

DUKE ENERGY 5484 – 138kV Columbia Substation

APPENDIX



SITE PHOTOGRAPHS



Photo 1. Stream 1, ephemeral, facing downstream.



Photo 3. Overview of Wetland 1, located adjacent to Little Miami River.



Photo 2. Stream 2, Little Miami River, looking downstream.



Photo 4. Stream 3, intermittent, facing upstream.





Photo 5. View of Wetland 2, facing west.



Photo 6. Stream 4, intermittent, facing downstream.

DUKE ENERGY 5484 – 138kV Columbia Substation

APPENDIX

В

HHEI FORMS

Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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	SITE NAME/LOCATION Stream 1 - Duke Energy: Columbia Substation	
	SITE NUMBER Stream 1 RIVER BASIN Little Miami River DRAINAGE AREA (mi²)	<1
	LENGTH OF STREAM REACH (ft) 75 LAT 39.370295 LONG -84.226376 RIVER CODE N/A RIVER MILE I	N/A
	DATE 7/5/2018 SCORER Danielle K. Thompson COMMENTS	
	NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
	STREAM CHANNEL X NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO	RECOVERY
	MODIFICATIONS:	
1.	SUBSTRATE (Est. % of every type of substrate present. Check ONLY 2 predominant substrate TYPE boxes (Max of 40).	
	Add total number of significant substrate types found (Max of 8). Final metric score is A + B. TYPE PERCENT TYPE PERCENT	HHEI Metric
		Points
	BLDR SLABS [16 pts]	Tomics
	BEDROCK [16 PTS]	Substrate
	COBBLE (65-256mm) [12 pts] 10 CLAY or HARDPAN [0 PT]	Max = 40
	X GRAVEL (2-64mm) [9 pts] 20 MUCK [0 PT]	
	SAND (<2mm) [6 pts] 5 ARTIFICIAL [3 PTS]	
		16
	Total of Percentages of Bldr Slabs, Boulder, Cobble, & Bedrock (A) 10	
	Slabs, Boulder, Cobble, & Bedrock 10 TOTAL NUMBER OF SUBSTRATE TYPES: 4 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4 1	A + B
	TOTAL NOMBLE OF SUBSTRATE TIPES.	
2.	Maximum Pool Depth (Measure the maximum pool depth within the 61m (200') evaluation reach at the time of	Pool Depth
	evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 30
	>30 centimeters [20 pts] >5 cm - 10 cm [15 pts]	
	>22.5 - 30 cm [30 pts] X <5 cm [5 pts]	
	>10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
	3	
	COMMENTS MAXIMUM POOL DEPTH (centimeters):	
3.	BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
	>4.0 meters (>13') [30 pts] >1.0 m - 1.5 m (>3'3" - 4'8") [15 pts]	Width Max = 30
	>3.0 m - 4.0 m (>9'7" - 13') [25 pts]	IVIAX - 30
	>1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]	5
	COMMENTS AVERAGE BANKFULL WIDTH (meters)	
	This information <u>must</u> also be completed	
	RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream	
	RIPARIAN WIDTH FLOODPLAIN QUALITY	
	L R (Per Bank) L R (Most Predominant per Bank) L R	
	Wide >10m	-
	X X Narrow <5m X X Residential, Park, New Field Open Pasture, Ro	
		w Crop
	None Fenced Pasture Mining or Constru	
	None	
	Comments	
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	
	Comments	
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Comments Dry channel, no water (Ephemeral)	
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Comments SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box):	
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	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Comments SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 3.0 3.0 2.5	
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Comments SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box): None 1.0 3.0	iction .

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): Stream	m 1
QHEI PERFORMED? Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Little Miami River Distance from Evaluated Stream 700 LF	
CWH Name: Distance from Evaluated Stream	
EWH Name: Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name: South Lebanon (OH) NRCS Soil Map Page: N/A NRCS Soil Map Stream Order N/A	
County: Warren Township/City: Union Township	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipition: 7/3/2018 Quantity: 0.1	
Photographer Information: 2 Photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number	
Field Measures: Temp (°C) N/A Dissolved Oxygen (mg/l) N/A pH (S.U.) N/A Conductivity (μmhos/cm)	N/A
Is the sampling reach representative of the stream? (Y/N) N If not, please explain: Sampling reach only within the 100	0
foot corridor and may not indicate the entire stream characteristics	
Additional comments/description of pollution impacts	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the stable of ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual) Fish observed? (Y/N) N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Comments Regarding Biology DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location	
FLOW— Streen I Garver Garver Grand + Colle Jall herbaccons vig dasien 2 of grants front 2 of grants front	

Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

	SITE NAME/LOCATION Stream 3 - Duke	ke Energy: Columbia Substation	
		RIVER BASIN Little Miami River DRAINAGE AREA (mi²)	<1
	LENGTH OF STREAM REACH (ft) 75	LAT 39.363028 LONG -84.221885 RIVER CODE N/A RIVER MILE	N/A
	DATE 7/5/2018 SCORER Danielle	e K. Thompson COMMENTS	
	NOTE: Complete All Items On This Form -	- Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	3
	STREAM CHANNEL X NONE / NATURAL	L CHANNEL RECOVERED RECOVERING RECENT OR I	NO RECOVERY
	MODIFICATIONS:		
			1
1.		rate present. Check ONLY 2 predominant substrate TYPE boxes (Max of 40).	HHEI
	<u> </u>	types found (Max of 8). Final metric score is A + B. PERCENT TYPE PERCENT	Metric
	BLDR SLABS [16 pts]	X SILT [3 PTS] 45	Points
	X BOULDER (>256mm) [16 pts]	40 LEAF PACK/WOODY DEBRIS [3 PTS]	
	BEDROCK [16 PTS]	FINE DETRITUS [3 PTS]	Substrate
	COBBLE (65-256mm) [12 pts]	CLAY or HARDPAN [0 PT]	Max = 40
	GRAVEL (2-64mm) [9 pts]	10 MUCK [0 PT]	1 —
	SAND (<2mm) [6 pts]	5 ARTIFICIAL [3 PTS]	23
	Total of Percentages of Bldr	(A) (B)	23
	Slabs, Boulder, Cobble, & Bedrock	<u>40</u> 19 4	
S	SCORE OF 2 MOST PREDOMINANT SUBSTRA	ATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	A + B
_			
2.	• •	imum pool depth within the 61m (200') evaluation reach at the time of I culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
	>30 centimeters [20 pts]	>5 cm - 10 cm [15 pts]	With a se
	>22.5 - 30 cm [30 pts]	<5 cm [5 pts]	
	×10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	25
	COMMENTS	MAXIMUM POOL DEPTH (centimeters):	
2	RANK FILL WIDTH (Measured as the aver	rage of 3-4 measurements) (Check ONLY one hov):	Bankfull
3.		rage of 3-4 measurements) (Check ONLY one box):	Bankfull Width
3.	>4.0 meters (>13') [30 pts]	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts]	
3.		>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] ≤1.0 m (≤ 3'3") [5 pts]	Width Max = 30
3.	>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] \leq 1.0 m (\leq 3'3") [5 pts]	Width
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3.	>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] $ \le 1.0 \text{ m } (\le 3'3") \text{ [5 pts]} $ AVERAGE BANKFULL WIDTH (meters) $ 0.6 $ This information $ \underline{\text{must}} $ also be completed	Width Max = 30
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3.	>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN Q RIPARIAN WIDTH (Per Bank) L R (Per Bank) Wide >10m	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] \$\leq 1.0 m \leq 3'3"\rightarrow [5 pts] \\ AVERAGE BANKFULL WIDTH (meters) This information must also be completed QUALITY * NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY R (Most Predominant per Bank) Mature Forest, Wetland Conservation T	Width Max = 30 5
3.	>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN Q RIPARIAN WIDTH (Per Bank) L R	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] \$\leq 1.0 m \leq 3'3"\rightarrow [5 pts] \\ AVERAGE BANKFULL WIDTH (meters) This information must also be completed QUALITY * NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY R (Most Predominant per Bank) L R	Width Max = 30 5
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3.	>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN Q RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] ≤1.0 m (≤ 3'3") [5 pts] AVERAGE BANKFULL WIDTH (meters) This information must also be completed QUALITY * NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub, or Old Field Residential, Park, New Field O.6 Urban or Indus Open Pasture,	Width Max = 30 5
3.	>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN Q RIPARIAN WIDTH (Per Bank) L R Wide >10m Moderate 5-10m Narrow <5m None Comments FLOW REGIME (At Time of Evaluation	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] ≤1.0 m (≤ 3'3") [5 pts] AVERAGE BANKFULL WIDTH (meters) This information must also be completed QUALITY * NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Conservation T Immature Forest, Shrub, or Old Field Urban or Indus Residential, Park, New Field Open Pasture, Fenced Pasture Mining or Conservation T (Check ONLY one box):	Width Max = 30 5 iillage trial Row Crop struction
3.	>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN Q RIPARIAN WIDTH (Per Bank) L R Wide >10m Moderate 5-10m Narrow <5m None Comments	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] ≤1.0 m (≤ 3'3") [5 pts] AVERAGE BANKFULL WIDTH (meters) This information must also be completed QUALITY * NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub, or Old Field Residential, Park, New Field Fenced Pasture (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent)	Width Max = 30 5 iillage trial Row Crop struction
3.	>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] ≤1.0 m (≤ 3'3") [5 pts] AVERAGE BANKFULL WIDTH (meters) This information must also be completed QUALITY * NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Wetland Immature Forest, Shrub, or Old Field Residential, Park, New Field Fenced Pasture (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent)	Width Max = 30 5 iillage trial Row Crop struction
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3.	>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN Q RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None Comments FLOW REGIME (At Time of Evaluation Stream Flowing Subsurface flow with isolated pools (I Comments SINUOSITY (Number of bends per 61r None	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] ≤1.0 m (≤ 3'3") [5 pts] AVERAGE BANKFULL WIDTH (meters) This information must also be completed QUALITY * NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY R (Most Predominant per Bank) I Mature Forest, Wetland I Immature Forest, Wetland Residential, Park, New Field Fenced Pasture (Conservation T Urban or Indus Residential, Park, New Field Fenced Pasture (Check ONLY one box): Dry channel, isolated pools, no flow (Intermittent) Interstitial) (Check ONLY one box): 1.0 (Check ONLY one box): 1.0 3.0	Width Max = 30 5 iillage trial Row Crop struction
3.	>4.0 meters (>13') [30 pts] >3.0 m - 4.0 m (>9'7" - 13') [25 pts] >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts] COMMENTS RIPARIAN ZONE AND FLOODPLAIN Q RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None Comments FLOW REGIME (At Time of Evaluation Stream Flowing Subsurface flow with isolated pools (I Comments) SINUOSITY (Number of bends per 61r	>1.0 m - 1.5 m (>3'3" - 4'8") [15 pts] AVERAGE BANKFULL WIDTH (meters) This information must also be completed QUALITY * NOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub, or Old Field Residential, Park, New Field Fenced Pasture Mining or Cons (Check ONLY one box): Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	Width Max = 30 5 iillage trial Row Crop struction
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ADDITIO	NAL STREAM INFORMATION (This Information Must Also be Completed): Str	eam 3
(QHEI PERFORMED? Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)	
I	DOWNSTREAM DESIGNATED USE(S)	
☑ WWH	Name: Little Miami River Distance from Evaluated Stream 1200 LF	
☐ CWH	Name: Distance from Evaluated Stream	
☐ EWH	Name: Distance from Evaluated Stream	
1	MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quad	rangle Name: South Lebanon (OH) NRCS Soil Map Page: N/A NRCS Soil Map Stream Order N/A	
County:	Warren Township/City: Hamilton Township	
Ī	MISCELLANEOUS	
Base Flow C	Conditions? (Y/N): Y Date of last precipition: 7/3/2018 Quantity: 0.1	
Photograph	ner Information: 2 Photos	
Elevated Tu	urbidity? (Y/N): N Canopy (% open): 100	
Were samp	oles collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number	
Field Measu	ures: Temp (°C) N/A Dissolved Oxygen (mg/l) N/A pH (S.U.) N/A Conductivity (μmhos/cm)	N/A
Is the samp	oling reach representative of the stream? (Y/N) N If not, please explain: Sampling reach only within the	100
foot corrido	or and may not indicate the entire stream characteristics	
Additional o	comments/description of pollution impacts	
Frogs or Tac	(Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with to ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual) red? (Y/N N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) Regarding Biology	
Inc	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location	
FLOW	Main bound Pow burba com vegetation	

Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

67

	SITE NAME/LOCATION Stream 4 - Duke Energy: Columbia Substation	
	SITE NUMBER Stream 4 RIVER BASIN Little Miami River DRAINAGE AREA (mi²)	<1
	LENGTH OF STREAM REACH (ft) 75 LAT 39.363028 LONG -84.221885 RIVER CODE N/A RIVER MILE	N/A
	DATE 7/5/2018 SCORER Danielle K. Thompson COMMENTS	
	NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
	STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED X RECOVERING RECENT OR NO	RECOVERY
	MODIFICATIONS:	
1.	SUBSTRATE (Est. % of every type of substrate present. Check ONLY 2 predominant substrate TYPE boxes (Max of 40).	HHEI
	Add total number of significant substrate types found (Max of 8). Final metric score is A + B. TYPE PERCENT TYPE PERCENT	Metric
	BLDR SLABS [16 pts] [X] SILT [3 PTS] 65	Points
	X BOULDER (>256mm) [16 pts] 30 LEAF PACK/WOODY DEBRIS [3 PTS]	
	BEDROCK [16 PTS]	Substrate
	COBBLE (65-256mm) [12 pts] 5 CLAY or HARDPAN [0 PT]	Max = 40
	GRAVEL (2-64mm) [9 pts]	
	SAND (<2mm) [6 pts] ARTIFICIAL [3 PTS]	22
	Total of Percentages of Bldr (A) (B)	22
	Slabs, Boulder, Cobble, & Bedrock 35 19	
5	SCORE OF 2 MOST PREDOMINANT SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	A + B
2.	Maximum Pool Depth (Measure the maximum pool depth within the 61m (200') evaluation reach at the time of	Pool Depth
	evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 30
	>30 centimeters [20 pts] >5 cm - 10 cm [15 pts]	
	>22.5 - 30 cm [30 pts] <5 cm [5 pts]	25
	>10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	25
	COMMENTS MAXIMUM POOL DEPTH (centimeters): 15	
3.	BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
	>4.0 meters (>13') [30 pts] >1.0 m - 1.5 m (>3'3" - 4'8") [15 pts]	Width
	>3.0 m - 4.0 m (>9'7" - 13') [25 pts] ≤1.0 m (≤ 3'3") [5 pts]	Max = 30
	>1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]	
	2.1	20
	COMMENTS AVERAGE BANKFULL WIDTH (meters)	
	This information <u>must</u> also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream	
	RIPARIAN WIDTH FLOODPLAIN QUALITY	
	L R (Per Bank) L R (Most Predominant per Bank) L R	
	Wide >10m	-
	Moderate 5-10m	
		w crop
	None Fenced Pasture Mining or Constru	ıction
	Comments Fenced Pasture Mining or Constru	uction
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	uction
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	uction
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	uction
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Comments Dry channel, no water (Ephemeral)	uction
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Comments SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box):	uction
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Comments Dry channel, no water (Ephemeral)	uction
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Comments SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	uction
	Comments FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Comments SINUOSITY (Number of bends per 61m (200ft) of channel) (Check ONLY one box): None 1.0 3.0	

ADDITIO	NAL STREAM INFORMATION (This Information Must Also be Completed): Stream	n 4
	QHEI PERFORMED? ☐ Yes ☑ No QHEI Score (If Yes, Attach Completed QHEI Form)	
	DOWNSTREAM DESIGNATED USE(S)	
☑ WWH	Name: Little Miami River Distance from Evaluated Stream 1200 LF	
☐ CWH	Name: Distance from Evaluated Stream	
☐ EWH	Name: Distance from Evaluated Stream	
	MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Qua	drangle Name: South Lebanon (OH) NRCS Soil Map Page: N/A NRCS Soil Map Stream Order N/A	
County:	Warren Township/City: Hamilton Township	
	MISCELLANEOUS	
Base Flow	Conditions? (Y/N): Y Date of last precipition: 7/3/2018 Quantity: 0.1	
Photograp	her Information: 2 Photos	
Elevated T	urbidity? (Y/N): N Canopy (% open): 100	
Were sam	ples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number	
Field Meas	sures: Temp (°C) N/A Dissolved Oxygen (mg/l) N/A pH (S.U.) N/A Conductivity (μmhos/cm) N	/A
Is the sam	pling reach representative of the stream? (Y/N) N If not, please explain: Sampling reach only within the 100)
foot corrid	or and may not indicate the entire stream characteristics	
Additional	comments/description of pollution impacts	
Fish obser Frogs or Ta	? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the si ID number. Include appopriate field data sheets from the Primary Hedwater Habitat Assessment Manual) ved? (Y/N N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N	N
In	clude important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location	_
FLOW	MAINTANIA CON-Herbacens Vegetya m RIPAP SILI RIPAP RIPAP	

DUKE ENERGY 5484 – 138kV Columbia Substation

APPENDIX



OHIO RAPID ASSESSMENT METHOD 5.0 FORM AND USACE WETLAND DELINEATION DATA SHEETS

010 1111 1 3.	o i icia i oili	Quantitutive nating				
Site:	Wetland	1 - RFO	Rater(s):	D.K. Thompson	Date:	July 5, 201
2 max 6 pts.	2 subtotal	Metric 1. Wetland Area (size). Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pt) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) X 0.3 to <3 acres (0.12 to <1.2ha) (2 pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pts) <0.1 acres (0.04ha) (0 pts)		Duke Energy: Columb	ia Substation	
14	16			land		
max 14 pts.	subtotal	Metric 2. Upland buffers and su 2a. Calculate average buffer width. Select only of the control	one and assign so more around w Om (82 to <164ft 5m (32ft to <82ft) around e or double chec t, prairie, savann , young second g ed pasture, park	core. Do not double check. retland perimeter (7) c) around wetland perimeter (4) it) around wetland perimeter (1) wetland perimeter (0) ck and average. nah, wildlife area, etc. (7) growth forest. (5) c, conservation tillage, new fallo		
24	40	Metric 3. Hydrology				
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface water (1) Perennial surface water (lake or stream) 3c. Maximum water depth. Select only one and >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime. X None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	n) (5) assign score.	X Part of wetland/i X Part of riparian of semi- to perman X Regularly inunda Seasonally inund Seasonally satura uble check and average. point source (r filling/grading road bed/RR tr dredging	ain (1) /lake and other human use upland (e.g. forest), compl or upland corridor (1) ration. Score one or dbl ch ently inundated/saturated ted/saturated (3) ated (2) ated in upper 30cm (12in) nonstormwater)	ex (1) neck. I (4)
16	56	Metric 4. Habitat Alteration and D	evelopmen	ıt.		
max 20 pts.	subtotal 56	4a. Substrate disturbance. Score one or double X None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and a Excellent (7) Very good (6) Good (5) Moderately good (4) X Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double checome or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	ssign score.	s observed shrub/sapling in herbaceous/ac sedimentation	quatic bed removal	
SI	ubtotal this page	. 	woody debris toxic pollutant	removal farming	nment	

Site:	Wetland	1 - RFO		Rater(s):	D.K. Thompson	Date:	July 5, 2018
	-2			Site:	Duke Energy: Colu	ımbia Substation	
	subtotal th	is page			<u> </u>		
		Metric	5. Special Wetlands				
nax 10 p	t: subtotal	Check all	that apply and score as indicated.				
			Bog (10) Fen (10)				
			Old growth forest (10)				
			Mature forested wetland (5)				
			Lake Erie coastal/tributary wetland-ui Lake Erie coastal/tributary wetland-re	•			
			Lake Plain Sand Prairies (Oak Opening		Sy (3)		
			Relict Wet Prairies (10)				
		-	Known occurrence state/federal threa Significant migratory songbird/water				
			Category 1 Wetland. See Question 1		• , ,		
			Not Applicable (0)				
2	1						
-2	-2	Metric	6. Plant communities, inte	rspersion, n	nicrotopograhy.		
nax 20 p	t: subtotal	6a. Wetla	and Vegetation Communities.	Vegetation Co	mmunity Cover Scale		
		Score all p	present using 0 to 3 scale.	0		rises <0.1ha (0.2471 acres)	
		1	Aquatic bed Emergent	1		er comprises small part of and is of moderate quality	
			Shrub	-	=	part but is of low quality	, or comprises a
			Forest		Present and eith	er comprises significant pa	
			Mudflats	2	_	and is of moderate quality	or comprises a small
			Open water Other			of high quality pprises significant part, or	more, of wetland's
		6b. Horiz	ontal (plan view) Interspersion.	3		and is of high quality	
		Select onl	-	Name II as Dan		P1	
			High (5) Moderately high (4)	Narrative Des	cription of Vegetation Qual	ity y and/or predominance of	
					II ow snn diversity		nonnative or
			Moderate (3)	low		y and/or predominance of tolerant native species	nonnative or
			Moderate (3) Moderately low (2)	low	disturbance Native spp are de	tolerant native species ominant component of the	e vegetation,
		X	Moderate (3) Moderately low (2) Low (1)		disturbance Native spp are de although no	tolerant native species ominant component of the onnative and/or disturband	e vegetation, ce tolerant native spp
			Moderate (3) Moderately low (2) Low (1) None (0)	low	disturbance Native spp are d although no can also be	tolerant native species ominant component of the onnative and/or disturband present, and species diver	e vegetation, ce tolerant native spp rsity moderate to
		6c. Cover	Moderate (3) Moderately low (2) Low (1)		disturbance Native spp are di although no can also be moderately	tolerant native species ominant component of the onnative and/or disturband	e vegetation, ce tolerant native spp rsity moderate to
		6c. Cover to Table 1 or deduct	Moderate (3) Moderately low (2) Low (1) None (0) rage of invasive plants. Refer L ORAM long form for list. Add points for coverage		disturbance Native spp are diversely although no can also be moderately threatened A predominance	tolerant native species ominant component of the omnative and/or disturband present, and species diver high, but generally w/o p or endangered spp of native species, with no	e vegetation, ce tolerant native spp rsity moderate to resence of rare innative spp
		6c. Cover to Table 1 or deduct	Moderate (3) Moderately low (2) Low (1) None (0) rage of invasive plants. Refer LORAM long form for list. Add points for coverage Extensive >75% cover (-5)		disturbance Native spp are di although no can also be moderately threatened A predominance and/or distu	tolerant native species ominant component of the componen	e vegetation, ce tolerant native spp rsity moderate to resence of rare innative spp p absent or virtually
		6c. Cover to Table 1 or deduct	Moderate (3) Moderately low (2) Low (1) None (0) rage of invasive plants. Refer LORAM long form for list. Add points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3)	mod	disturbance Native spp are disalthough no can also be moderately threatened A predominance and/or distuabsent, and	tolerant native species ominant component of the componen	e vegetation, ce tolerant native spp rsity moderate to resence of rare ennative spp p absent or virtually en, but no always,
		6c. Cover to Table 1 or deduct	Moderate (3) Moderately low (2) Low (1) None (0) rage of invasive plants. Refer LORAM long form for list. Add points for coverage Extensive >75% cover (-5)	mod	disturbance Native spp are disalthough no can also be moderately threatened A predominance and/or distuabsent, and	tolerant native species ominant component of the componen	e vegetation, ce tolerant native spp rsity moderate to resence of rare ennative spp p absent or virtually en, but no always,
		6c. Cover to Table 1 or deduct	Moderate (3) Moderately low (2) Low (1) None (0) rage of invasive plants. Refer LORAM long form for list. Add points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)	mod high Mudflat and C	disturbance Native spp are disable although no can also be moderately threatened A predominance and/or distuabsent, and the presence	tolerant native species ominant component of the principle of the principle of the principle of the present, and species diver high, but generally w/o p or endangered spp of native species, with no urbance tolerant native sphigh spp diversity and of the of rare, threatened, or expended.	e vegetation, ce tolerant native spp rsity moderate to resence of rare ennative spp p absent or virtually en, but no always,
		6c. Cover to Table 1 or deduct X	Moderate (3) Moderately low (2) Low (1) None (0) rage of invasive plants. Refer L ORAM long form for list. Add points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)	mod	disturbance Native spp are disturbance although no can also be moderately threatened A predominance and/or disturbance, and the presence Open Water Class Quality Absent <0.1ha (0.1ha (tolerant native species ominant component of the principle of the present, and species diver high, but generally w/o por endangered sppor of native species, with nour bance tolerant native sphigh spp diversity and off the principle of rare, threatened, or expecies of the principle of the princi	e vegetation, ce tolerant native spp rsity moderate to resence of rare rnnative spp p absent or virtually en, but no always, endangered spp
		6c. Cover to Table 1 or deduct X A 6d. Micro Score all	Moderate (3) Moderately low (2) Low (1) None (0) rage of invasive plants. Refer LORAM long form for list. Add points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) topography. present using 0 to 3 scale.	mod high Mudflat and C	disturbance Native spp are disturbance although no can also be moderately threatened A predominance and/or disturbance, and the presence open Water Class Quality Absent <0.1ha (Control of the present very small very small of the present very small very small of the present very small very	tolerant native species ominant component of the principle of the principle of the principle of the principle of the present, and species diver high, but generally w/o por endangered sppor of native species, with no urbance tolerant native sphigh spp diversity and off the principle of rare, threatened, or expected of the principle of the princi	e vegetation, ce tolerant native spp rsity moderate to resence of rare rnnative spp p absent or virtually en, but no always, endangered spp
		6c. Cover to Table 1 or deduct X	Moderate (3) Moderately low (2) Low (1) None (0) rage of invasive plants. Refer L ORAM long form for list. Add points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)	high Mudflat and C	disturbance Native spp are disturbance although no can also be moderately threatened A predominance and/or disturbance, and the presence open Water Class Quality Absent <0.1ha (Control of the present very small of marginal)	tolerant native species ominant component of the principle of the principle of the principle of the principle of the present, and species diver high, but generally w/o por endangered sppor of native species, with no urbance tolerant native sphigh spp diversity and off the principle of rare, threatened, or expected of the principle of the princi	e vegetation, ce tolerant native spp rsity moderate to resence of rare rnnative spp p absent or virtually en, but no always, endangered spp
		6c. Cover to Table 1 or deduct X 6d. Micro Score all p 0 1 0	Moderate (3) Moderately low (2) Low (1) None (0) rage of invasive plants. Refer LORAM long form for list. Add points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) otopography. present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	high Mudflat and C	disturbance Native spp are disable although no can also be moderately threatened A predominance and/or distuabsent, and the presence Open Water Class Quality Absent <0.1ha (Control of marginal Present in mode quality or in	tolerant native species ominant component of the common of	e vegetation, ce tolerant native spp rsity moderate to resence of rare mnative spp p absent or virtually en, but no always, endangered spp
		6c. Cover to Table 1 or deduct X 6d. Micro Score all p 0 1 0	Moderate (3) Moderately low (2) Low (1) None (0) rage of invasive plants. Refer LORAM long form for list. Add points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) topography. present using 0 to 3 scale. Vegetated hummocks/tussocks Coarse woody debris >15cm (6in)	high Mudflat and C	disturbance Native spp are disable although no can also be moderately threatened A predominance and/or distuabsent, and the presence Open Water Class Quality Absent <0.1ha (Control of marginal Present in mode quality or in	tolerant native species ominant component of the commant component of the commant of the command of the commant of the command	e vegetation, ce tolerant native spp rsity moderate to resence of rare mnative spp p absent or virtually en, but no always, endangered spp

54 Grand Total (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Comments:

Site:	Wetland	2 - PEM	Rater(s):	D.K. Thompson	Date:	July 5, 201
O max 6 pts.	Osubtotal	Metric 1. Wetland Area (size). Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2 pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pts) X <0.1 acres (0.04ha) (0 pts)	,	Duke Energy: Colum	nbia Substation	
6 max 14 pts.	6 subtotal	Metric 2. Upland buffers and sur 2a. Calculate average buffer width. Select only on WIDE. Buffers average 50m (164ft) or a MEDIUM. Buffers average 25m to <50r X NARROW. Buffers average 10m to <25r VERY NARROW. Buffers average <10m 2b. Intensity of surrounding land use. Select one VERY LOW. 2nd growth or older forest, X LOW. Old field (>10 years), shrubland, MODERATELY HIGH. Residential, fence HIGH. Urban, industrial, open pasture,	ne and assign so more around w m (82 to <164fi m (32ft to <82fi (<32ft) around or double checo prairie, savant young second pasture, park	ore. Do not double check. etland perimeter (7)) around wetland perimeter t) around wetland perimeter wetland perimeter (0) k and average. hah, wildlife area, etc. (7) growth forest. (5) , conservation tillage, new fa	(1)	
14 max 30 pts.	subtotal	Metric 3. Hydrology 3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream stream water depth. Select only one and a selection of the s) (5) assign score.	Part of wetlar Part of riparia 3d. Duration inundation/sa Semi- to perm Regularly inur X Seasonally inu Seasonally sat uble check and average. bbserved point source X filling/gradi road bed/R dredging	dplain (1) am/lake and other human nd/upland (e.g. forest), co on or upland corridor (1) aturation. Score one or d nanently inundated/satur ndated/saturated (3) undated (2) turated in upper 30cm (1: e (nonstormwater) ng	omplex (1) bl check. ated (4)
10 max 20 pts.	30 subtotal 30 subtotal this page	Recovered (6) X Recovering (3) Recent or no recovery (1)	heck and avera	s observed shrub/saplii herbaceous sedimentat dredging removal farming	s/aquatic bed removal ion	

	Wetlan	d 2 - PEM	Rater(s):	D.K. Thompson	Date:	July 5, 2018
	1		Site:	Duke Energy: Colur	mbia Substation	
	subtotal th	is page				
nax 10 pi	ts subtotal	Metric 5. Special Wetlands Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Eric coastal/tributary wetland-	-			
		Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Openir Relict Wet Prairies (10) Known occurrence state/federal thr Significant migratory songbird/wate Category 1 Wetland. See Question 1 Not Applicable (0)	ngs) (10) eatened or endan r fowl habitat or u	gered species (10) sage (10)		
1	1	Metric 6. Plant communities, int	erspersion, r	nicrotopograhy.		
nax 20 p	subtotal	6a. Wetland Vegetation Communities.		ommunity Cover Scale		
		Score all present using 0 to 3 scale.	0		ses <0.1ha (0.2471 acre	
		Aquatic bed 1 Emergent	1		r comprises small part on r comprises small part on r comprises small part of r comprises small par	
		Shrub			art but is of low quality	
		Shrub Forest Mudflats Open water	2	Present and eithe	art but is of low quality r comprises significant p nd is of moderate qualit	part of wetland's
		Forest Mudflats Open water Other 6b. Horizontal (plan view) Interspersion.	2	Present and eithe vegetation a part and is of Present and comp	art but is of low quality r comprises significant p nd is of moderate qualit	part of wetland's cy or comprises a small
		Forest Mudflats Open water Other 6b. Horizontal (plan view) Interspersion. Select only one.	3	Present and eithe vegetation a part and is of Present and comp vegetation a	art but is of low quality or comprises significant part of its of moderate quality or see significant, or not see significant part, or not is of high quality	part of wetland's cy or comprises a small
		Forest Mudflats Open water Other 6b. Horizontal (plan view) Interspersion.	3	Present and eithe vegetation al part and is of Present and comp vegetation al cription of Vegetation Qualit Low spp diversity	art but is of low quality or comprises significant part of its of moderate quality or see significant, or not see significant part, or not is of high quality	part of wetland's ry or comprises a small r more, of wetland's
		Forest Mudflats Open water Other 6b. Horizontal (plan view) Interspersion. Select only one. High (5) Moderately high (4) Moderatel (3) Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer	3 Narrative Des	Present and eithe vegetation as part and is of Present and comp vegetation as cription of Vegetation Quality Low spp diversity disturbance to Native spp are do although nor can also be p moderately h	art but is of low quality or comprises significant part of is of moderate quality or is significant part, or individual is of high quality or is of the individual is of high quality or is of the individual is of high part of the individual is of high part of high	part of wetland's by or comprises a small or more, of wetland's of nonnative or the vegetation, the vegetation of the ve
		Forest Mudflats Open water Other 6b. Horizontal (plan view) Interspersion. Select only one. High (5) Moderately high (4) Moderate (3) Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	3 Narrative Des	Present and eithe vegetation as part and is of Present and comp vegetation as cription of Vegetation Qualit Low spp diversity disturbance to A predominance of and/or disturbance to and/or disturbanc	art but is of low quality or comprises significant part of high quality or seem or see	oart of wetland's by or comprises a small or more, of wetland's of nonnative or the vegetation, note tolerant native spp tersity moderate to presence of rare onnative spp pp absent or virtually ften, but no always,
		Forest Mudflats Open water Other 6b. Horizontal (plan view) Interspersion. Select only one. High (5) Moderately high (4) Moderate (3) Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0)	Narrative Des low	Present and eithe vegetation at part and is of Present and comp vegetation at cription of Vegetation Quality Low spp diversity disturbance to Native spp are do although nor can also be p moderately by threatened of A predominance of and/or disturbance and/or disturbance to the presence of the presence of the part of	art but is of low quality or comprises significant part of is of moderate quality or ises significant part, or ind is of high quality or ises significant part, or ind is of high quality or ises significant part, or ind is of high quality or ises significant part, or individually or ises significant part, or individually or is of high quality or is of individually or is of individually or is of individually or is of individually or individuall	oart of wetland's by or comprises a small or more, of wetland's of nonnative or the vegetation, note tolerant native spp tersity moderate to presence of rare onnative spp pp absent or virtually ften, but no always,
		Forest Mudflats Open water Other 6b. Horizontal (plan view) Interspersion. Select only one. High (5) Moderately high (4) Moderate (3) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) Absent (1)	Narrative Des low mod	Present and eithe vegetation as part and is of Present and comp vegetation as of Present and Presence of Present and Present and Presence of Present and Pre	art but is of low quality or comprises significant part of is of moderate quality or ises significant part, or individual to the fight quality or ises significant part, or individual to the fight quality or ises significant part, or individual to the fight quality or ises of the fight quality or ises of the fight quality and or endangered spoor endangered endangered endangered endangered endangered endangered e	oart of wetland's by or comprises a small or more, of wetland's of nonnative or the vegetation, note tolerant native spp tersity moderate to presence of rare onnative spp pp absent or virtually ften, but no always,
		Forest Mudflats Open water Other 6b. Horizontal (plan view) Interspersion. Select only one. High (5) Moderately high (4) Moderate (3) Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.	Narrative Des low	Present and eithe vegetation as part and is of Present and compart	art but is of low quality or comprises significant part of is of moderate quality or ises significant part, or ind is of high quality or ises significant part, or ind is of high quality or ises significant part, or ind is of high quality or ises significant part, or individually or predominance of tolerant native species minant component of the individual of its individ	part of wetland's by or comprises a small or more, of wetland's of nonnative or the vegetation, the vegetation, the tolerant native spp tersity moderate to presence of rare onnative spp pp absent or virtually ften, but no always, endangered spp
		Forest Mudflats Open water Other 6b. Horizontal (plan view) Interspersion. Select only one. High (5) Moderately high (4) Moderate (3) Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography.	Narrative Des low mod high	Present and eithe vegetation as part and is of Present and compart	art but is of low quality or comprises significant part of is of moderate quality or ises significant part, or ind is of high quality or ises significant part, or ind is of high quality or ises significant part, or ind is of high quality or ises significant part, or individually or predominance of tolerant native species minant component of the individual of its individ	part of wetland's by or comprises a small or more, of wetland's of nonnative or the vegetation, the vegetation, the tolerant native spp tersity moderate to presence of rare onnative spp pp absent or virtually fiten, but no always, endangered spp mmon thighest

31 Grand Total (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Comments:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site:	Duke Energy: Colu	mbia Subst	tation - Wetland	1			City/County	: Union Twp, W	arren Count	Sampling Date: 7/5/2018
Applicant/Owner:	Duke Energy						State	: OH	Sampling Point:	DP1
Investigator(s):	Danielle K. Thomps	on; James	Crumpler					Section, Townsh	hip, Range: n/a	
Landform (hillslope,	terrace, etc.):		Oxbow		-		<u>-</u>	Loc	al relief (concave, convex, none)	g: concave
Slope (%):	2%	Lat	:	39.3675	42		Long:		-84.225674	Datum: NAD83 UTM16N
Soil Map Unit Name	: Riverwash			<u> </u>					NWI clas	ssification: none
Are climatic / hydrol	ogic conditions on the	e site typica	al for this time of	year?			Yes	X No	(If no, explain in Remarks	s.)
Are Vegetation	·	, Soil		, or Hydrology	N	significantly dist			nal Circumstances" present?	Yes X No
Are Vegetation	N	, Soil		, or Hydrology	N	naturally proble			d, explain any answers in Remarl	
				g sampling point		_			-,,,	,
			map snowing			_				
Hydric Soil Pres	jetation Present?			Yes X Yes X	_	10 		Sampled A		y No
Wetland Hydrold				Yes X		10 	WILIIII	i a vvetianu	? Yes	<u>x</u> No
	ogy i resent:			103 <u>X</u>	- '					
Remarks: VEGETATION -	- Use scientific	names o	f plants.							
VEGETATION	CCC COICILLIIC	11411100 0	· piantoi			Absolute	Dominant	Indicator		
Tree Stratum (Plot	size: 30' radius)					% Cover	Species?	Status	Dominance Test worksheet	t:
1. None								UPL	•	
2.									Number of Dominant Species	3
3.									That Are OBL, FACW, or FAC	C: 2 (A)
4.										
5.		-							Total Number of Dominant	
							= Total Cover		Species Across All Strata:	(B)
	um (Plot size: 15' rad	dius)							Percent of Dominant Species	
1. None								UPL	That Are OBL, FACW, or FAC	C: 100% (A/B)
2										
3.										
4									Prevalence Index workshee	t:
5.										AA 1851 I
							= Total Cover		Total % Cover of: That Are OBL, FACW, or FAC	Multiply by: C: A/B
Herb Stratum (Plot	eize: 5' radiue)								OBL species 5%	
Phalaris arundir				_		80%	Yes	FACW	FACW species 90%	
Impatiens cape						10%	No No	FACW	FAC species 35%	
Carex frankii	10.00					5%	No	OBL	FACU species	x4 =
4. Toxicodendron	radicans					5%	No	FAC	UPL species	x5 =
5. Ficaria verna						30%	Yes	FAC	Column Totals: 1.30	
6.						_				
7.						_			Prevalence Index :	= B/A = 2.23
8.									•	
9.										
10.									Hydrophytic Vegetation Ind	licators:
11.										
12.						_			1-Rapid Test for Hyd	Irophytic Vegetation
13.									X 2-Dominance Test is	
14.									X 3-Prevalence Index	
15.						_			· ——	aptations ¹ (Provide supporting
16.						_				on a separate sheet)
17.									Problematic Hydrop	hytic Vegetation ¹ (Explain)
18.										
19									Indicators of hydric soil and v	
20									be present, unless disturbed	or problematic.
						130%	= Total Cover			
	(D)									
	n (Plot size: 30' radi	us)						1151	Hydrophytic	
1. None						_		UPL	Vegetation	. V. N.
2						_	Total O:	-	Present? Yes	s_X_ No
						-	= Total Cover			
Pomorke: /landu-t-	nhoto numbers he	or on a ac-	arata chast \						1	
nemarks: (include	photo numbers here	or on a sep	arate SNeet.)							
<u> </u>										

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Reatures (inches) Color (moist) % Color (moist) % Color (moist) % Sye Pi Loc Toutro Remarks O-16" 10YR 4/2 90 10YR 4/8 10 C M Sandy Leam Sand and Gravel inclusions Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion, RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Type: CoConcentration, Di-Depletion RMi-Reduced Matrix, CS-Covered or Coated Sand Grains. Ty								Sam	ppling Point: DP1		
Color (moist) % Color (moist) % Color (moist) % Type Loc Texture Remarks	Profile Desc	cription: (Describe to the	ne depth neede			nfirm the al	osence of	indicators.)			
C-16* 10YR 4/2 90	•							_			
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Test Indicators Test Indicators of Hydric Solis: Histosol (A1) Sandy Gleyed Matrix (S4) Histosol (A2) Sandy Redox (S5) Very Shallow Dark Surface (F22) Hydrogen Sulfide (A4) Dark Surface (S7) Community Mineral (F1) Loarny Mucky Mineral (F1) Depleted Below Dark Surface (A12) Thick Dark Surface (A12) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Depleted Depleted Depleted Matrix (F2) Depleted Matrix (F2) Depleted Depleted Matrix (F2)	(inches)	Color (moist)	_	Color (moist)	%		Loc ²	Texture	Remarks		
Hydric Soil Indicators*: Histoscl (A1) Histo Epipedon (A2) Black Histic (A3) Sandy Gleyed Matrix (S6) Stripped Matrix (S7) Stripped Matrix (S7) Stripped Matrix (S7) Thick Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Secondary Indicators in the United States of Hydric Soils in the United States, Version 8.0, 2016. Restrictive Layer (if observed): Type: Secondary Indicators (minimum of one is required: check all that apply) Remarks: Hydric Soil Present? Yes X No Water-Stained Leaves (B9) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Saturation (A3) True Aquatic Plana (B13) Saturation (A3) Saturation (A3) X Water Marks (B1) Hydrogen Sulfiade Odor (C1) Algal Mat or Crust (B4) Fresent Present? Yes X No Depth (inches): Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Perplace (T7) Surface Soil Cracks (B6) Surface S	0-16"	10YR 4/2	90	10YR 4/6	10	C	М	Sandy Loam	Sand and Gravel inclusions		
Hydric Soil Indicators¹: Histosol (A1) Histosol (A2) Black Histor (A3) Sandy Redox (55) Stratified Layers (A5) Stratified Layers (A5) Depleted Below Dark Surface (F22) Depleted Below Dark Surface (A12) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (F1) Ze om Muck (A10) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (S1) Depleted Deark Surface (A12) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3) Secondary Indicators in in the United States, Version 8.0, 2016. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Wetand Hydrology Indicators: Wetand Hydrology Indicators: Water Table (A2) Aquatic Fauna (B13) Saturation (A3) Tuck Aquatic Plants (B14) Saturation (A3) Saturation (A3) Fersence Aquatic Plants (B14) Aquatic Fauna (B13) Dary Season Water Table (C2) Sadiment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Algal Mat or Crust (B4) Indicators (B3) Field Observations: Surface Water Present? Yes X No Depth (inches): Depth (inches): A Depth (inches): Depth (inches): Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) S											
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Hydric Soil Indicators¹: Histosol (A1) Histosol (A2) Black Histor (A3) Sandy Redox (55) Stratified Layers (A5) Stratified Layers (A5) Depleted Below Dark Surface (F22) Depleted Below Dark Surface (A12) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (F1) Ze om Muck (A10) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (S1) Depleted Deark Surface (A12) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3) Secondary Indicators in in the United States, Version 8.0, 2016. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Wetand Hydrology Indicators: Wetand Hydrology Indicators: Water Table (A2) Aquatic Fauna (B13) Saturation (A3) Tuck Aquatic Plants (B14) Saturation (A3) Saturation (A3) Fersence Aquatic Plants (B14) Aquatic Fauna (B13) Dary Season Water Table (C2) Sadiment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Algal Mat or Crust (B4) Indicators (B3) Field Observations: Surface Water Present? Yes X No Depth (inches): Depth (inches): A Depth (inches): Depth (inches): Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) S								·			
Hydric Soil Indicators¹: Histosol (A1) Histosol (A2) Black Histor (A3) Sandy Redox (55) Stratified Layers (A5) Stratified Layers (A5) Depleted Below Dark Surface (F22) Depleted Below Dark Surface (A12) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (F1) Ze om Muck (A10) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (S1) Depleted Deark Surface (A12) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3) Secondary Indicators in in the United States, Version 8.0, 2016. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Wetand Hydrology Indicators: Wetand Hydrology Indicators: Water Table (A2) Aquatic Fauna (B13) Saturation (A3) Tuck Aquatic Plants (B14) Saturation (A3) Saturation (A3) Fersence Aquatic Plants (B14) Aquatic Fauna (B13) Dary Season Water Table (C2) Sadiment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Algal Mat or Crust (B4) Indicators (B3) Field Observations: Surface Water Present? Yes X No Depth (inches): Depth (inches): A Depth (inches): Depth (inches): Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) S	¹Tvpe: C=C	Concentration, D=Depleti	on, RM=Reduce	d Matrix, CS=Covere	d or Coated Sa	nd Grains.	² Location	n: PL=Pore Lining,	M=Matrix.		
Histosol (A1)			211, 1111								
Histic Epipedon (A2) Sandy Redox (S5) Stripped Matrix (S6) Other (Explain in Remarks) Hydrogen Sulfide (A4) Stripped Matrix (S6) Stratified Layers (A5) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3) Som My More Peat or Peat (S3) Type: Depleted Matrix (F2) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3) Type: Depth (inches): Hydric Soil Present? Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required) X Surface Water (A1) Surface Matrix (B1) Surface Water (A1) Surface (B1) Surface Water (A2) Surface Water (A1) Surface (B1) Surface (B1) Surface Water (A2) Surface (B1)	-			Sandy Gley	ed Matrix (S4)			•			
Black Histic (A3) Stripped Matrix (S6) Other (Explain in Remarks) Hydrogen Sulfide (A4) Dark Surface (S7) Stratified Layers (A5) Loamy Mucky Mineral (F1) 2 cm Muck (A10) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) X Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) The hydric soil indicators have been updated to comply with the Field Indicators of Hydric Soils of the United States, Version 8.0, 2016. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes X No Remarks: **Remarks:** **HYDROLOGY** Wetland Hydrology Indicators: Hydric Soil Present? Yes X No Remarks: **Autatic Fauna (B13) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) X Surface Water (A1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Diff Deposits (B3) Presence of Reduced Iron (C4) Statusdion Visible on Aerial Imagery (C9) Diff Deposits (B3) Presence of Reduced Iron (C4) Statusdion Visible on Aerial Imagery (C9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Water Table Present? Yes X No Depth (inches): 4 Water Table Present? Yes No X Depth (inches): 4 Water Table Present? Yes No Depth (inches): 4 Water Table Present? Yes Depth (inches): 4 Water Table Present?		` '			, ,				· ·		
Hydrogen Sulfide (A4) Stratified Layers (A5) Loamy Mucky Mineral (F1) 2 cm Muck (A10) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Secondary Indicators have been updated to comply with the Field Indicators of Hydric Soils for Mucky Mineral (S1) Secondary Indicators (F8) The hydric soil indicators have been updated to comply with the Field Indicators of Hydric Soils for Mucky Mineral (S1) Secondary Indicators (F8) Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) X Surface Water (A1) High Water Table (A2) Saturation (A3) True Aquatic Plants (B14) Saturation (A3) True Aquatic Plants (B14) True Aquatic Plants (B14) Dry-Season Water Table (C2) Drift Deposits (B2) Drift Deposits (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Sunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) In Muck Surface (C7) Square Wetl Present? Yes No No Water Table (Pcesent? Yes No Depth (inches): 4 Water Table Present? Yes No Water Table (Pcesent? Yes No Depth (inches): 4 Water Table Present? Yes No Water Table Present? Yes Depth (inches): 4 Water Table Present? Yes Depth (inches): 4 Water Table Present? Yes Depth (inches): 5-18*									• •		
2 cm Muck (A10) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A12) Depleted Matrix (F2) Depleted Matrix (F3) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) Sandy Mucky Mineral (S1) Som Mucky Peat or Peat (S3) X Redox Depressions (F8) Type: Depleted Dark Surface (F7) Type: Depleted Dark Surface (F7) Type: Depleted Dark Surface (F8) Type: Depleted Dark Surface (F8) Type: Depleted Dark Surface (F8) Hydric Soil Present? Yes X No Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required) X Surface Water (A1) High Water Table (A2) Saturation (A3) True Aquatic Plants (B14) Saturation (A3) True Aquatic Plants (B14) X Sediment Deposits (B2) Drift Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Irin Deposits (B3) Presence of Reduced Iron (C4) Square (C7) Again Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Ves No Depth (inches):		, ,		Dark Surfar	e (S7)				·		
Depleted Below Dark Surface (A11) X Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Some Mucky Peat or Peat (S3) X Redox Depressions (F8) Restrictive Layer (if observed): Type: Depth (inches): Peth (inches): Peth (inches): Peth (inches): Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required) Surface Water (A1) Surface Soil Cracks (B6) High Water Table (A2) Surface Mater (B10) Saturation (A3) True Aquatic Plants (B14) Surface (C1) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Surface (C1) Surface Soil Cracks (B6) Surface Water (B1) Surface Surface (B1) Surfac	Stratifie	ed Layers (A5)		Loamy Muc	ky Mineral (F1)						
Thick Dark Surface (A12)	2 cm N	Muck (A10)		Loamy Gley	red Matrix (F2)						
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) comply with the Field Indicators of Hydric Soils in the United States, Version 8.0, 2016. Restrictive Layer (if observed):	Deplete	ed Below Dark Surface (A11)	X Depleted M	atrix (F3)						
S cm Mucky Peat or Peat (S3) X Redox Depressions (F8) in the United States, Version 8.0, 2016.	Thick [Dark Surface (A12)		Redox Dark	Surface (F6)			³ The hydric soil ir	ndicators have been updated to		
Restrictive Layer (if observed):	Sandy	Mucky Mineral (S1)		Depleted D	ark Surface (F7	')		comply with the Field Indicators of Hydric Soils			
Type: Depth (inches): Hydric Soil Present? Yes X No Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required) X Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) X Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) X Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation (visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) X Geomorphic Position (D2) Inon Deposits (B5) Thin Muck Surface (C7) X FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes X No Depth (inches): 4 Water Table Present? Yes No X Depth (inches): 318*	5 cm N	Mucky Peat or Peat (S3)		X Redox Dep	essions (F8)			in the United States , Version 8.0, 2016.			
Primary Indicators (minimum of one is required: check all that apply) Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) X Surface Water (A1) High Water Table (A2) Saturation (A3) Sutration (A3) Water Marks (B1) A Quatic Fauna (B13) Dry-Season Water Table (C2) X Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) X Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Iron Deposits (B5) Iron Deposits (B5) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Algal Mat or Crust (B4) Federal Table (A2) Algal Mat or Crust (B4) Algal Mat or		Layer (if observed):									
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) X Surface Water (A1)	-	(inches):					Hydric S	Soil Present?	Yes X No		
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) X Surface Water (A1)	Domarks:								<u> </u>		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) X Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) X Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water Table (Pas) Other (Explain in Remarks) Secondary Indicators (minimum of two required) Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) X FAC-Neutral Test (D5) Thin Muck Surface (C7) X FAC-Neutral Test (D5) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks)											
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) X Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) X Sediment Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Water Table (Pas) Other (Explain in Remarks) Secondary Indicators (minimum of two required) Secondary Indicators (minimum of two required) Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) X FAC-Neutral Test (D5) Thin Muck Surface (C7) X FAC-Neutral Test (D5) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks)											
Primary Indicators (minimum of one is required: check all that apply) X Surface Water (A1)	<u> </u>	OGV									
X Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) X Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) X Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) X Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) X FAC-Neutral Test (D5) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes X No Depth (inches): 4 Water Table Present? Yes No X Depth (inches): >18"											
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Saturation Present? Yes No X Depth (inches): >18" Wetland Hydrology Present? Yes X No	Wetland Hyd Primary Indi X Surface High W Saturat X Water X Sedime Drift De Algal M Iron De Inunda Sparse	drology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ation Visible on Aerial Imagely Vegetated Concave S	agery (B7) surface (B8)	Water-Stair Aquatic Fau True Aquati Hydrogen S Oxidized Rt Presence of Recent Iron Thin Muck S Gauge or W Other (Expl	una (B13) c Plants (B14) culfide Odor (C1 nizospheres on f Reduced Iron Reduction in T Surface (C7) /ell Data (D9) ain in Remarks	Living Roots (C4) 'illed Soils (C	, ,	Surface So Drainage P Dry-Seasor Crayfish Bu Saturation Stunted or X Geomorphi	pil Cracks (B6) Patterns (B10) In Water Table (C2) Parrows (C8) Visible on Aerial Imagery (C9) Stressed Plants (D1) Ic Position (D2)		
	Wetland Hyd Primary Indi X Surface High W Saturat X Water X Sedime Drift De Algal M Iron De Inunda Sparse Field Obsert Surface Wat	drology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) tition (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) ation Visible on Aerial Imagely Vegetated Concave Servations: ter Present?	agery (B7) Surface (B8)	Water-Stair Aquatic Fau True Aquati Hydrogen S Oxidized Rt Presence of Recent Iron Thin Muck S Gauge or W Other (Explain	una (B13) c Plants (B14) culfide Odor (C1 nizospheres on f Reduced Iron Reduction in T Surface (C7) /ell Data (D9) ain in Remarks	Living Roots (C4) 'illed Soils (C	, ,	Surface So Drainage P Dry-Seasor Crayfish Bu Saturation Stunted or X Geomorphi	ail Cracks (B6) Patterns (B10) In Water Table (C2) Parrows (C8) Visible on Aerial Imagery (C9) Stressed Plants (D1) Ic Position (D2)		

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site:	Duke Energy: Colu	mbia Subst	tation - Wetland 1				_ City/County	y: Union Twp, W	arren Count	Sampling [Date: 7/5/2018	
Applicant/Owner:	Duke Energy						State	e: OH	Sampling Point:		DP2	
Investigator(s):	Danielle K. Thomps	on; James	Crumpler					Section, Townsl	hip, Range: n/a			
Landform (hillslope,	terrace, etc.):		Oxbow					Loc	al relief (concave, convex, r	ione): concave		
Slope (%):	15%	Lat	:	39.3674	64		Long:		-84.225635	Datum:	NAD83 UTM16N	
Soil Map Unit Name	: Riverwash		<u> </u>			·	· ·		NWI	classification:	none	
Are climatic / hydrol	ogic conditions on the	e site typica	al for this time of y	rear?			Yes	X No	(If no, explain in Rer	narks.)		
Are Vegetation		, Soil	N	, or Hydrology	N	significantly dis	sturbed?	Are "Norr	mal Circumstances" present	? Yes	X No	
Are Vegetation	N	, Soil		, or Hydrology	N	naturally probl		(If needed	d, explain any answers in Re	-		
	FINDINGS Att			sampling point	locations					,		
	etation Present?			Yes x		No No		Sampled A	roa			
Hydric Soil Pres				Yes X	_	No x	_	n a Wetland		s No	Х	
Wetland Hydrold				Yes	_	No X	_ ******	a monana		,		
Remarks:	- 37				_							
	- Use scientific	names o	f plants.				D					
Tree Stratum (Plot	eize: 30' radius)					Absolute % Cover	Dominant Species?	Indicator	Dominance Test works	shoot:		
Platanus occide						% Cover 30%	Species? Yes	Status FACW	Dominance Test works	neet.		
Populus deltoide						30%	Yes	FAC	Number of Dominant Spe	ecies		
3.						30 /6	169	1 70	That Are OBL, FACW, o		6 (A)	
4.								·	· Individe ODE, I AOW, 0		(\racksquare)	
5.							-		. Total Number of Domina	nt		
- ·						60%	= Total Cover		Species Across All Strate		7 (B)	
									.		``	
Sapling/Shrub Strat	um (Plot size: 15' rad	dius)							Percent of Dominant Spe	ecies		
Platanus occide						10%	Yes	FACW	That Are OBL, FACW, o		86% (A/B))
2. Salix nigra						20%	Yes	OBL	•			
3.							_					
4.									Prevalence Index works	sheet:		
5.												
						30%	= Total Cover		Total % Cover of		Multiply by:	_
									That Are OBL, FACW, or		A/B	
Herb Stratum (Plot				_					OBL species	20% x1 =	0.2	-
1. Phalaris arundir						50%	Yes	FACW	· · · · 	117% x2 =	2.34	-
2. Impatiens cape						2%	No No	FACW	FAC species	35% x3 =	1.05	-
3. Solidago canada						30%	Yes	FACU	FACU species	40% x4 =	1.6	-
4. Toxicodendron						5% 10%	No No	FACU FACU	UPL species Column Totals:	x5 =	5.19	(D)
Solidago altissir Urtica dioica	Па					20%	No No	FACW	Column rotals.	2.12 (A)	5.19	(B)
7.								PACW	Prevalence In	dev - R/A -	2.45	
8.							_		·	uex = b/A =	2.40	•
9.												
10.									Hydrophytic Vegetation	n Indicators:		
11.												
12.							_	-	1-Rapid Test for	r Hydrophytic Vege	etation	
13.									X 2-Dominance To	est is >50%		
14.									3-Prevalence In	dex is ≤3.0 ¹		
15.								-	4-Morphologica	I Adaptations ¹ (Pro	vide supporting	
16.									data in Remark	s or on a separate	sheet)	
17.									Problematic Hy	drophytic Vegetation	ວກ ¹ (Explain)	
18.												
19.									Indicators of hydric soil	and wetland hydrol	ogy must	
20.									be present, unless distur	bed or problematic	<i>.</i> .	
						117%	= Total Cover					
-	n (Plot size: 30' radi	us)		<u></u>					Hydrophytic			
1. Vitis riparia						5%	Yes	FACW	Vegetation			
2								·	Present?	Yes X No		
						5%	= Total Cover					
D	.1											
Remarks: (Include	photo numbers here	or on a sep	arate sheet.)									
1												

OIL	"				<i>c</i> :			npling Point:	DP2
rofile Description: (Description:		th needed to			ntirm the a	bsence of	indicators.)		
nches) Color (mo	Matrix oist) %		lor (moist)	lox Features %	Type ¹	Loc ²	Texture	Remai	rke
0-16" 10YR 4			0YR 4/6	10	С	M	Sandy Loam	Sand and Grave	
0-10			011(4/0			IVI	Sandy Loani	Gand and Grave	er inclusions
Type: C=Concentration, D	=Depletion, RM	l=Reduced Ma	trix, CS=Covered	or Coated Sa	nd Grains.	² Location	: PL=Pore Lining,	M=Matrix.	
dric Soil Indicators ³ :	,		,				ndicators of Hydri		
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) Depleted Below Dark S Thick Dark Surface (A' Sandy Mucky Mineral (5 cm Mucky Peat or Pe	12) (S1) eat (S3)	- - - - - - - -	Sandy Gleyed Sandy Redox Stripped Matr Dark Surface Loamy Mucky Loamy Gleyed Depleted Mat Redox Dark S Depleted Darl Redox Depres	x (S5) rix (S6) y (S7) y Mineral (F1) d Matrix (F2) trix (F3) Surface (F6) k Surface (F7			Very Shall Other (Exp ³ The hydric soil i comply with th	anese Masses (F12) by Dark Surface (F22) clain in Remarks) andicators have been uper Field Indicators of F States, Version 8.0, 20	pdated to <i>Hydric Soils</i>
estrictive Layer (if observ	vea):								
Type:									
Type: Depth (inches): emarks:						Hydric S	oil Present?	Yes	No
Depth (inches):						Hydric S	oil Present?	Yes	No
Depth (inches):emarks:						Hydric S	oil Present?	Yes	No
Depth (inches): marks: YDROLOGY etland Hydrology Indicat rimary Indicators (minimum Surface Water (A1)	n of one is requ	ired: check all	Water-Staine)	Hydric S	Secondary Indica	ators (minimum of two bil Cracks (B6)	
Depth (inches): marks: YDROLOGY etland Hydrology Indicate rimary Indicators (minimum Surface Water (A1) High Water Table (A2)	n of one is requ	ired: check all	Water-Stained	a (B13))	Hydric S	Secondary Indica	ators (minimum of two bil Cracks (B6) Patterns (B10)	
Depth (inches): marks: YDROLOGY etland Hydrology Indicat rimary Indicators (minimum Surface Water (A1)	n of one is requ	ired: check all	Water-Staine	a (B13) Plants (B14)		Hydric S	Secondary Indica Surface So Drainage F	ators (minimum of two bil Cracks (B6)	
Depth (inches): marks: YDROLOGY etland Hydrology Indicate timary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)	n of one is requ	ired: check all	Water-Stained Aquatic Fauna True Aquatic	a (B13) Plants (B14) Ifide Odor (C1)		Secondary Indica Surface So Drainage F Dry-Seaso Crayfish B	ators (minimum of two bil Cracks (B6) Patterns (B10) n Water Table (C2)	required)
PDEPTH (inches): marks: YDROLOGY etland Hydrology Indicate rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	n of one is requ	ired: check all	Water-Stainer Aquatic Fauna True Aquatic Hydrogen Sul	a (B13) Plants (B14) Ifide Odor (C1 zospheres on) Living Root		Secondary Indica Surface So Drainage F Dry-Seaso Crayfish B Saturation	ators (minimum of two bil Cracks (B6) Patterns (B10) n Water Table (C2) urrows (C8)	required)
Depth (inches): marks: YDROLOGY etland Hydrology Indicat rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	n of one is requ	ired: check all	Water-Stained Aquatic Faund True Aquatic Hydrogen Sul Oxidized Rhiz	a (B13) Plants (B14) Ifide Odor (C1 zospheres on Reduced Iron	Living Root (C4)	s (C3)	Secondary Indica Surface So Drainage F Dry-Seaso Crayfish B Saturation Stunted or	ators (minimum of two bil Cracks (B6) Patterns (B10) n Water Table (C2) urrows (C8) Visible on Aerial Imag	required)
Depth (inches): marks: YDROLOGY etland Hydrology Indicat rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	n of one is requ	ired: check all	Water-Stained Aquatic Faund True Aquatic Hydrogen Sul Oxidized Rhiz Presence of F	a (B13) Plants (B14) Ifide Odor (C1 zospheres on Reduced Iron Reduction in T	Living Root (C4)	s (C3)	Secondary Indication Surface Some Drainage For Dry-Season Crayfish Boundary Saturation Stunted or Geomorph	ators (minimum of two bil Cracks (B6) Patterns (B10) n Water Table (C2) urrows (C8) Visible on Aerial Imag Stressed Plants (D1)	required)
Pepth (inches): marks: YDROLOGY etland Hydrology Indicat rimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	n of one is requ	- - - - - -	Water-Stainer Aquatic Fauna True Aquatic Hydrogen Sul Oxidized Rhiz Presence of F	a (B13) Plants (B14) Ifide Odor (C1 zospheres on Reduced Iron Reduction in T urface (C7)	Living Root (C4)	s (C3)	Secondary Indication Surface Some Drainage For Dry-Season Crayfish Boundary Saturation Stunted or Geomorph	ators (minimum of two bil Cracks (B6) Patterns (B10) n Water Table (C2) urrows (C8) Visible on Aerial Imag Stressed Plants (D1) ic Position (D2)	required)
POROLOGY Vetland Hydrology Indicate Trimary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	n of one is requ 2) Aerial Imagery (I		Water-Stainer Aquatic Fauna True Aquatic Hydrogen Sul Oxidized Rhiz Presence of F Recent Iron R Thin Muck Su	a (B13) Plants (B14) Ifide Odor (C1 zospheres on Reduced Iron Reduction in T urface (C7)	Living Root (C4) illed Soils (G	s (C3)	Secondary Indication Surface Some Drainage For Dry-Season Crayfish Boundary Saturation Stunted or Geomorph	ators (minimum of two bil Cracks (B6) Patterns (B10) n Water Table (C2) urrows (C8) Visible on Aerial Imag Stressed Plants (D1) ic Position (D2)	required)
Principles (Page 1988) Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A Sparsely Vegetated Co	n of one is requ 2) Aerial Imagery (I		Water-Stainer Aquatic Fauna True Aquatic Hydrogen Sul Oxidized Rhiz Presence of F Recent Iron R Thin Muck Su Gauge or We	a (B13) Plants (B14) Ifide Odor (C1 zospheres on Reduced Iron Reduction in T urface (C7)	Living Root (C4) illed Soils (G	s (C3)	Secondary Indication Surface Some Drainage For Dry-Season Crayfish Boundary Saturation Stunted or Geomorph	ators (minimum of two bil Cracks (B6) Patterns (B10) n Water Table (C2) urrows (C8) Visible on Aerial Imag Stressed Plants (D1) ic Position (D2)	required)
Print Depth (inches): Proposition (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A	n of one is requ 2) Aerial Imagery (I		Water-Stainer Aquatic Fauna True Aquatic Hydrogen Sul Oxidized Rhiz Presence of F Recent Iron R Thin Muck Su Gauge or We Other (Explain	la (B13) Plants (B14) Ifide Odor (C1 zospheres on Reduced Iron Reduction in T urface (C7) Ell Data (D9) In in Remarks	Living Root (C4) illed Soils (G	s (C3)	Secondary Indication Surface Some Drainage For Dry-Season Crayfish Boundary Saturation Stunted or Geomorph	ators (minimum of two bil Cracks (B6) Patterns (B10) n Water Table (C2) urrows (C8) Visible on Aerial Imag Stressed Plants (D1) ic Position (D2)	required)
Property (inches): Proper	n of one is requ 2)) Aerial Imagery (I oncave Surface		Water-Stainer Aquatic Fauna True Aquatic Hydrogen Sul Oxidized Rhiz Presence of F Recent Iron R Thin Muck Su Gauge or We	a (B13) Plants (B14) Ifide Odor (C1 zospheres on Reduced Iron Reduction in T urface (C7) Ill Data (D9) n in Remarks	Living Root (C4) illed Soils (G	s (C3)	Secondary Indication Surface Some Drainage For Dry-Season Crayfish Boundary Saturation Stunted or Geomorph	ators (minimum of two bil Cracks (B6) Patterns (B10) n Water Table (C2) urrows (C8) Visible on Aerial Imag Stressed Plants (D1) ic Position (D2)	required)
Prince Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on A Sparsely Vegetated Co	n of one is reque 2) Aerial Imagery (I oncave Surface Yes	37)	Water-Stainer Aquatic Fauna True Aquatic Hydrogen Sul Oxidized Rhiz Presence of F Recent Iron R Thin Muck Su Gauge or We Other (Explain	la (B13) Plants (B14) Ifide Odor (C1 zospheres on Reduced Iron Reduction in T urface (C7) Ill Data (D9) In in Remarks :	Living Root (C4) iilled Soils ((s (C3)	Secondary Indication Surface Some Drainage For Dry-Season Crayfish Boundary Saturation Stunted or Geomorph	ators (minimum of two bil Cracks (B6) Patterns (B10) n Water Table (C2) urrows (C8) Visible on Aerial Imag Stressed Plants (D1) ic Position (D2)	required)

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site:	Duke Energy: Colur	nbia Substa	ation - Wetland 2				City/County	: Union Twp, Wa	arren Count	Sampling Date: 7/5/2018
Applicant/Owner:	Duke Energy						State	: OH	Sampling Point:	DP3
Investigator(s):	Danielle K. Thompso	n; James (Crumpler					Section, Townsh	ip, Range: n/a	
Landform (hillslope,	terrace, etc.):		Stream Terrace					Loca	al relief (concave, convex, none):	concave
Slope (%):	2%	Lat:		39.361	303		Long:	-	84.221256	Datum: NAD83 UTM16N
Soil Map Unit Name	: Hickory Clay Loam								NWI class	sification: none
Are climatic / hydrole	ogic conditions on the	site typica	I for this time of y	ear?			Yes	X No	(If no, explain in Remarks	.)
Are Vegetation		, Soil	N	, or Hydrology	N	significantly dist	urbed?		nal Circumstances" present?	Yes X No
Are Vegetation	N	, Soil		, or Hydrology	N	naturally proble		(If needed	l, explain any answers in Remark	
SUMMARY OF	FINDINGS Atta	ıch site ı		=	locations, tr	ransects. imp	ortant featur	es. etc.		
	etation Present?			Yes x	N			Sampled Ar	ea	
Hydric Soil Pres				Yes X	 N			n a Wetland?		x No
Wetland Hydrold				Yes X	_ N					_ -
Remarks: VEGETATION -	- Use scientific r	ames of	plants.							
			p.u.i.u.			Absolute	Dominant	Indicator		
Tree Stratum (Plot	size: 30' radius)					% Cover	Species?	Status	Dominance Test worksheet	:
1. None								UPL		
2									Number of Dominant Species	
3									That Are OBL, FACW, or FAC	: <u>3</u> (A)
4									<u></u>	
5									Total Number of Dominant	
							= Total Cover		Species Across All Strata:	(B)
1	um (Plot size: 15' rad	ius)							Percent of Dominant Species That Are OBL, FACW, or FAC	::(A/B)
3.									L	
4									Prevalence Index worksheet	:
5.									T	
							= Total Cover		Total % Cover of: That Are OBL, FACW, or FAC	: Multiply by: : A/B
Herb Stratum (Plot	size: 5' radius)								OBL species 72%	
Typha X glauca				_		25%	Yes	OBL	FACW species 60%	
Carex vulpinoide						50%	Yes	FACW	FAC species	x3 =
Scirpus atrovire						20%	No	OBL	FACU species 5%	x4 = 0.2
4. Carex frankii						25%	Yes	OBL	UPL species	x5 =
5. Impatiens caper	nsis					10%	No	FACW	Column Totals: 1.37	(A) 2.12 (B)
6. Solidago canade	ensis					5%	No	FACU		
7. Salix nigra						2%	No	OBL	Prevalence Index =	B/A = 1.55
8										
9.										
10									Hydrophytic Vegetation Indi	cators:
11.						-				
12.									X 1-Rapid Test for Hydi	· · · · ·
13. 14.									X 2-Dominance Test is X 3-Prevalence Index is	_
15.						-				otations ¹ (Provide supporting
16.									data in Remarks or o	
17.										nytic Vegetation ¹ (Explain)
18.										yue regetation (Explain)
19.						-			¹ Indicators of hydric soil and w	vetland hydrology must
20.									be present, unless disturbed of	
						137%	= Total Cover			
1	n (Plot size: 30' radiu	s)							Hydrophytic Vegetation Present? Yes	Y No
							= Total Cover		resent: fes	<u> </u>
							- TOTAL COVEL			
Remarks: (Include	photo numbers here o	r on a sepa	arate sheet.)						•	

SOIL							Sa	mpling Point: DP3
Profile Desc	cription: (Describe to the	he depth need	led to document the	indicator or co	onfirm the a	bsence of	indicators.)	
Depth	Matrix			edox Features				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16"	10YR 4/2	90	10YR 4/6	10	С	М	Clay Loam	
							·	
							-	
								-
¹ Type: C=(Concentration, D=Depleti	on RM=Reduc		nd or Coated Sa	and Grains.	² I ocation	n: PL=Pore Lining	M-Matrix
	Indicators ³ :	OII, INVICTORES		401 004104 00	and Oranic.		ndicators of Hydr	
-	ol (A1)		Sandy Gley	ved Matrix (S4)			•	ganese Masses (F12)
	Epipedon (A2)		Sandy Red	` ,				low Dark Surface (F22)
Black	Histic (A3)		Stripped Ma					plain in Remarks)
Hydro	gen Sulfide (A4)		Dark Surface	ce (S7)			· <u></u>	
	ied Layers (A5)			cky Mineral (F1))			
	Muck (A10)			yed Matrix (F2)				
	ted Below Dark Surface (A11)	X Depleted M				3 ,,	
	Dark Surface (A12)			k Surface (F6)	- \			indicators have been updated to
	Mucky Mineral (S1)			ark Surface (F)	()		. ,	the Field Indicators of Hydric Soils
	Mucky Peat or Peat (S3)		X Redox Dep	ressions (F8)			III trie Orineo	States, Version 8.0, 2016.
Restrictive	Layer (if observed):							
_								
Type:	· · · ·					······································		y y Na
	(inches):					Hydric S	Soil Present?	Yes <u>X</u> No
	(inches):					Hydric \$	Soil Present?	Yes X No
Depth ((inches):					Hydric S	Soil Present?	Yes <u>X</u> No
Depth ((inches):					Hydric S	Soil Present?	Yes <u>X</u> No
Depth ((inches):					Hydric S	Soil Present?	Yes X No
Depth (<u> </u>					Hydric S	Soil Present?	Yes X No
Depth (Remarks:	.ogy					Hydric S	Soil Present?	Yes X No
Depth (Remarks: HYDROL Wetland Hy	OGY					Hydric S		
Depth (Remarks: HYDROL Wetland Hy Primary Indi	.OGY rdrology Indicators: icators (minimum of one	is required: che	11.77			Hydric S	Secondary India	cators (minimum of two required)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac	OGY rdrology Indicators: icators (minimum of one ice Water (A1)	is required: che	Water-Stair	ned Leaves (B9	9)	Hydric S	Secondary India	cators (minimum of two required)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W	OGY rdrology Indicators: icators (minimum of one icators (A1) Vater Table (A2)	is required: che	Water-Stair Aquatic Fac	una (B13)	9)	Hydric S	Secondary Indio	cators (minimum of two required) soil Cracks (B6) Patterns (B10)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura	rdrology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) ation (A3)	is required: che	Water-Stair Aquatic Fat True Aquat	una (B13) ic Plants (B14)		Hydric S	Secondary India Surface S Drainage Dry-Seas	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura Water	rdrology Indicators: icators (minimum of one be Water (A1) Vater Table (A2) ation (A3) Marks (B1)	is required: che	Water-Stain Aquatic Fau True Aquat Hydrogen S	una (B13) ic Plants (B14) Sulfide Odor (C	1)		Secondary India Surface S Drainage Dry-Seas Crayfish B	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura Water X Sedim	rdrology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) ation (A3)	is required: che	Water-Stair Aquatic Fat True Aquat Hydrogen S Oxidized R	una (B13) ic Plants (B14) Sulfide Odor (C hizospheres on	1) Living Root		Secondary India Surface S Drainage Dry-Seas Crayfish B	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura Water X Sedime Drift D	rdrology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) ation (A3) Marks (B1) icent Deposits (B2) deposits (B3)	is required: che	Water-Stair Aquatic Far True Aquat Hydrogen S Oxidized R Presence o	una (B13) ic Plants (B14) Sulfide Odor (C	1) Living Root (C4)	s (C3)	Secondary Indic	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura Water X Sedime Drift D Algal N	cody Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) Attion (A3) Marks (B1) Indicators:	is required: che	Water-Stair Aquatic Far True Aquat Hydrogen S Oxidized R Presence o	una (B13) ic Plants (B14) Sulfide Odor (C hizospheres on if Reduced Iron	1) Living Root (C4)	s (C3)	Secondary India Surface S Drainage Dry-Seas Crayfish B Saturation Stunted o X Geomorp	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura Water X Sedime Drift D Algal M Iron De	LOGY rdrology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) ation (A3) Marks (B1) Icent Deposits (B2) Iceposits (B3) Mat or Crust (B4)	·	Water-Stair Aquatic Fat True Aquat Hydrogen S Oxidized R Presence o Recent Iror Thin Muck	una (B13) ic Plants (B14) Sulfide Odor (C hizospheres on of Reduced Iron on Reduction in T	1) Living Root (C4)	s (C3)	Secondary India Surface S Drainage Dry-Seas Crayfish B Saturation Stunted o X Geomorp	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura Water X Sedime Drift D Algal M Iron De	rdrology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) ation (A3) Marks (B1) ient Deposits (B2) ieposits (B3) Mat or Crust (B4) ieposits (B5)	agery (B7)	Water-Stair Aquatic Fai True Aquat Hydrogen S Oxidized Ri Presence o Recent Iror Thin Muck Gauge or V	una (B13) ic Plants (B14) Sulfide Odor (C hizospheres on if Reduced Iron in Reduction in T Surface (C7)	1) Living Root (C4) Filled Soils (s (C3)	Secondary India Surface S Drainage Dry-Seas Crayfish B Saturation Stunted o X Geomorp	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura Water X Sedime Drift D Algal N Iron De Inunda Sparse	rdrology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) ation (A3) Marks (B1) Icent Deposits (B2) Iceposits (B3) Mat or Crust (B4) Iceposits (B5) Icep	agery (B7)	Water-Stair Aquatic Fai True Aquat Hydrogen S Oxidized Ri Presence o Recent Iror Thin Muck Gauge or V	una (B13) ic Plants (B14) Sulfide Odor (C hizospheres on if Reduced Iron in Reduction in 7 Surface (C7) Vell Data (D9)	1) Living Root (C4) Filled Soils (s (C3)	Secondary India Surface S Drainage Dry-Seas Crayfish B Saturation Stunted o X Geomorp	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura Water X Sedime Drift D Algal M Iron De Inunda Sparse	rdrology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) ation (A3) Marks (B1) ient Deposits (B2) ieposits (B3) Mat or Crust (B4) ieposits (B5) ation Visible on Aerial Imalely Vegetated Concave S	agery (B7) Surface (B8)	Water-Stail Aquatic Fat True Aquat Hydrogen S Oxidized RI Presence o Recent Iror Thin Muck Gauge or V Other (Expl	una (B13) ic Plants (B14) Sulfide Odor (C hizospheres on if Reduced Iron in Reduction in T Surface (C7) Vell Data (D9) lain in Remarks	1) Living Root (C4) Filled Soils (s (C3)	Secondary India Surface S Drainage Dry-Seas Crayfish B Saturation Stunted o X Geomorp	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura Water X Sedime Drift D Algal M Iron De Inunda Sparse Surface Wa	rdrology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) ation (A3) Marks (B1) icent Deposits (B2) iceposits (B3) Mat or Crust (B4) iceposits (B5) ation Visible on Aerial Imalely Vegetated Concave S rvations: atter Present?	agery (B7) Surface (B8)	Water-Stair Aquatic Fai True Aquat Hydrogen S Oxidized Ri Presence of Recent Iror Thin Muck Gauge or V Other (Expl	una (B13) ic Plants (B14) Sulfide Odor (C hizospheres on if Reduced Iron in Reduction in 1 Surface (C7) Vell Data (D9) lain in Remarks	1) Living Root (C4) Filled Soils (s (C3)	Secondary India Surface S Drainage Dry-Seas Crayfish B Saturation Stunted o X Geomorp	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2)
Depth (Remarks: HYDROL Wetland Hy Primary Indi X Surfac High W Satura Water X Sedime Drift D Algal M Iron De Inunda Sparse	rdrology Indicators: icators (minimum of one ice Water (A1) Vater Table (A2) ation (A3) Marks (B1) ient Deposits (B2) ieposits (B3) Mat or Crust (B4) ieposits (B5) ation Visible on Aerial Imalely Vegetated Concave S rvations: ater Present? ie Present?	agery (B7) Surface (B8)	Water-Stair Aquatic Fai True Aquat Hydrogen S Oxidized Ri Presence o Recent Iror Thin Muck Gauge or V Other (Expl	una (B13) ic Plants (B14) Sulfide Odor (C hizospheres on if Reduced Iron n Reduction in 7 Surface (C7) Vell Data (D9) lain in Remarks as): 1"	1) Living Root (C4) Filled Soils (s (C3)	Secondary India Surface S Drainage Dry-Seas Crayfish B Saturation Stunted o X Geomorp	cators (minimum of two required) soil Cracks (B6) Patterns (B10) on Water Table (C2) Burrows (C8) n Visible on Aerial Imagery (C9) r Stressed Plants (D1) hic Position (D2)

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site:	Duke Energy: Colur	nbia Substat	ion - Wetland	2				_ City/Cou	unty:	Union Twp, Wa	arren Count	§	Sampling Da	ate: <u>7/5/2</u> 0	118
Applicant/Owner:	Duke Energy							s	tate:	ОН	Sampling Poin	t:	D	P4	
Investigator(s):	Danielle K. Thompso	n; James Cr	umpler						5	Section, Townsh	p, Range: n/a				
Landform (hillslope	e, terrace, etc.):	9	Stream Terrace	9				<u>_</u>		Loca	I relief (concave, co	nvex, none): co	ncave		
Slope (%):	2%	Lat:		39.36126	67			Long:		-8	34.221227		Datum: N	NAD83 UTN	M16N
Soil Map Unit Nam	ne: Hickory Clay Loam											NWI classific	ation: n	ione	
Are climatic / hydro	ologic conditions on the	site typical f	or this time of	year?				Y	es_	X No	(If no, explain	in Remarks.)			
Are Vegetation		, Soil	N	, or Hydrology	N	sig	nificantly dis	turbed?		Are "Norm	al Circumstances" p	resent?	Yes _	X No	
Are Vegetation	N	, Soil	N	, or Hydrology	N	nat	urally proble	ematic?		(If needed	explain any answer	s in Remarks.)			
SUMMARY OF	FINDINGS Atta	ch site m	ap showing	g sampling point l	ocations	s, tran	sects, im	portant fea	itur	es, etc.					
Hydrophytic Ve	egetation Present?			Yes	_	No_	Χ	_ ls t	the	Sampled Ar	ea				
Hydric Soil Pre				Yes	_	No_	Х	_ wit	thin	a Wetland?		Yes	_ No_	X	
Wetland Hydro	logy Present?			Yes	=	No_	X	=							
Remarks:															
VEGETATION	Use scientific r	ames of p	olants.				Al l . s	<u> </u>		I. P. de	T				
Tree Stratum (Plot	t size: 30' radius)						Absolute % Cover	Dominar Species		Indicator Status	Dominance Test	worksheet.			
Robinia pseude						_	10%	Yes	<u> </u>	FACU		5			
Fraxinus amer.							10%	Yes	_	FACU	Number of Domin	ant Species			
3.											That Are OBL, FA			1	(A)
4.															
5.											Total Number of D	Oominant			
							20%	= Total Cove	er		Species Across A	Il Strata:		6	(B)
	atum (Plot size: 15' rad	ius) _					050/	V		LIDI	Percent of Domina			70/	(A/D)
Lonicera maac 2.	CKII						25%	Yes	_	UPL	That Are OBL, FA	CW, OF FAC:	1	7%	_(A/B)
3.									_						
4.									_		Prevalence Index	worksheet:			
5.								-							
							25%	= Total Cove	er		Total % C	cover of:	1	Multiply by:	
								_			That Are OBL, FA	CW, or FAC:			A/B
Herb Stratum (Plo	ot size: 5' radius)			_							OBL species	10%	x1 =	0.1	
Solidago canad							30%	Yes		FACU	FACW species	5%	x2 =	0.1	
2. Trifolium repen							20%	No No	_	FACU	FAC species	10%	_ x3 = _	0.3	
Trifolium hybrid Melilotus officir							10% 25%	No Yes	_	FACU	FACU species UPL species	107% 25%	x4 = x5 =	4.28 1.25	
5. Toxicodendron							10%	No	_	FAC	Column Totals:	1.57	_ (A)	6.03	
6. Fraxinus amer							2%	No		FACU	Column Totalo.		_ (' ') _	0.00	(5)
7. Carex frankii							10%	No		OBL	Prevale	ence Index = B/A	A =	3.84	
8.															
9								_							
10											Hydrophytic Veg	etation Indicat	ors:		
11.									_						
12.									_			Test for Hydroph ance Test is >50		ation	
13. 14.						— –			_			ance rest is >50 ence Index is ≤3			
15.						— –			_			ological Adaptati		ide suppor	ting
16.								-	_			Remarks or on a			J
17.									_			atic Hydrophytic		. 1)
18.															
19.											¹ Indicators of hydr	ic soil and wetla	and hydrolo	gy must	
20.									_		be present, unless	disturbed or pr	oblematic.		
							107%	= Total Cove	er						
											l				
	um (Plot size: 30' radiu	is) _					501	V .		EACIN	Hydrophytic				
Vitis riparia 2.							5%	Yes	_	FACW	Vegetation Present?	Vac	No	Y	
۷۰							5%	= Total Cove	er er		riesentr	165	No _		
						_	370	_ 10141 0006	21						
Remarks: (Include	e photo numbers here o	r on a separ	ate sheet.)								+				
,		•	,												

SOIL								npling Point: DP4
	cription: (Describe to the	e depth need			onfirm the a	ibsence of	indicators.)	
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(inches)	Color (moist)	%	Color (moist)	<u></u> %	Type ¹	Loc ²	Texture	Remarks
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							-	
¹ Type: C=0	Concentration, D=Depletio	n, RM=Reduc	ed Matrix, CS=Covere	ed or Coated Sa	and Grains.	² Locatio	n: PL=Pore Lining,	M=Matrix.
Hydric Soil	Indicators ³ :						ndicators of Hydri	
Histos	sol (A1)		Sandy Gley	red Matrix (S4)			Iron-Mang	anese Masses (F12)
Histic	Epipedon (A2)		Sandy Red	ox (S5)			Very Shall	ow Dark Surface (F22)
Black	Histic (A3)		Stripped Ma	atrix (S6)			Other (Exp	olain in Remarks)
Hydro	gen Sulfide (A4)		Dark Surfa	ce (S7)				
Stratif	ied Layers (A5)			ky Mineral (F1))			
	Muck (A10)			yed Matrix (F2)				
	ted Below Dark Surface (A	.11)	Depleted M	, ,			3	
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5 cm l	Mucky Peat or Peat (S3)		Redox Dep	ressions (F8)			in the United	States, Version 8.0, 2016.
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Remarks:

DUKE ENERGY 5484 – 138kV Columbia Substation

APPENDIX

D

ENDANGERED, THREATENED, AND RARE SPECIES CORRESPONDENCE



July 16, 2018

Mr. Dan Everson United States Fish and Wildlife Service Ecological Services Field Office 4625 Morse Road, Suite 104 Columbus, OH 43230 Cardno

11121 Canal Road Cincinnati, Ohio 45241 USA

Phone 513 489 2402 Fax 513 489 2404

www.cardno.com

RE: F5484 kV 138 Columbia Substation Project
Rare, Threatened, and Endangered Species Consultation
South Lebanon and Hamilton Township, Warren County, Ohio

Dear Mr. Everson:

Duke Energy (Duke) is proposing to expand the existing transmission line approximately 550 LF to facilitate the construction of the new Columbia Substation in addition to the removal and replacement of approximately 0.4 miles of existing transmission line, encompassing a total study corridor of 6.1 acres of existing 100-foot wide Duke Energy transmission line corridor Right-Of-Way (ROW). A field investigation of the study corridor was conducted on July 5, 2018.

The project study area is located in the Village of South Lebanon and Hamilton Township, Warren County, Ohio. The location of the proposed Project is depicted on the attached South Lebanon (OH) USGS 7.5-minute topographic map excerpt (Figure 1).

Cardno was contracted by Duke to perform a boundary delineation and assessment of regulated waters, including wetlands, streams, ditches, and/or other federally regulated open waters, rare, threatened, endangered, and special habitat located within the proposed 0.4 miles of existing 100-ft wide ROW. The project study area was dominated by maintained ROW and secondary growth forest vegetation assemblages. Cardno botanists and ecologists conducted a habitat assessment to identify the presence of regulated waters, and potential Indiana bat (*Myotis sodalis*), Northern long-eared bat (*Myotis septentrionalis*), and Running Buffalo Clover (*Trifolium stoloniferum*) habitat.

In accordance with the USFWS Section 7 ESA coordination requirements; the Project study area and its habitat characteristics has been summarized for you below.

1. Location data including latitude and longitude of the project area, site address, and county.

South Lebanon, Hamilton Township, Warren County, Ohio

Initiates: Duke Energy Structure 163 (39.3709, -84.2266) Terminates: Duke Energy Structure 155 (39.3658, -84.2236)

2. A detailed project description, including layout of any new construction.

The proposed F5484 138kV Columbia Substation Project is necessary in order to facilitate the construction of the new Duke Columbia Substation as well as maintain the integrity of existing Duke structures to ensure adequate power supplies to current and future utility customers in the area. The project is also needed to ensure safety within the existing easements and remain in compliance with current transmission line standards. The transmission line route consists of an existing transmission line corridor and Duke Energy easement.

Construction will be accomplished largely through the use of bucket trucks with truck-mounted augers for structure installation and other construction vehicles transporting cable spools to install the transmission cable along the route. Excavation will be restricted to the locations where the installation of new structures (12 electrical poles) will occur. Earth moving activities are anticipated to be minimal. The extent of access disturbance can vary widely dependent upon many factors, including density and type of surface, vegetative cover, weather conditions, and the type of vehicles moving over the area. The existing vegetation will be preserved to the maximum extent practicable.

Project construction is expected to begin in Fall 2018.

3. A detailed description of onsite habitat, including the size, location, and quality of streams, wetlands, forested areas, and other natural areas, and proposed impacts.

The proposed F5484 kV138 Columbia Substation Project is linear in scope and will take place entirely within existing transmission line corridor and Duke Energy easement (Figure 1 & 2). Six potentially regulated waters including one ephemeral stream (Stream 1), two intermittent streams (Stream 3 and Stream 4), one perennial USGS-Little Miami River (Stream 2), one palustrine emergent wetland (Wetland 2), and one riverine forested wetland (Wetland 1) were identified within the project's Study Area. Specific attention was given to the presence of habitat suitable for federally endangered and threatened species – specifically, the Indiana bat (*Myotis sodalist*), the Northern Long-Eared bat (*Myotis septentrionalis*), and Running Buffalo Clover (*Trifolium stoloniferum*). To evaluate the potential habitat for rare, threatened, and endangered species a general site reconnaissance of the project study area was performed by Cardno botanists and ecologists. The result of these habitat assessments can be found below.

Maintained ROW

The maintained ROW vegetation assemblage dominated the majority of the project study area. Vegetation present in this habitat type consisted of Canada Goldenrod (*Solidago canadensis*), Frank's Sedge (Carex frankii), White Ash seedlings (Fraxinus americana), Black Locust seedlings (Robinia pseudoacacia), Amur Honey Suckle (Lonicera maackii), Kentucky Bluegrass (Poa pratensis), Tall Fescue (Festuca arundinacea), Poison Ivy (Toxicodendron radicans), Grape Vine (Vitis riparia), Daisy Flea Bane (Erigeron annuus), White Clover (Trifolium repens), and Red Clover (Trifolium pretense). Although a formal study was not part of this scope, no potential habitat for listed species was identified within this habitat.

Secondary Growth Forest

The secondary growth forest vegetation assemblage was located adjacent to the actively maintained ROW as well as within the riparian corridor of the Little Miami River (Stream 2). Dominant canopy species in this habitat type consisted of White Ash (*Fraxinus americana*), Bur Oak (*Quercus macrocarpa*), and Black Walnut (*Juglans nigra*). Less dominant species in this habitat type included Black Locust (*Robinia pseudoacacia*), Silver Maple (*Acer saccharinum*), Bitternut Hickory (*Carya cordiformis*), and Tree of Heaven (*Ailanthus altissima*). Understory vegetation was dominated by dense Bush Honeysuckle and Multiflora Rose (*Rosa multiflora*) with lesser amounts of White Ash *and* Tree of Heaven seedlings.

4. A description of the forested habitat onsite, including type of forest, and presence of dead trees, split branches or trunks, and exfoliating bark, and proposed impacts.

Approximately 2.5 acres of the study area consisted of secondary growth forest located outside the actively maintained ROW and along the riparian corridor of the Little Miami River (Stream 2). Approximately 0.02 acres of secondary growth forest may need to be cleared to accommodate proposed access route from Duke Energy Structure 158 to Structure 161. Additionally, one dead ash tree will be cleared near Duke Energy Structure 162.

<u>5. Photographs representative of all cover types on the site and encompassing views of the entire site.</u>

See the attached photograph log.

6. Conclusion

Based on the physical site characteristics, the site contains the site contains moderate quality habitat for the federally endangered Indiana and NLE bat based on the woody species composition and intensity of surrounding land use. All tree clearing activities will be conducted during the USFWS recommended winter tree clearing window between November 15 and March 31.

We are requesting a review by your office and a written response regarding effects on federally listed threatened and/or endangered species and their critical habitat within the vicinity of the project area. Enclosed for your review are the project location map, aerial map and photograph log.

If you have any questions concerning this request or would like additional information, please do not hesitate to contact me at (513) 833-6392 or Cori.Jansing@cardno.com.

Sincerely,

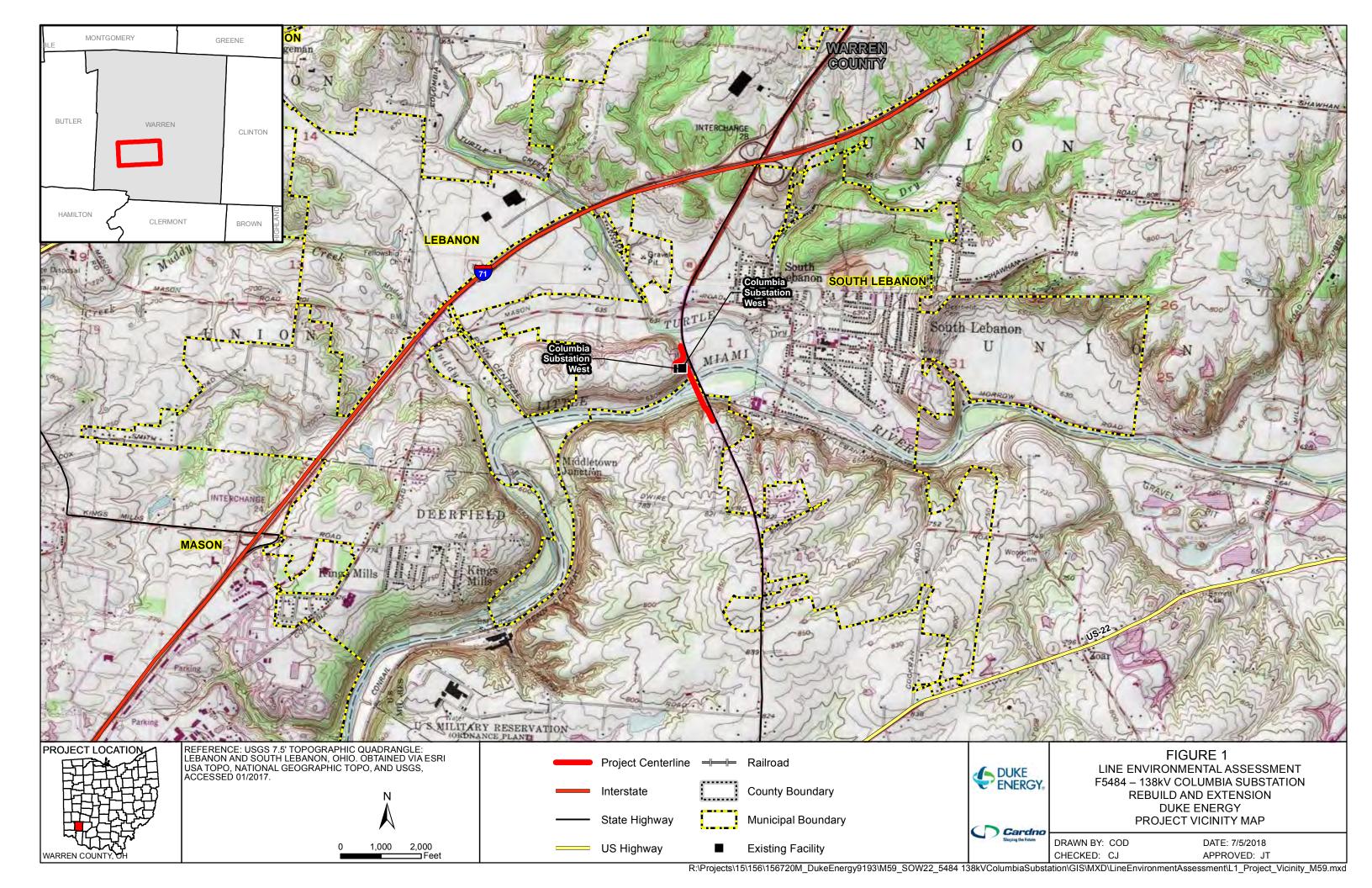
Corrine A. Jansing, PWS Botanist, Project Scientist

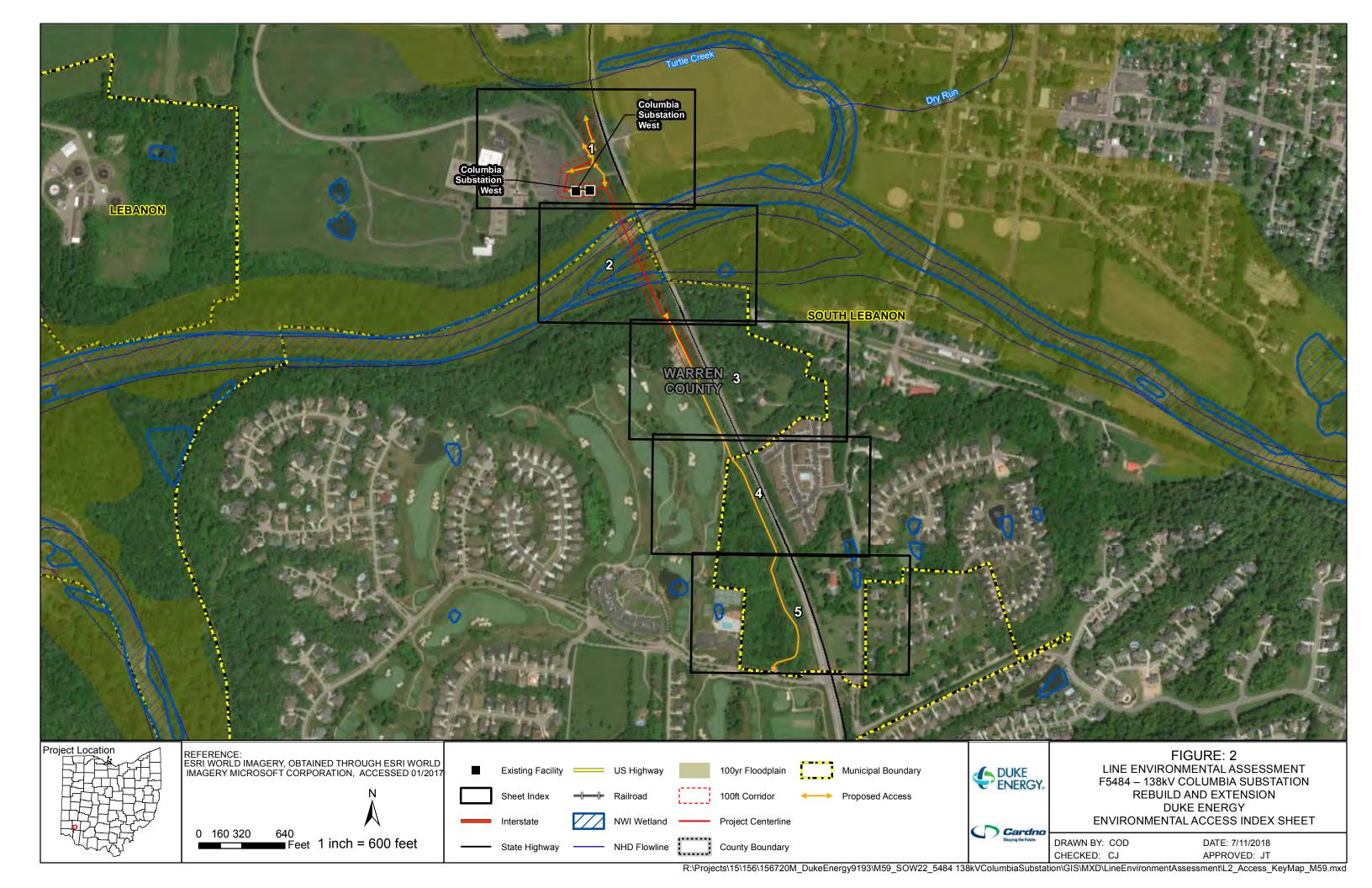
for Cardno, Inc.

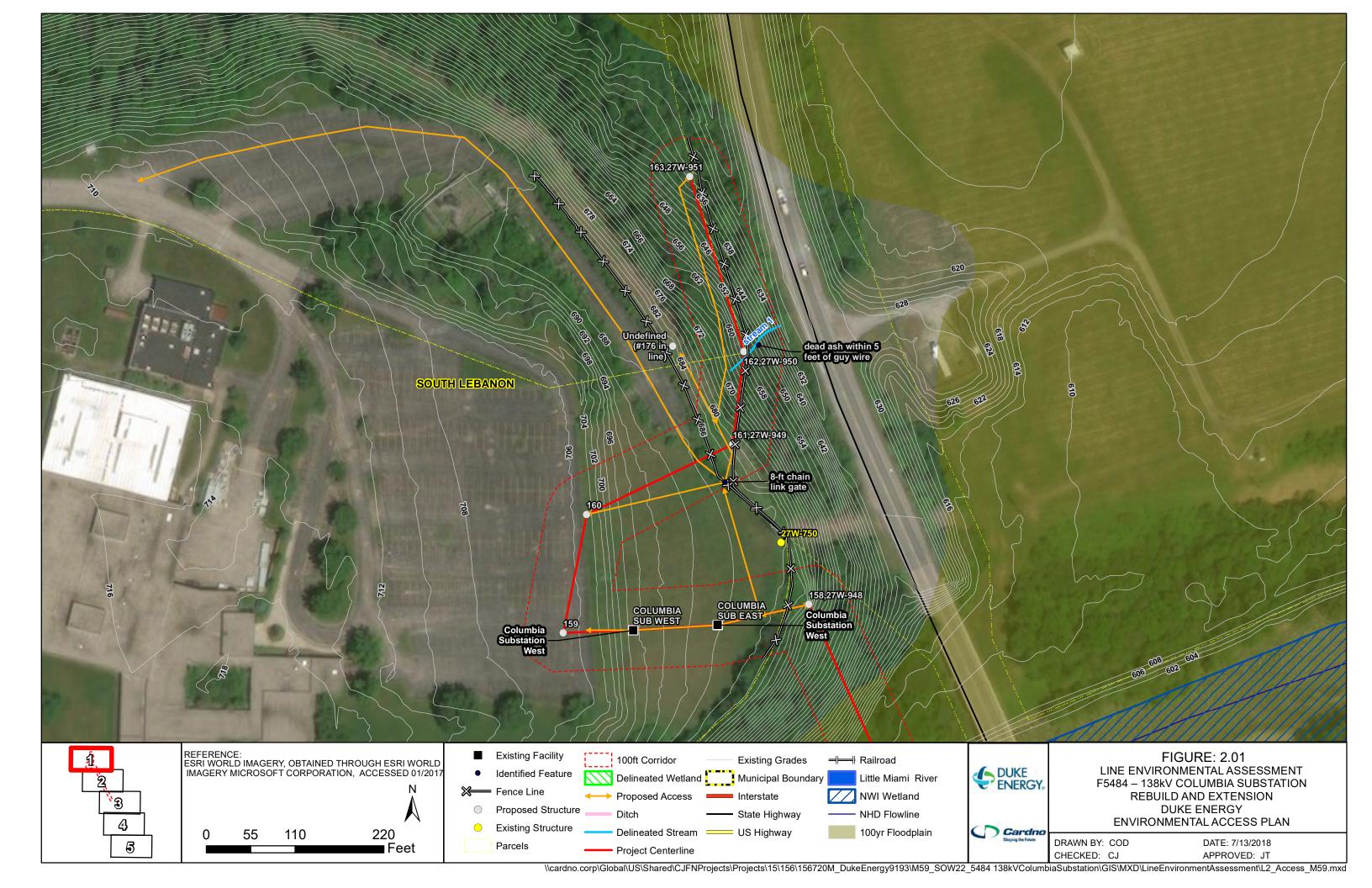
Enc: USGS map, Aerial Map, Site Plans, Photo Log

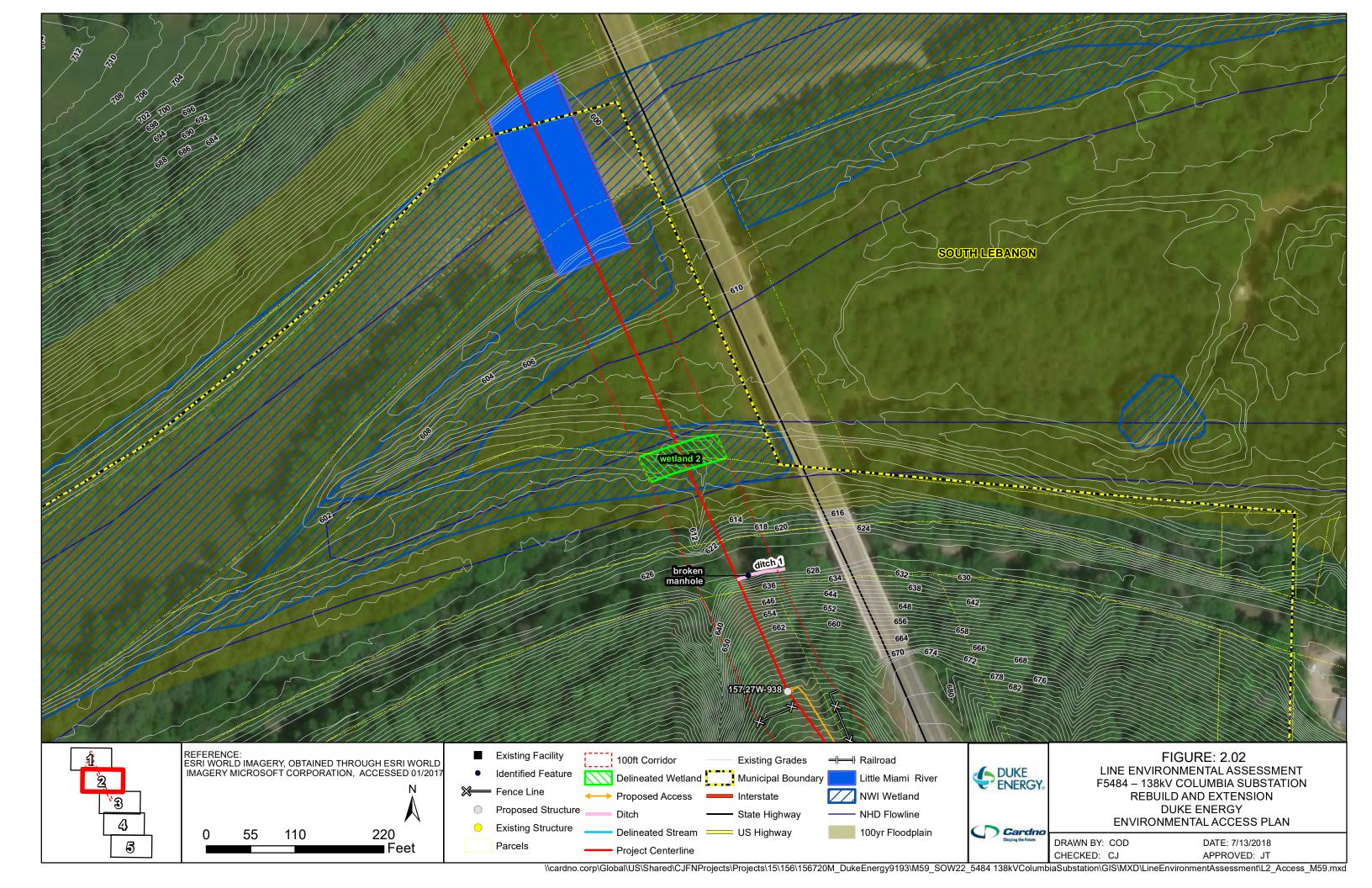
ATTACHMENTS:

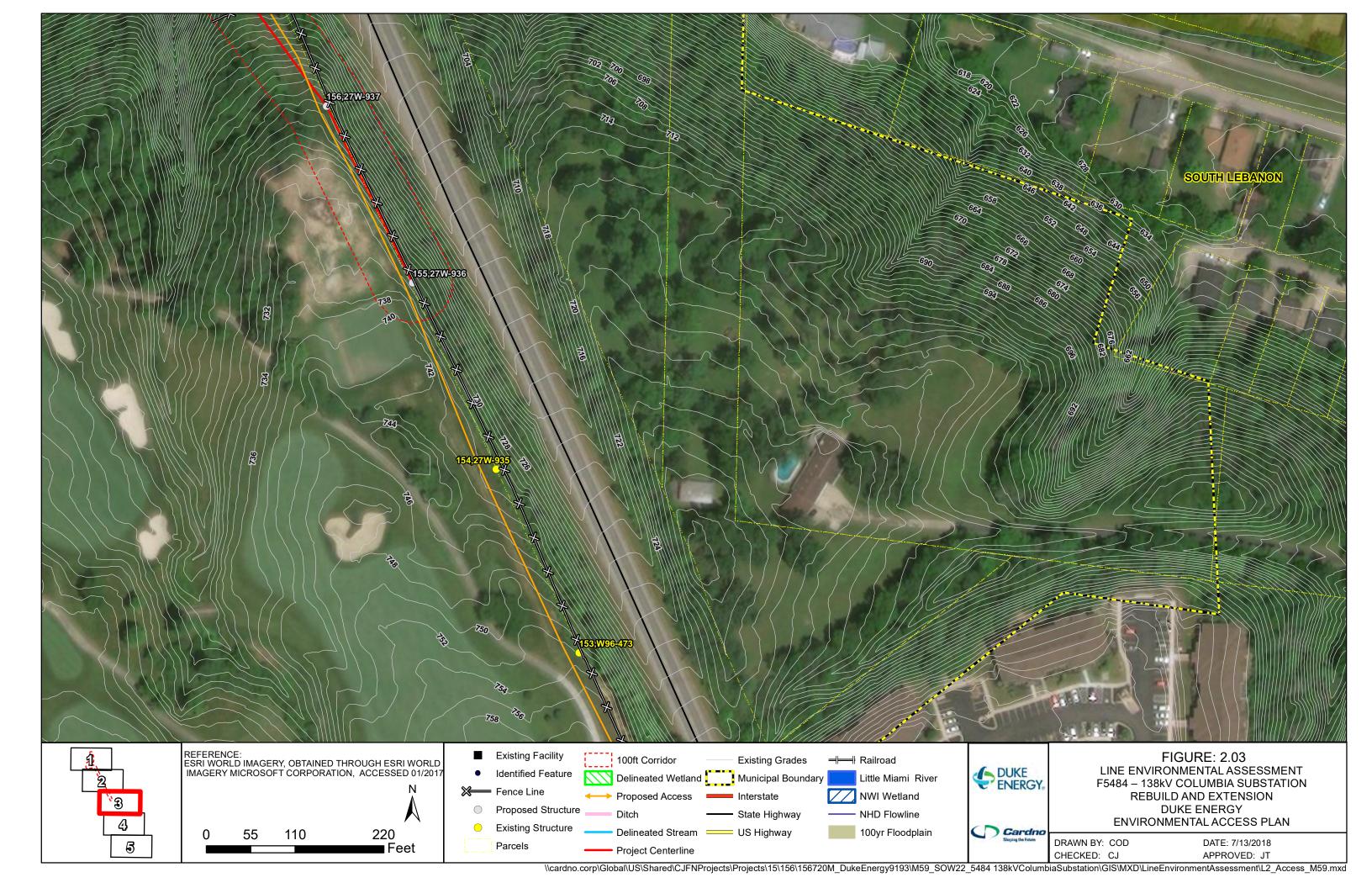
PROJECT LOCATION MAP PROJECT AERIAL MAP SITE PLANS PHOTOGRAPH LOG

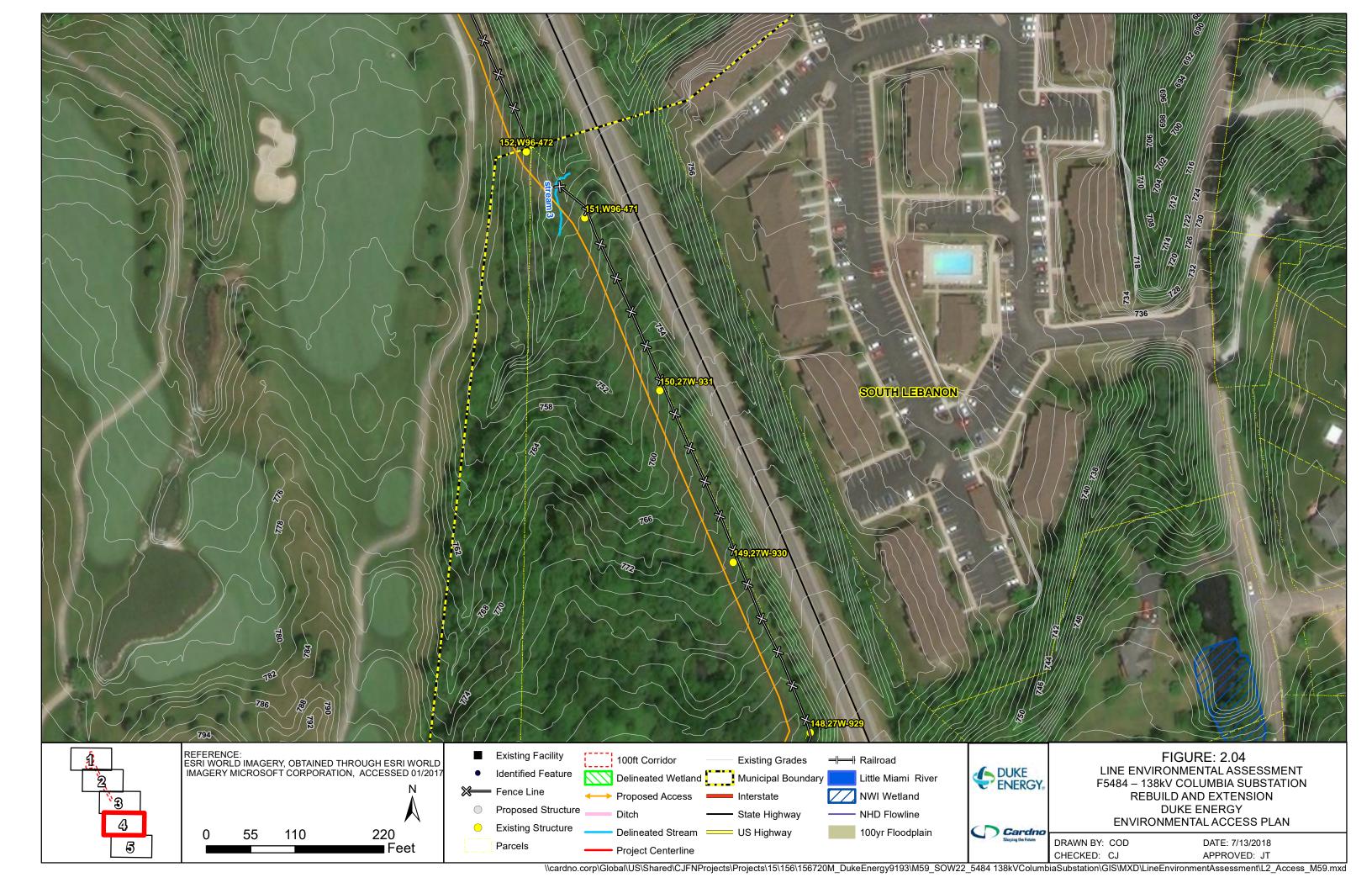


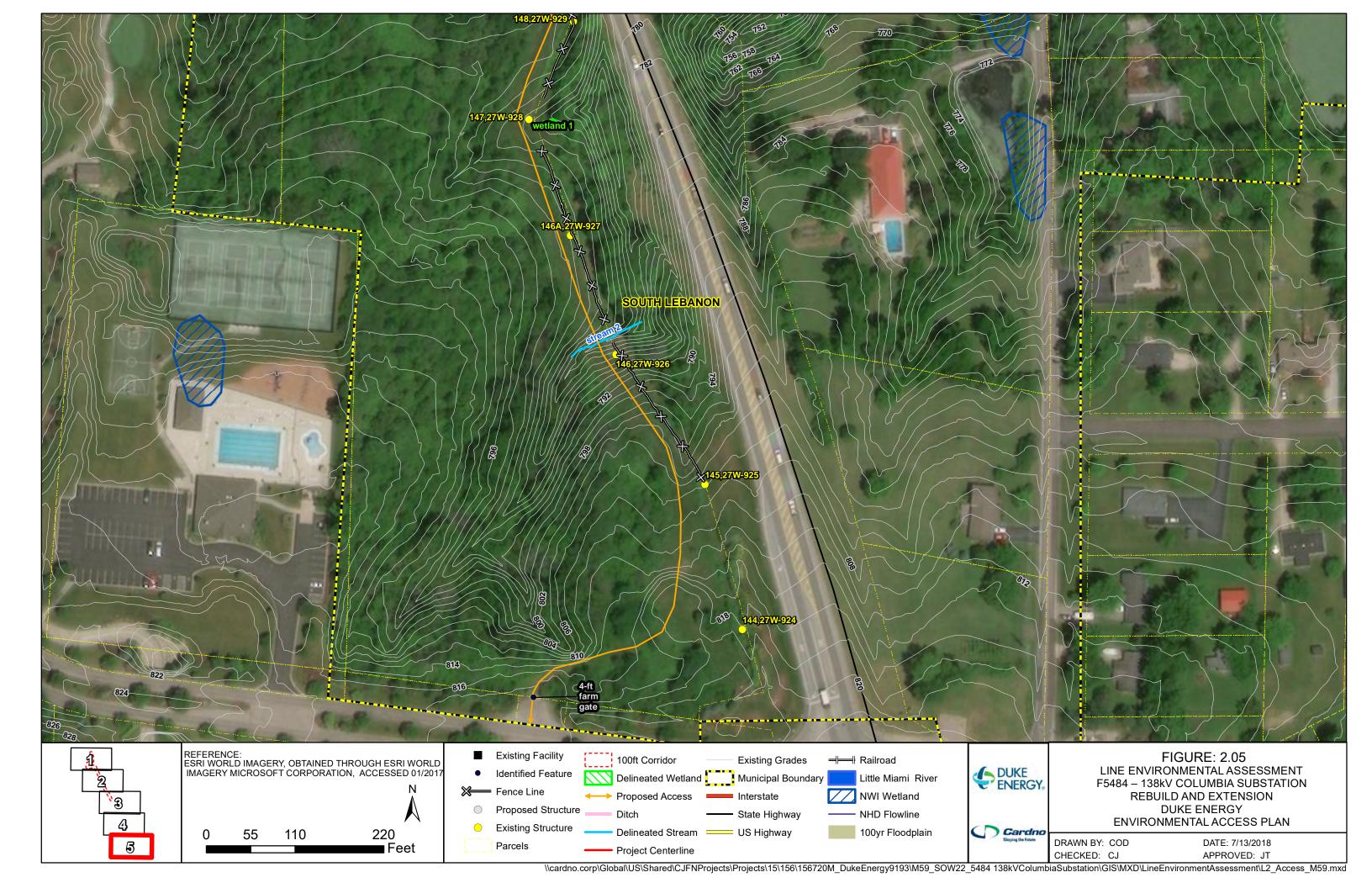


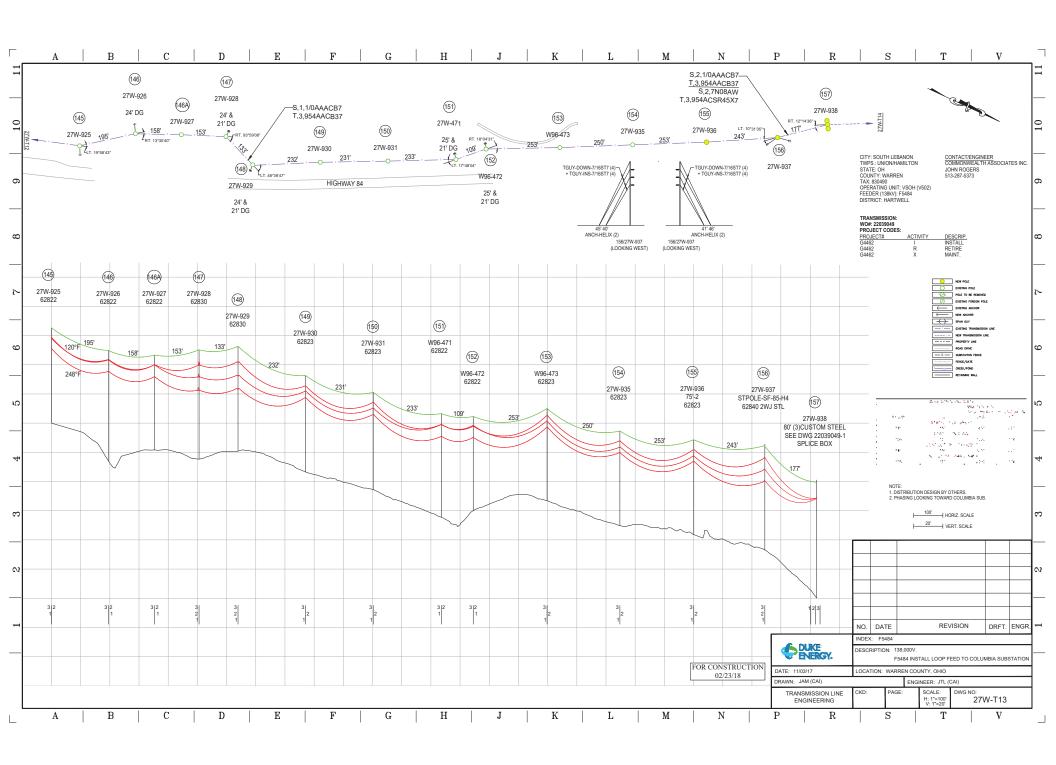












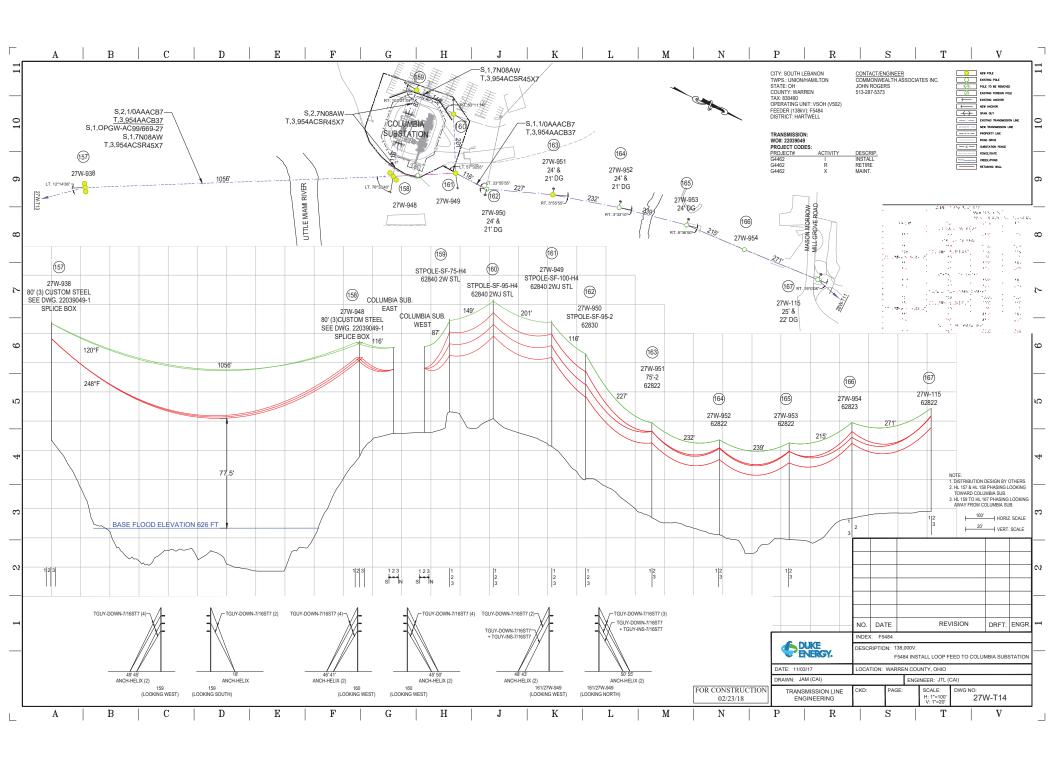




Photo 1. Stream 1, ephemeral, facing downstream.



Photo 3. Overview of Wetland 1, located adjacent to Little Miami River.



Photo 2. Stream 2, Little Miami River, looking downstream.



Photo 4. Ditch 1.





Photo 5. Stream 3, intermittent, facing upstream.



Photo 7: Stream 4, intermittent, facing downstream.



Photo 6. View of Wetland 2, facing west.



Photo 8: Manhole, located in Ditch 1.





July 16, 2018

Mr. John Kessler Ohio Department of Natural Resources Office of Real Estate 2045 Morse Road, Building E-2 Columbus, OH 43230 Cardno

11121 Canal Road Cincinnati, Ohio 45241 USA

Phone 513 489 2402 Fax 513 489 2404

www.cardno.com

RE: F5484 kV 138 Columbia Substation Project
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See the attached photograph log.

6. Conclusion

Based on the physical site characteristics, the site contains the site contains moderate quality habitat for the federally endangered Indiana and NLE bat based on the woody species composition and intensity of surrounding land use. All tree clearing activities will be conducted during the USFWS recommended winter tree clearing window between November 15 and March 31.

We are requesting a review by your office and a written response regarding effects on federally listed threatened and/or endangered species and their critical habitat within the vicinity of the

project area. Enclosed for your review are the project location map, aerial map and photograph log.

If you have any questions concerning this request or would like additional information, please do not hesitate to contact me at (513) 833-6392 or Cori.Jansing@cardno.com.

Sincerely,

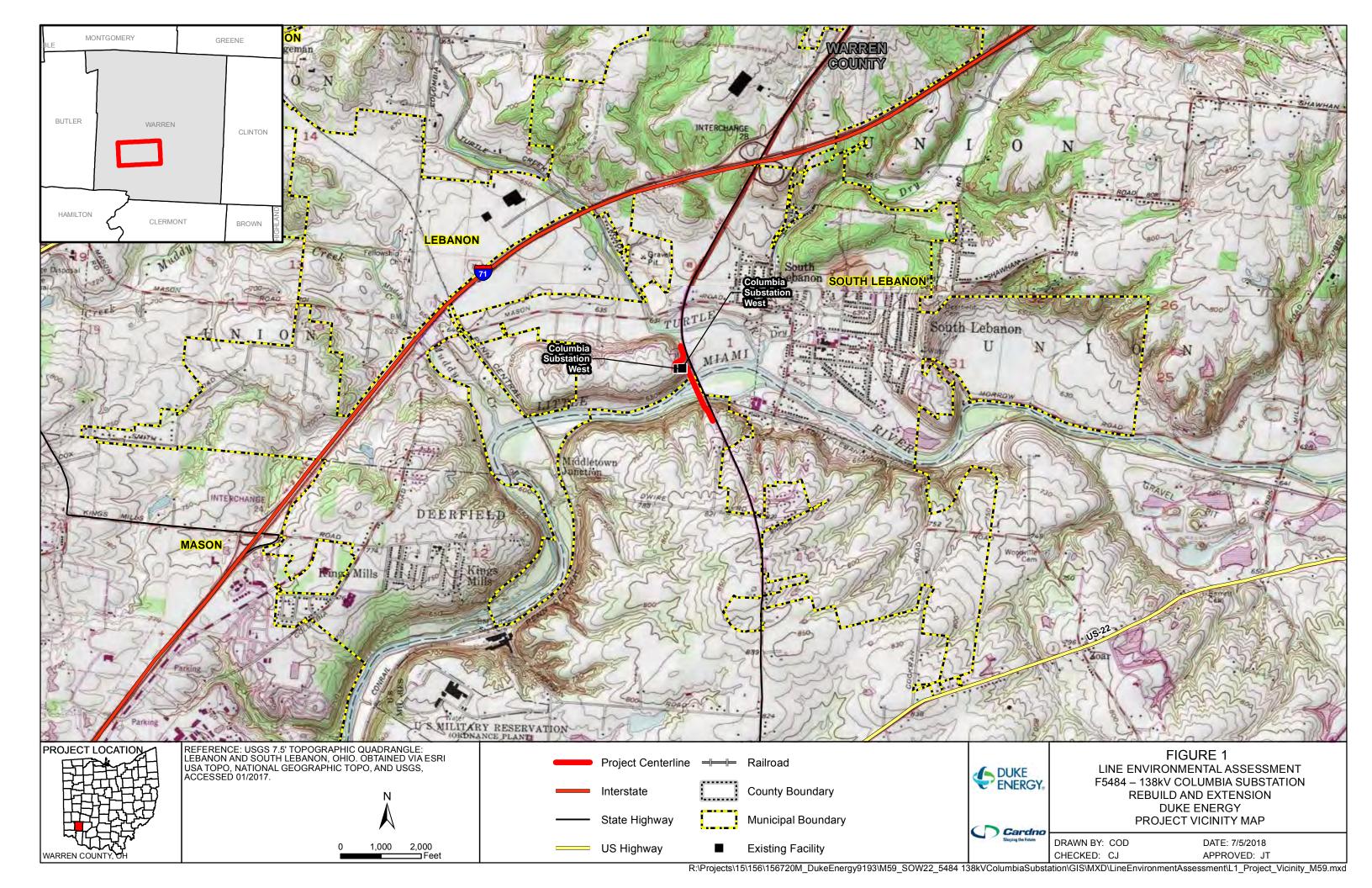
Corrine A. Jansing, PWS Botanist, Project Scientist

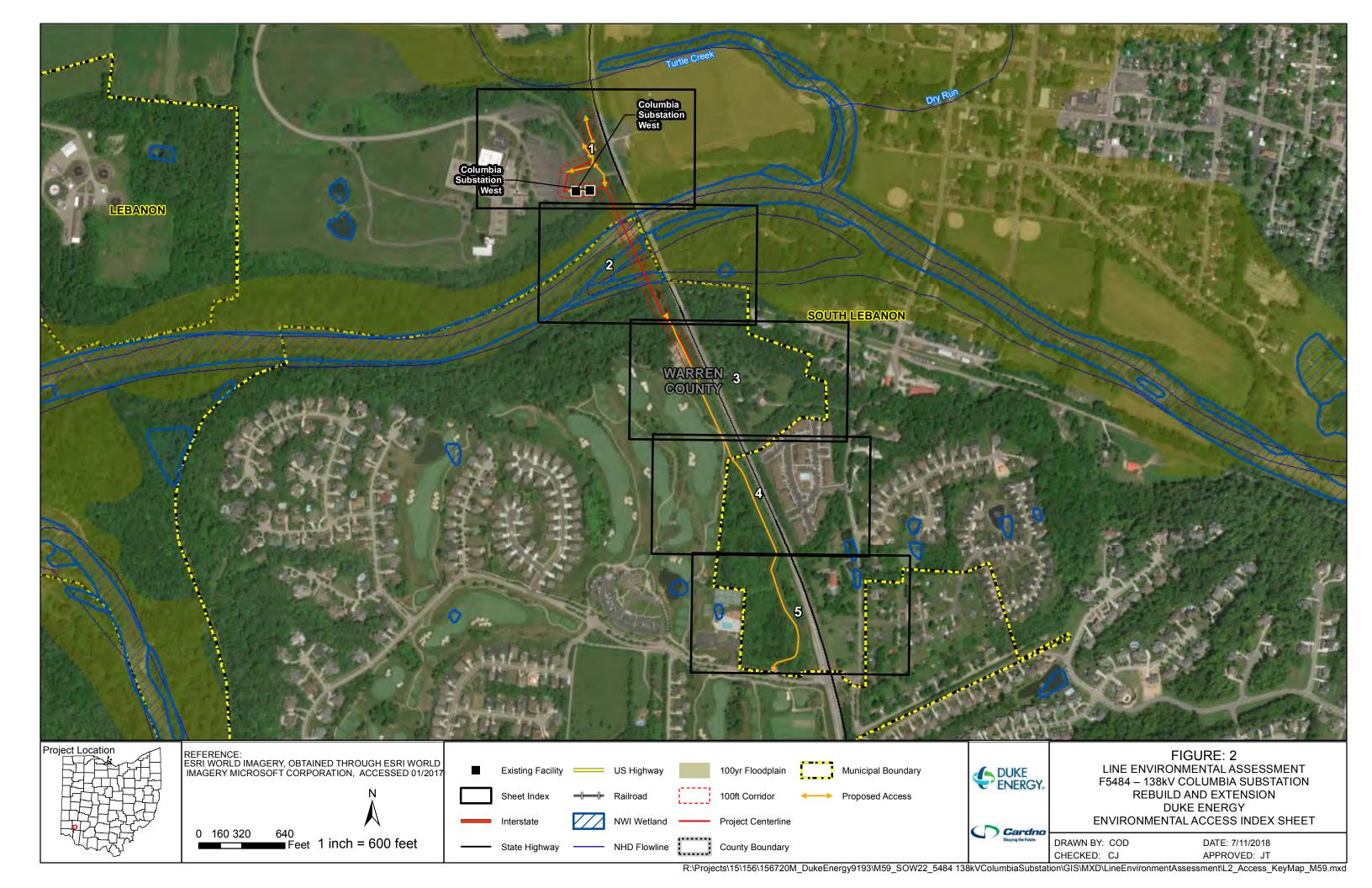
for Cardno, Inc.

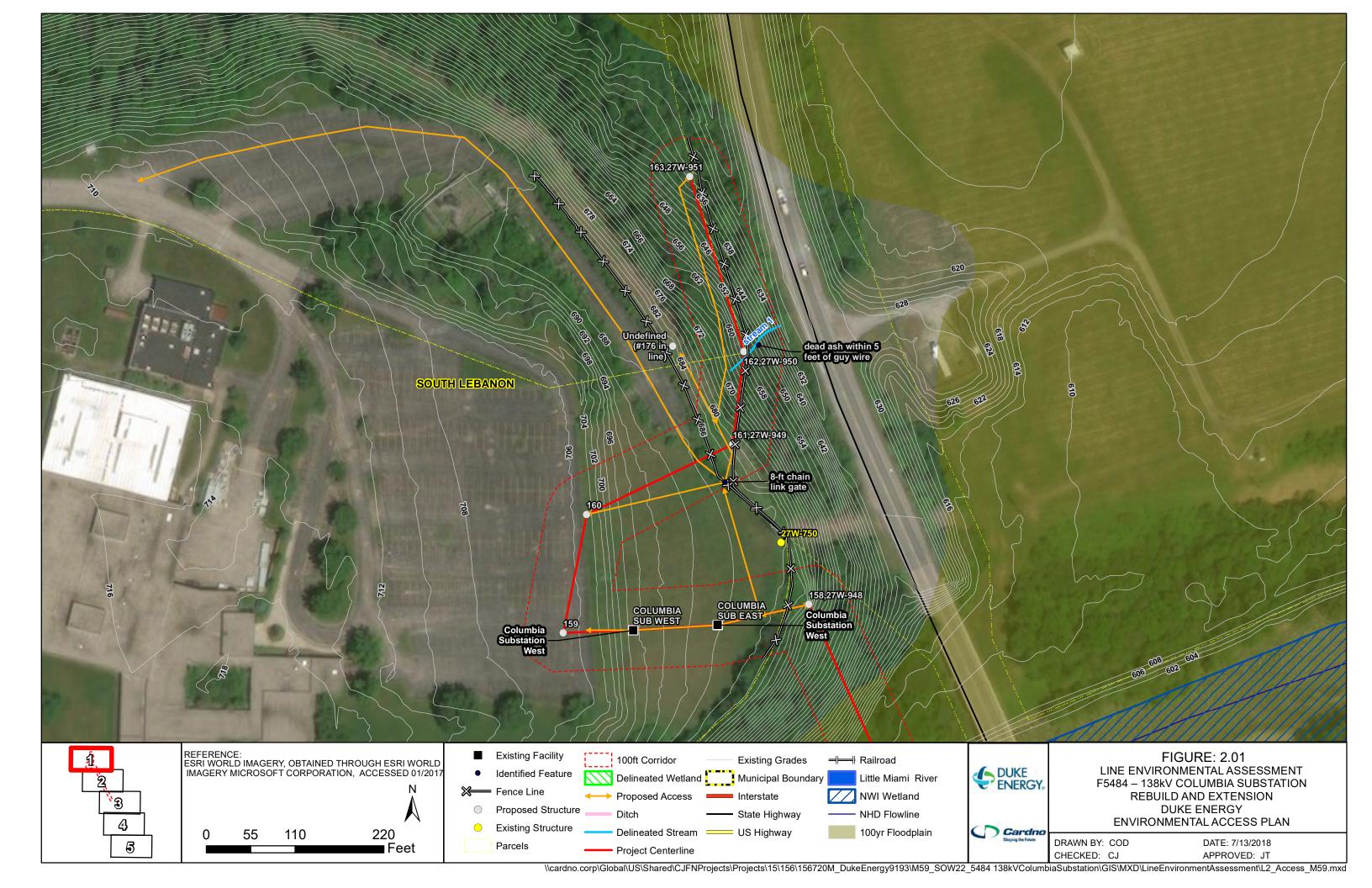
Enc: USGS map, Aerial Map, Site Plans, Photo Log, GIS Shapefile

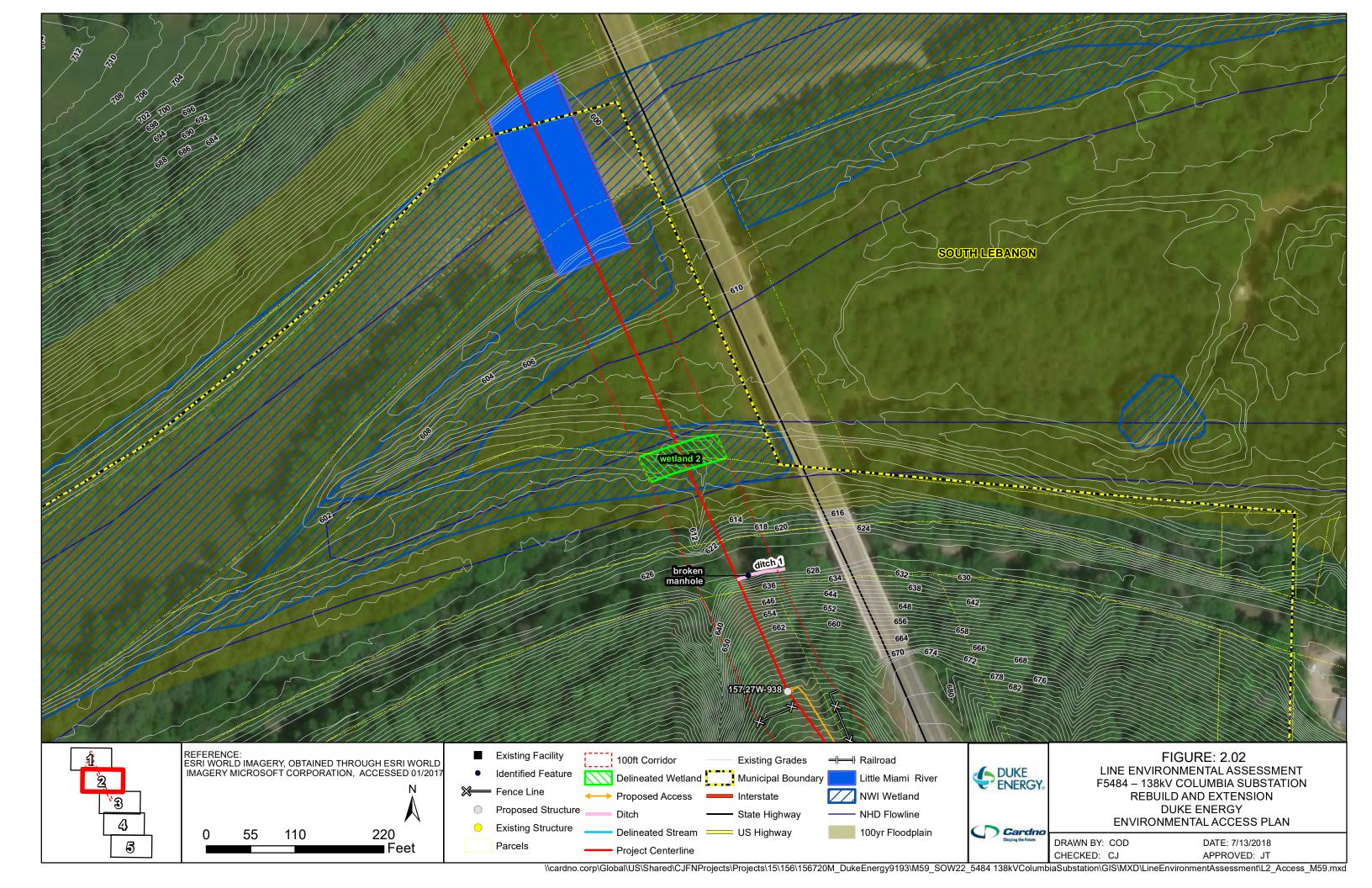
ATTACHMENTS:

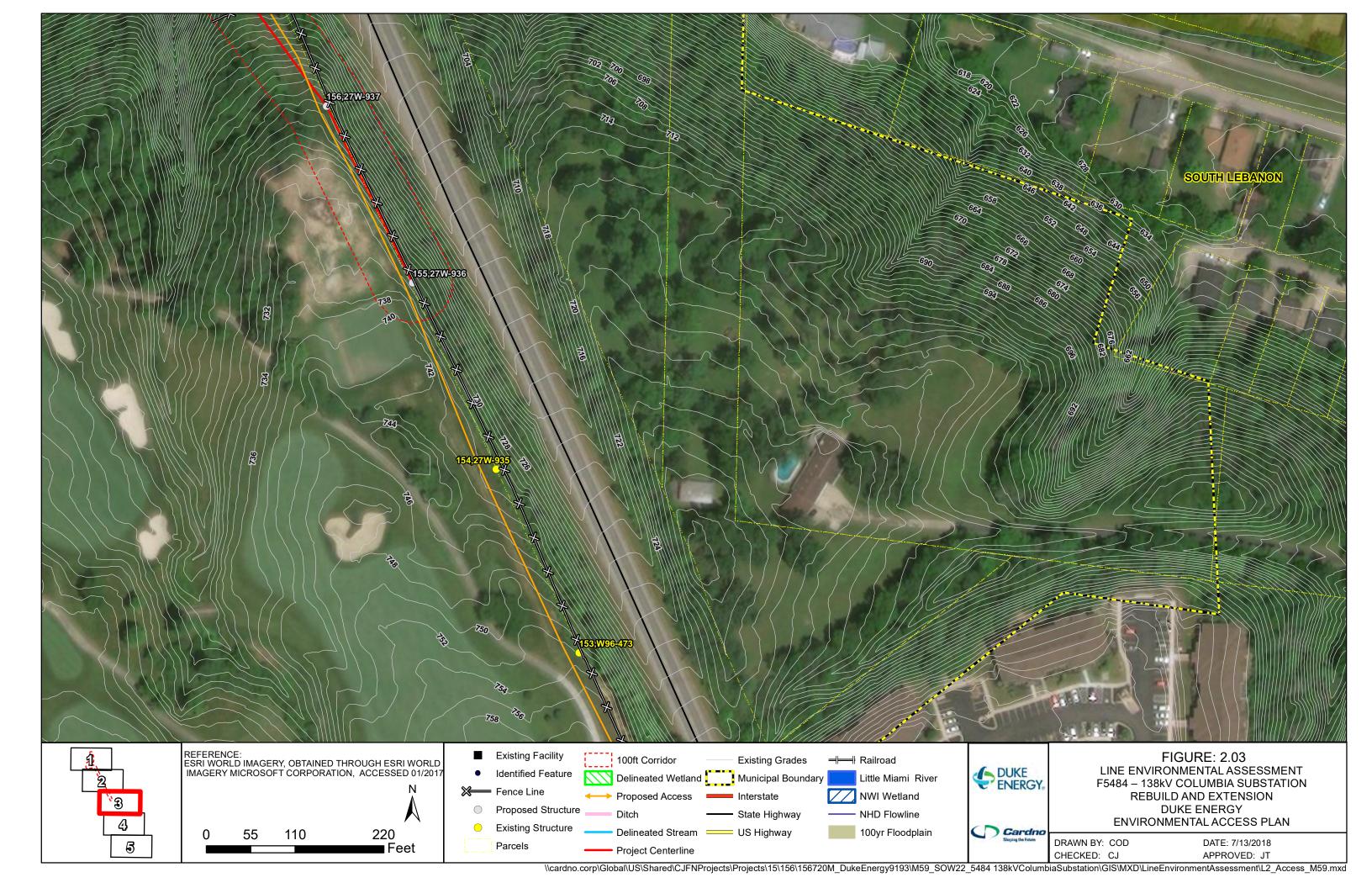
PROJECT LOCATION MAP PROJECT AERIAL MAP SITE PLANS PHOTOGRAPH LOG

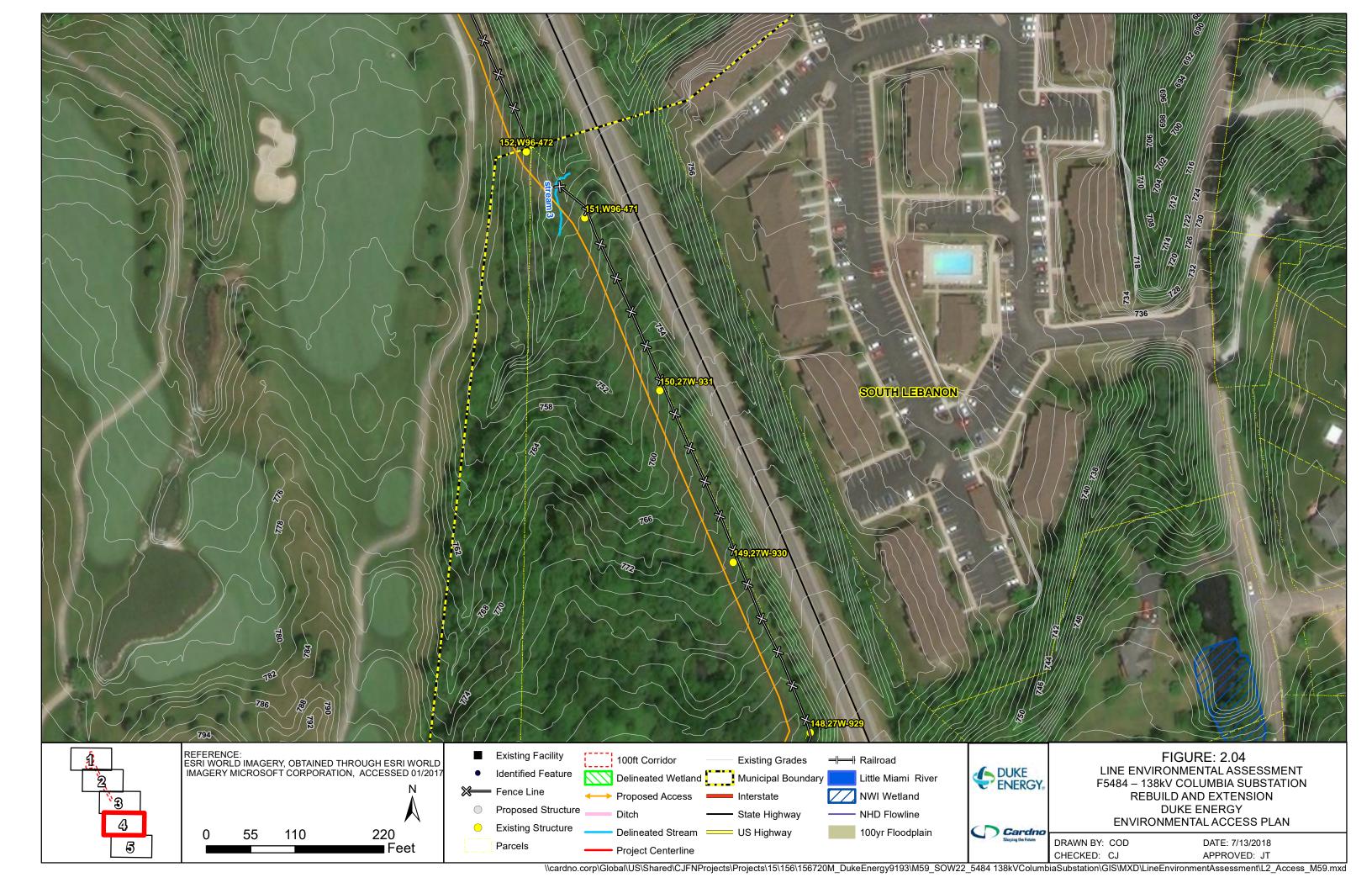


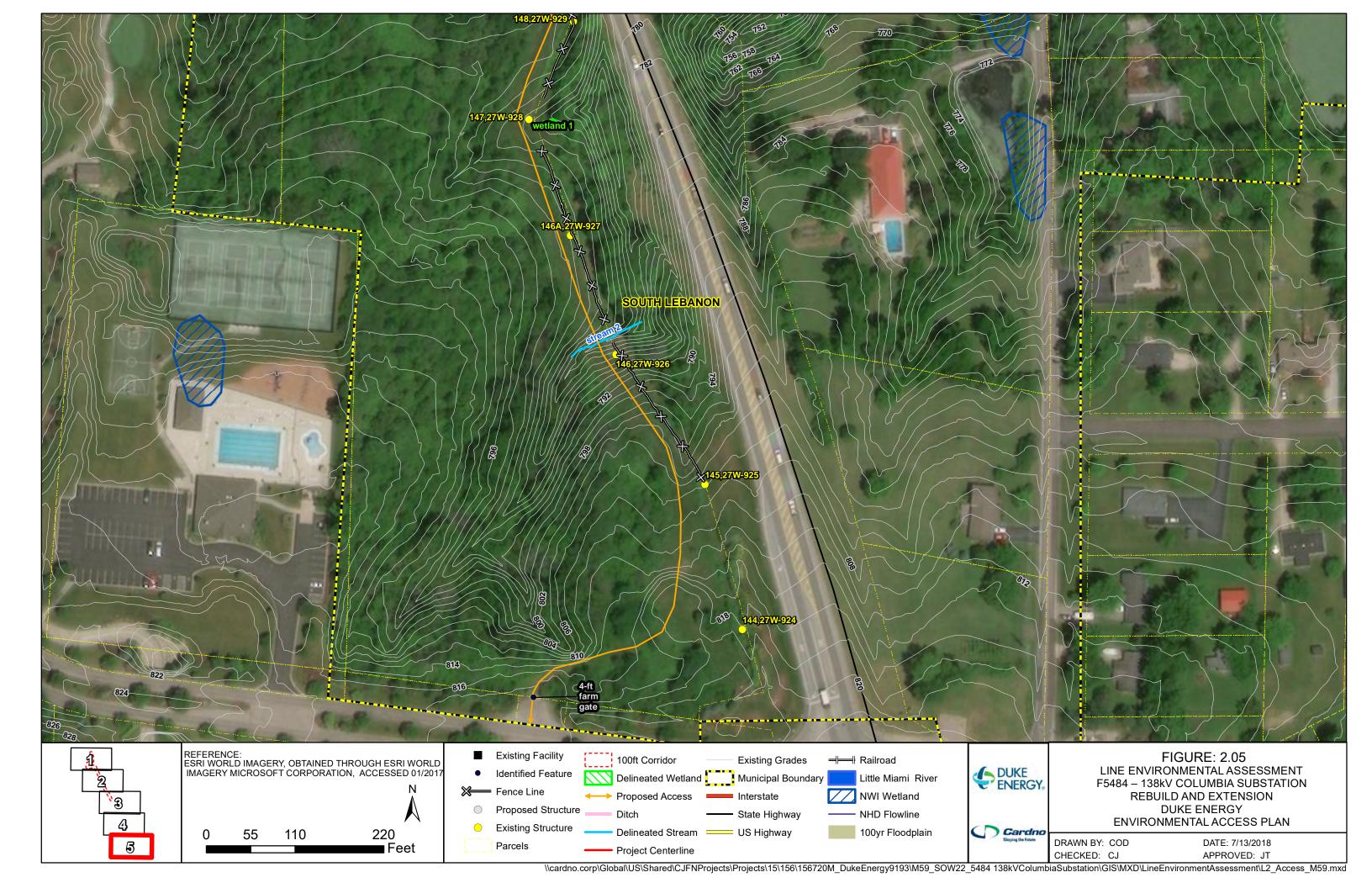


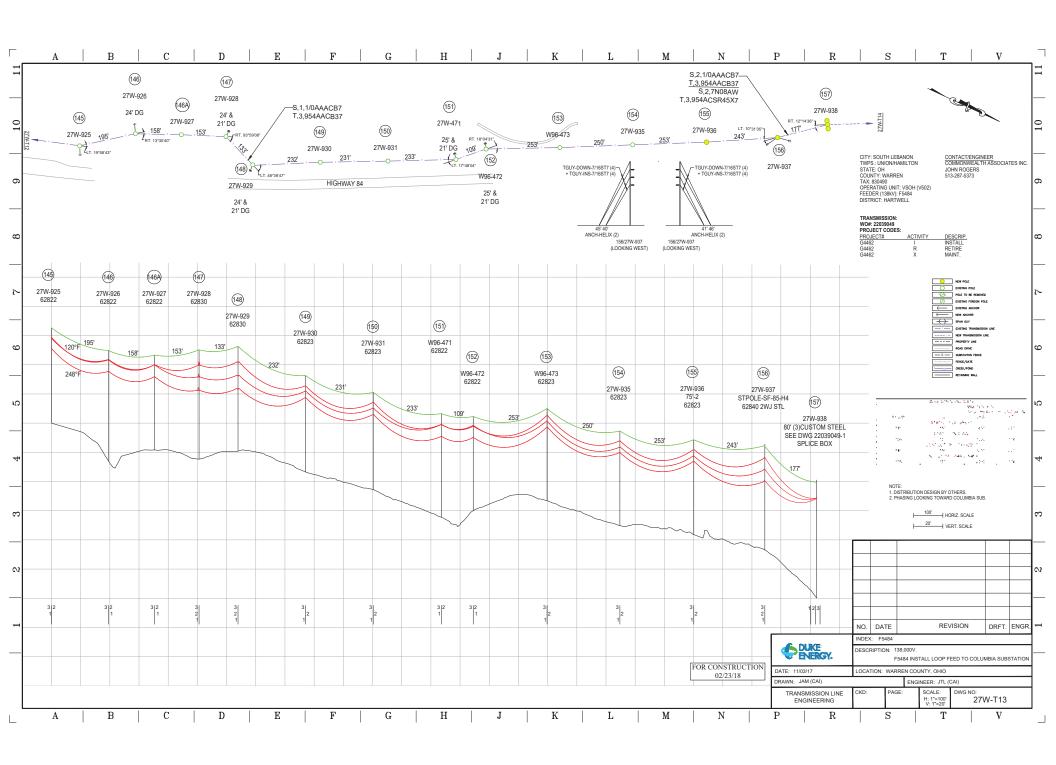












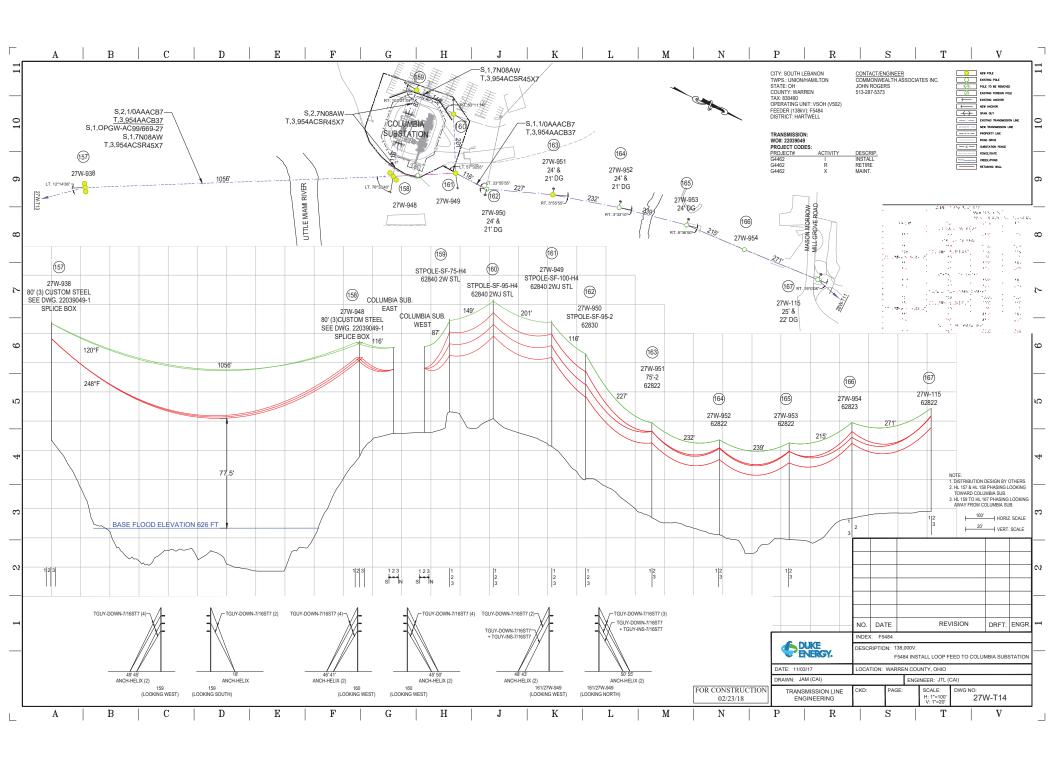




Photo 1. Stream 1, ephemeral, facing downstream.



Photo 3. Overview of Wetland 1, located adjacent to Little Miami River.



Photo 2. Stream 2, Little Miami River, looking downstream.



Photo 4. Ditch 1.





Photo 5. Stream 3, intermittent, facing upstream.



Photo 7: Stream 4, intermittent, facing downstream.



Photo 6. View of Wetland 2, facing west.



Photo 8: Manhole, located in Ditch 1.





Photo 9. Fence line located north of Stream 2, facing north.



Photo 11. View of fence line within ROW.



Photo 10. ROW looking south towards the Little Miami River (Stream 2).



Photo 12. Overview of Maintained ROW vegetation assemblage.





Photo 9. Fence line located north of Stream 2, facing north.



Photo 11. View of fence line within ROW.



Photo 10. ROW looking south towards the Little Miami River (Stream 2).



Photo 12. Overview of Maintained ROW vegetation assemblage.



From: Cori Jansing
To: Danielle Thompson

Subject: FW: Cardno - F5484 Columbia Substation Expansion 138 kV Project, Warren County

Date: Monday, September 24, 2018 6:35:04 AM

Attachments: image001.jpg

image002.jpg

Corrine Jansing

PROJECT SCIENTIST CARDNO

Office +1 513 489 2402 Direct +1 513 233 7034 Mobile +1 513 833 6392 Address 11121 Canal Rd., Cincinnati (Sharonville), Ohio 45241 Email cori.jansing@cardno.com Web www.cardno.com

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From: susan zimmermann@fws.gov < susan zimmermann@fws.gov > On Behalf Of Ohio, FW3

Sent: Monday, July 23, 2018 8:50 AM

To: Cori Jansing <cori.jansing@cardno.com>

Subject: Cardno - F5484 Columbia Substation Expansion 138 kV Project, Warren County



TAILS# 03E15000-2018-TA-1693

Dear Ms. Jansing,

We have received your recent correspondence regarding potential impacts to federally listed species in the vicinity of the above referenced project. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. We recommend that proposed activities minimize water quality impacts, including fill in streams and wetlands. Best management practices should be utilized to minimize erosion and sedimentation.

FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees =3 inches diameter at breast height between October 1 and March 31) to avoid impacts to the federally listed endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*), we do not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the U.S. Fish and Wildlife Service (Service) should be initiated to assess any potential impacts.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the Endangered Species Act (ESA), between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,



Scott Pruitt
Acting Field Supervisor

Office of Real Estate

Paul R. Baldridge, Chief 2045 Morse Road – Bldg. E-2 Columbus, OH 43229 Phone: (614) 265-6649

Fax: (614) 267-4764

September 18, 2018

Cori Jansing Cardno 11121 Canal Road Cincinnati, Ohio 45241

Re: 18-852; F5484 kV 138 Columbia Substation Project

Project: The proposed project involves expanding existing line approximately 550 LF to facilitate the construction of the new Columbia Substation in addition to the removal and replacement of approximately 0.4 miles of existing transmission line.

Location: The proposed project is in South Lebanon and Hamilton Townships, Warren County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has the following records at or within a one-mile radius of the project area:

Snuffbox (*Epioblasma triquetra*), E, FE
Fawnsfoot (*Truncilla donaciformis*), T
Mountain madtom (*Noturus eleutherus*), T
Little Miami State Scenic River
Little Miami Scenic State Park – ODNR Division of Parks & Watercraft
Deerfield Gorge Scenic River Lands – ODNR Scenic Rivers Program
City of Lebanon, River Bend Land Co., TEJ Holdings, Taft Broadcast, & Tournament Players
Club Scenic Rivers Easements – ODNR Scenic Rivers Program

The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity. Additional comments on some of the features may be found in pertinent sections below.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal endangered, FT = federal threatened, FSC = federal species of concern, FC = federal candidate species.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The project is within the range of the Indiana bat (Myotis sodalis), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees: shagbark hickory (Carya ovata), shellbark hickory (Carya laciniosa), bitternut hickory (Carya cordiformis), black ash (Fraxinus nigra), green ash (Fraxinus pennsylvanica), white ash (Fraxinus americana), shingle oak (Quercus imbricaria), northern red oak (Quercus rubra), slippery elm (Ulmus rubra), American elm (Ulmus americana), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (Ouercus stellata), and white oak (Ouercus alba). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the club shell (*Pleurobema clava*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the washboard (*Megalonaias* nervosa), a state endangered mussel, the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel, the black sandshell (*Ligumia recta*), a state threatened mussel, and the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel. The DOW has reviewed this project with the assumption that in-water work within the Little Miami River will not be necessary. Therefore, this project is not likely to impact these or other mussel species.

The project is within the range of the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, the goldeye (*Hiodon alosoides*), a state endangered fish, the mountain brook lamprey (*Ichthyomyzon greeleyi*), a state endangered fish, the bigeye shiner (*Notropis boops*) a state threatened fish, the American eel (*Anguilla rostrata*), a state threatened fish, and the paddlefish (*Polyodon spathula*) a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and

their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the spotted turtle (*Clemmys guttata*), a state threatened species. This species prefers fens, bogs and marshes, but is also known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet fields and meadows. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Sloan's crayfish (*Orconectes sloanii*), a state threatened species. Due to the location, and the habitat within the project area, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Scenic Rivers: The Ohio Scenic Rivers Program has the following comment.

The proposed Duke Energy F5484 kv 138 Columbia Substation expansion project falls within 1,000 of the Little Miami State and National Scenic River in Warren County, Ohio. It crosses the Little Miami State and National Scenic River, the Little Miami State Park and protected conservation land owned and managed by the ODNR Scenic Rivers Program. Scenic Rivers and Park Management staff request that Cardno and Duke Energy schedule a time to meet on site to discuss the project in greater detail, including any potential real estate and mitigation needs, before the project moves forward. Please contact the ODNR regional manager, Melissa Clark at Melissa.clark@dnr.state.oh.us or (937)408-8554.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

 $\underline{\text{http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager\%20Community}}\\ \underline{\%20Contact\%20List_8_16.pdf}$

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler ODNR Office of Real Estate 2045 Morse Road, Building E-2 Columbus, Ohio 43229-6693 John.Kessler@dnr.state.oh.us **Attachment H**

Section 10 Permit Application



Ms. Teresa Spanga U.S. Army Corps of Engineers, Huntington District Regulatory Branch (OR-F) 502 8th Street Huntington, WV 25701-2070

Cardno

11121 Canal Road Cincinnati, Ohio 45241

Phone 513 489 2402 513 489 2404 Fax www.cardno.com

Re: **Section 10 Navigable Waters Permit Application** 5484 – 138kV Columbia Substation Rebuild and Expansion Project Warren County, Ohio

www.cardno.com

Dear Ms. Spanga:

Cardno is contacting the U.S. Army Corps of Engineers (USACE) on behalf of Duke Energy ("Duke"), who seeks authorization under Section 10: Navigable Waters Permit to remove existing wood utility structures and replace them with upgraded galvanized steel structures, which support a 138kV overhead power line that traverses the Little Great Miami River, near mile marker 22. The 5484 Columbia Substation Rebuild and Expansion project begins at the Duke Energy's Columbia Substation located west of State Route 48 and south of Mason Morrow Millgrove Road (39.369349, -84.226636) and terminates at Duke Energy's Structure No. 936 located west of State Route 48 and south of the Little Miami River (39.363899, -84.222795). See Appendix A.

The Columbia Substation 138kV Rebuild and Expansion Project aims to maintain and improve the quality of the electric service and reliability to the service area as well as ensure the integrity of the transmission line by replacing the existing wood structures to galvanized steel structures. The Study Area consisted of a mix of habitats including forested wetland, secondary growth deciduous forest, and scrub-shrub/maintained rightof-way (ROW). A total of two potentially regulated waters including the Little Miami River (Stream 2), and one unnamed ephemeral stream (Stream 1) and one wetland (Wetland 1) were identified within the Project Study Area (Appendix A). No identified streams will be impacted by the project; however, the structures that support Duke's existing overhead 138kV electric power line over the Little Miami River will be replaced at the same location and height of the original allowing for the same clearance of the existing line. The project activities will result in no net fill within the floodplain of the Little Miami River. See Appendix B, for project Engineering Plans.

We request verification that the project, as proposed, meets the conditions of the Section 10 USACE Permit that is required for work on structures in, over, or under navigable waters of the United States. If you have any questions concerning this Section 10 permit authorization request, please do not hesitate to contact me at your convenience.

Sincerely,

Danielle K. Thompson Senior Project Scientist

for Cardno

cc: Dustin Giesler, Duke Energy

Enc: Appendix A: Figures

Appendix B: Engineering Plans

Jaill Korhom

Appendix C: USFWS and ODNR Correspondence

File: J156702M59

Duke Project No.: G4462

U.S. ARMY CORPS OF ENGINEERS APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

Form Approved -OMB No. 0710-0003 Expires: 30-SEPTEMBER-2015

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

	(ITEMS 1 THRU 4 TO BE	FILLED BY THE CORPS)					
1. APPLICATION NO.	2. FIELD OFFICE CODE	DATE RECEIVED 4. DATE APPLICATION COMPLE		E APPLICATION COMPLETE			
	(ITEMS BELOW TO BE	FILLED BY APPLICANT)					
5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)						
First - Dustin Middle -	First - Danielle Middle - K Last - Thompson						
Company - Duke Energy	Company - Cardno						
E-mail Address - dustin.giesler@d	E-mail Address - danielle.thompson@cardno.com						
6. APPLICANT'S ADDRESS:	9. AGENT'S ADDRESS:	9. AGENT'S ADDRESS:					
Address- 139 E. 4th Street	Address- 11121 Canal Rd						
City - Cincinnati State -	OH Zip - 45202 Country - USA	City - Cincinnati	State - OH	Zip - 45241 Country -USA			
7. APPLICANT'S PHONE NOs. w//	10. AGENTS PHONE NOs. w/AREA CODE						
a. Residence b. Busine 859-380			b. Business 513-489-2402	c. Fax			
	STATEMENT OF	AUTHORIZATION		***************************************			
11. I hereby authorize, supplemental information in support	Cardno to act in my behalf as t of this permit application.	s my agent in the processing	of this application a	and to furnish, upon request,			
SIGNATURE OF APPLICANT DATE							
	NAME, LOCATION, AND DESCRI	IPTION OF PROJECT OR A	CTIVITY				
12. PROJECT NAME OR TITLE (s	ee instructions)						
5484 - Columbia Substation Re	build and Expansion						
13. NAME OF WATERBODY, IF K	14. PROJECT STREET A	14. PROJECT STREET ADDRESS (if applicable)					
Little Miami River	Address n/a	Address n/a					
15. LOCATION OF PROJECT Latitude: •N 39.369199	Longitude: •W -84.226046	City - South Lebanon	State- C	OH Zip- 45036			
	PTIONS, IF KNOWN (see instructions)	" " " O					
State Tax Parcel ID	•	nicipality Hamilton Twp., Warren County					
Section -	Township -	Range -					

17. DIRECTIONS TO THE SITE

The 5484 Columbia Substation Rebuild and Expansion project begins at the Duke Energy's Columbia Substation located west of State Route 48 and south of Mason Morrow Millgrove Road (39.369349, -84.226636) and terminates at Duke Energy's Structure No. 936 located west of State Route 48 and south of the Little Miami River (39.363899, -84.222795). See Appendix A, Figure 2 for project corridor.

From Cincinnati take I-71 North to Exit 28 to SR-48 South, the project corridor runs parallel to SR-48 from approximately 0.25 mile north of the Little Miami River to approximately 0.25 mile south of the Little Miami River.

18. Nature of Activity (Description of project, include all features)

The Columbia Substation 138kV Rebuild and Expansion Project aims to maintain and improve the quality of the electric service and reliability to the service area as well as ensure the integrity of the transmission line by replacing the existing wood structures to galvanized steel structures. The Study Area consisted of a mix of habitats including forested wetland, secondary growth deciduous forest, and scrubshrub/maintained right-of-way (ROW). A total of two potentially regulated waters including the Little Miami River (Stream 2), and one unnamed ephemeral stream (Stream 1) and one wetland (Wetland 1) were identified within the Project Study Area (Appendix A). No identified streams will be impacted by the project; however, the structures that support Duke's existing overhead 138kV electric power line over the Little Miami River will be replaced at the same location and height of the original allowing for the same clearance of the existing line. The project activities will result in no net fill within the floodplain of the Little Miami River. See Appendix B, for project Engineering Plans.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose and need for the Columbia Substation 138kV Rebuild and Expansion Project is to maintain and improve the quality of the electric service and reliability to the service area as well as ensure the integrity of the transmission line by replacing the existing wood structures to galvanized steel structures.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

No fill material will be discharged into 'Waters of the US'.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type
Amount in Cubic Yards

Type
Amount in Cubic Yards

Type

Amount in Cubic Yards

N/A

N/A

N/A

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres N/A

OF

Linear Feet N/A

23. Description of Avoidance, Minimization, and Compensation (see instructions)

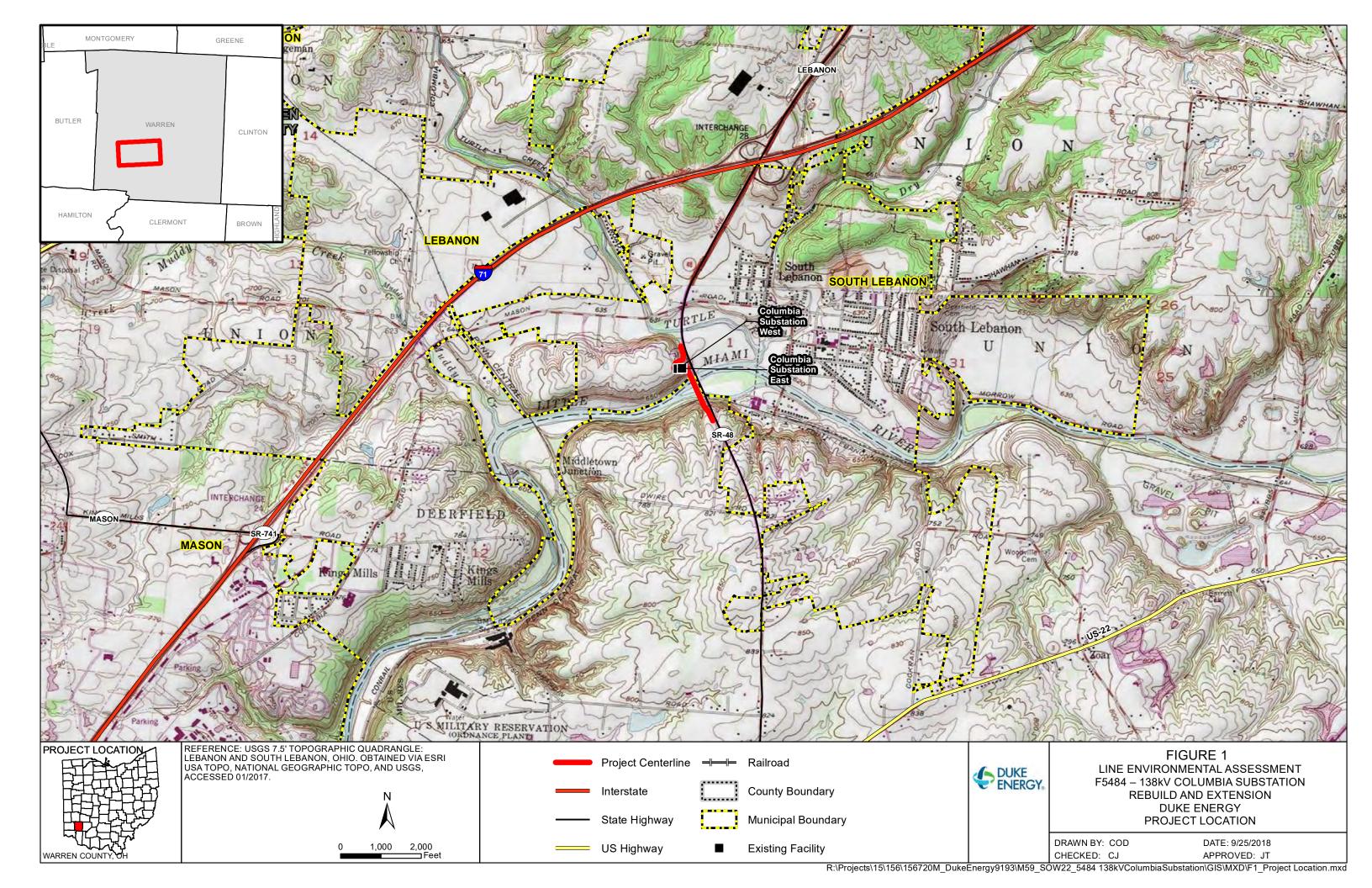
The proposed Project will occur entirely within existing Duke Right-of-Way. No additional long term impacts to adjacent properties are anticipated as a result of the rebuild Project. Therefore, the current alignment is the only reasonable alternative available and no alternatives were considered.

ENG FORM 4345, DEC 2014 Page 2 of 3

24. Is Any Portion of the Work Aiready Complete? Yes No IF YES, DESCRIBE THE COMPLETED WORK									
25. Addresses of Adjoinin	g Property Owners, Lessee	s. Etc., Whose Property A	dioins the Waterbody (if mor	re than can be entered here, please a	ultach a supplemental list)				
•		,,	, , , , , , , , , , , , , , , , , , , ,		and a supplemental many				
a. Address-									
City -		State -	Zip -						
b. Address-									
b. Address									
City -		State -	Zip -						
			•						
c. Address-									
City -		State -	Zip -						
al Autorope									
d. Address-									
City -		State -	Zip -						
e. Address-									
City -		State -	Zip -	8					
26. List of Other Certificat	es or Approvals/Denials rec	eived from other Federal	State or Local Agencies for	or Work Described in This A	nnlication				
AGENCY	TYPE APPROVAL*	IDENTIFICATION	DATE APPLIED	DATE APPROVED					
AGENOT	THEATTHOVAL	NUMBER	DATE AFFLIED	DATE APPROVED	DATE DENIED				
									
* Would include but is not	restricted to zoning, buildin	g, and flood plain permits							
	made for permit or permits		ribed in this application. I	certify that this information is	n this application is				
complete and accurate. I	further certify that I possess	the authority to undertake	e the work described herein	or am acting as the duly a	uthorized agent of the				
applicant.	1	/ 1	11 26	7					
XY/C		10/15/18	Valle	ach.	10/15/18				
SIGNATURE	OF APPLICANT	/DATE	SIGNAT	DRE OF AGENT	DATE				
The Application must be	e signed by the person v	who desires to undertak	e the proposed activity	(applicant) or it may be e	ianad by a duly				

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.



This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

11/14/2018 1:06:31 PM

in

Case No(s). 18-1571-EL-BNR

Summary: Notification CONSTRUCTION NOTICE FOR THE F5484 – 138 kV COLUMBIA SUBSTATION- PART 2 electronically filed by Carys Cochern on behalf of Kingery, Jeanne W Ms.