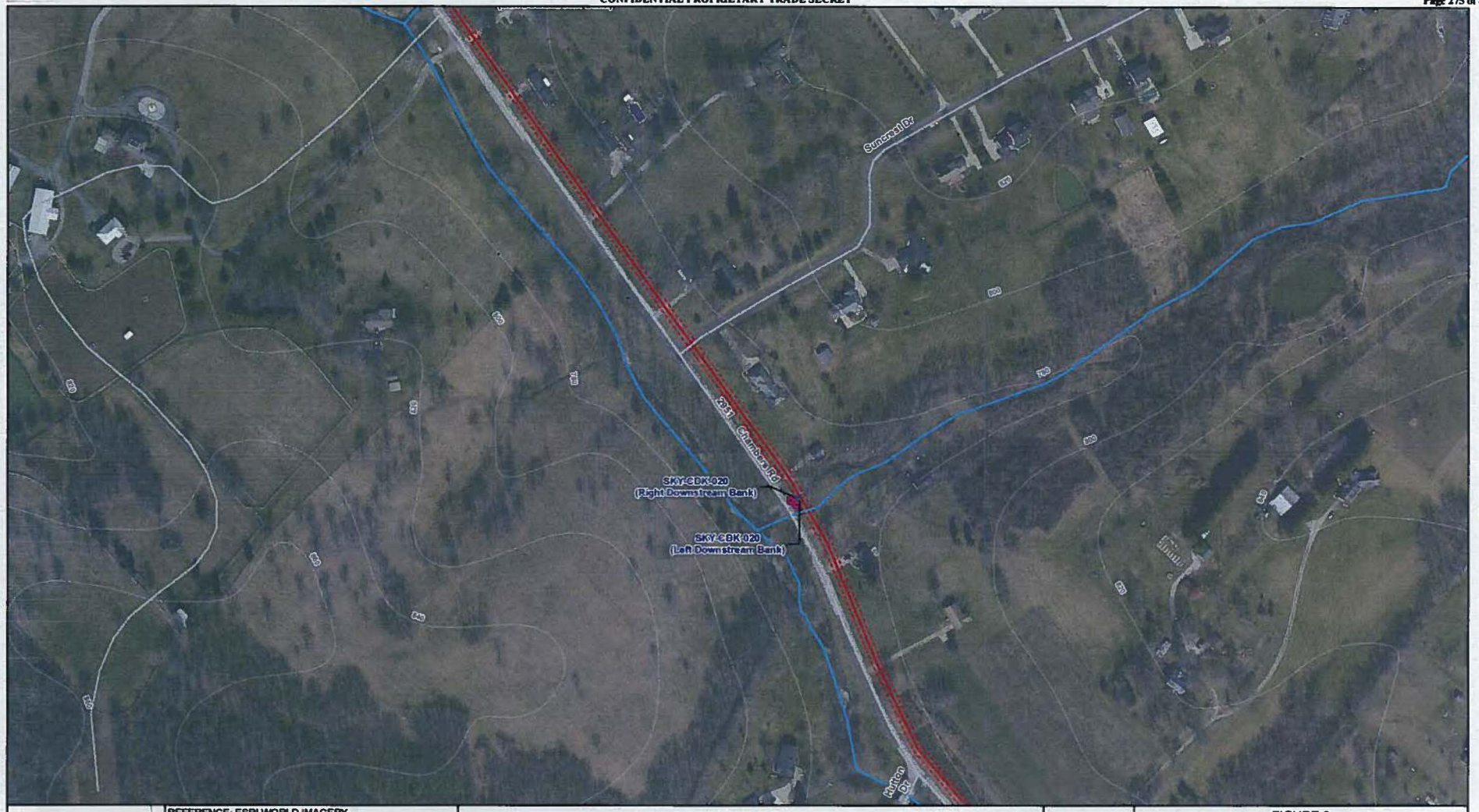

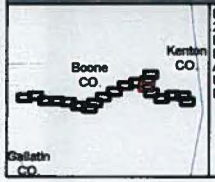

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N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 15 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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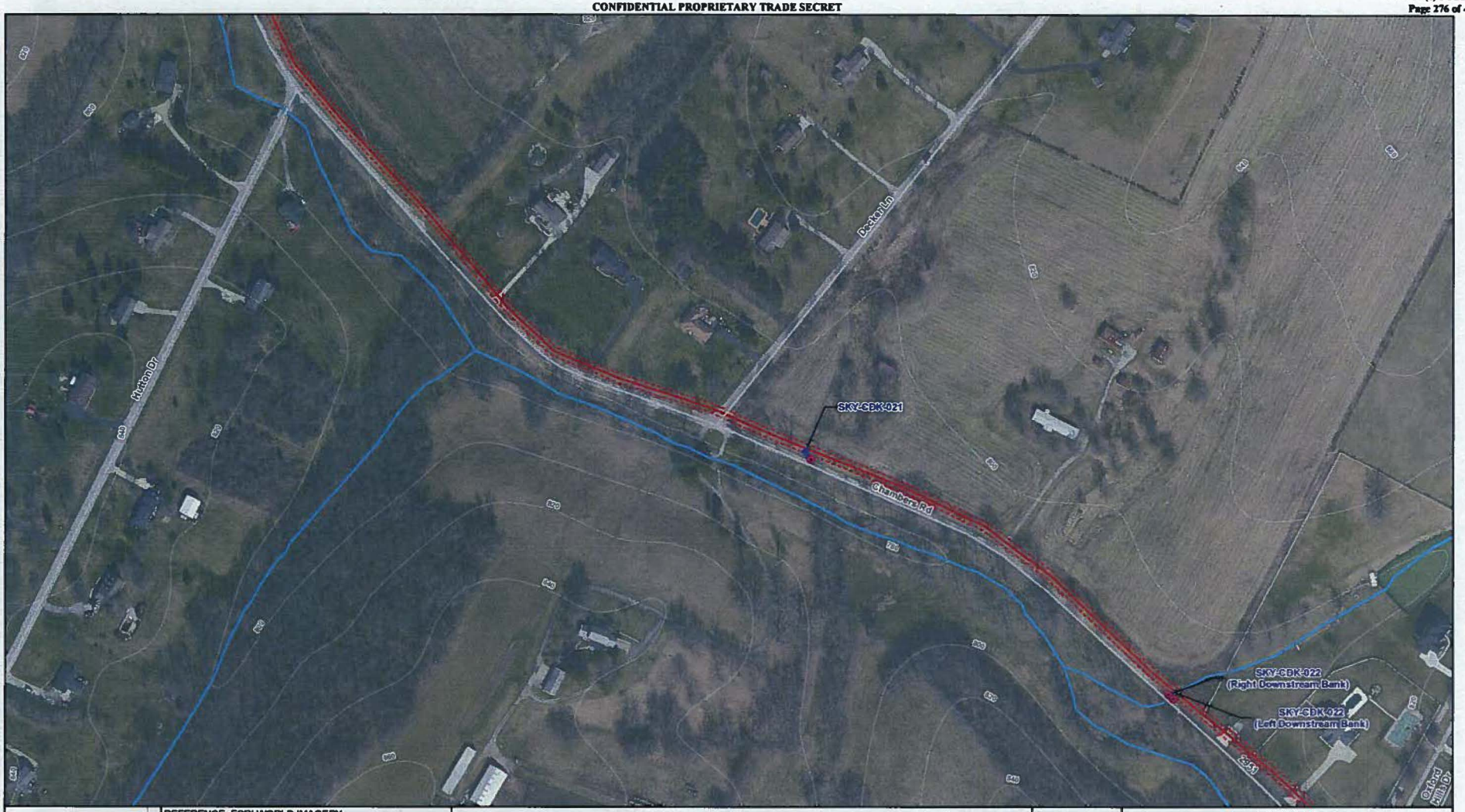

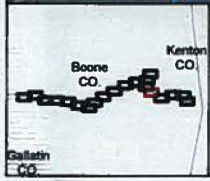

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N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 16 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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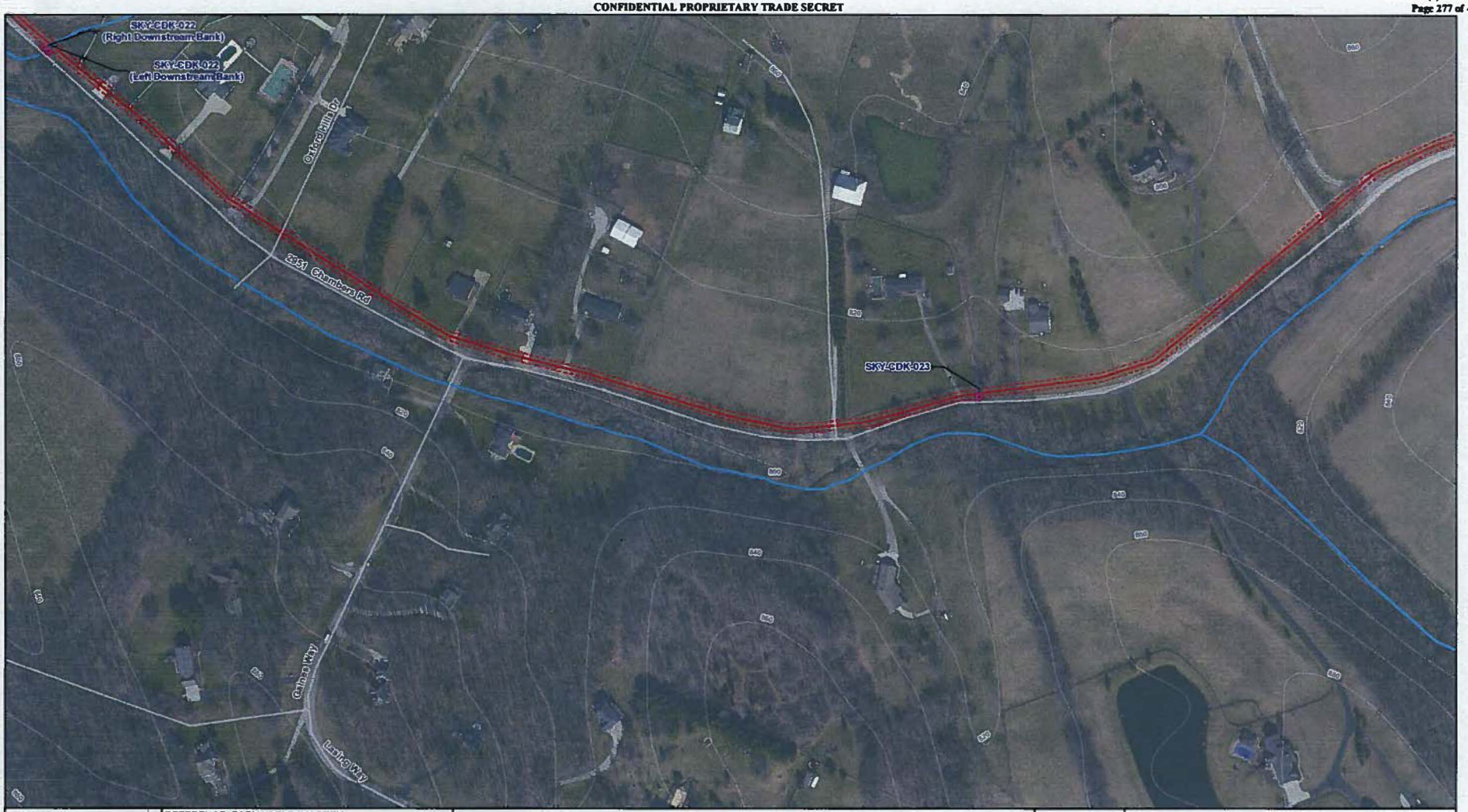

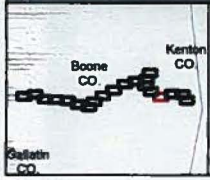

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N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

DUKE ENERGY.

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FIGURE 2
RESOURCE LOCATION

SHEET 17 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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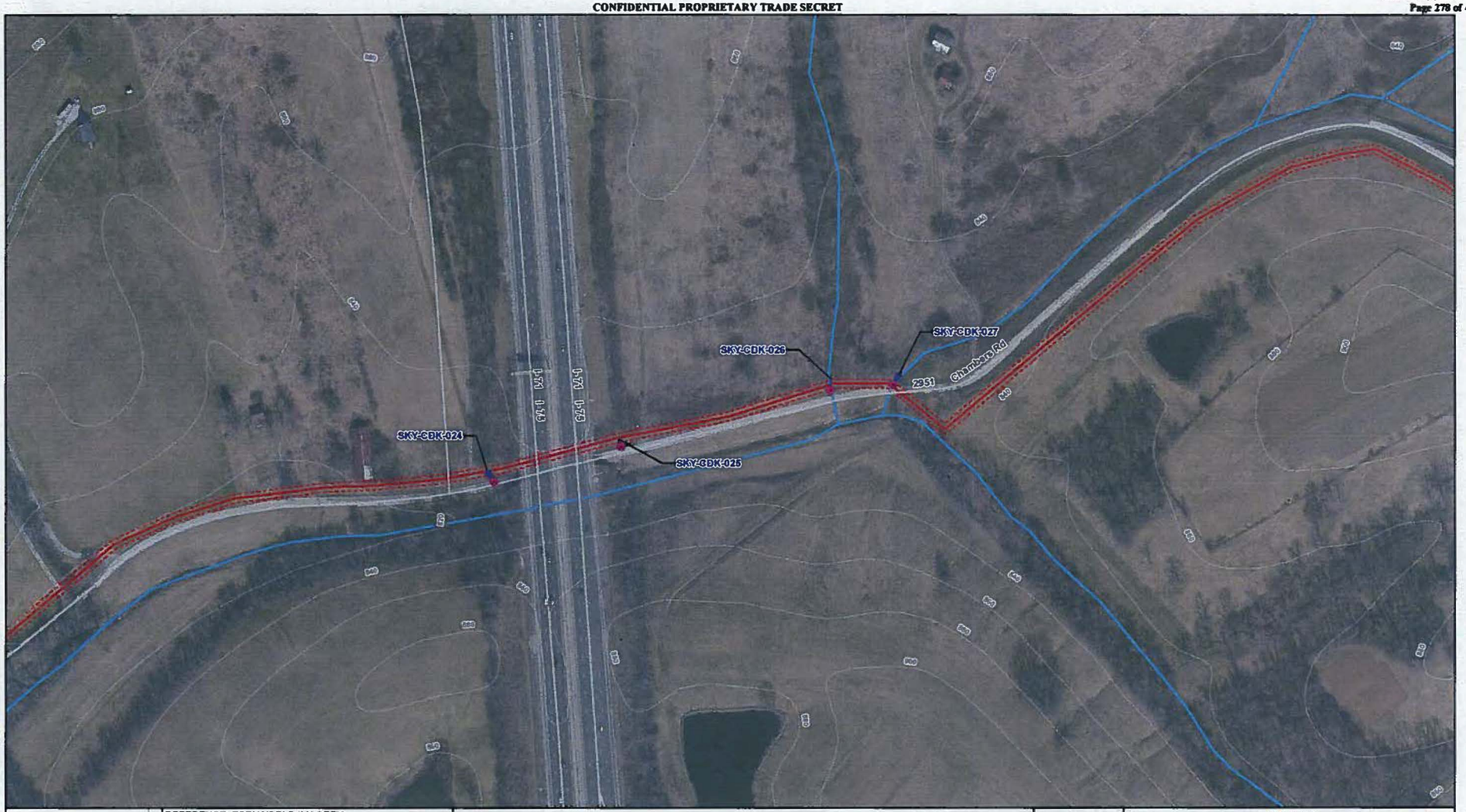

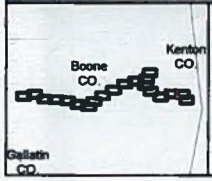

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N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

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FIGURE 2
RESOURCE LOCATION

SHEET 18 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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CHECKED: MRW	APPROVED: MRW

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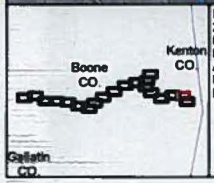

REFERENCE: ESRI WORLD IMAGERY, 2012, OBTAINED THROUGH ESRI WORLD IMAGERY, MICROSOFT CORPORATION, ACCESSED 11/2015. USGS NHD, 2015; ROADS, 2013; NED 10FT CONTOURS, 2014.

N

0 100 200 Feet

- Culvert
- Route Centerline
- Delineated Stream
- NHD Waterway
- Road Centerline
- Study Area
- County Boundary
- NED 10-Foot Contour

DUKE ENERGY.

gai consultants

FIGURE 2
RESOURCE LOCATION

SHEET 19 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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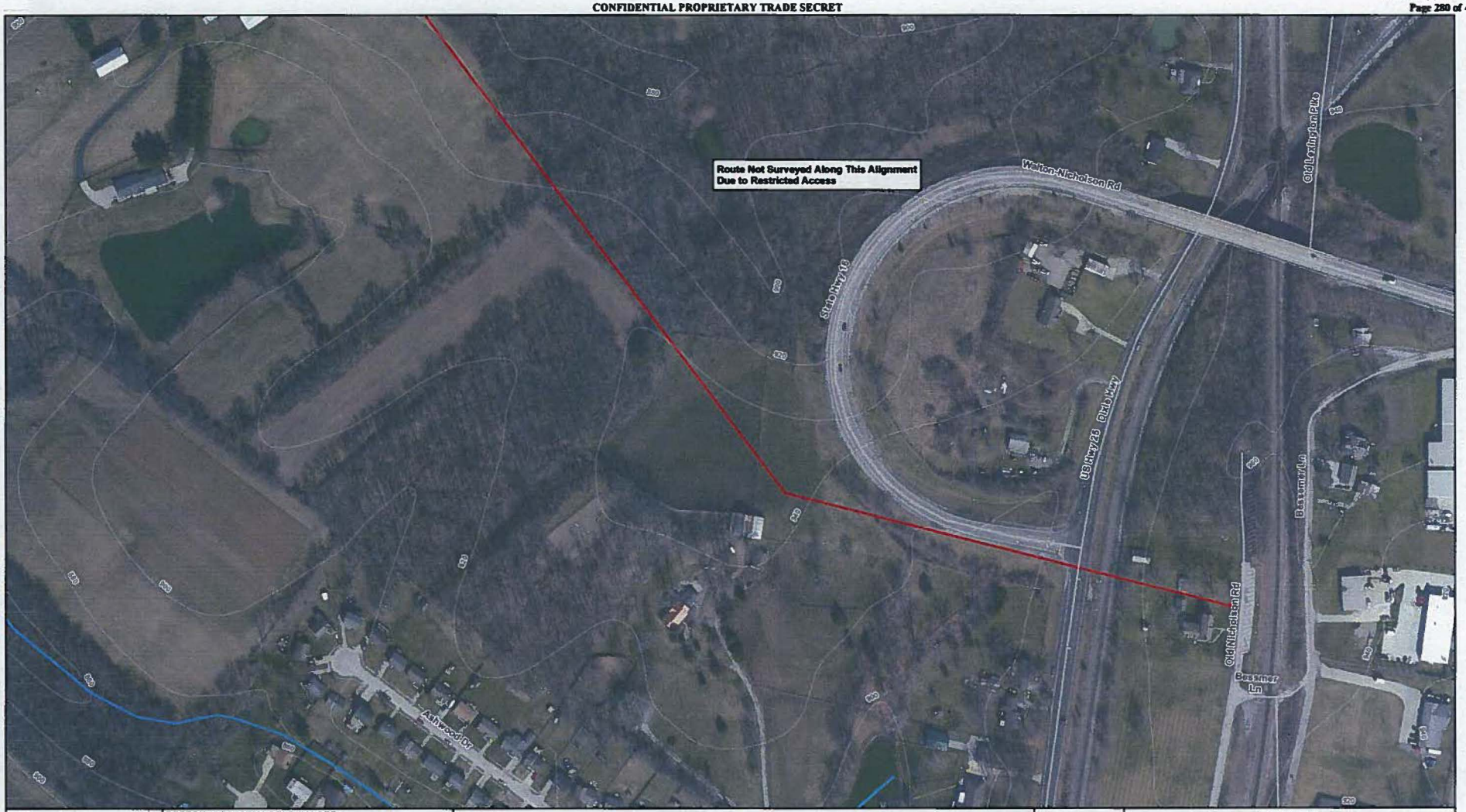

FIGURE 2
RESOURCE LOCATION

SHEET 20 OF 20

Wetland Delineation and Stream Identification Report

Duke Walton-Big Bone Pipeline

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