

CONFIDENTIAL PROPRIETARY TRADE SECRET

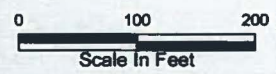


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014



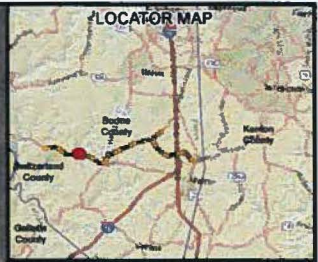
Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 4H
 WETLAND AND WATERBODIES
 DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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CONFIDENTIAL PROPRIETARY TRADE SECRET

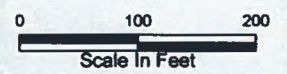


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014

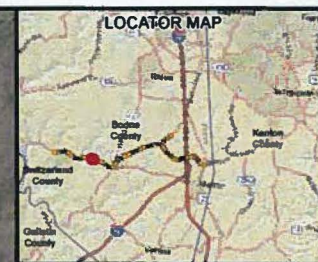


Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 41
 WETLAND AND WATERBODIES
 DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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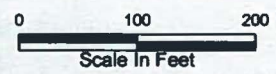


LEGEND:

- Centerline
- ▭ Right of Way
- ▭ Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
- ▨ PEM
- ▨ PFO
- ▨ PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014



Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

**FIGURE 4J
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
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CONFIDENTIAL PROPRIETARY TRADE SECRET



LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014



*Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky*

**FIGURE 4K
 WETLAND AND WATERBODIES
 DELINEATION MAP**

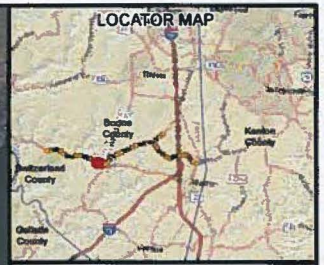
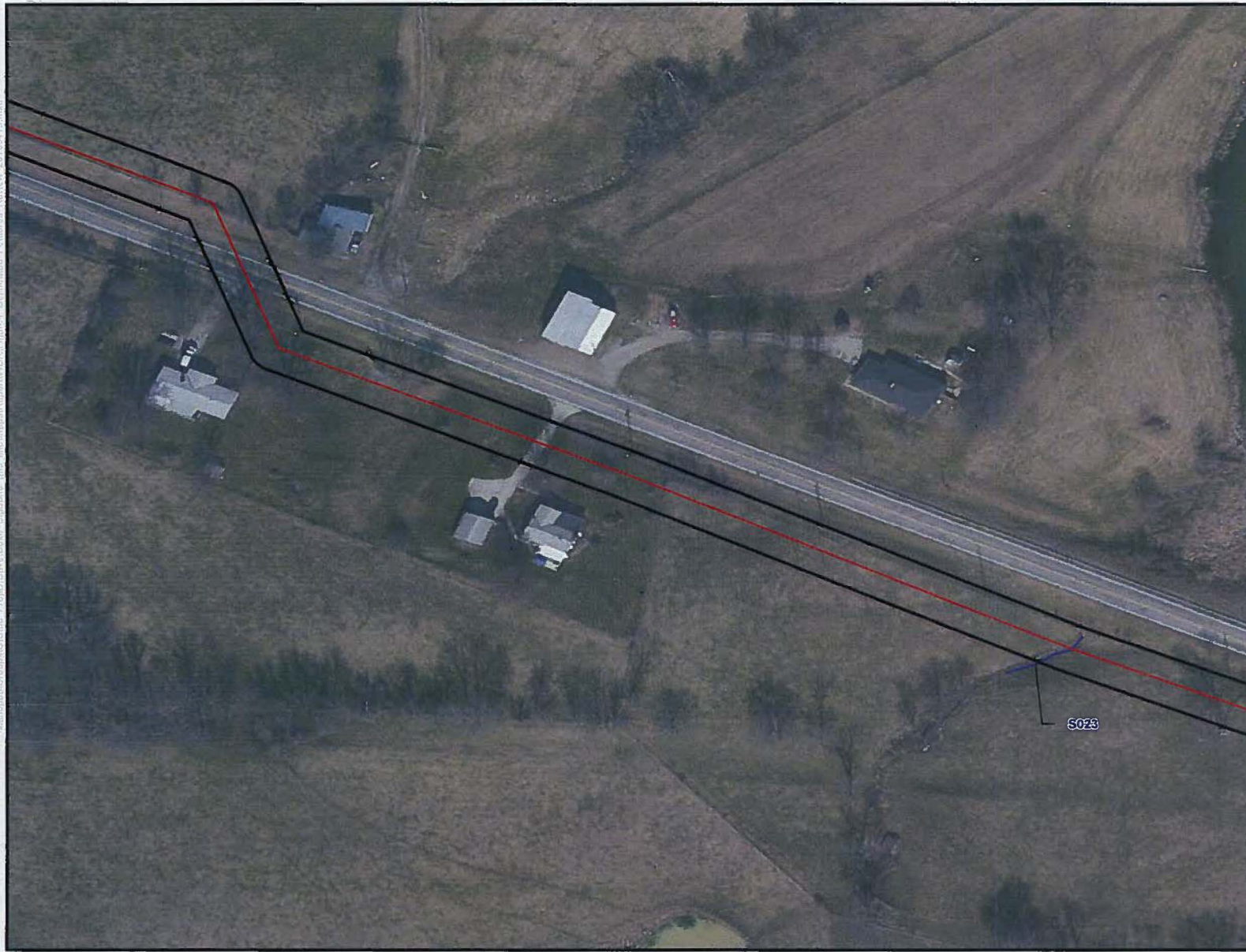
PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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CONFIDENTIAL PROPRIETARY TRADE SECRET



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LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014

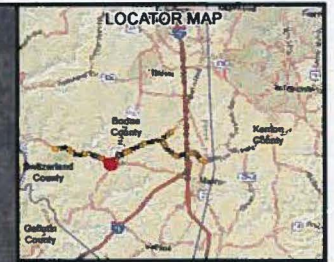


Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

**FIGURE 4M
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

CONFIDENTIAL PROPRIETARY TRADE SECRET

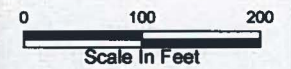


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014



Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 4N
 WETLAND AND WATERBODIES
 DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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CONFIDENTIAL PROPRIETARY TRADE SECRET



LEGEND:

- Centerline
- ▭ Right of Way
- ▭ Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- ▭ Pond (CH Delineated)
- Wetland (CH Delineated)**
- ▨ PEM
- ▨ PFO
- ▨ PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014



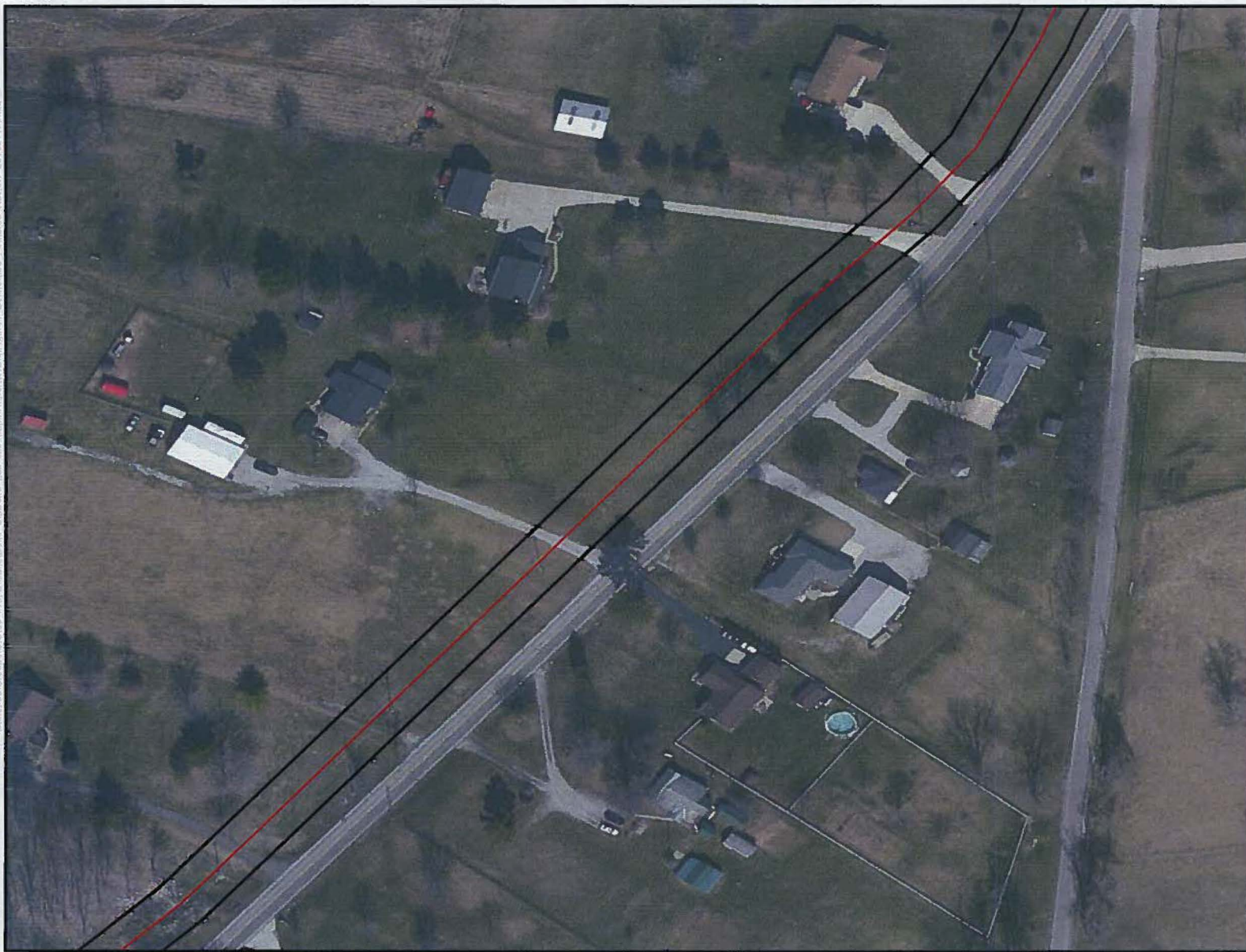
Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

FIGURE 40
WETLAND AND WATERBODIES
DELINEATION MAP

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	ch2m
REVIEWED BY:	

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CONFIDENTIAL PROPRIETARY TRADE SECRET

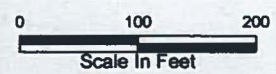


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
- PEM
- PFO
- PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014



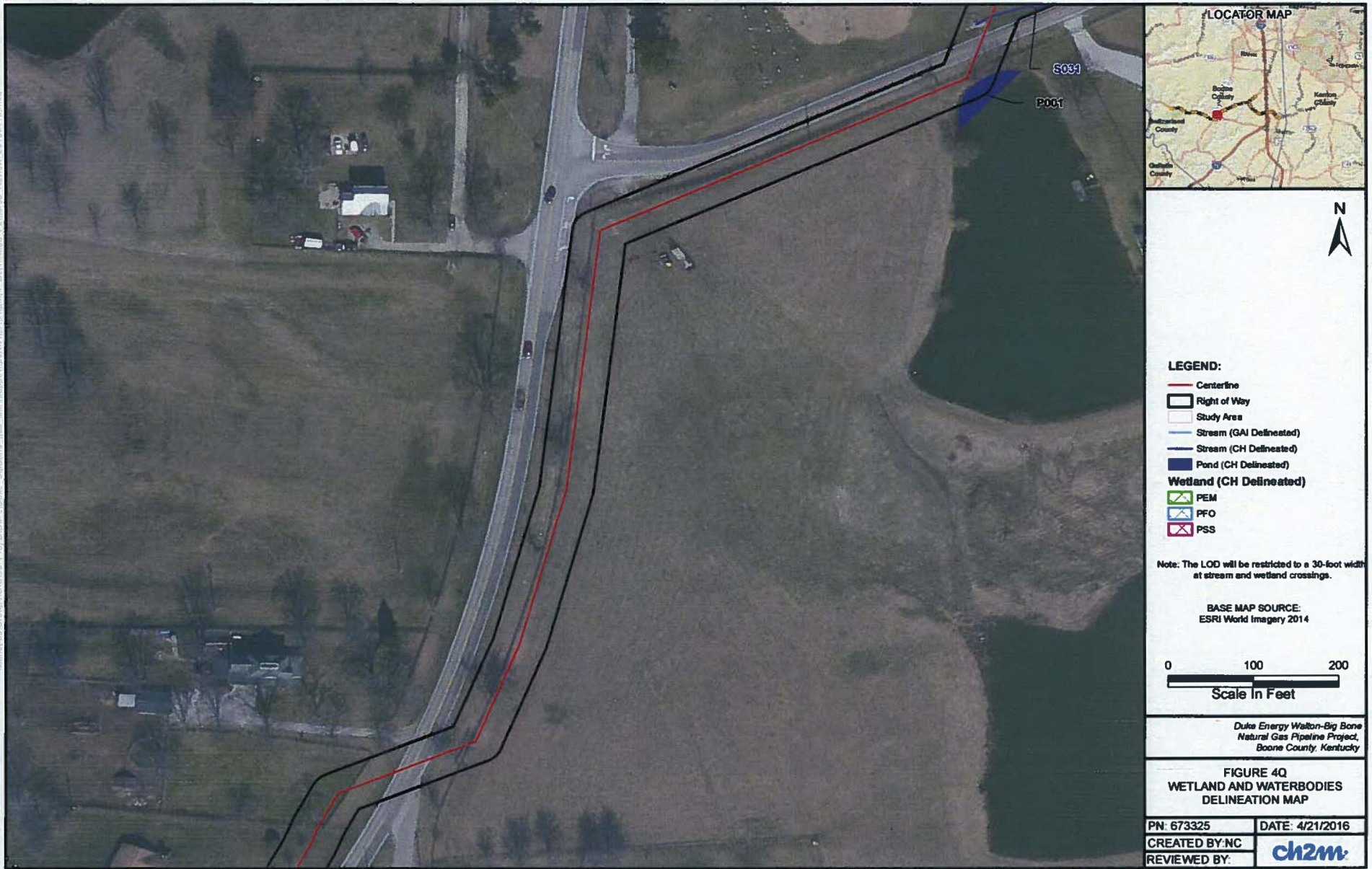
Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 4P
 WETLAND AND WATERBODIES
 DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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CONFIDENTIAL PROPRIETARY TRADE SECRET

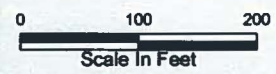


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

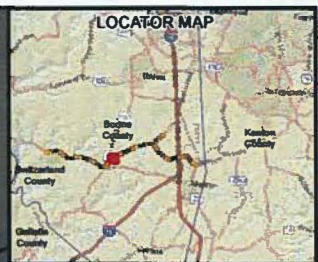
BASE MAP SOURCE:
 ESRI World Imagery 2014



Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 4Q
 WETLAND AND WATERBODIES
 DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	ch2m
REVIEWED BY:	

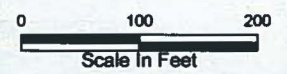


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014



Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

**FIGURE 4R
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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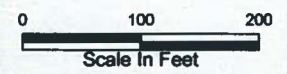


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
- PEM
- PFO
- PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014












Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 4S
 WETLAND AND WATERBODIES
 DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

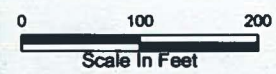


LEGEND:

-  Centerline
-  Right of Way
-  Study Area
-  Stream (GAI Delineated)
-  Stream (CH Delineated)
-  Pond (CH Delineated)
- Wetland (CH Delineated)**
-  PEM
-  PFO
-  PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014



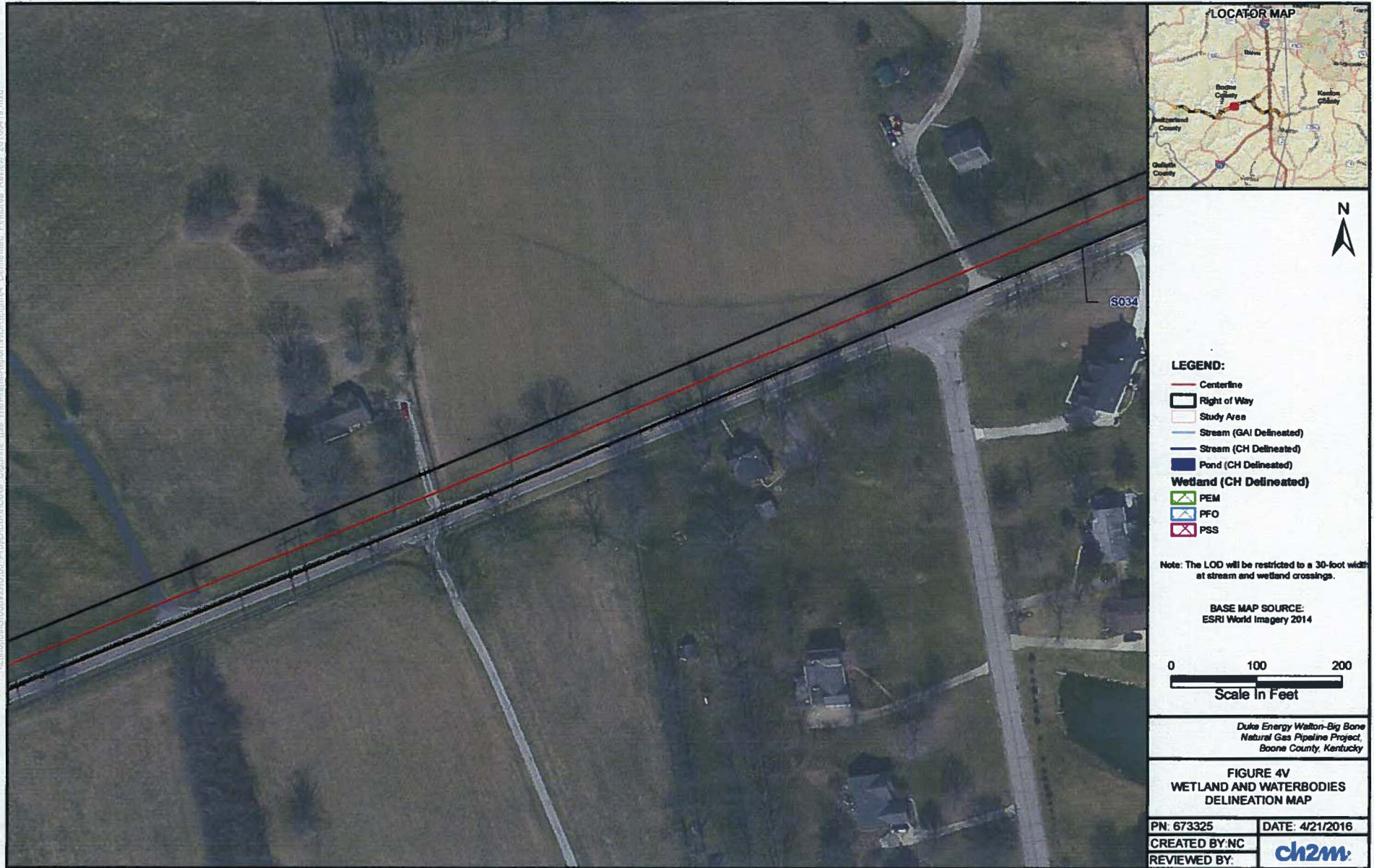
Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

**FIGURE 4T
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	



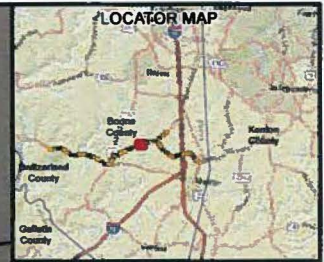
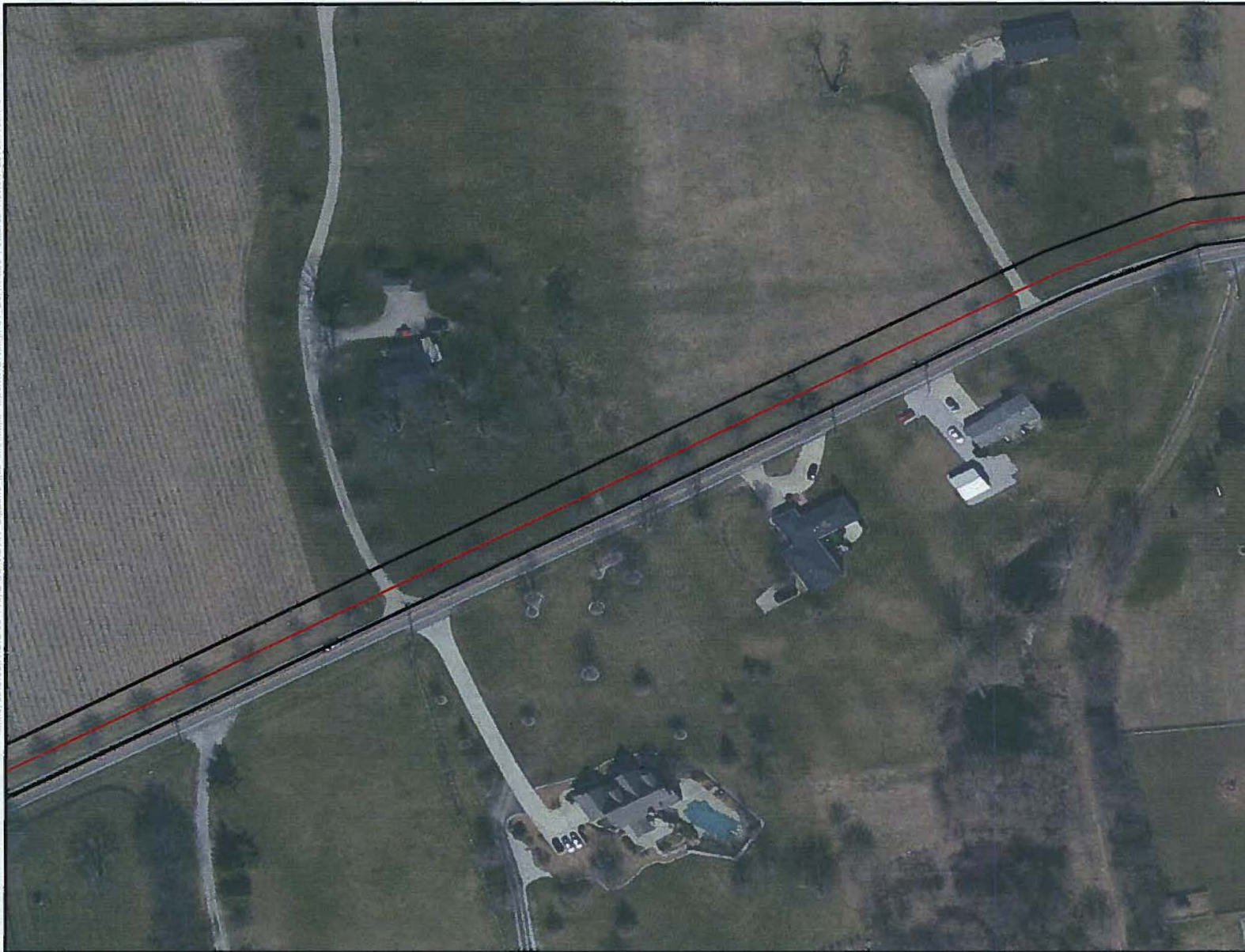
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LEGEND:

-  Centerline
-  Right of Way
-  Study Area
-  Stream (GAI Delineated)
-  Stream (CH Delineated)
-  Pond (CH Delineated)
- Wetland (CH Delineated)**
-  PEM
-  PFO
-  PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014



Duka Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

**FIGURE 4X
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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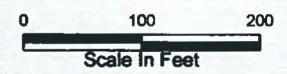


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014

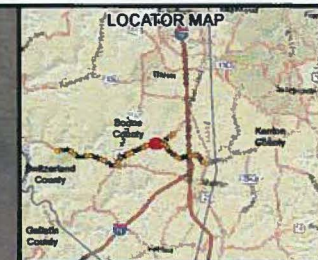


Duke Energy Wellton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

**FIGURE 4Y
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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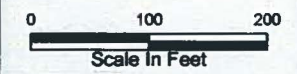


LEGEND:

- Centerline
- ▭ Right of Way
- ▭ Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
- ▨ PEM
- ▨ PFO
- ▨ PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014



Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 4Z
 WETLAND AND WATERBODIES
 DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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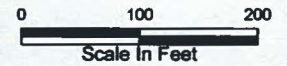


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014



Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

**FIGURE 4AA
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	



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LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
- PEM
- PFO
- PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014












Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 4AC
 WETLAND AND WATERBODIES
 DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	ch2m
REVIEWED BY:	



LEGEND:


-  Centerline
-  Right of Way
-  Study Area
-  Stream (GAI Delineated)
-  Stream (CH Delineated)
-  Pond (CH Delineated)
- Wetland (CH Delineated)**
-  PEM
-  PFD
-  PSS

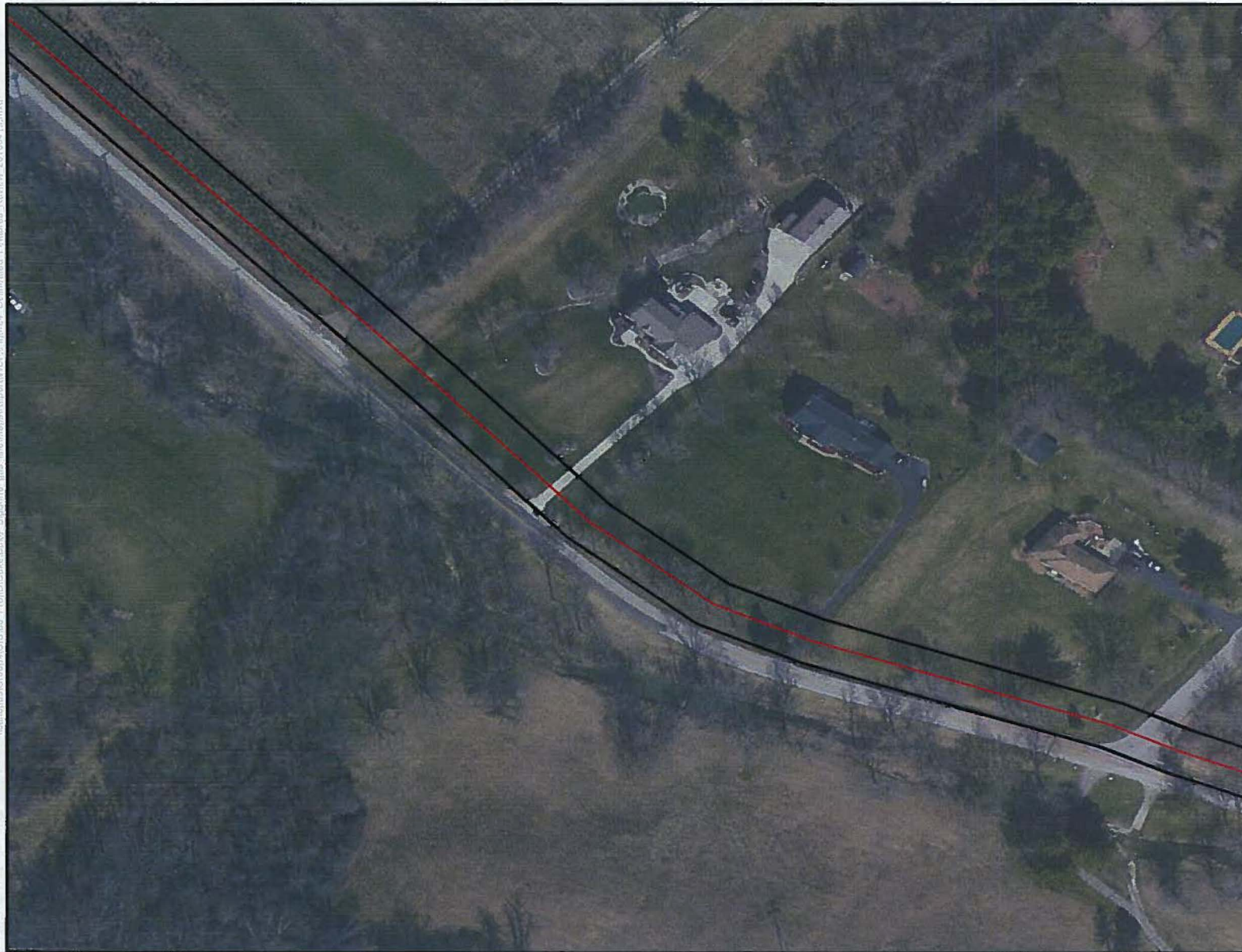
Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014




Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

FIGURE 4AD WETLAND AND WATERBODIES DELINEATION MAP	
PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	



LEGEND:

-  Centerline
-  Right of Way
-  Study Area
-  Stream (GAI Delineated)
-  Stream (CH Delineated)
-  Pond (CH Delineated)
- Wetland (CH Delineated)**
-  PEM
-  PFO
-  PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014



Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

**FIGURE 4AE
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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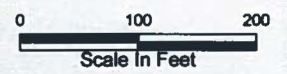


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
- PEM
- PFO
- PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014

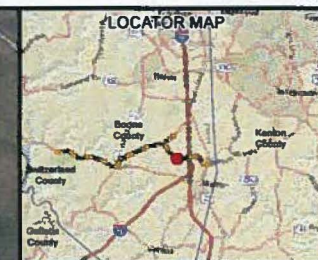


Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 4AF
 WETLAND AND WATERBODIES
 DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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LEGEND:

-  Centerline
-  Right of Way
-  Study Area
-  Stream (GAI Delineated)
-  Stream (CH Delineated)
-  Pond (CH Delineated)
- Wetland (CH Delineated)**
-  PEM
-  PFO
-  PSS


Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

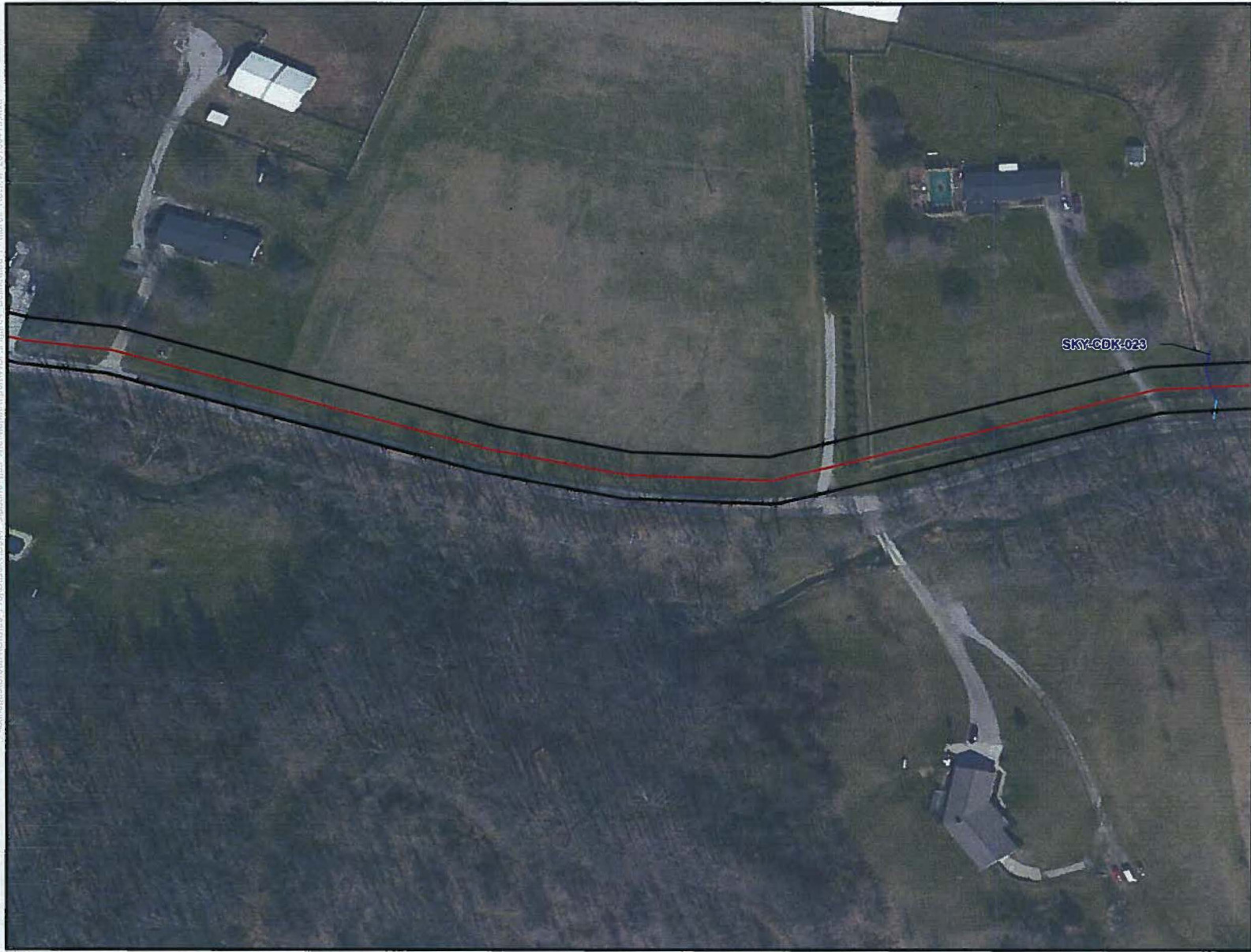
BASE MAP SOURCE:
ESRI World Imagery 2014



Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

FIGURE 4AG
WETLAND AND WATERBODIES
DELINEATION MAP

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
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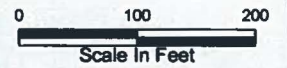


LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014



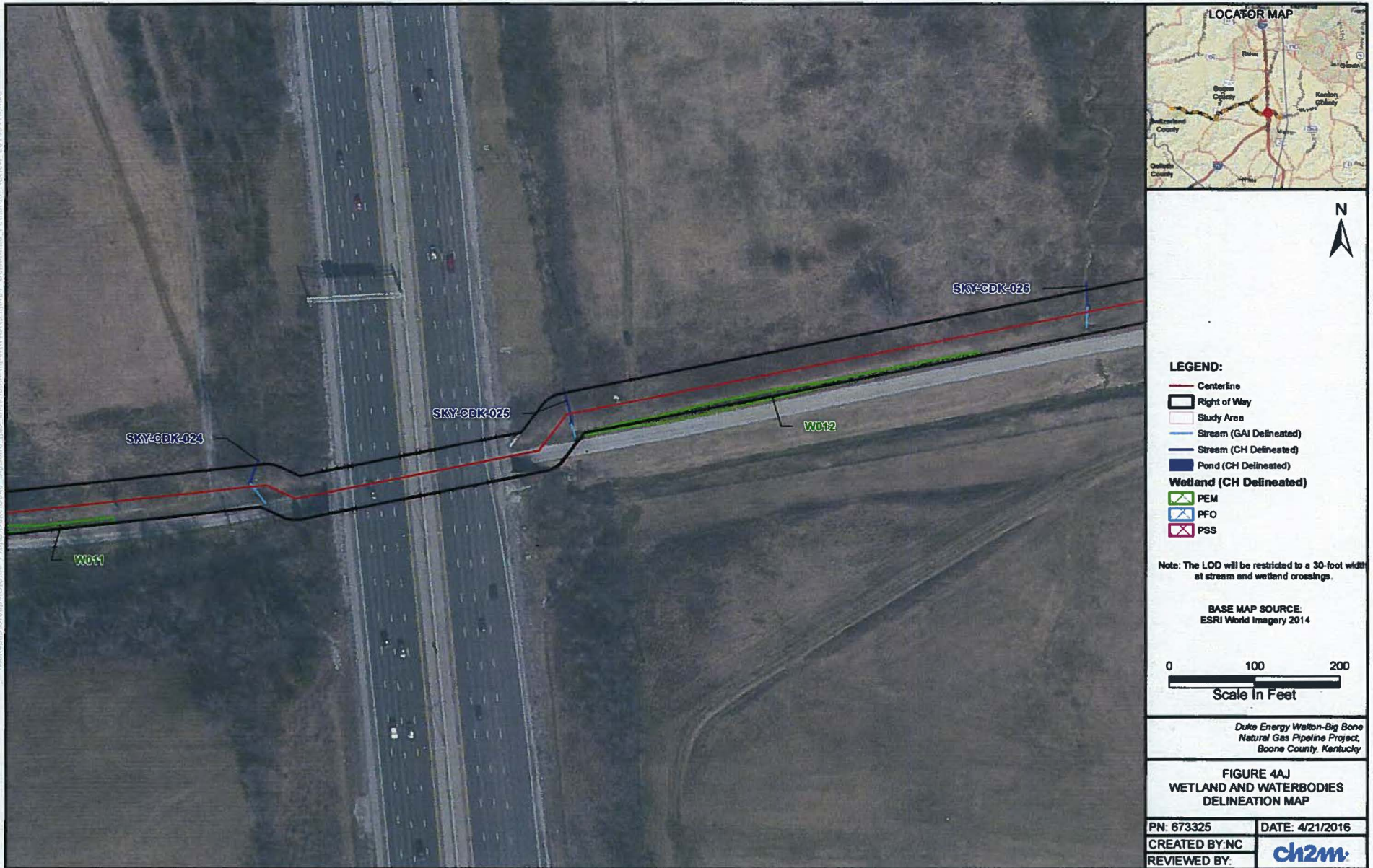
*Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky*

**FIGURE 4AH
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
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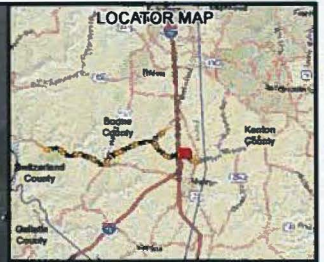
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LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
- PEM
- PFO
- PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014

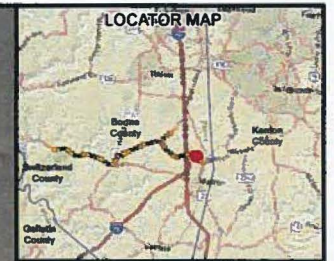


Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

FIGURE 4AL
WETLAND AND WATERBODIES
DELINEATION MAP

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014



Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 4AM
 WETLAND AND WATERBODIES
 DELINEATION MAP**

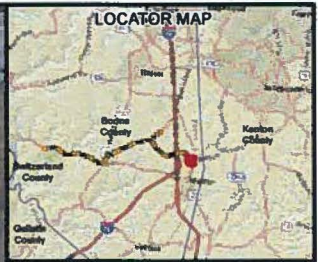
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LEGEND:

-  Centerline
-  Right of Way
-  Study Area
-  Stream (GAI Delineated)
-  Stream (CH Delineated)
-  Pond (CH Delineated)
- Wetland (CH Delineated)**
-  PEM
-  PFO
-  PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014



Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

**FIGURE 4A0
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
- PEM
- PFO
- PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
ESRI World Imagery 2014

0 100 200
Scale in Feet

Duke Energy Walton-Big Bone
Natural Gas Pipeline Project,
Boone County, Kentucky

**FIGURE 4AR
WETLAND AND WATERBODIES
DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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LEGEND:

- Centerline
- Right of Way
- Study Area
- Stream (GAI Delineated)
- Stream (CH Delineated)
- Pond (CH Delineated)
- Wetland (CH Delineated)**
 - PEM
 - PFO
 - PSS

Note: The LOD will be restricted to a 30-foot width at stream and wetland crossings.

BASE MAP SOURCE:
 ESRI World Imagery 2014



Duke Energy Walton-Big Bone
 Natural Gas Pipeline Project,
 Boone County, Kentucky

**FIGURE 4AS
 WETLAND AND WATERBODIES
 DELINEATION MAP**

PN: 673325	DATE: 4/21/2016
CREATED BY: NC	
REVIEWED BY:	

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Appendix A
USACE Wetland Determination Field Datasheets

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Appendix B
Rapid Bioassessment Datasheets

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Appendix C
Pond/Open Water Datasheets

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Appendix D
Wetlands, Streams, and Ponds Photo
Documentation

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Appendix E
GAI Wetland and Stream Delineation Report

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Appendix A
USACE Wetland Determination Field Datasheets