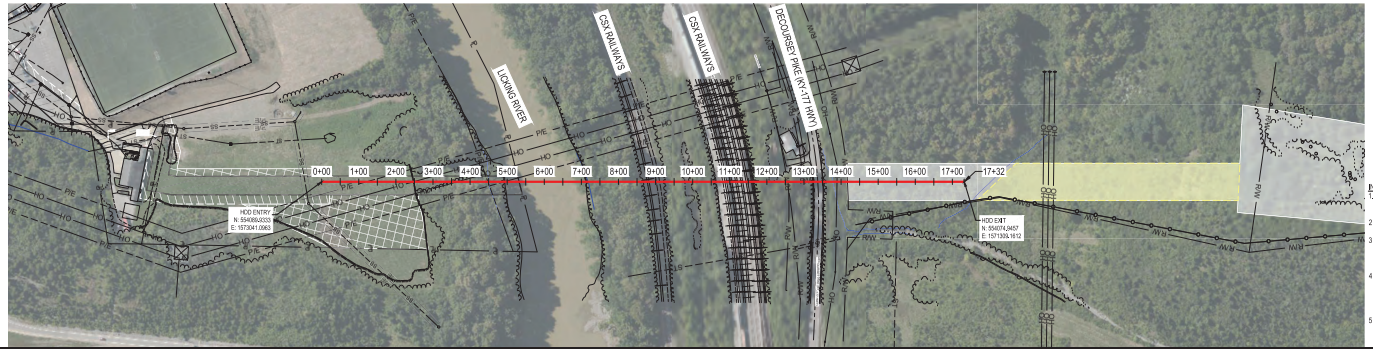
PLAN



REQUIRED TOLERANCES	
ITEM	TOLERANCE
PILOT HOLE ENTRY LOCATION	NO MODIFICATIONS SHALL BE MADE WITHOUT APPROVAL FROM THE COMPANY ENGINEER. IN THE EVENT THE PILOT HOLE IS ADVANCED FROM EXIT TO ENTRY OR A PILOT HOLE INTERSECT IS PERFORMED, TOLERANCES SHALL BE APPROVED BY COMPANY ENGINEER.
PILOT HOLE EXIT LOCATION	UP TO 20-FEET BEYOND OR 10-FEET SHORT OF THE EXIT STAKE, BETWEEN 5-FEET LEFT AND 5-FEET RIGHT OF CENTERLINE
MINIMUM ALLOWABLE THREE-JOINT COMBINED RADIUS	OVER ANY CONSECUTIVE THREE-JOINT SECTION SHALL NOT BE LESS THAN 1600'.
PILOT HOLE DEPTH	UP TO 2-FEET ABOVE THE DESIGN DRILL PROFILE ALLOWED; UP TO 10-FEET BELOW THE DESIGN DRILL PROFILE ALLOWED.
PILOT HOLE ALIGNMENT	SHALL REMAIN WITHIN 5-FEET LEFT OR RIGHT OF THE HDD ALIGNMENT.
ENTRY ANGLE	UP TO 1° INCREASE FROM THE DESIGNED ENTRY ANGLE; NO DECREASE IN ENTRY ANGLE WILL BE ALLOWED.
EXIT ANGLE	NO INCREASE FROM THE DESIGNED EXIT ANGLE; UP TO 2° DECREASE IN EXIT ANGLE WILL BE ALLOWED.

INSTALLATION REQUIREMENTS:
1. CONTRACTOR SHALL SUPPLY A PULLBACK LIFTING PROCEDURE, INCLUDING SUPPORT SPACING AND HEIGHT, AS PART OF THEIR FINAL HDD WORK PLAN.
2. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK.
3. THE MINIMUM ALLOWABLE RADIUS OF CURVATURE FOR HANDLING AND POSITIONING THE CARRIER PIPE IN PREPARATION FOR PULLBACK OPERATIONS IS 1,600-FEET.
4. THE HDD CONTRACTOR SHALL PROVIDE WITH THEIR HDD WORK PLAN THE MAXIMUM ANTICIPATED PULL FORCE REQUIRED TO INSTALL THE CARRIER PIPE AND THE MAXIMUM ALLOWABLE PULL FORCE THAT CAN BE APPLIED TO THEIR DOWNHOLE TOOLING.
5. THE HDD CONTRACTOR SHALL MONITOR DOWNHOLE ANNULAR PRESSURE THROUGHOUT THE DRILLING PROCESS.

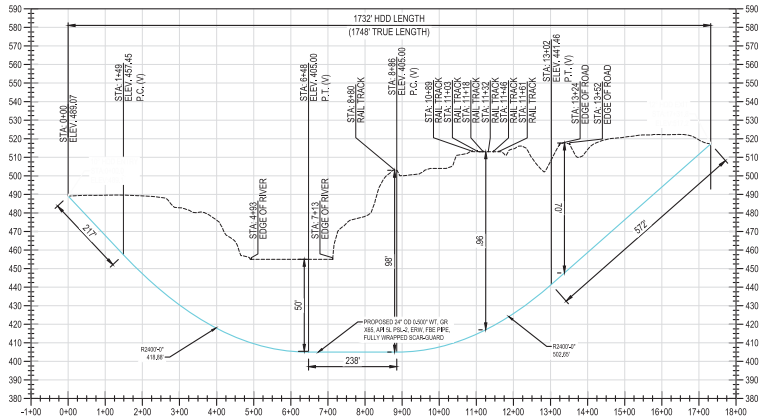
POST-INSTALLATION REQUIREMENTS:
1. THE HDD CONTRACTOR SHALL BE RESPONSIBLE FOR PRODUCING AND SUBMITTING AN AS-BUILT DRAWING OF THE PILOT HOLE SURVEY DATA WITHIN TWO WEEKS OF THE COMPLETION OF PULLBACK OPERATIONS. THIS SHALL INCLUDE A TABULATION OF THE SUPPORTING AS-BUILTS SURVEY DATA USED TO GENERATE THE DRAWING.
2. UPON COMPLETION OF INSTALLATION, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH CONTRACT DOCUMENTS.

STATIONING

PLAN/PROFILE VIEW SCALE
0 150 300
HORIZONTAL SCALE: 1" = 150'

PROFILE

ENTRY ANGLE	EXIT ANGLE	LENGTH OF BORE
12°	10°	1747'-6"



TOPSOIL | SAND | WELL-GRADED SAND | POORLY-GRADED SAND | WELL-GRADED SAND WITH SILT | POORLY-GRADED SAND WITH SILT | SILT | SILTY SAND | SILTY SAND WITH CLAY SEAMS | SANDY SILT | CLAYEY SILT | LOW PLASTICITY ORGANIC SILT OR CLAY | HIGH PLASTICITY SILT | LOW PLASTICITY SILT | CLAY | SANDY CLAY | SILTY CLAY | CLAYEY SAND | CRYSTALLINE ROCK | MUCK/PEAT | CORED ROCK | PARTIALLY WEATHERED ROCK | SILTY GRAVEL | ASPHALT | WATER

1. STATIONING IS IN FEET BY HORIZONTAL MEASUREMENT, FOR HDD SURVEY CONTROL, REFERENCING CENTERLINE OF PIPE.
2. HORIZONTAL CONTROL NAD 83, KENTUCKY PLANE NORTH ZONE (2246), US FOOT. VERTICAL CONTROL ELEV. REF NAVD 88.
3. GEOTECHNICAL DATA WAS PROVIDED FOR CONTRACTOR REFERENCE IN THE GEOTECHNICAL DATA REPORT FOR HDD-XXX PREPARED BY "COMPANY NAME" DATED MONTH DAY, 20XX.

GENERAL NOTES:
1. DESIGNED IN ACCORDANCE TO TITLE 49 CFR 192 CLASS IV DESIGN FACTOR ON FULLY CONTROLLED HIGHWAYS.
2. STATIONING IS IN FEET BY HORIZONTAL MEASUREMENT, FOR HDD SURVEY CONTROL, REFERENCING CENTERLINE OF PIPE.
3. HORIZONTAL CONTROL NAD 83, VERTICAL CONTROL ELEV. REF NAVD 88.
4. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY.
5. BORING IS OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN IN THE PLAN VIEW. BORING GROUND SURFACE ELEVATION WAS PROVIDED WITH THE GEOTECHNICAL DATA RECEIVED FOR THIS SITE AS SHOWN ON THE PROFILE VIEW. REFER TO THE APPLICABLE GEOTECHNICAL REPORT IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION (PROVIDED BY GEOTECHNOLOGY LLC, DATED 01/18/2023).
6. CONTRACTOR IS RESPONSIBLE FOR CALLING KY 811 AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15-FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM DUKE ENERGY PRIOR TO INITIATING HDD OPERATIONS.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
8. THE HDD DRILL RIG SHALL BE POSITIONED ON THE ENTRY SIDE OF THE CROSSING UNLESS OTHERWISE APPROVED BY THE PROJECT TEAM. THE USE OF DUAL DRILL RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
9. PROJECT AREA SHALL NOT BE ACCESSED VIA I-275 OR ITS AFFILIATED ON/OFF RAMPS. TRAFFIC SHALL NOT BE IMPACTED BY CONSTRUCTION ACTIVITIES.
10. MAXIMUM WORK SPACE LIMITS ARE DEPICTED, CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR, FOR ROW MAINTENANCE, A MINIMUM 16' SHALL BE CLEARED FROM GROUND TO SKY ALONG THE ENTIRE HDD TO ENSURE COMPLIANCE WITH PHMSA PART 192 REGULATIONS REQUIRING PATROLS THAT WOULD ALLOW FOR AERIAL SURVEILLANCE OF THE ROW ON THE REQUIRED FREQUENCY.
11. CONTRACTOR SHALL DISPOSE OF EXCESS FLUID IN ACCORDANCE WITH CONTRACT DOCUMENTS AND/OR PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF IN ACCORDANCE WITH CONTRACT DOCUMENTS AND/OR PERMIT CONDITIONS. ALL DISPOSAL LOCATIONS SHALL BE REVIEWED AND APPROVED BY DUKE ENERGY IN ADVANCE.
12. WATER FOR DRILLING FLUID AND HYDROSTATIC TEST WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
13. PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE HYDROSTATIC TEST PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS.
14. THE HDD CONTRACTOR SHALL SUBMIT WITH THEIR HDD WORK PLAN AN ASSESSMENT OF THE POTENTIAL FOR HOLE INSTABILITY AND THEIR PROPOSED MITIGATION PROCEDURES SHOULD HOLE INSTABILITY IMPACT DRILLING OPERATIONS AND/OR INCREASE THE RISK OF A FAILED INSTALLATION.
15. THE HDD CONTRACTOR SHALL MAKE ALL REASONABLE ATTEMPTS TO MAINTAIN DRILLING FLUID RETURNS DURING PILOT HOLE AND REAMING OPERATIONS.
16. THE DRILLING FLUID PROPERTIES SHALL BE TESTED A MINIMUM OF THREE (3) TIMES PER SHIFT SO THE SUITABILITY OF THE DRILLING FLUID FOR THE GIVEN CONDITIONS CAN BE DETERMINED.
17. ALL DRILL PIPE UTILIZED ON THE PROJECT MUST BE INSPECTED AND DRILL PIPE INSPECTION RECORDS FURNISHED TO DUKE ENERGY PRIOR TO USE ON THE PROJECT. THE DRILL PIPE SHALL NOT HAVE BEEN USED ON ANOTHER PROJECT SUBSEQUENT TO ITS LAST INSPECTION.
18. PROPOSED PIPELINE/HDD WILL BE PROTECTED BY THE EXISTING AM07 CATHODIC PROTECTION SYSTEM. ALL TEST STATIONS INSTALLATIONS AND CP EFFORTS ARE TO BE COORDINATED WITH DUKE SYSTEM INTEGRITY DEPARTMENT.

PILOT HOLE REQUIREMENTS:
1. AT ALL TIMES THE HDD CONTRACTOR SHALL PROVIDE AND MAINTAIN INSTRUMENTATION TO DOCUMENT AND ACCURATELY LOCATE THE PILOT HOLE. THIS EFFORT SHALL INCLUDE THE USE OF A DOWNHOLE STEERING TOOL AS WELL AS A SECONDARY SURVEY SYSTEM (TRUTRACK, PARATRACK, OR EQUIVALENT). THE HDD CONTRACTOR WILL NOT BE ALLOWED TO DRILL ANY PORTION OF THE PILOT HOLE WITHOUT THE USE OF A SECONDARY SURVEY SYSTEM UNLESS AGREED TO IN ADVANCE BY THE COMPANY OR IN EVENT A GYROSCOPIC STEERING TOOL IS UTILIZED.
2. AFTER SURVEYING THE SECONDARY SURVEY WIRE, THE HDD CONTRACTOR SHALL REPORT ANY LACK OF CLOSURE THAT MAY INDICATE INCORRECTLY LOCATED ENTRY AND/OR EXIT POINTS OR ANY OTHER POTENTIAL DISCREPANCIES WITH THE DESIGN INFORMATION PROVIDED ON THIS DESIGN DRAWING.
3. IN NO CASE WILL THE PILOT HOLE BE ACCEPTABLE IF ITS LOCATION WOULD RESULT IN THE PIPELINE BEING INSTALLED IN VIOLATION OF THE RIGHT-OF-WAY AND PERMIT STIPULATIONS SECTION OF THE CONTRACT, AND FEDERAL, STATE, OR LOCAL PERMIT REQUIREMENTS OR REQUIRED CLEARANCES BETWEEN COMPANY AND FOREIGN OWNED UTILITIES AND STRUCTURES.
4. PRIOR TO REAMING, THE CONTRACTOR SHALL SUBMIT AS-DRILLED DATA AND CALCULATED LOCATION TO THE COMPANY FOR APPROVAL OF THE PILOT HOLE. CONTRACTOR SHALL NOT COMMENCE REAMING UNTIL THE PILOT HOLE IS APPROVED.

REAMING REQUIREMENTS:
1. AFTER COMPLETION OF THE PILOT HOLE, THE HDD CONTRACTOR SHALL MAINTAIN A CONTINUOUS STRING OF DRILL PIPE DOWNHOLE BETWEEN ENTRY AND EXIT AT ALL TIMES EXCEPT WHEN RE-ESTABLISHING A CONTINUOUS STRING OF DRILL PIPE IN THE EVENT OF A TWIST OFF DOWNHOLE.
2. THE HDD CONTRACTOR SHALL COMPLETE AT A MINIMUM ONE (1) SWAB PASS TO EVALUATE THE CONDITION OF THE HOLE PRIOR TO PULLBACK OPERATIONS. THE HDD CONTRACTOR SHALL MEET WITH DUKE ENERGY AND REVIEW THE DATA COLLECTED DURING THE REAMING AND SWAB PASSES BEFORE PULLBACK OPERATIONS BEGIN.

ADDITIONAL NOTES:
1. CONTRACTOR SHALL COMPLETE THE DRILL IN ACCORDANCE WITH DUKE'S HDD SPECIFICATION ENG-GD-3050, ANY DEVIATION PROPOSED BY THE CONTRACTOR TO THE SPECIFICATION SHALL BE APPROVED BY COMPANY ENGINEER IN WRITING BEFORE IMPLEMENTATION.
2. CONTACT KYTC DISTRICT 6 TO LOCATE UNDERGROUND LINES FOR SIGNALS AND LIGHTING.
3. CONTACT TRIMARC TO LOCATE UNDERGROUND ELECTRIC AT TURKEYFOOT RD AT I-275.
4. HDD ENTRY SITE WITHIN KYTC R/W WILL BE SECURED BY CONTRACTOR TO PROTECT THE SAFETY OF PEDESTRIAN TRAFFIC.

MATERIAL
CLASS / MAOP

PROFESSIONAL ENGINEER STAMP

*PROPRIETARY & CONFIDENTIAL *ALL RIGHTS RESERVED *DO NOT SCALE THIS DRAWING *USE DIMENSIONS ONLY
DUKE ENERGY & PIEDMONT NATURAL GAS DRAWINGS ARE CONFIDENTIAL "DRAWING IS CURRENT ONLY THROUGH THE LATEST REVISED DATE "TO ENSURE THERE IS NO RISK OF INAPPROPRIATE DISCLOSURE,
ALL PREVIOUS PAPER COPIES OF THIS DRAWING MUST BE DESTROYED IN ACCORDANCE WITH RECORDS & INFO MANAGEMENT (RIM)

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
HDD ALIGNMENT SHEET
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)	0X-XXXXX-XXXX-20XX - SHT 1 0X-XXXX-XXXX-20XX - SHT 1
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	04/10/2024
SUPERSEDED	__
DRAWING NUMBER	PNG -C-043-0002001
REVISION	A

DISCIPLINE / RESOURCE CENTER / LINE NUMBER

KENTUCKY TRANSPORTATION CABINET
Department of Highways
PERMITS BRANCH

TC 99-1A
Rev. 10/2020
Page 1 of 4

APPLICATION FOR ENCROACHMENT PERMIT

KYTC KEPT #: _____

SECTION 1: APPLICANT CONTACT INFORMATION

APPLICANT Duke Energy	**ADDRESS** 139 E 4th St		
EMAIL n/a	**CITY** Cincinnati	**STATE** OH	**ZIP** 45202
CONTACT NAME 1 Josh Pedersen (on behalf of Duke Energy)	**EMAIL** jmpedersen@burnsmcd.com	**PHONE #** **CELL #** (913) 645-2713	
CONTACT NAME 2 (*if applicable*) John Perkins	**EMAIL** john.perkins@duke-energy.com	**PHONE #** **CELL #** 513-315-8338	

SECTION 2: PROPOSED WORK LOCATION

ADDRESS AA Hwy (KY9)	**CITY** Wilder		**STATE** Kentucky	**ZIP** 41076
COUNTY Kenton	**ROUTE #** KY9	**MILE POINT** 17.55	**LONGITUDE** (*X*) -84.481835° -84.480955°	**LATITUDE** (*Y*) 39.020173° 39.020137°

ADDITIONAL LOCATION INFORMATION: includes workspace and pipe installation within KYTC ROW for installation of road crossing bore. Also includes temporary access drive for access

FOR KYTC USE ONLY

PERMIT TYPE: ☐ Air Right ☐ Entrance ☐ Utilities ☐ Vegetation Removal ☐ Other: _____

ACCESS: ☐ Full ☐ Partial ☐ by Permit **LOCATION:** ☐ Left ☐ Right ☐ Crossing

SECTION 3: GENERAL DESCRIPTION OF WORK

Scope includes trenchless installation of 24" steel natural gas pipeline below AA Hwy (KY9) with entry/exit pits on each side within road right of way. Also includes installation of temporary access drive back to installation location within KYTC ROW. No hard surface restoration anticipated with installation efforts being trenchless. Anticipated installation of bored pipeline under KY9 approximately 147' of true length. Approximately total length of 24" steel pipeline within public KYTC owned ROW is 583'.

(See attached design drawings including plan/profile views of proposed bore installation PNG-C-043-0001986 and PNG-C-043-0002004)

Installation of temporary access off KY9 is assumed during non-peak hours as specified by KYTC.

THE UNDERSIGNED APPLICANT(s), being duly authorized representative(s) or owner(s), DO AGREE TO ALL ORIGINAL UNEDITED TERMS AND CONDITIONS ON THE TC 99-1A, pages 1-4.

John Perkins Digitally signed by JPerki2 (277364) Date: 2024.05.09 10:42:55 -04'00'

SIGNATURE **DATE**

This is not a permit unless and until the applicant(s) receives an approved TC 99-1B from KYTC. This application shall become void if not approved by the cancellation date. The cancellation date shall be a minimum of one year from the date the applicant submits their application.

KENTUCKY TRANSPORTATION CABINET
Department of Highways
PERMITS BRANCH

TC 99-1A
Rev. 10/2020
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APPLICATION FOR ENCROACHMENT PERMIT

TERMS AND CONDITIONS

1. The permit, including this application and all related and accompanying documents and drawings making up the permit, remains in effect and is binding upon the Applicant/Permittee, its successors and assigns, as long as the encroachment(s) exists and also until the permittee is finally relieved by the Department of Highways from all its obligations.

2. Applicant shall meet all requirements of the Clean Water Act if the project will disturb one acre or more, the applicant shall obtain a KPDES KYR10 Permit from the Kentucky Division of Water. All disturbed areas shall meet the requirements of the Department of Highway's Standard Specifications, Sections 212 and 213, as amended.

3. **INDEMNITY:**
   - **A.** PERFORMANCE BOND: The permittee shall provide to the Department a performance bond according to the Permits Manual, Section PE-203 as a guarantee of conformance with the Department's Encroachment Permit requirements.
   - **B.** PAYMENT BOND: At the discretion of the department, a payment bond shall be required of the permittee to ensure payment of liquidated damages assessed to the permittee.
   - **C.** LIABILITY INSURANCE: Liability insurance shall be required of the permittee (in an amount approved by the department) to cover all liabilities associated with the encroachment.
   - **D.** It shall be the responsibility of the permittee, its successors and assigns, to maintain all indemnities in full force and effect until the permittee is authorized to release the indemnity by the Department.

4. A copy of this application and all related documents making up the approved permit shall be given to the applicant and shall be made readily available for review at the work site at all times.

5. Perpetual maintenance of the encroachment is the responsibility of the permittee, its successors and assigns, with the approval of the Department as required, unless otherwise stated.

6. Permittee, its successors and assigns, shall comply with and agree to be bound by the requirements and terms of (a) this application and all related documents making up the approved permit, (b) by the Department's Permits Manual, and (c) by the Manual on Uniform Traffic Control Devices, both manuals as revised to and in effect on the date of issuance of the permit, all of which documents are made a part thereof by this reference. Compliance by the permittee, its successors and assigns, with subsequent revisions to applicable provisions of either manual or other policy of the Department may be made a condition of allowing the encroachment to persist under the permit.

7. Permittee agrees that this and any encroachment may be ordered removed by the Department at any time, and for any reason, upon thirty days written notice to the last known address of the applicant or to the address at the location of the encroachment. The permittee agrees that the cost of removing and of restoring the associated right-of-way is the responsibility of the permittee, its successors and assigns.

8. Permittee, its successors and assigns, agree that if the Department determines that motor vehicular safety deficiencies develop as a result of the installation or use of the encroachment, the permittee, its successors and assigns, shall provide and bear the expenses to adjust, relocate, or reconstruct the facilities, add signs, auxiliary lanes, or other corrective measures reasonably deemed necessary by the Department within a reasonable time after receipt of a written notice of such deficiency. The period within which such adjustments, relocations, additions, modifications, or other corrective measures must be completed will be specified in the notice.

9. Where traffic signals are required as a condition of granting the requested permit or are thereafter required to correct motor vehicular safety deficiencies, as determined by the Department, the costs for signal equipment and installation(s) shall be borne by the permittee, its successors and assigns and the Department in its reasonable discretion and only in accordance with the Department's current policy set forth in the Traffic Operations Manual and Permits Manual. Any modifications to the permittee's entrance necessary to accommodate signalization (including necessary easement(s) on private property) shall be the responsibility of the permittee, its successors and assigns, at no expense to the Department.

KENTUCKY TRANSPORTATION CABINET
Department of Highways
PERMITS BRANCH

TC 99-1A
Rev. 10/2020
Page 3 of 4

APPLICATION FOR ENCROACHMENT PERMIT

10. The requested encroachment shall not infringe on the frontage rights of an abutting owner without their written consent as hereinafter described. Each abutting owner shall express their consent, which shall be binding on their successors and assigns, by the submission of a notarized statement as follows, "I (we), _____, hereby consent to the granting of the permit requested by the applicant along Route _____, which permit does affect frontage rights along my (our) adjacent real property." By signature(s) _____, subscribed and sworn by _____, on this date _____.

11. The permit, if approved, is subject to the agreement that it shall not interfere with any similar rights or permit(s) previously granted to any other party, except as otherwise provided by law.

12. Permittee shall include documentation which describes the facilities to be constructed. Permittee, its successors and assigns, agree as a condition of the granting of the permit to construct and maintain any and all permitted facilities or other encroachments in strict accordance with the submitted and approved permit documentation and the policies and procedures of the Department. Permittee, its successors and assigns, shall not use facilities authorized herein in any manner contrary to that prescribed by the approved permit. Only normal usage as contemplated by the parties and by this application and routine maintenance are authorized by the permit.

13. Permittee, its successors and assigns, at all times from the date permitted work is commenced until such time as all permitted facilities or other encroachments are removed from the right-of-way and the right-of-way restored, **shall defend, protect, indemnify and save harmless** the Department from any and all liability claims and demands arising out of the work, encroachment, maintenance, or other undertaking by the permittee, its successors and assigns, related or undertaken pursuant to the granted permit, due to any claimed act or omission by the permittee, its servants, agents, employees, or contractors. This provision shall not inure to the benefit of any third party nor operate to enlarge any liability of the Department beyond that existing at common law or otherwise if this right to indemnity did not exist.

14. Upon a violation of any provision of the permit, or otherwise in its reasonable discretion, the Department may require additional action by the permittee, its successors and assigns, up to and including the removal of the encroachment and restoration of the right-of-way. In the event additional actions required by the Department under the permit are not undertaken as ordered and within a reasonable time, the Department may in its discretion cause those or other additional corrective actions to be undertaken and the Department shall recover the reasonable costs of those corrective actions from the permittee, its successors and assigns.

15. Permittee, its successors and assigns, shall use the encroachment premises in compliance with all requirements of federal law and regulation, including those imposed pursuant to Title VI of the Civil Right Act of 1964 (42 U.S.C. § 2000d et seq.) and the related regulations of the U.S. Department of Transportation in Title 49 C.F.R. Part 21, all as amended.

16. Permittee, its successors and assigns, agree that if the Department determines it is necessary for the facilities or other encroachment authorized by the permit to be removed, relocated or reconstructed in connection with the reconstruction, relocation or improvement of a highway, the Department may revoke permission for the encroachment to remain under the permit and may order its removal, relocation or reconstruction by the permittee, its successors and assigns, at the expense of the permittee, except where the Department is required by law to pay any or all of those costs.

KENTUCKY TRANSPORTATION CABINET
Department of Highways
PERMITS BRANCH

TC 99-1A
Rev. 10/2020
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APPLICATION FOR ENCROACHMENT PERMIT

17. Permittee agrees that the authorized permit is personal to the permittee and shall remain in effect until such time as (a) the permittee's rights to the adjoining real property to have benefitted from the requested encroachment have been relinquished, (b) until all permit obligations have been assumed by appropriate successors and assigns, and (c) unless and until a written release from permit obligations has been granted by the Department. The permit and its requirements shall also bind the real property to have benefitted from the requested encroachment to the extent permitted by law. The permit and the related encroachment become the responsibility of the successors and assigns of the permittee and the successors and assigns of each property owner benefitting from the encroachment, or the encroachment may not otherwise permissibly continue to be maintained on the right-of-way. (Does not apply to utility encroachments serving the general public.)

18. If work authorized by the permit is within a highway construction project in the construction phase, it shall be the responsibility of the permittee to make personal contact with the Department's Engineer on the project in order to coordinate all permitted work with the Department's prime contractor on the project.

19. This permit is not intended to, nor shall it, affect, alter or alleviate any requirement imposed upon the permittee, its successors and assigns, by any other agency.

20. Permittee, its successors and assigns, agree to contain and maintain all dirt, mud, and other debris emanating from the encroachment away from the surrounding right-of-way and the travel way of the highway hereafter and at all times that its obligations under the permit remain in effect.

21. Before You Dig: The contractor is instructed to call 1-800-752-6007 to reach KY 811, the One-Call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that the owners of underground facilities are not required to be members of the KY 811 One-Call Before U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Clerk to determine what utility companies have facilities in the area.

22. The undersigned Utility acknowledges ownership and control of the facilities proposed to be installed, modified, or extended by the Applicant/Permittee and agrees to be bound by the requirements and terms of this application and all related documents making up the approved permit, by the Department's Permits Guidance Manual, and by all applicable regulations and statutes in effect on the date of issuance of the permit. This information and application is certified correct to the best knowledge and belief of the undersigned Utility.

Duke Energy

UTILITY

John Perkins

NAME (Utility Representative)

Senior Engineer

TITLE (Utility Representative)

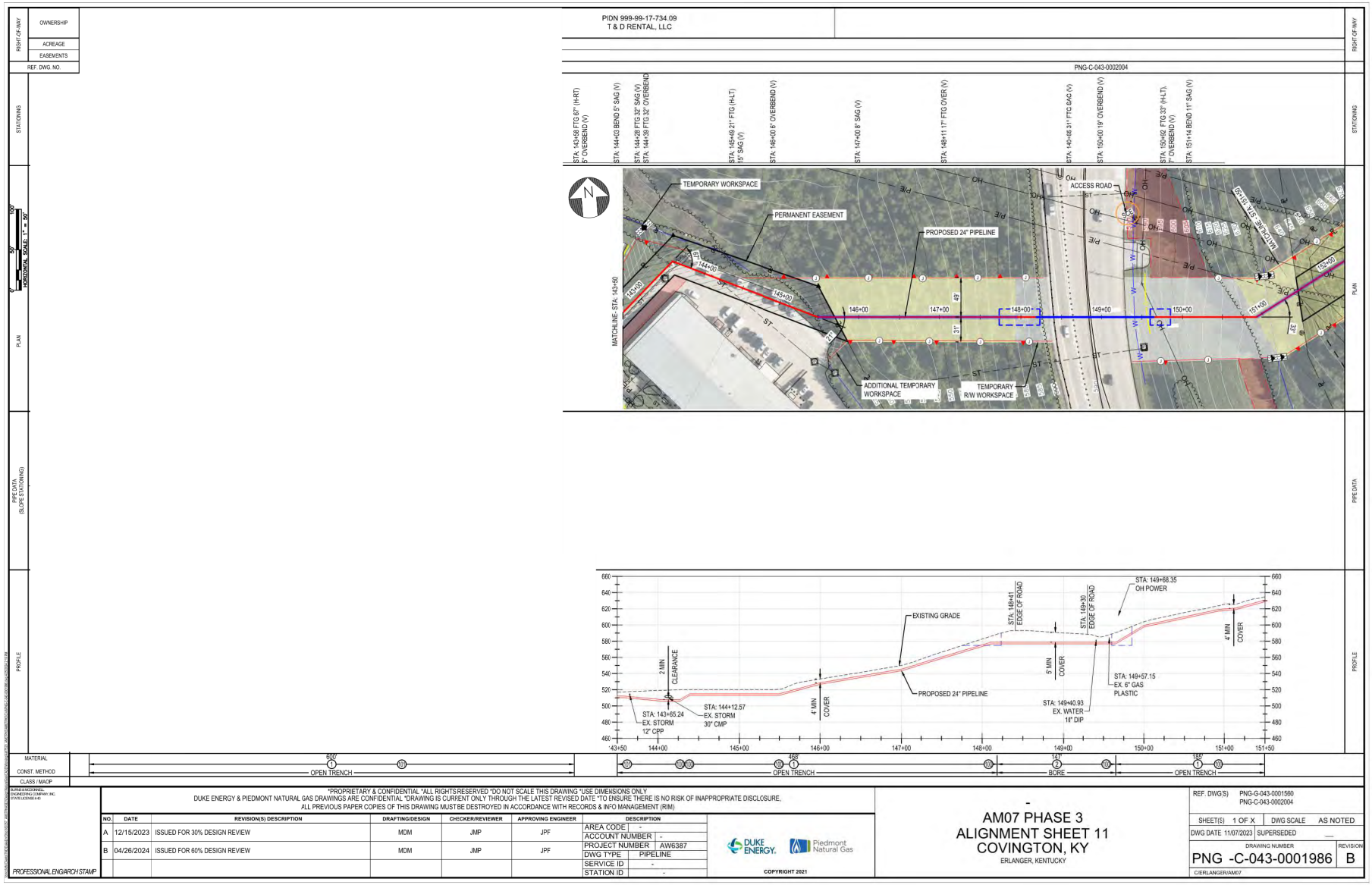
Digitally signed by JPerki2 (277364)
Date: 2024.05.09 10:44:42 -04'00'

SIGNATURE (Utility Representative)

DATE

Kentucky811 Know what's below. Call before you dig.

To Submit a Locate Request
24 Hours a Day, Seven Days a Week:
Call 811 or 800-752-6007



NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF

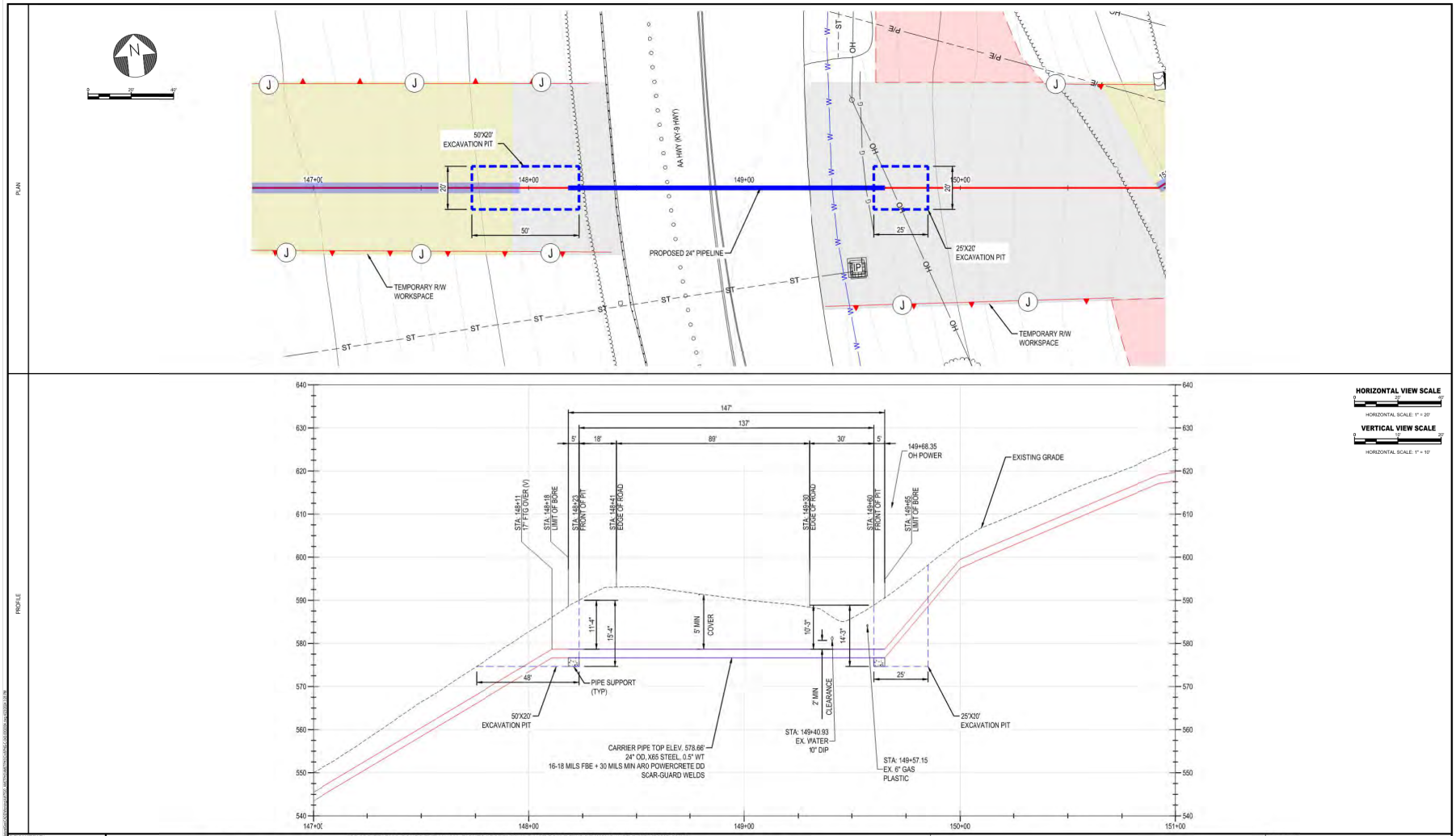
DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

PROFESSIONAL ENGINEER STAMP

-
AM07 PHASE 3
ALIGNMENT SHEET 11
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)	PNG-G-043-0001560 PNG-C-043-0002004
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	11/07/2023
SUPERSEDED	—
DRAWING NUMBER	PNG -C-043-0001986
REVISION	B

C/ERLANGER/AM07



NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

PROFESSIONAL ENGINEER STAMP

-
AM07 PHASE 3
BORE CROSSING DETAIL 2
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) G-XXX-000XXX1
SHEET(S) 1 OF X | DWG SCALE AS NOTED
DWG DATE 04/10/2024 | SUPERSEDED __
DRAWING NUMBER PNG C-043-0002004 | REVISION A
C/ERLANGER/AM07

PIPELINE ACCESS & LAYDOWN 3

SCALE: 1:150

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	AMP
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

PROFESSIONAL ENGINEER STAMP

-
AM07 PHASE 3
ACCESS AND LAYDOWN OVERVIEW 1
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560
SHEET(S) 1 OF X | DWG SCALE AS NOTED
DWG DATE 11/29/2023 | SUPERSEDED __
DRAWING NUMBER | REVISION
PNG C-043-0001970 | B
C/ERLANGER/AM07

KENTUCKY TRANSPORTATION CABINET
Department of Highways
PERMITS BRANCH

TC 99-1A
Rev. 10/2020
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APPLICATION FOR ENCROACHMENT PERMIT

KYTC KEPT #: _____

SECTION 1: APPLICANT CONTACT INFORMATION

APPLICANT Duke Energy	**ADDRESS** 139 E 4th St		
EMAIL n/a	**CITY** Cincinnati	**STATE** OH	**ZIP** 45202
CONTACT NAME 1 Josh Pedersen (on behalf of Duke Energy)	**EMAIL** jmpedersen@burnsmcd.com	**PHONE #**	
		CELL # (913) 645-2713	
CONTACT NAME 2 (*if applicable*) John Perkins	**EMAIL** john.perkins@duke-energy.com	**PHONE #**	
		CELL # 513-315-8338	

SECTION 2: PROPOSED WORK LOCATION

ADDRESS between Alanna Dr and I-275	**CITY** Wilder		**STATE** Kentucky	**ZIP** 41071
COUNTY Campbell	**ROUTE #** I-275	**MILE POINT** 76.5	**LONGITUDE** (*X*) -84.474104°	**LATITUDE** (*Y*) 39.028227°

ADDITIONAL LOCATION INFORMATION: limited access within KYTC right of way limits for temporary utilization during construction efforts. intended to be utilized by foot traffic only and no construction equipment.

FOR KYTC USE ONLY

PERMIT TYPE: ☐ Air Right ☐ Entrance ☐ Utilities ☐ Vegetation Removal ☐ Other: _____

ACCESS: ☐ Full ☐ Partial ☐ by Permit **LOCATION:** ☐ Left ☐ Right ☐ Crossing

SECTION 3: GENERAL DESCRIPTION OF WORK

Scope includes installation of a temporary access path approximately 15' wide by 170' long within KYTC right of way for purposes of personnel access during construction of a new pipeline tie-in in the area. Not intended for construction equipment.

THE UNDERSIGNED APPLICANT(s), being duly authorized representative(s) or owner(s), DO AGREE TO ALL ORIGINAL UNEDITED TERMS AND CONDITIONS ON THE TC 99-1A, pages 1-4.

John Perkins Digitally signed by JPerki2 (277364)
Date: 2024.05.09 10:38:30 -04'00'

SIGNATURE **DATE**

This is not a permit unless and until the applicant(s) receives an approved TC 99-1B from KYTC. This application shall become void if not approved by the cancellation date. The cancellation date shall be a minimum of one year from the date the applicant submits their application.

KENTUCKY TRANSPORTATION CABINET
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APPLICATION FOR ENCROACHMENT PERMIT

TERMS AND CONDITIONS

1. The permit, including this application and all related and accompanying documents and drawings making up the permit, remains in effect and is binding upon the Applicant/Permittee, its successors and assigns, as long as the encroachment(s) exists and also until the permittee is finally relieved by the Department of Highways from all its obligations.

2. Applicant shall meet all requirements of the Clean Water Act if the project will disturb one acre or more, the applicant shall obtain a KPDES KYR10 Permit from the Kentucky Division of Water. All disturbed areas shall meet the requirements of the Department of Highway's Standard Specifications, Sections 212 and 213, as amended.

3. **INDEMNITY:**

- **A.** PERFORMANCE BOND: The permittee shall provide to the Department a performance bond according to the Permits Manual, Section PE-203 as a guarantee of conformance with the Department's Encroachment Permit requirements.
- **B.** PAYMENT BOND: At the discretion of the department, a payment bond shall be required of the permittee to ensure payment of liquidated damages assessed to the permittee.
- **C.** LIABILITY INSURANCE: Liability insurance shall be required of the permittee (in an amount approved by the department) to cover all liabilities associated with the encroachment.
- **D.** It shall be the responsibility of the permittee, its successors and assigns, to maintain all indemnities in full force and effect until the permittee is authorized to release the indemnity by the Department.

4. A copy of this application and all related documents making up the approved permit shall be given to the applicant and shall be made readily available for review at the work site at all times.

5. Perpetual maintenance of the encroachment is the responsibility of the permittee, its successors and assigns, with the approval of the Department as required, unless otherwise stated.

6. Permittee, its successors and assigns, shall comply with and agree to be bound by the requirements and terms of (a) this application and all related documents making up the approved permit, (b) by the Department's Permits Manual, and (c) by the Manual on Uniform Traffic Control Devices, both manuals as revised to and in effect on the date of issuance of the permit, all of which documents are made a part thereof by this reference. Compliance by the permittee, its successors and assigns, with subsequent revisions to applicable provisions of either manual or other policy of the Department may be made a condition of allowing the encroachment to persist under the permit.

7. Permittee agrees that this and any encroachment may be ordered removed by the Department at any time, and for any reason, upon thirty days written notice to the last known address of the applicant or to the address at the location of the encroachment. The permittee agrees that the cost of removing and of restoring the associated right-of-way is the responsibility of the permittee, its successors and assigns.

8. Permittee, its successors and assigns, agree that if the Department determines that motor vehicular safety deficiencies develop as a result of the installation or use of the encroachment, the permittee, its successors and assigns, shall provide and bear the expenses to adjust, relocate, or reconstruct the facilities, add signs, auxiliary lanes, or other corrective measures reasonably deemed necessary by the Department within a reasonable time after receipt of a written notice of such deficiency. The period within which such adjustments, relocations, additions, modifications, or other corrective measures must be completed will be specified in the notice.

9. Where traffic signals are required as a condition of granting the requested permit or are thereafter required to correct motor vehicular safety deficiencies, as determined by the Department, the costs for signal equipment and installation(s) shall be borne by the permittee, its successors and assigns and the Department in its reasonable discretion and only in accordance with the Department's current policy set forth in the Traffic Operations Manual and Permits Manual. Any modifications to the permittee's entrance necessary to accommodate signalization (including necessary easement(s) on private property) shall be the responsibility of the permittee, its successors and assigns, at no expense to the Department.

KENTUCKY TRANSPORTATION CABINET
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APPLICATION FOR ENCROACHMENT PERMIT

10. The requested encroachment shall not infringe on the frontage rights of an abutting owner without their written consent as hereinafter described. Each abutting owner shall express their consent, which shall be binding on their successors and assigns, by the submission of a notarized statement as follows, "I (we), _____, hereby consent to the granting of the permit requested by the applicant along Route _____, which permit does affect frontage rights along my (our) adjacent real property." By signature(s) _____, subscribed and sworn by _____, on this date _____.

11. The permit, if approved, is subject to the agreement that it shall not interfere with any similar rights or permit(s) previously granted to any other party, except as otherwise provided by law.

12. Permittee shall include documentation which describes the facilities to be constructed. Permittee, its successors and assigns, agree as a condition of the granting of the permit to construct and maintain any and all permitted facilities or other encroachments in strict accordance with the submitted and approved permit documentation and the policies and procedures of the Department. Permittee, its successors and assigns, shall not use facilities authorized herein in any manner contrary to that prescribed by the approved permit. Only normal usage as contemplated by the parties and by this application and routine maintenance are authorized by the permit.

13. Permittee, its successors and assigns, at all times from the date permitted work is commenced until such time as all permitted facilities or other encroachments are removed from the right-of-way and the right-of-way restored, **shall defend, protect, indemnify and save harmless** the Department from any and all liability claims and demands arising out of the work, encroachment, maintenance, or other undertaking by the permittee, its successors and assigns, related or undertaken pursuant to the granted permit, due to any claimed act or omission by the permittee, its servants, agents, employees, or contractors. This provision shall not inure to the benefit of any third party nor operate to enlarge any liability of the Department beyond that existing at common law or otherwise if this right to indemnity did not exist.

14. Upon a violation of any provision of the permit, or otherwise in its reasonable discretion, the Department may require additional action by the permittee, its successors and assigns, up to and including the removal of the encroachment and restoration of the right-of-way. In the event additional actions required by the Department under the permit are not undertaken as ordered and within a reasonable time, the Department may in its discretion cause those or other additional corrective actions to be undertaken and the Department shall recover the reasonable costs of those corrective actions from the permittee, its successors and assigns.

15. Permittee, its successors and assigns, shall use the encroachment premises in compliance with all requirements of federal law and regulation, including those imposed pursuant to Title VI of the Civil Right Act of 1964 (42 U.S.C. § 2000d et seq.) and the related regulations of the U.S. Department of Transportation in Title 49 C.F.R. Part 21, all as amended.

16. Permittee, its successors and assigns, agree that if the Department determines it is necessary for the facilities or other encroachment authorized by the permit to be removed, relocated or reconstructed in connection with the reconstruction, relocation or improvement of a highway, the Department may revoke permission for the encroachment to remain under the permit and may order its removal, relocation or reconstruction by the permittee, its successors and assigns, at the expense of the permittee, except where the Department is required by law to pay any or all of those costs.

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APPLICATION FOR ENCROACHMENT PERMIT

17. Permittee agrees that the authorized permit is personal to the permittee and shall remain in effect until such time as (a) the permittee's rights to the adjoining real property to have benefitted from the requested encroachment have been relinquished, (b) until all permit obligations have been assumed by appropriate successors and assigns, and (c) unless and until a written release from permit obligations has been granted by the Department. The permit and its requirements shall also bind the real property to have benefitted from the requested encroachment to the extent permitted by law. The permit and the related encroachment become the responsibility of the successors and assigns of the permittee and the successors and assigns of each property owner benefitting from the encroachment, or the encroachment may not otherwise permissibly continue to be maintained on the right-of-way. (Does not apply to utility encroachments serving the general public.)

18. If work authorized by the permit is within a highway construction project in the construction phase, it shall be the responsibility of the permittee to make personal contact with the Department's Engineer on the project in order to coordinate all permitted work with the Department's prime contractor on the project.

19. This permit is not intended to, nor shall it, affect, alter or alleviate any requirement imposed upon the permittee, its successors and assigns, by any other agency.

20. Permittee, its successors and assigns, agree to contain and maintain all dirt, mud, and other debris emanating from the encroachment away from the surrounding right-of-way and the travel way of the highway hereafter and at all times that its obligations under the permit remain in effect.

21. Before You Dig: The contractor is instructed to call 1-800-752-6007 to reach KY 811, the One-Call system for information on the location of existing underground utilities. The call is to be placed a minimum of two (2) and no more than ten (10) business days prior to excavation. The contractor should be aware that the owners of underground facilities are not required to be members of the KY 811 One-Call Before U-Dig (BUD) service. The contractor must coordinate excavation with the utility owners, including those whom do not subscribe to KY 811. It may be necessary for the contractor to contact the County Clerk to determine what utility companies have facilities in the area.

22. The undersigned Utility acknowledges ownership and control of the facilities proposed to be installed, modified, or extended by the Applicant/Permittee and agrees to be bound by the requirements and terms of this application and all related documents making up the approved permit, by the Department's Permits Guidance Manual, and by all applicable regulations and statutes in effect on the date of issuance of the permit. This information and application is certified correct to the best knowledge and belief of the undersigned Utility.

Duke Energy

UTILITY

John Perkins

NAME (Utility Representative)

John Perkins Digitally signed by JPerki2 (277364)
Date: 2024.05.09 10:38:04 -04'00'

SIGNATURE (Utility Representative)

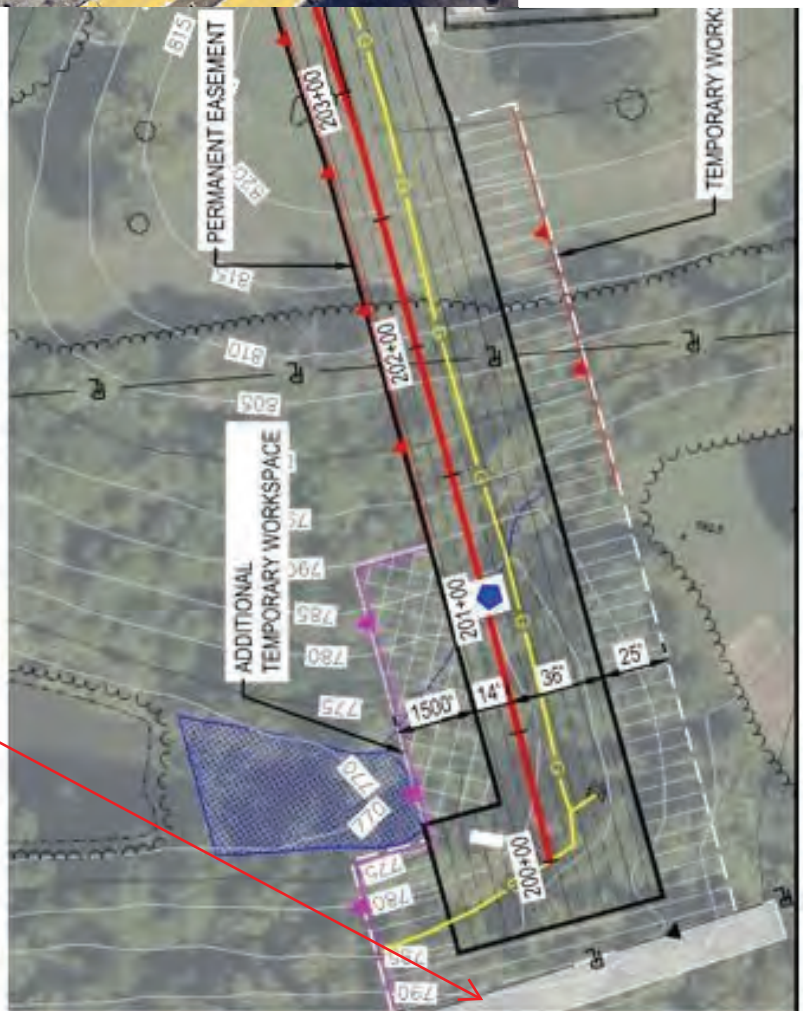
Senior Engineer

TITLE (Utility Representative)

DATE

Kentucky 811 Know what's below. Call before you dig.

To Submit a Locate Request
24 Hours a Day, Seven Days a Week:
Call 811 or 800-752-6007



proposed temporary access path

KENTUCKY ENERGY & ENVIRONMENT CABINET

§401 Water Quality Certification Pre-Filing Meeting Request Form

Federal regulation 40 CFR 121.4 requires the applicant to submit a pre-filing meeting request before filing a *Certification Request*. More information may be viewed on the U.S. EPA Overview of §401 Certification webpage.

This form may be used to request the pre-filing meeting and submitted to the Division of Water at **401WQC@ky.gov.** This form may be submitted with the *Application to Construct Across or Along a Stream and/or Water Quality Certification.*

The information requested below will allow the Division of Water to provide guidance for filing a *§401 Water Quality Certification Request* once a complete application has been received and reviewed.

Contact the Water Quality Certification Section at 401WQC@ky.gov or 502-564-3410 with any questions.

SECTION I – Applicant Information (property owner or easement holder)	
Applicant Name: Duke Energy, Brad Seiter	E-mail Address: brad.seiter@duke-energy.com
The *Application for Permit to Construct Across or Along A Stream and/or Water Quality Certification* (Form DOW 7116, July 2008) is required for Individual Water Quality Certification.	☒ Attached ☐ Submitted
AI Number (leave blank if unknown):	
Date: 06/14/2024	
SECTION II – Alternate Contact/ Consultant Information (Optional, a consultant is not required)	
Alternate Name: Brooke Harrison	E-Mail Address: bharrison@burnsmcd.com

SECTION III – The federal license or permit(s) required for the activity (check all that apply)

☒ Section 404 Permit ☒ Section 10 Permit ☒ Nationwide Permit (NWP) No.: 12 ☐ LOP (Section 10/404)

☐ Section 10/404 Regional General Permit ☐ TVA 26a Permit ☐ Federal Energy Regulatory Commission

SECTION IV – Project Site Information	
Site or Project Name: AM07 Phase 3 Pipeline Replacement Project	Latitude & Longitude (decimal degrees): 39.021061, -84.500642
4a. Water Resource proposed for alteration: ☒ Stream/River ☐ Wetland	
4b. Name of Water Resource (access watermaps.ky.gov for more information: Unnamed tributaries, Licking River	
4c. Surface Water Resource Impacts (permanent and temporary): Proposed temporary impacts to eleven unnamed tributary streams (intermittent and ephemeral). Proposed boring activities under a navigable water section of Licking River; no impacts to Licking River. Linear feet of stream/river: 715 Average stream/river width (feet): Acreage of wetland: N/A	
4d. Has a Jurisdictional Determination been received from the U.S. Army Corps of Engineers?	☐ Yes ☒ No
4e. Are the streams and/or wetlands that will be impacted identified by the Division of Water as **Outstanding State or National Resource Water, Cold Water Aquatic Habitat, or Exceptional Waters**? (access watermaps.ky.gov and Water Quality Certification Viewer for more information)	☐ Yes ☒ No

Form continues on the next page

4f.	Are the streams and/or wetland that will be impacted identified by the Division of Water as **impaired** for warm water or cold water aquatic habitat where the parameter or source is related to habitat? (access watermaps.ky.gov and Water Quality Certification Viewer for more information)	☐ Yes ☒ No
4g.	Are the streams and/or wetland that will be impacted identified by the Division of Water as **full support** for warm water or cold water aquatic habitat? (access watermaps.ky.gov and Water Quality Certification Viewer for more information)	☐ Yes ☒ No
SECTION V – Project Description (some items may not apply)		
5a.	Description of the proposed project, including but not limited to the size, depth, length of the project, types of materials proposed for use, and anticipated timeline for construction and operation.	☒ Attached
5b.	Table of impacts: If there are multiple discharge locations that are not continuous, please include a separate table or figure listing the coordinate location (in decimal degrees) of each surface water impact, linear feet/ acreage of impact, name of waterbody, and stream flow type (ephemeral, intermittent, perennial).	☒ Attached
5c.	Site plans and description of site development, including but not limited to maps of surface waters and proposed surface water impacts within the project area.	☒ Attached
5d.	Proposed temporary impacts to surface waters: linear feet of temporary stream impacts, acreage of temporary wetland impacts, and the proposed plans for restoration.	☒ Attached
5e.	Preliminary Jurisdictional Determination (PJD) and/or Approved Jurisdictional Determination (AJD) issued by the U.S. Army Corps of Engineers.	☐ Attached
5f.	Compensatory mitigation proposal or compensatory mitigation statement for impacts to surface waters.	☐ Attached
5g.	Description of best management practices (BMPs) to be implemented to minimize the impacts to surface waters, including sedimentation and erosion control measures.	☒ Attached
5h.	For dredge activities: Dredge methods, disposal areas, proposed volume of material to be extracted, record of the most recent mussel survey if available.	☐ Attached
5i.	Endangered Species Act (ESA) Section 7 consultation or concurrence documentation, biological surveys, and/or other pertinent information regarding the presence of federally threatened or endangered aquatic species.	☒ Attached
5j.	Other information pertinent to the project.	☒ Attached

Submit the completed form and attachments through email to 401WQC@ky.gov.

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June 14, 2024

Kentucky Division of Water
Floodplain Management Section
Water Quality Certification Section
Division of Water
300 Sower Boulevard
Frankfort, KY 40601

DOWFloodplain@ky.gov
401WQC@ky.gov

Re: Permit to Construct Across or Along a Stream and/or Water Quality Certification
AM07 Phase 3 Pipeline Replacement Project
Duke Energy Kentucky, Inc.

To whom it may concern:

Burns & McDonnell, on behalf of Duke Energy Kentucky Inc. (Duke Energy) submits this application to the Kentucky Energy and Environment Cabinet (KYEEC) Division of Water (DOW) Floodplain Management Section and Water Quality Certification (WQC) Section for the AM07 Phase 3 Pipeline Replacement Project (Project). Upon review of the KYEEC Floodplain and WQC guidance we believe the Project would require an Individual WQC and floodplain permit. We request agency review of the enclosed permit application and confirmation of applicable permit(s). A pre-filing meeting request has been sent to the DOW WQC Section.

AM07 Phase 3 is a 24-inch natural gas pipeline. In order to upgrade aging infrastructure, the project proposes to replace 15,530 feet (approximately 2.94 miles) of 24-inch-diameter steel pipeline (AM07), approximately 3,220 feet of 20-inch-diameter pipeline (UL06) and 820 feet of 8-inch-diameter pipeline (UL16). Approximately 18,478 feet (3.5 miles) of 24-inch high pressure distribution will be relocated from a new Covington Station to a tie-in on the east side of I-275/I-9. In addition to the AM07 24-inch relocation efforts, relocation is required for the UL06 tie-in (1,425 feet) and UL16 tie-in (550 feet) on the west and east side of the line. The Project is located in Taylor Mill, Wilder, and Covington, Kenton and Campbell Counties, Kentucky (Attachment 3).

Efforts have been made to avoid and minimize impacts to waters of the U.S. and sensitive species and habitat to the extent practicable. A wetland delineation was completed, and the wetland delineation figures showing results are included with this application (Attachment 3). During the environmental field survey a much larger survey area was evaluated to capture data within both preferred and alternate routes. One wetland (PFO), one open water pond and 28 streams (perennial, intermittent, ephemeral) were identified within the Survey Area. It is Burns & McDonnell's professional opinion that one wetland and ten streams are considered

jurisdictional. Photos documenting existing habitat and resources are included with this application as Attachment 5.

Temporary impacts to waters of the U.S. are proposed and are associated with temporary construction crossings necessary to access the pipeline ROW and adjacent workspaces. Permanent impacts to waters of the U.S. have been avoided. Temporary impacts are unavoidable, however, impacts have been minimized to the maximum extent practicable. The project proposes to temporarily impact a total of 715 linear feet (0.125 acre) of eleven intermittent and ephemeral streams. Of the eleven streams with proposed impacts, seven of those streams are considered jurisdictional streams (intermittent) with 450 linear feet of proposed impact. Information on these impacts is included in the attached permit application form and other attachments. Temporary impacts to jurisdictional streams may include excavation to the pipeline elevation crossing, placement of culverts, timber mats and clean fill rock for vehicles and equipment, and tree and vegetation clearing activities within the pipeline easement and temporary workspace located adjacent to the streams. Best management practices will be employed to keep any sediment from the banks from entering the channels.

In January 2024, Burns & McDonnell conducted initial Project coordination with the U.S. Fish and Wildlife Service (USFWS) Kentucky Field Office and Kentucky Department of Fish and Wildlife Resources (KDFWR), and agency response letters are included with this application (Attachment 7). Burns & McDonnell received a response from the USFWS and KDFWR in February and March 2024, regarding the Project.

USFWS response stated that that they have no comments at this time, and to refer species listed in the official IPaC species list obtained from the IPaC website. The Kentucky state-wide determination key was completed and the letter is attached with this permit application along with the official IPaC (Attachment 7). The Indiana bat and northern long-eared bat determination keys will be completed following submittal of a bat mist net study plan and determination letters will be provided.

KDFWR indicated that the following federal listed species are recorded within ten miles of the Project: five federally listed mussel species, one federally listed fish species (federal listed tuxedo darter), one federally listed reptile species (federal potentially threatened alligator snapping turtle), and three federally listed bat species. The KDFWR also indicated that the following state listed species are recorded within one mile of the Project: five bird species (state endangered red-breasted nuthatch), one bat species (state threatened tri-colored bat), two amphibian species. Finally, the KDFWR stated that no trout streams, fish spawning areas, sensitive waterways, wildlife management areas, natural lands, or other protected areas are located within the Project footprint or one mile.

Regarding mussel species, the KDFWR indicated that no records of mussel species were found within Licking River near the area of concern, therefore, it is unlikely that the proposed Project will significantly affect these species.

Regarding bat species, the KDFWR requests coordination with USFWS KFO regarding tree removal activities. Due to the presence of federally listed bat species near the Project, USFWS may have seasonal clearing requirements.

During the environmental field survey, Burns & McDonnell conducted a search for potential listed species suitable habitat. Licking River may contain suitable habitat that could support listed mussel species, however, the Project proposes to bore under the river with no in-water work activities planned. Coordination with KDFWR indicated that no records for mussel species were found within the Licking River near the Survey Area. Several intermittent streams may be temporarily impacted during project construction activities. These stream banks were searched for mussel shells and none were found. At this time it is anticipated that no adverse impacts to mussel species are anticipated within Licking River or other streams onsite. The Kentucky state-wide determination key was completed, and the letter is attached with this permit application along with the official IPaC (Attachment 7). The determination letter issued a may effect call for listed mussel species. The Indiana bat and northern long-eared bat determination keys will be completed following submittal of a bat mist net study plan and determination letters will be provided. Potential habitat was noted that could support several listed species of birds during the winter and migratory seasons. However, given the mobility of these species it is unlikely any adverse impacts would occur to these species.

Burns & McDonnell assessed forested habitat located throughout the Survey Area. Multiple potential bat roost habitat trees were identified within the forested portions of the Survey Area (Wetland Delineation Maps, Attachment 3). A bat mist net survey will be conducted in June 2024 and a report documenting findings. Both the USFWS and KDFWR note the potential presence of listed bat species near the project. Tree clearing activities is recommended during the winter season in order to avoid impacts to species. The Survey Area consists primarily of upland forest habitat, upland disturbed grassland and commercial/residential areas with lack of suitable habitat for the other listed species.

A cultural resources desktop review was completed by Burns & McDonnell in November 2023. There are seven historic resources in close proximity to the Project, but due to the nature of the Project, they are unlikely to be adversely impacted. There are 31 archaeological sites recorded within 2 km of the Project. Although none are mapped within the Project corridor, one mound site is mapped within 60 feet. The accuracy of the mapping is unknown, however, so detailed archaeological survey of that area is recommended. Additionally, survey of any areas not

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covered by previous cultural resource investigations will likely be required by KHC. A cultural resources field survey is planned for June 2024 and a report documenting findings.

A USACE Pre-Construction Notification (PCN) for a Nationwide Permit (NWP) 12 was submitted to the USACE on June 4, 2024 for authorization under the NWP program. Erosion and Sediment Control best management practices will be employed to limit sediment transport and erosion. Construction is planned from April 2025 through October 2025. Disturbed stream banks and floodplain areas will be stabilized through seeding and mulching immediately following construction and returned to pre-existing condition. It is anticipated that a permit public notice can be waived due to negligible impacts from underground utility development activities. If a public notice filing is necessary it will be completed following this initial application review and confirmation of applicable permit(s).

The following documents are attached to support this permit application:

- Attachment 1: Application Form and Supplemental Information Sheet
- Attachment 2: FEMA Firmette Maps
- Attachment 3: Vicinity Map, USGS Topographic Map, and Wetland Delineation Map
- Attachment 4: Design Drawings
- Attachment 5: Photographs
- Attachment 6: Impact Table
- Attachment 7: Initial USFWS and KDFWR Coordination

If you have any questions or need any additional information, please don't hesitate to contact Brooke Harrison by telephone at (216) 527-4781 or by email at bharrison@burnsmcd.com. Your attention to this matter is appreciated.

Sincerely,

Brooke Harrison

Brooke Harrison
Project Manager

Enclosure

cc: Bradley Seiter, Duke Energy
Steve Lane, Duke Energy

James Culbertson, Burns & McDonnell
Brittany Webb, Burns & McDonnell
Joshua Pedersen, Burns & McDonnell

ATTACHMENT 1 – APPLICATION FORM AND SUPPLEMENTAL INFORMATION SHEET

COMMONWEALTH OF KENTUCKY
ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER

APPLICATION FOR PERMIT TO CONSTRUCT ACROSS OR ALONG A STREAM AND / OR WATER QUALITY CERTIFICATION

Chapter 151 of the Kentucky Revised Statutes requires approval from the Division of Water prior to any construction or other activity in or along a stream that could in any way obstruct flood flows or adversely impact water quality. *If the project involves work in a stream, such as bank stabilization, dredging or relocation, a 401 Water Quality Certification (WQC) from the Division of Water will be required.* This completed form will be forwarded to the Water Quality Branch for WQC processing. The project may not start until all necessary approvals are received from the KDOW. For questions concerning the WQC process, contact the WQC section at 502/564-3410.

If the project will disturb more than 1 acre of soil, A Notice of Intent for Storm Water Discharges will also be required. Forms can be obtained at http://water.ky.gov/permitting/pages/generalpermits.aspx

1. **OWNER:** Duke Energy, Bradley Seiter
   Give name of person(s), company, governmental unit, or other owner of proposed project.
   MAILING ADDRESS: 139 East 4th Street, Cincinnati, Ohio, 45202
   TELEPHONE #: 859-466-6690 **EMAIL:** brad.seiter@duke-energy.com
2. **AGENT:** Burns & McDonnell, Brooke Harrison
   Give name of person(s) submitting application, if other than owner.
   ADDRESS: 530 West Spring Street, Columbus, Ohio 43215
   TELEPHONE #: 380-390-2916 **EMAIL:** bharrison@burnsmcd.com
3. **ENGINEER:** _____ **P.E. NUMBER:** _____
   Contact Division of Water if waiver can be granted.
   TELEPHONE #: _____ **EMAIL:** _____
4. **DESCRIPTION OF CONSTRUCTION:** Please refer to the Supplemental Information Sheet attached.
   List the items to be constructed in the floodplain
5. **COUNTY:** Kenton **NEAREST COMMUNITY:** Taylor Mill
6. **USGS QUAD NAME** Covington and Newport KY **LATITUDE/LONGITUDE:** 39.021061, -84.500642 Project Center
7. **STREAM NAME:** Unnamed tributaries, Licking River **WATERSHED SIZE (in acres):** _____
8. **LINEAR FEET OF STREAM and/or ACRES OF WETLAND IMPACTED:** Stream=715LF
9. **DIRECTIONS TO SITE:** From the USACE Louisville District North Branch Office take I-71N and travel approximately 91 miles. Take exit 185 to merge onto I-275 E and travel approximately 5 miles. Take exit 79 for KY-16 toward Pride Pkwy/Taylor Mill/Covington and travel approximately 0.5 miles. Turn right onto KY-16W/Taylor Mill Road and travel 0.2 miles. Turn left onto Taylor Mill Road, turn left onto Meadow Lane. Directions take you to the center of the Project (39.021061, -84.500642). Travel west and east to view the remainder of the routes and station location.

10. **IS ANY PORTION OF THE REQUESTED PROJECT NOW COMPLETE?** ☐ Yes ☐ No If yes, identify the completed portion on the drawings you submit and indicate the date activity was completed. DATE: _____

11. **ESTIMATED BEGIN CONSTRUCTION DATE:** 04/01/2025

12. **ESTIMATED END CONSTRUCTION DATE:** 10/31/2025

13. **HAS A PERMIT BEEN RECEIVED FROM THE US ARMY, CORPS of ENGINEERS?** ☐ Yes ☐ No If yes, attach a copy of that permit.

14. **THE APPLICANT *MUST* ADDRESS PUBLIC NOTICE:**

(a) **PUBLIC NOTICE HAS BEEN GIVEN FOR THIS PROPOSAL BY THE FOLLOWING MEANS:**

☐ **Public notice in newspaper having greatest circulation in area (provide newspaper clipping or affidavit)**
☐ **Adjacent property owner(s) affidavits (Contact Division of Water for requirements)**

(b) ☐ **I REQUEST WAIVER OF PUBLIC NOTICE BECAUSE:**

negligible temporary impacts from below grade utilities

Contact Division of Water for requirements.

15. **I HAVE CONTACTED THE FOLLOWING CITY OR COUNTY OFFICIALS CONCERNING THIS PROJECT:**

Taylor Mill, City of Covington, Wilder, Kenton County

Give name and title of person(s) contacted and provide copy of any approval city or county may have issued.

16. **LIST OF ATTACHMENTS:** Cover letter, Attachment 2 - FEMA Firmette Maps, Attachment 3 - Vicinity Map/

List plans, profiles, or other drawings and data submitted. Attach a copy of a 7.5 minute USGS topographic map clearly showing the project location.

USGS Topographic Map/Wetland Delineation Map,

Attachment 4 - Design Drawings, Attachment 5 - Photographs, Attachment 6 - Impact Table

Attachment 7 - Initial USFWS and KDFWR Coordination

17. **I,** BAS **(owners Initials) CERTIFY THAT THE OWNER OWNS OR HAS EASEMENT RIGHTS ON ALL PROPERTY ON WHICH THIS PROJECT WILL BE LOCATED OR ON WHICH RELATED CONSTRUCTION WILL OCCUR (for dams, this includes the area that would be impounded during the design flood).**

18. **REMARKS:** _____

I hereby request approval for construction across or along a stream as described in this application and any accompanying documents. To the best of my knowledge, all the information provided is true and correct.

SIGNATURE: _____

Owner or Agent sign here. (If signed by Agent, a Power of Attorney should be attached.)

DATE: 05/31/2024

SIGNATURE OF LOCAL FLOODPLAIN COORDINATOR:

_____

Permit application will be returned to applicant if not properly endorsed by the local floodplain coordinator.

DATE: 6/12/24

SUBMIT APPLICATION AND ATTACHMENTS TO:

Floodplain Management Section
Division of Water
300 Sower Boulevard
Frankfort, KY 40601
- or -
DOWFloodplain@ky.gov

DOW 7116 Revised 11-2016

Supplemental Information

Block 4: Description of Construction:

The purpose of the project is to replace most of an existing route consisting of approximately 2.94 miles of 24-inch-diameter steel pipeline (AM07), 3,220 feet of 20-inch pipeline (UL06) and 820 feet of 8-inch pipeline relocation (UL16). Approximately 18,478 feet of 24-inch high pressure distribution will be relocated from a new Covington Station to a tie-in on the east side of I-275/I-9. In addition to the AM07 24-inch relocation efforts, relocation is required for the UL06 tie-in (1,425 feet) and UL16 tie-in (550 feet) on the west and east side of the line.

During construction activities eleven temporary stream crossings (S-1, S-3, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-17) will be necessary to access the new pipeline right-of-way and install the new pipe. Most of the streams proposed for temporary impacts have 50 or greater bank disturbance. These streams are located in areas where steep slope installation measures are being taken leading up to and away from the stream requiring 50 feet or greater of bank disturbance. Additionally, the Project proposes to bore under a section of the navigable Licking River (S-5) to install the new pipeline. The Licking River will be crossed utilizing a Horizontal Directional Drill installation method (HDD). The HDD is proposed for a length of approximately 1700’ and will reach a depth of 50’ below the river surface. Bore hole locations are east and west of the Licking River. The bore hole located on the east side of the Licking River is within the 100-year floodplain. A temporary laydown yard is also located along the east side of the river, north of the pipeline and within the 100-year floodplain. No impact will occur to the Licking River, however, this section of Licking River is classified as a navigable water.

The existing pipeline will be abandoned in place and the new pipe will be installed within the new easement locations. Minor tree and vegetation clearing will be necessary to access the new pipeline easement. Streams will be dammed to utilize a flume bypass. Within temporary stream crossings for S-3, S-7, S-8, S-9, S-10, S-12, and S-17 a temporary equipment crossing will be installed. Multiple culverts of different sizes will be placed within these stream crossings and timber mats will be placed on top. Clean rock will be temporarily placed between the culverts to stabilize the crossing. For S-1, S-11, and S-14 no culverts will be required under the timber matting. Installation of the new pipe will occur by excavating a trench. Spoils from open cutting activities will be temporary sidecast and erosion and sediment controls will be installed along with best management practices (BMPs) to protect spoils and prevent runoff. Temporary workspaces will be located adjacent along both sides of streambanks. These temporary workspaces will involve minor tree and vegetation clearing and will be temporarily matted to reduce impact. Following completion of construction activities, the trench will be backfilled, restored to pre-construction contours, and seeded as appropriate.

Stream S-13 is located within workspace and will be temporarily matted to prevent impact. This stream has 100 feet of temporary disturbance, respectively, and cannot be reduced further due to location of stream within workspace. No wetlands are located within pipeline alignment or workspaces, therefore no wetland impacts are anticipated. Following completion of construction activities, timber matting will be removed, areas will be restored to pre-construction contours, and seeded as appropriate. Please refer to the impact tables in Attachment 2 and design drawings in Attachment 6 for additional information.

Supplemental Information

The Project has been designed to minimally impact streams. Removal of vegetated buffer will be limited to necessary access area and stream buffer will be maintained to the extent practicable. The pipeline will be constructed in a way to maintain flow and allow for dry excavation, and no equipment will be operating within the stream channel. Erosion and sediment control best management practices will be utilized to limit erosion. After Project construction, temporary work areas will be returned to pre-construction contours and re-vegetated as appropriate.

Construction is scheduled to start April 2025 is be completed by October 2025.

ATTACHMENT 2 – FEMA FIRMETTE MAPS

84°30'W 39°1'59.12"N

84°28'7.09"W 38°59'53.44"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **5/9/2024 12:03 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL 38 OF 145

PANELS Contains:

COMMUNITY	NUMBER	PANEL
FAIRVIEW, CITY OF	210407	0038
TAYLOR MILL, CITY OF	210246	0038
WILDER, CITY OF	210041	0038
CAMPBELL COUNTY	210034	0038
KENTON COUNTY	210128	0038

MAP NUMBER
21117C0038F
EFFECTIVE DATE
May 16, 2013

84°31'52.94"W 39°1'59.12"N

84°29'59.59"W 38°59'53.44"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
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- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
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- Jurisdiction Boundary

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To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

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GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

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N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL 19 OF 145

This Panel Contains:

COMMUNITY	NUMBER	PANEL
TAYLOR MILL, CITY OF	210246	0019
FORT WRIGHT, CITY OF	210249	0019
COVINGTON, CITY OF	210129	0019

MAP NUMBER
21117C0019F
EFFECTIVE DATE
May 16, 2013

84°29'43.81"W 39°2'5.81"N

84°27'50.45"W 39°N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
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- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

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For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

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SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

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N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL 38 OF 201

Panel Contains:

COMMUNITY	NUMBER	PANEL
HIGHLAND HEIGHTS, CITY OF	210390	0038
TAYLOR MILL, CITY OF	210246	0038
WILDER, CITY OF	210042	0038
CAMPBELL COUNTY	210034	0038

MAP NUMBER
21037C0038E
EFFECTIVE DATE
March 03, 2014

ATTACHMENT 3 – VICINITY MAP, USGS TOPOGRAPHIC MAP, WETLAND DELINEATION FIGURES

ATTACHMENT 4 – DESIGN DRAWINGS

ATTACHMENT 5 – PHOTOGRAPHS

ATTACHMENT 6 – IMPACT TABLE

Table 1: Surface Waters Crossed by the Proposed Project

Surface Water Name/ID	County	14 Digit HUC Code	Latitude & Longitude of Impact	Designation [1]	Stream Flow Regime[2]	Wetland Type[3]	Type of Crossing[4]	Temporary, Permanent or No Impact (T/P/N)	Stream (ft.) or Wetland Impact (ac.)[5]	Construction and Maintenance Corridor Impact (ft.)[6]	Photograph Number/ID
S-1	Campbell	05100101270140	39.028624, -84.474375	N/A	Ephemeral	-	Open cut trench w/timber mat for workspace and access	T	110	110	7
S-2	Campbell	05100101270120	No impact	N/A	Ephemeral	-	None	N	0	0	8
S-3	Campbell	05100101270140	39.021885, -84.475818	N/A	Intermittent	-	Open cut trench w/timber mat and culvert crossing	T	50	50	9
S-4	Campbell	05100101270140	No impact	N/A	Ephemeral	-	None	N	0	0	10
S-5	Campbell	05100101270140	No impact	N/A	Perennial	-	None / HDD 50' under stream	N	0	0	11
S-6	Kenton	05100101270140	No impact	N/A	Intermittent	-	None	N	0	0	12
S-7	Kenton	05100101270140	39.021210, -84.493461	N/A	Intermittent	-	Open cut trench w/timber mat and culvert crossing	T	150	150	13
S-8	Kenton	05100101270140	39.021433, -84.499110	N/A	Intermittent	-	Open cut trench w/timber mat and culvert crossing	T	50	50	14
S-9	Kenton	05100101270140	39.022019, -84.501768	N/A	Intermittent	-	Open cut trench w/timber mat and culvert crossing	T	50	50	15
S-10	Kenton	05100101270140	39.019944, -84.504832	N/A	Intermittent	-	Open cut trench w/timber mat and culvert crossing	T	50	50	16
S-11	Kenton	05100101270140	39.020007, -84.504696	N/A	Ephemeral	-	Open cut trench w/timber mat for workspace and access	T	40	40	17
S-12	Kenton	05100101270140	39.020216, -84.505319	N/A	Intermittent	-	Open cut trench w/timber mat and culvert crossing	T	50	50	18
S-13	Kenton	05100101270140	39.020216, -84.505319	N/A	Ephemeral	-	Timber matting for workspace	T	100	100	19
S-14	Kenton	05100101290130	39.020652, -84.509776	N/A	Ephemeral	-	Open cut trench	T	15	15	20
S-15	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	21
S-16	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	22
S-17	Kenton	05100101290110	39.019654, -84.517087	N/A	Intermittent	-	Open cut trench w/timber mat and culvert crossing	T	50	50	23
S-18	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	24
S-19	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	25
S-20	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	26
S-21	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	27
S-22	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	28
S-23	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	29
S-24	Campbell	05100101270140	No impact	N/A	Intermittent	-	None	N	0	0	30
S-25	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	31
S-26	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	32
S-27	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	33
S-28	Kenton	05100101290110	No impact	N/A	Ephemeral	-	None	N	0	0	34
W-1	Kenton	05100101270140	No impact	N/A	-	PFO	None	N	0	0	1, 2, 3, 4
P-1	Campbell	05100101270140	No impact	N/A	-	open water	None	N	0	0	N/A-located

1.OSRW – Outstanding State Resource Water; ONRW – Outstanding National Resource Water, CAH – Coldwater Habitat, EXCW – Exceptional Waters (401 KAR 10:031 Sections 1, 4, and 8). These designations can be found here: http://eppcapp.ky.gov/spwaters/ and are updated regularly.

2.Indicate whether the stream is perennial, intermittent or ephemeral.

3.Indicate National Wetland Inventory classification and/or emergent, scrub-shrub or forested.

4.Indicate all types of crossings, including utility line [trenching, directional boring/horizontal directional drilling, pipe bursting, pipe lining, or cured-in-place], access roads, headwalls, associated bank stabilization areas, substations, pole or tower foundations, maintenance corridor, and staging areas.

5.The length (in linear feet) of bank disturbed. For crossings, only one bank length is used in calculation, see Condition #6 of the General Certification of Nationwide Permit #12.

6.Construction and maintenance corridors shall not exceed 50 feet of bank disturbance in order to meet Condition #4 of the General Certification of Nationwide Permit #12.

ATTACHMENT 7 – AGENCY INITIAL PROJECT COORDINATION

Harrison, Brooke

From: Bishop, Seth R <seth_bishop@fws.gov>
Sent: Wednesday, February 7, 2024 4:35 PM
To: Harrison, Brooke
Subject: FWS 2024-0037659; AM07 Phase 3 Pipeline Replacement Project, Campbell & Kenton Co., KY

Follow Up Flag: Follow up
Flag Status: Flagged

Brooke,

The KFO does not have any comments on this project at this time. The official species list you obtained from the Service's IPaC website will show you which species should be considered when evaluating potential effects to listed species from the project. When you are ready to evaluate potential effects, you can either use the determination keys on the IPaC website or submit a project package to our office for review. There is guidance on both of these options on our website (https://www.fws.gov/office/kentucky-ecological-services/kentucky-field-office-project-review-guidance).

Thanks for reaching out to our office. Let me know if you have any questions or need additional assistance at this time.

Seth

Seth R. Bishop
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Kentucky Field Office
330 West Broadway, Room 265
Frankfort, KY 40601
(502) 545-4532

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 05/09/2024 12:32:31 UTC
Project Code: 2024-0037659
Project Name: AM07 Phase 3 Pipeline Replacement Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do..

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of

this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
(502) 695-0467

PROJECT SUMMARY

Project Code: 2024-0037659
Project Name: AM07 Phase 3 Pipeline Replacement Project
Project Type: Pipeline - Onshore - Maintenance / Modification - Below Ground
Project Description: The project includes installation of approximately 2.94 miles of 24-inch pipeline.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.02446515,-84.47469053261406,14z

Counties: Campbell and Kenton counties, Kentucky

ENDANGERED SPECIES ACT SPECIES

There is a total of 16 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 5 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS

Gray Bat *Myotis grisescens* — Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- The project area includes potential gray bat habitat.

Species profile: https://ecos.fws.gov/ecp/species/6329
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/6422.pdf

Indiana Bat *Myotis sodalis* — Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
This species only needs to be considered under the following conditions:
- The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species.

Species profile: https://ecos.fws.gov/ecp/species/5949
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/6422.pdf

Northern Long-eared Bat *Myotis septentrionalis* — Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- This species only needs to be considered if the project includes wind turbine operations.

Species profile: https://ecos.fws.gov/ecp/species/9045
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/6422.pdf

Tricolored Bat *Perimyotis subflavus* — Proposed Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/10515

CLAMS

NAME	STATUS

Clubshell *Pleurobema clava* — Endangered

Population: Wherever found; Except where listed as Experimental Populations
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3789
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Fanshell *Cyprogenia stegaria* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/4822
General project design guidelines:

NAME	STATUS

https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Longsolid *Fusconaia subrotunda* — Threatened

There is **final** critical habitat for this species. Your location overlaps the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/9880

Northern Riffleshell *Epioblasma rangiana* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/527
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Orangefoot Pimpleback (pearlymussel) *Plethobasus cooperianus* — Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- The species may be affected by projects that significantly impact the Ohio River.

Species profile: https://ecos.fws.gov/ecp/species/1132
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Pink Mucket (pearlymussel) *Lampsilis abrupta* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7829
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Rabbitsfoot *Quadrula cylindrica cylindrica* — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5165
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Ring Pink (mussel) *Obovaria retusa* — Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- The species may be affected by projects that significantly impact the Ohio River.

Species profile: https://ecos.fws.gov/ecp/species/4128
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Rough Pigtoe *Pleurobema plenum* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6894
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

NAME	STATUS
Salamander Mussel *Simpsonaias ambigua* There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6208	Proposed Endangered
Snuffbox Mussel *Epioblasma triquetra* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4135	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

There are 2 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Longsolid *Fusconaia subrotunda* https://ecos.fws.gov/ecp/species/9880#crithab	Final
Salamander Mussel *Simpsonaias ambigua* https://ecos.fws.gov/ecp/species/6208#crithab	Proposed

IPAC USER CONTACT INFORMATION

Agency: Burns & McDonnell
Name: Brooke Harrison
Address: 530 West Spring Street, Suite 100
City: Columbus
State: OH
Zip: 43215
Email bharrison@burnsmcd.com
Phone: 3803902516

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 05/09/2024 12:49:36 UTC
Project code: 2024-0037659
Project Name: AM07 Phase 3 Pipeline Replacement Project

Subject: Consistency letter for the project named 'AM07 Phase 3 Pipeline Replacement Project' for specified threatened and endangered species that may occur in your proposed project location consistent with the Kentucky Determination Key (DKey)

Dear Brooke Harrison:

The U.S. Fish and Wildlife Service (Service) received on **May 09, 2024** your effect determination(s) for the 'AM07 Phase 3 Pipeline Replacement Project' (Action) using the Kentucky (DKey) within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Kentucky DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Clubshell (*Pleurobema clava*)	Endangered	May affect
Fanshell (*Cyprogenia stegaria*)	Endangered	May affect
Gray Bat (*Myotis grisescens*)	Endangered	May affect
Longsolid (*Fusconaia subrotunda*)	Threatened	May affect
Northern Riffleshell (*Epioblasma rangiana*)	Endangered	May affect
Orangefoot Pimpleback (pearlymussel) (*Plethobasus cooperianus*)	Endangered	May affect
Pink Mucket (pearlymussel) (*Lampsilis abrupta*)	Endangered	May affect
Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Threatened	May affect
Ring Pink (mussel) (*Obovaria retusa*)	Endangered	May affect
Rough Pigtoe (*Pleurobema plenum*)	Endangered	May affect
Snuffbox Mussel (*Epioblasma triquetra*)	Endangered	May affect

Consultation Status

May Affect Determinations: Species with May Affect determinations are those for which the DKey was unable to provide a conclusion or those for which you were either unsure about the determination or you chose to make a “may affect” determination. If the DKey was unable to provide a conclusion, this does not necessarily mean that the project is likely to adversely affect the species. If you think the project may affect the species or want additional technical assistance, please follow the instructions in the "Additional Coordination" section below. If a federal action agency chooses to make a "no effect" determination for the species, there is no statutory requirement to request concurrence with that determination; however, the federal action agency should document the supporting information for this determination in their files. This documentation would typically demonstrate a lack of suitable habitat within the action area, show that no impacts to suitable habitat would occur, or provide information that the species is not reasonably certain to occur in the action area even though suitable habitat is present.

The Service recommends that your agency contact the Kentucky Ecological Services Field Office or re-evaluate the Action in IPaC if: 1) the scope, timing, duration, or location of the Action changes, 2) new information reveals the Action may affect listed species or designated critical habitat, or 3) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Kentucky Ecological Services Field Office should take place before project changes are final or resources committed.

The following species and/or critical habitats may also occur in your project area and **are not** covered by this conclusion:

- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

To address effects to other federally listed or proposed species and/or their designated critical habitat, you can request project-specific review by following the instructions in the “Next Steps” section of your species list letter, or you may use another determination key, if available.

Additional Coordination

To request additional technical assistance or consultation, please email your request to KentuckyES@fws.gov and include relevant site-specific information. The Kentucky Ecological Services Field Office will respond within 30 days of your submittal.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

AM07 Phase 3 Pipeline Replacement Project

2. Description

The following description was provided for the project 'AM07 Phase 3 Pipeline Replacement Project':

> The project includes installation of approximately 2.94 miles of 24-inch pipeline.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.02446515,-84.47469053261406,14z

QUALIFICATION INTERVIEW

1. Will the proposed Action involve Federal funding, permitting, or authorization, or will it be carried out by a Federal Agency?

   Yes

2. Are you the lead Federal Action Agency or designated non-federal representative requesting concurrence on behalf of the lead Federal Action Agency?

   Yes

3. [Hidden Semantic] Does the action area intersect critical habitat?

   Automatically answered
   Yes

4. Will the proposed Action involve construction or operation of wind turbines?

   No

5. Will the proposed Action involve blasting (other than a fireworks display)?

   No

6. Will the proposed Action involve a new point source discharge from a facility other than a water treatment plant or storm water system?

   No

7. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g. leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

   No

8. Will the proposed Action include the removal, replacement, repair and/or maintenance of an existing bridge or culvert?

   No

9. Will the proposed Action involve perennial stream loss that would require an individual permit under 404 of the Clean Water Act?

   No

10. Will the proposed Action involve discharge of sediment into a stream?

    No

11. Does the Action Area contain any caves (including their associated sinkholes, fissures, or other karst features), rockshelters, underground quarries, or abandoned mine portals (including associated underground workings)?

    No

12. [Hidden Semantic] Does the Action Area intersect the Kentucky AOI of the gray bat?

    Automatically answered
    Yes

13. Will the proposed Action involve drilling or boring?

    Yes

14. Prior to the drilling or boring, will the project proponent conduct appropriate preliminary evaluations to ensure that proposed drilling or boring is unlikely to encounter karst voids or other voids?

    Yes

15. Will the project proponent contact the Field Office if potentially suitable gray bat hibernacula or roosting habitat is encountered during drilling or boring?

    No

16. Will the proposed Action involve a new point source discharge into a stream or change an existing point source discharge (e.g., outfalls; leachate ponds)?

    No

17. Will the proposed Action include any activities that would alter stream flow, such as hydropower energy production, impoundments, intake structures, diversion structures, and/or turbines?

    No

18. Will the proposed Action involve dredging or in-stream gravel mining?

    No

19. Will the proposed Action involve resource extraction (e.g., mining, oil/gas, logging), including exploration activities?

    No

20. Will the proposed Action involve stream impacts (perennial or intermittent) that would require an individual permit under 404 of the Clean Water Act?

    No

21. Will the proposed Action involve activities that would contribute measureable nonpoint source pollution to streams (e.g., sediment, nutrients, etc.)? *See the following EPA webpage for more examples of nonpoint source pollution and activities that can produce it: https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution*

    No

22. Will the proposed Action involve new or increased use of public recreational OHV trails?

    No

23. Will the proposed Action disturb the channel or bank of a perennial or intermittent stream?

    Yes

24. [Hidden Semantic] Does the project area intersect the AOI of the snuffbox?

    Automatically answered
    Yes

25. [Hidden Semantic] Does the project area intersect the AOI of the clubshell (*Pleurobema clava*)?

    Automatically answered
    Yes

26. [Hidden Semantic] Does the project area intersect the AOI of the fanshell (*Cyprogenia stegaria*)?

    Automatically answered
    Yes

27. [Hidden Semantic] Does the project area intersect the AOI of the northern riffleshell (*Epioblasma torulosa rangiana*)?

    Automatically answered
    Yes

28. [Hidden Semantic] Does the project area intersect the AOI of the orangefoot pimpleback (*Plethobascus cooperianus*)?

    Automatically answered
    Yes

29. [Hidden Semantic] Does the project area intersect the AOI of the pink mucket (*Lampsilis abrupta*)?

    Automatically answered
    Yes

30. [Hidden Semantic] Does the project area intersect the AOI of the rabbitsfoot (*Theliderma (= Quadrula) cylindrica*)?

    Automatically answered
    Yes

31. [Hidden Semantic] Does the project area intersect the AOI of the ring pink (*Obovaria retusa*)?

    Automatically answered
    Yes

32. [Hidden Semantic] Does the project area intersect the AOI of the rough pigtoe (*Pleurobema plenum*)?

    Automatically answered
    Yes

33. [Hidden Semantic] Does the project area intersect the AOI of the longsolid?

    Automatically answered
    Yes

IPAC USER CONTACT INFORMATION

Agency: Burns & McDonnell
Name: Brooke Harrison
Address: 530 West Spring Street, Suite 100
City: Columbus
State: OH
Zip: 43215
Email bharrison@burnsmcd.com
Phone: 3803902516

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

KENTUCKY DEPARTMENT OF FISH & WILDLIFE RESOURCES

Rich Storm
Commissioner

#1 Sportsman's Lane
Frankfort, Kentucky 40601
Phone (502) 564-3400
Fax (502) 564-0506

Brian Clark
Deputy Commissioner

Gabe Jenkins
Deputy Commissioner

March 18, 2024

Burns & McDonnell
Attn: Brooke Harrison, Project Manager
530 West Spring Street, Suite 100
Columbus, Ohio 43215

RE: Project Review Request
AM07 Phase 3 Pipeline Replacement Project
Kenton and Campbell Counties, Kentucky

Dear Ms. Harrison:

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has received your request for an environmental review regarding the proposed AM07 Phase 3 Pipeline Replacement Project in Kenton and Campbell Counties, KY. The proposed project area has been reviewed for impacts wildlife resources and other sensitive areas. The following comments are provided:

KDFWR Records Review:

Our records indicate the following federally listed and proposed listed species occur within ten (10) miles of the proposed project areas. Be advised that the KDFWR does not have the authority to confirm compliance with the Endangered Species Act. Please coordinate with the U.S. Fish and Wildlife Service for specific recommendations and compliance requirements for these federally listed species.

Scientific Name	Common Name	Class	Federal Status
Etheostoma lemniscatum	Tuxedo Darter	Actinopterygii	E
Cyprogenia stegaria	Fanshell	Bivalvia	E
Fusconaia subrotunda	Longsolid	Bivalvia	T
Lampsilis abrupta	Pink Mucket	Bivalvia	E
Plethobasus cyphyus	Sheepnose	Bivalvia	E
Theliderma cylindrica	Rabbitsfoot	Bivalvia	T
Macrochelys temminckii	Alligator Snapping Turtle	Chelonia	PT
Myotis septentrionalis	Northern Long-Eared Bat	Mammalia	T
Myotis sodalis	Indiana Bat	Mammalia	E
Perimyotis subflavus	Tricolored Bat	Mammalia	PE

The following state-listed species were recorded within one (1) mile of the proposed project area:

Scientific Name	Common Name	Class	Federal Status	KSNPC Status
Lithobates pipiens	Northern Leopard Frog	Amphibia	N	S
Plethodon cinereus	Eastern Red-backed Salamander	Amphibia	N	S
Accipiter striatus	Sharp-shinned Hawk	Aves	N	S
Lanius ludovicianus	Loggerhead Shrike	Aves	N	S
Passerculus sandwichensis	Savannah Sparrow	Aves	N	S
Pheucticus ludovicianus	Rose-breasted Grosbeak	Aves	N	S
Sitta canadensis	Red-breasted Nuthatch	Aves	N	E
Perimyotis subflavus	Tricolored Bat	Mammalia	PE	T

The KDFWR recently updated the Kentucky State Wildlife Action Plan (SWAP) under a federal grant from the U.S. Fish and Wildlife Service. The updated SWAP is a user-friendly guide for conservation of species of greatest conservation need (SGCN) in the state. The KDFWR invites you to review the updated SWAP on its website (https://app.fw.ky.gov/kyswap/). Species experts from the public and private sectors helped develop the SWAP by determining which species were rare, vulnerable, declining in population, or for which there was not enough information to determine status, and therefore had the greatest need for conservation actions. The SWAP is intended to provide guidance to developers, regulators, resource agencies, the public, and other stakeholders to conserve SGCN by prioritizing threats and recommending conservation actions for each species. The KDFWR is promoting the use of the SWAP to prevent declines in SGCN thereby preventing the need to list them in the Endangered Species Act. SGCN status does not invoke regulatory restrictions or requirements. However, the KDFWR encourages project sponsors to consider actions that provide conservation benefits to these species such as minimization of habitat encroachment, using buffer areas near projects to provide habitat, or other measures. Please refer to the SWAP for specific conservation actions that may benefit the SGCN identified within one (1) mile that may be compatible with the proposed project:

Scientific Name	Common Name	Class	Federal Status	KSNPC Status
Ambystoma barbouri	Streamside Salamander	Amphibia	N	N
Lithobates pipiens	Northern Leopard Frog	Amphibia	N	S
Plethodon cinereus	Eastern Red-backed Salamander	Amphibia	N	S
Accipiter striatus	Sharp-shinned Hawk	Aves	N	S
Butorides virescens	Green Heron	Aves	N	N
Coccyzus americanus	Yellow-billed Cuckoo	Aves	N	N
Empidonax traillii	Willow Flycatcher	Aves	N	N
Falco sparverius	American Kestrel	Aves	N	N
Gallinago delicata	Wilson's Snipe	Aves	N	N
Hylocichla mustelina	Wood Thrush	Aves	N	N
Lanius ludovicianus	Loggerhead Shrike	Aves	N	S
Melanerpes erythrocephalus	Red-headed Woodpecker	Aves	N	N
Passerculus sandwichensis	Savannah Sparrow	Aves	N	S
Protonotaria citrea	Prothonotary Warbler	Aves	N	N
Scolopax minor	American Woodcock	Aves	N	N
Setophaga cerulea	Cerulean Warbler	Aves	N	N
Setophaga discolor	Prairie Warbler	Aves	N	N

Spiza americana	Dickcissel	Aves	N	N
Spizella pusilla	Field Sparrow	Aves	N	N
Sturnella magna	Eastern Meadowlark	Aves	N	N
Cambarus bartonii cavatus	Appalachian Brook Crayfish	Malacostraca	N	N
Faxonius rusticus	Rusty Crayfish	Malacostraca	N	N
Perimyotis subflavus	Tricolored Bat	Mammalia	PE	T

No trout streams, fish spawning areas, or sensitive waterways were identified as occurring in the project footprint. It is possible that wetlands occur near the project area based on a desktop review of the National Wetlands Inventory Mapping and soil data. Additionally, numerous streams are depicted on topographic maps and hydrologic map data, including the Licking River. An on-site review of the project footprint is recommended. The KDFWR requests that you coordinate the proposed project with the U. S. Army Corps of Engineers (USACE) and the Kentucky Division of Water (KDOW) prior to any work within the waterways or wetland habitats of Kentucky.

There were no wildlife management areas, natural lands, or other protected areas identified in a review of such records within the footprint of the project or within one (1) mile.

KDFWR Comments and Guidance:

The federally listed mussel species are typically found in flowing waters of medium to large rivers in main channels over mud, firm sand, and gravel substrates. No records were found within the Licking River near the area of concern, therefore it is unlikely that the proposed project will significantly affect these species.

The federally listed bat species occur in forests, caves, or mine portals at different times of the year. The Northern Long-Eared Bat and the Tricolored bat typically overwinter in caves or mines and spend the remainder of the year in forested habitats. The Indiana Bat relies on trees for maternity seasons and may use caves or mine portals throughout the year. The KDFWR asks that you coordinate any tree removal activities with the U.S. Fish and Wildlife Service Kentucky Field Office. Due to the presence of federally listed bat species near the project site, the USFWS may have seasonal requirements for removing those trees, especially those greater than 3” diameter-at-breast height (dbh). Removing these trees during the winter months would reduce possible direct impacts to tree-roosting bat species.

To minimize impacts to nearby state-listed and SGCN aquatic species, KDFWR recommends that erosion control measures be developed and implemented prior to construction to reduce siltation into waterways located within/near the project area. Such erosion control measures may include, but are not limited to silt fences, staked straw bales, brush barriers, sediment basins, and diversion ditches. Erosion control measures will need to be inspected regularly and repaired as needed. If blanket-style matting is used for erosion control, please avoid using the nylon monofilament netting as it can entangle and kill wildlife. An alternative blanket style control is organic coir matting, which degrades naturally and provides excellent soil protection and moisture retention for seed germination—as well as controlling erosion runoff without unnecessarily impacting wildlife.

Thank you for coordinating with KDFWR. Please contact Emily Lawson at 502-892-4472 or emilym.lawson@ky.gov if you have further questions or require additional information.

Sincerely,

Emily Lawson
Environmental Branch Coordinator

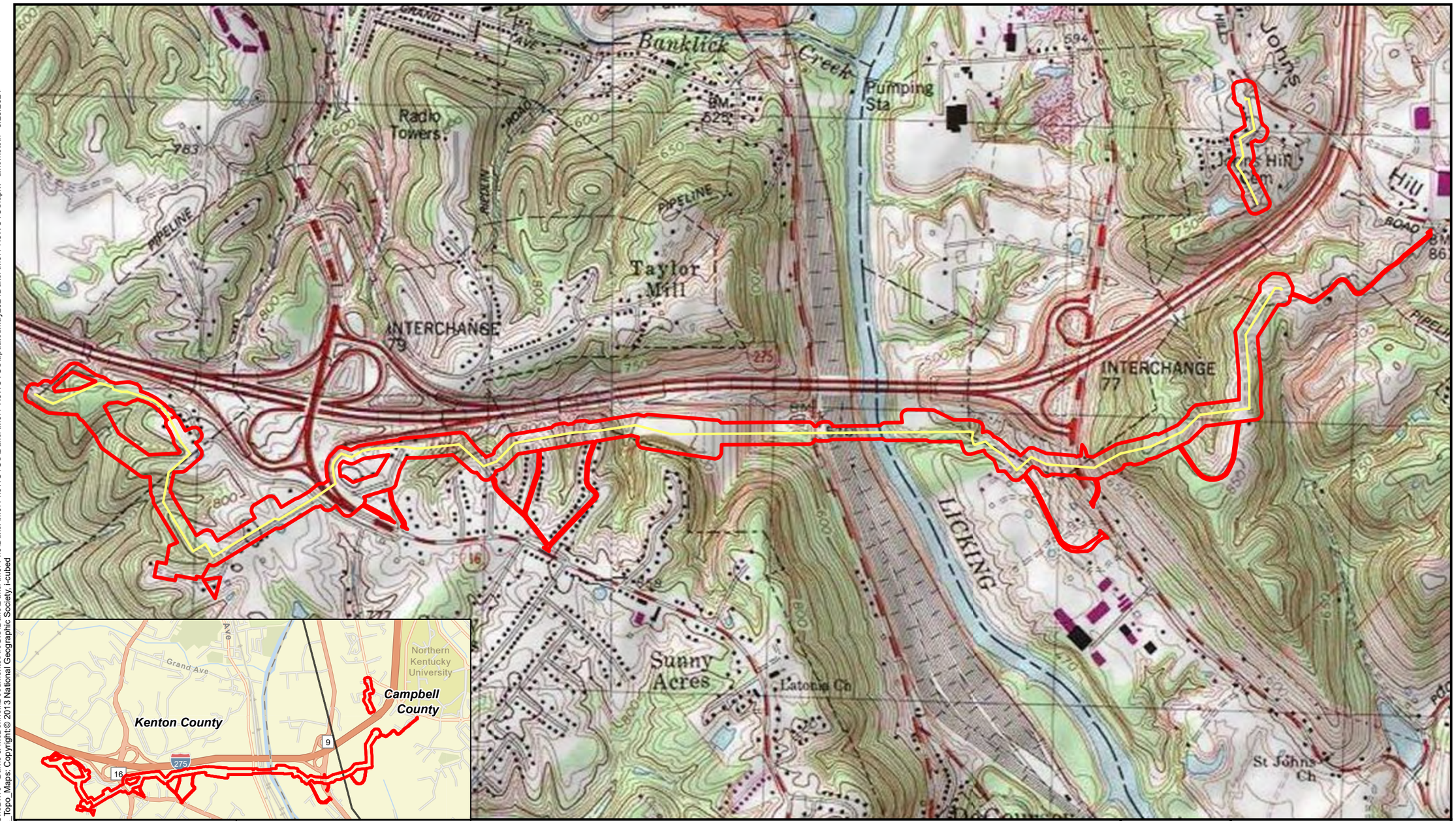
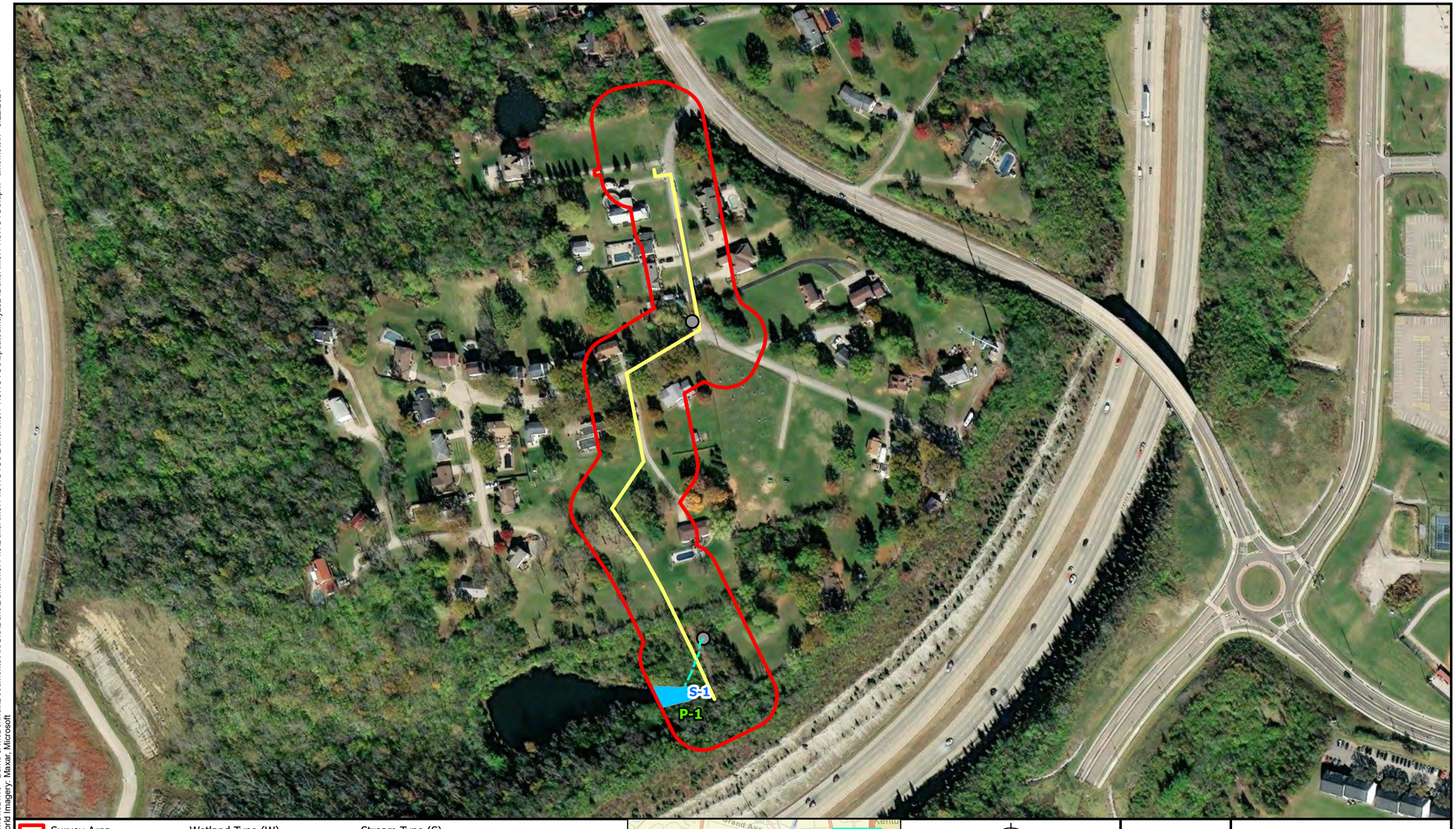


Figure 1: Site Location Map
AM07 Phase 3 Pipeline Replacement Project
Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY

Issued: 5/23/2024

Source: ESRI, USGS, Duke Energy Ohio, Burns & McDonnell

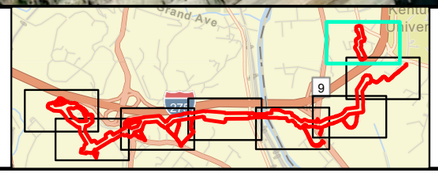
Path: C:\Users\alhornstein\OneDrive - Burns & McDonnell\Documents\ArcGIS\Duke\DukeAM07Ph3\DukeAM07Ph3WOTUS\DukeAM07PH3WOTUSupdatedMay2024DukeAM07PH3WOTUS.aprx alhornstein 5/23/2024
Service Layer Credits: USA_Topo_Maps: Copyright© 2013 National Geographic Society, i-cubed



Survey Area
Pipeline Alignment
Sample Plot
Culvert
Potential Roost Tree

Wetland Type (W)
PFO
Open Water Pond (P)

Stream Type (S)
Ephemeral
Intermittent
Perennial



NORTH
200 100 0 200
Scale in Feet

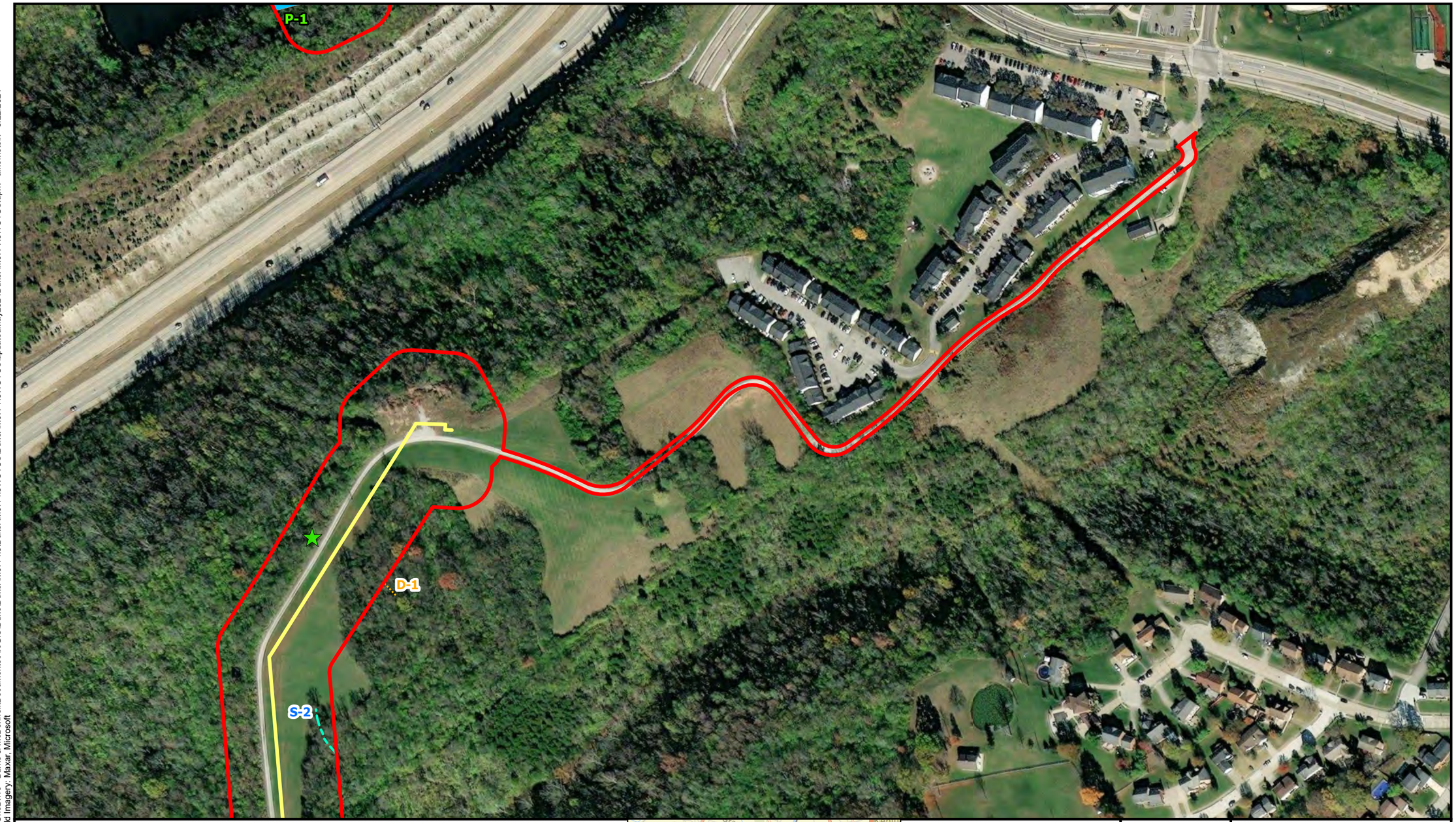
BURNS McDONNELL

Figure 4: Wetland Delineation Map
AM07 Phase 3 Pipeline
Replacement Project
Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY
Page 1 of 8

Path: C:\Users\alhornstein\OneDrive - Burns & McDonnell\Documents\ArcGIS\Duke\DukeAM07Ph3\DukeAM07Ph3WOTUS\DukeAM07PH3WOTUSupdatedMay2024DukeAM07PH3WOTUS.aprx alhornstein 5/22/2024
Service Layer Credits: World Imagery: Maxar, Microsoft

Source: ESRI, Duke Energy Ohio, Burns & McDonnell

Issued: 5/22/2024



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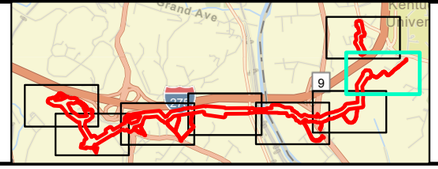

NORTH
200 100 0 200
Scale in Feet

BURNS McDONNELL

Figure 4: Wetland Delineation Map
AM07 Phase 3 Pipeline
Replacement Project
Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY
Page 2 of 8

Path: C:\Users\alhornstein\OneDrive - Burns & McDonnell\Documents\ArcGIS\Duke\DukeAM07PH3WOTUS\DukeAM07Ph3\DukeAM07PH3WOTUSupdatedMay2024DukeAM07PH3WOTUS.aprx alhornstein 5/22/2024
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Source: ESRI, Duke Energy Ohio, Burns & McDonnell

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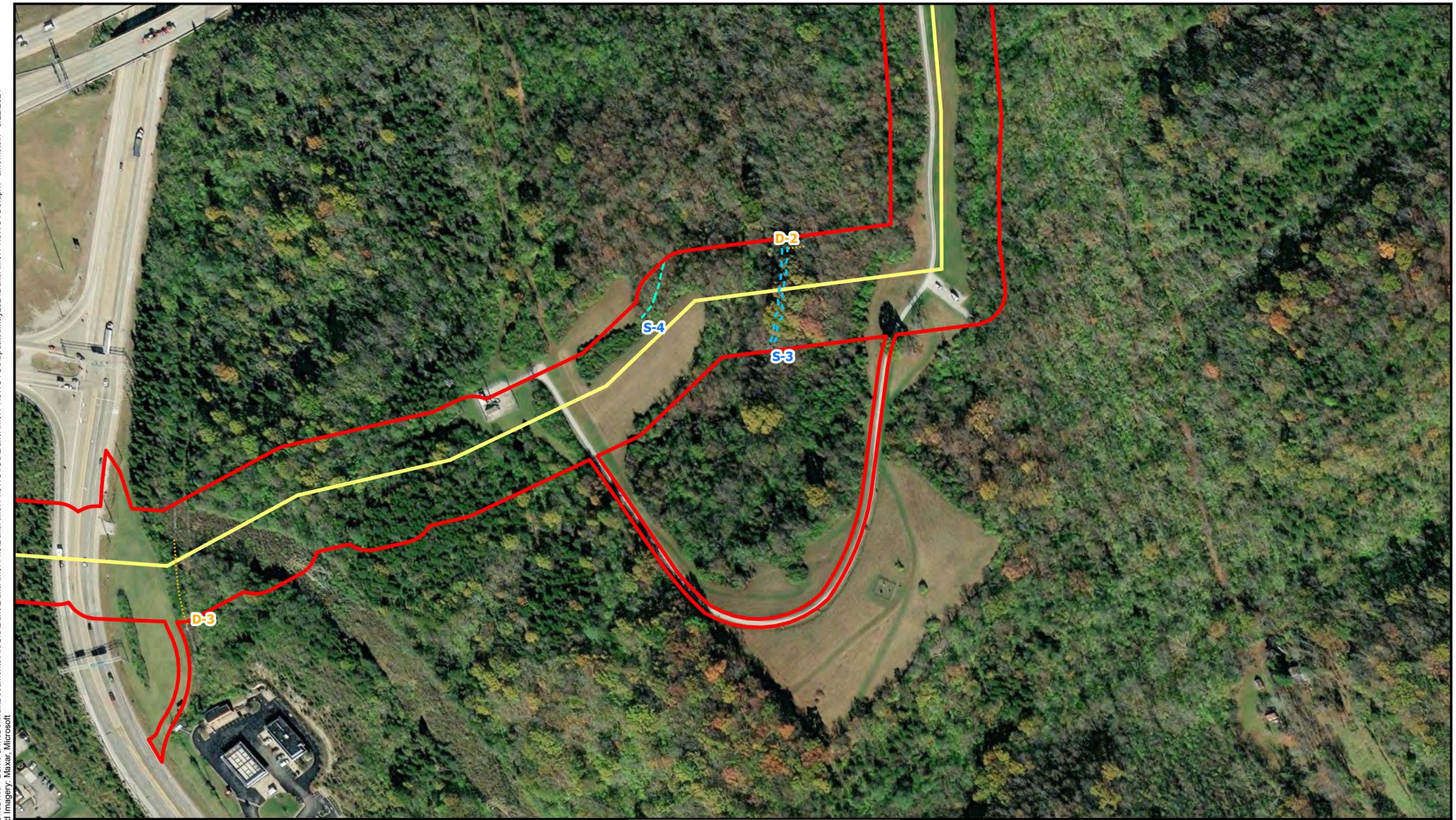

Survey Area
Pipeline Alignment
Sample Plot
Culvert
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Open Water Pond (P)

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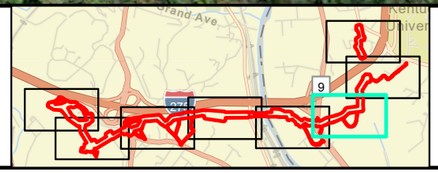

NORTH
200 100 0 200
Scale in Feet

BURNS McDONNELL

Figure 4: Wetland Delineation Map
AM07 Phase 3 Pipeline
Replacement Project
Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY
Page 3 of 8

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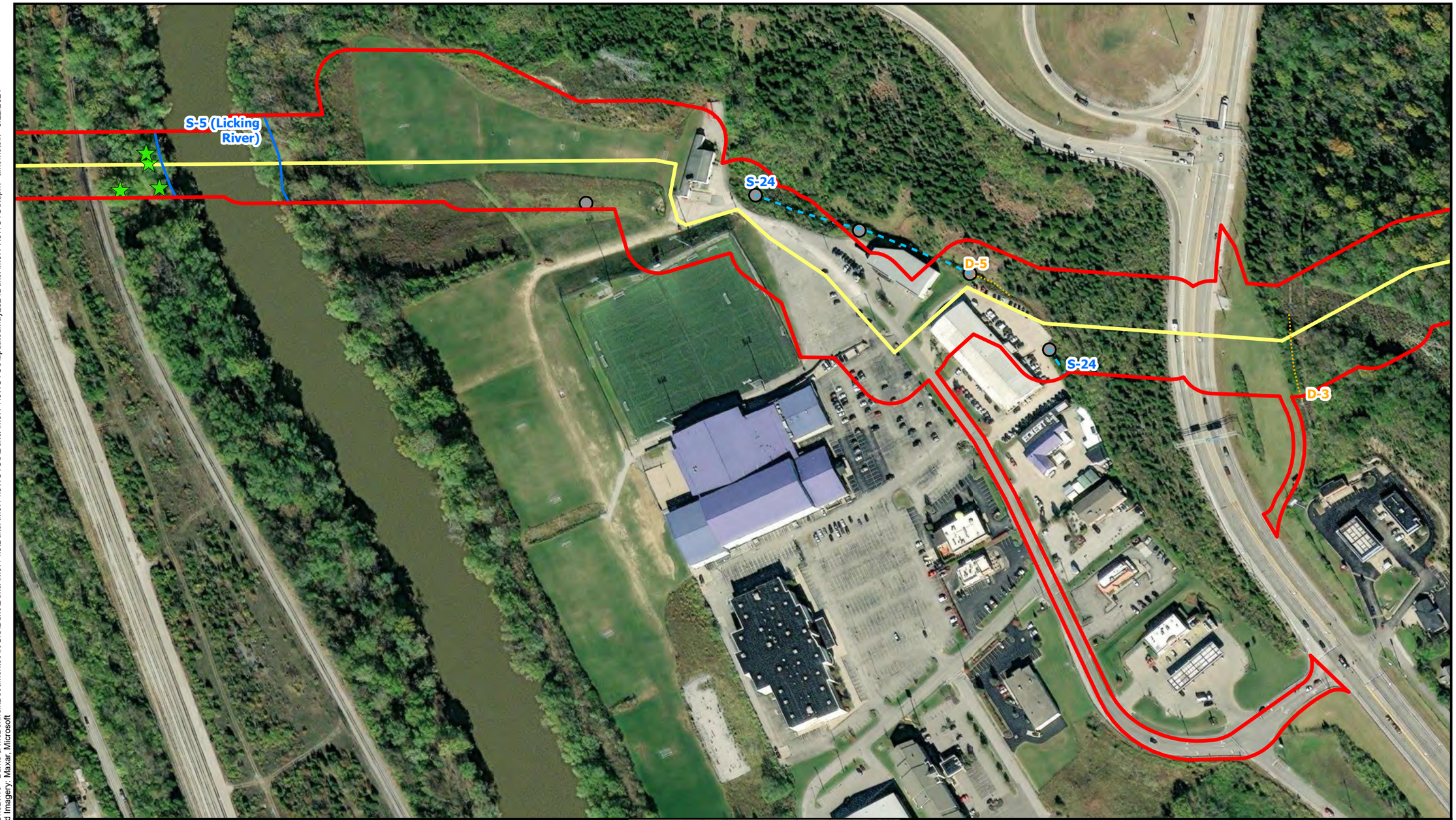
Source: ESRI, Duke Energy Ohio, Burns & McDonnell

Issued: 5/22/2024



Survey Area
Pipeline Alignment
Sample Plot
Culvert
Potential Roost Tree

Wetland Type (W)
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Intermittent
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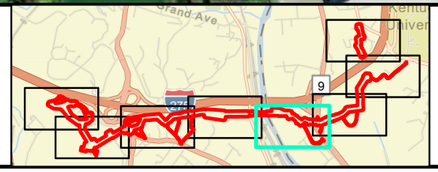

NORTH
200 100 0 200
Scale in Feet

BURNS McDONNELL

Figure 4: Wetland Delineation Map
AM07 Phase 3 Pipeline
Replacement Project
Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY
Page 4 of 8

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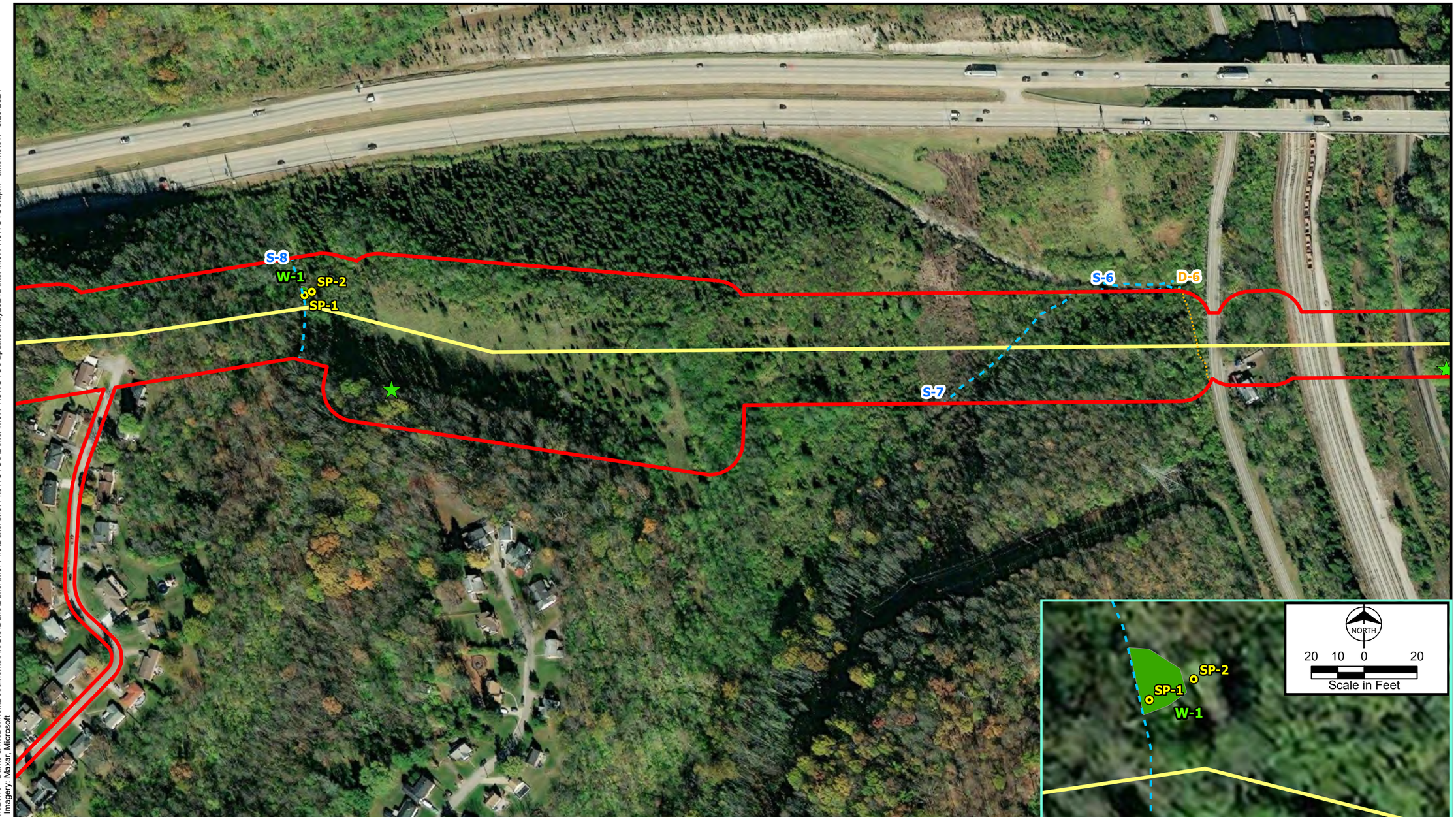

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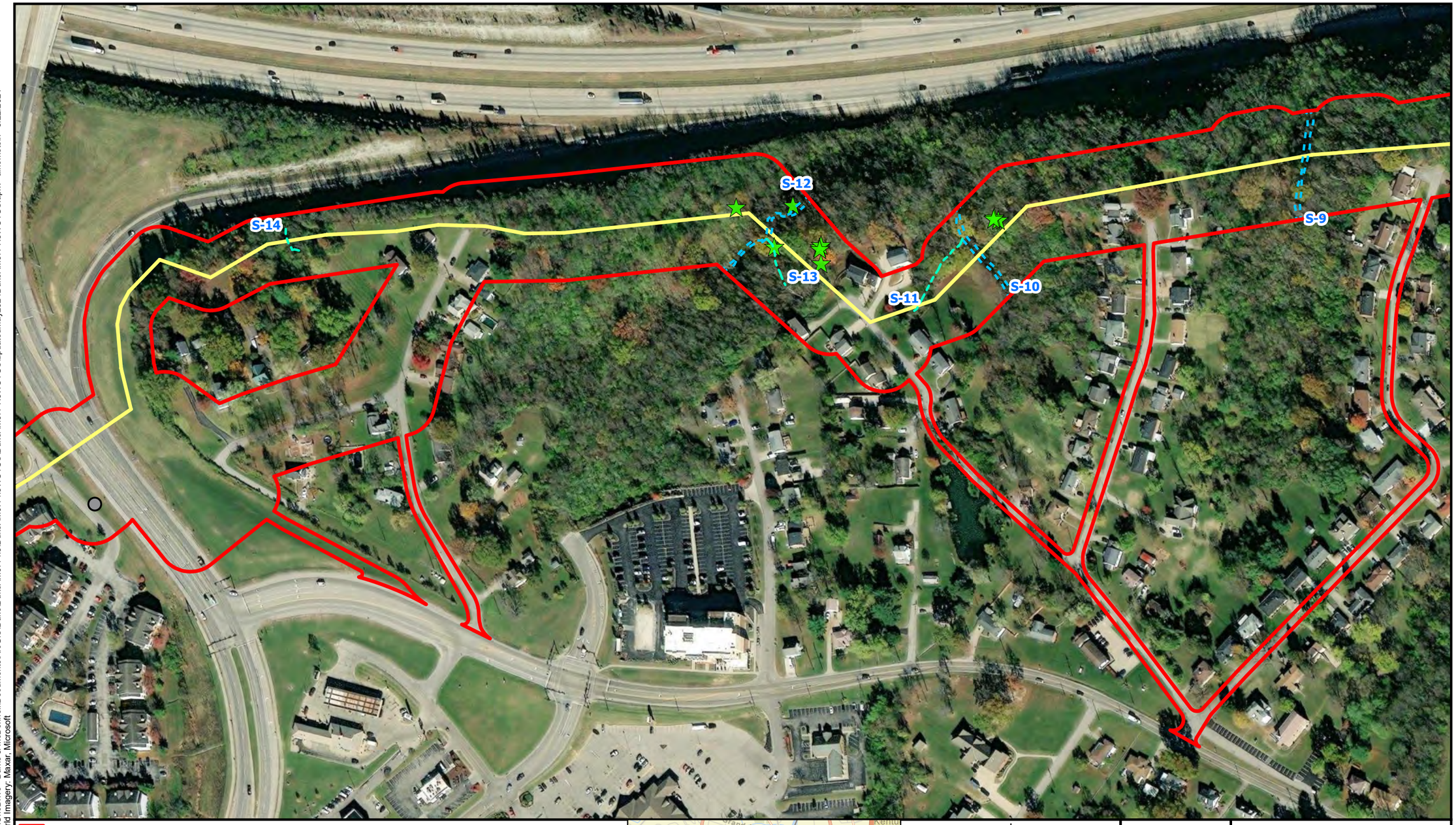
Service Layer Credits: World Imagery: Maxar, Microsoft

Source: ESRI, Duke Energy Ohio, Burns & McDonnell

Figure 4: Wetland Delineation Map
AM07 Phase 3 Pipeline
Replacement Project
Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY
Page 5 of 8

Issued: 5/29/2024



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AM07 Phase 3 Pipeline
Replacement Project
Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY
Page 6 of 8

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Service Layer Credits: World Imagery: Maxar, Microsoft

Source: ESRI, Duke Energy Ohio, Burns & McDonnell

Issued: 5/22/2024

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Pipeline Alignment
Sample Plot
Culvert
Potential Roost Tree

Wetland Type (W)
PFO
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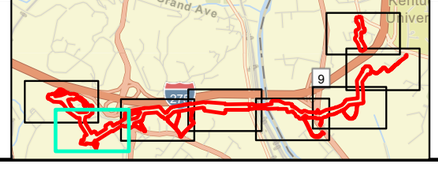

NORTH
200 100 0 200
Scale in Feet

BURNS McDONNELL

Figure 4: Wetland Delineation Map
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Replacement Project
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Kenton and Campbell Counties, KY
Page 7 of 8

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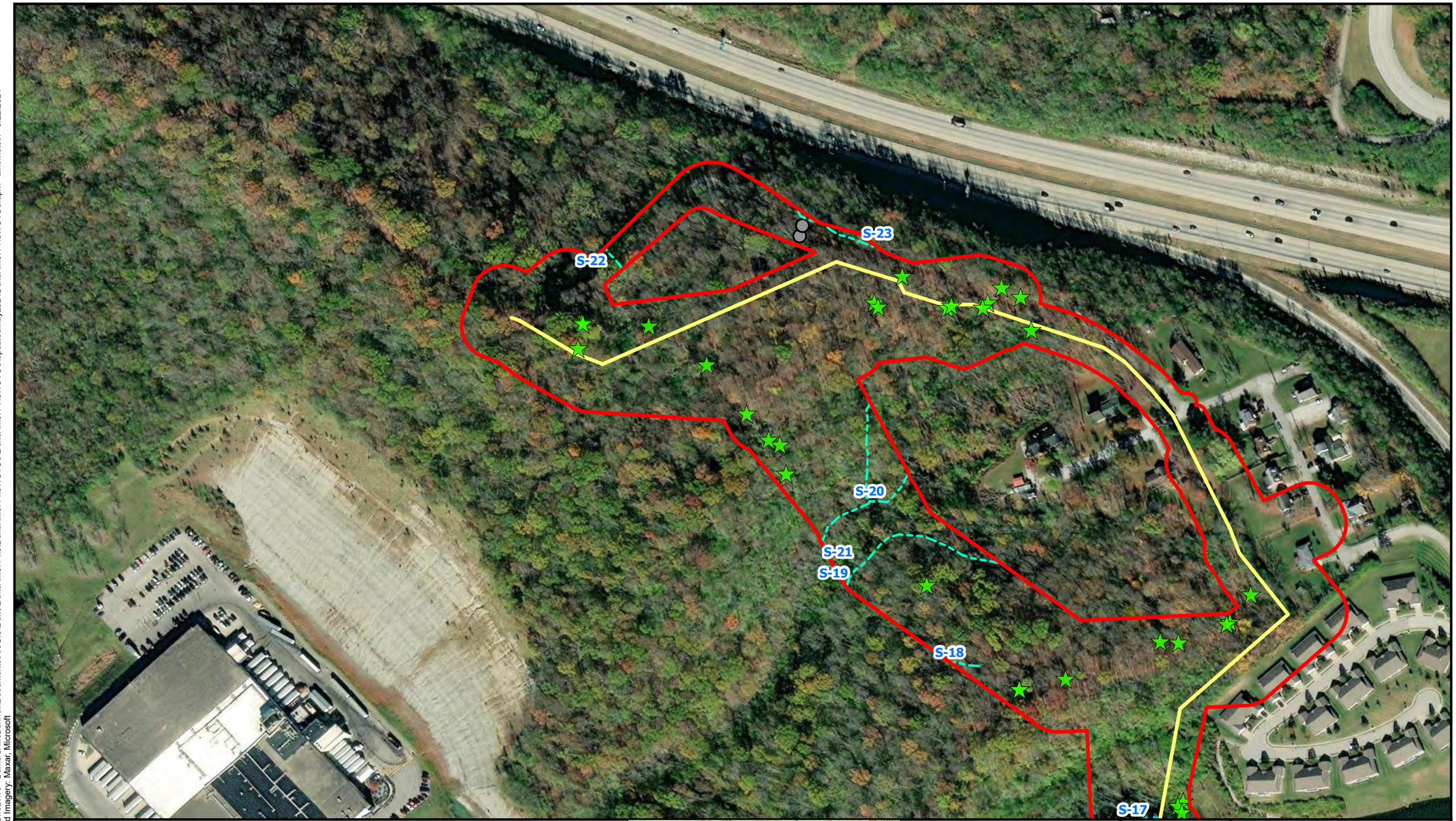

Figure 4: Wetland Delineation Map
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Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY
Page 8 of 8

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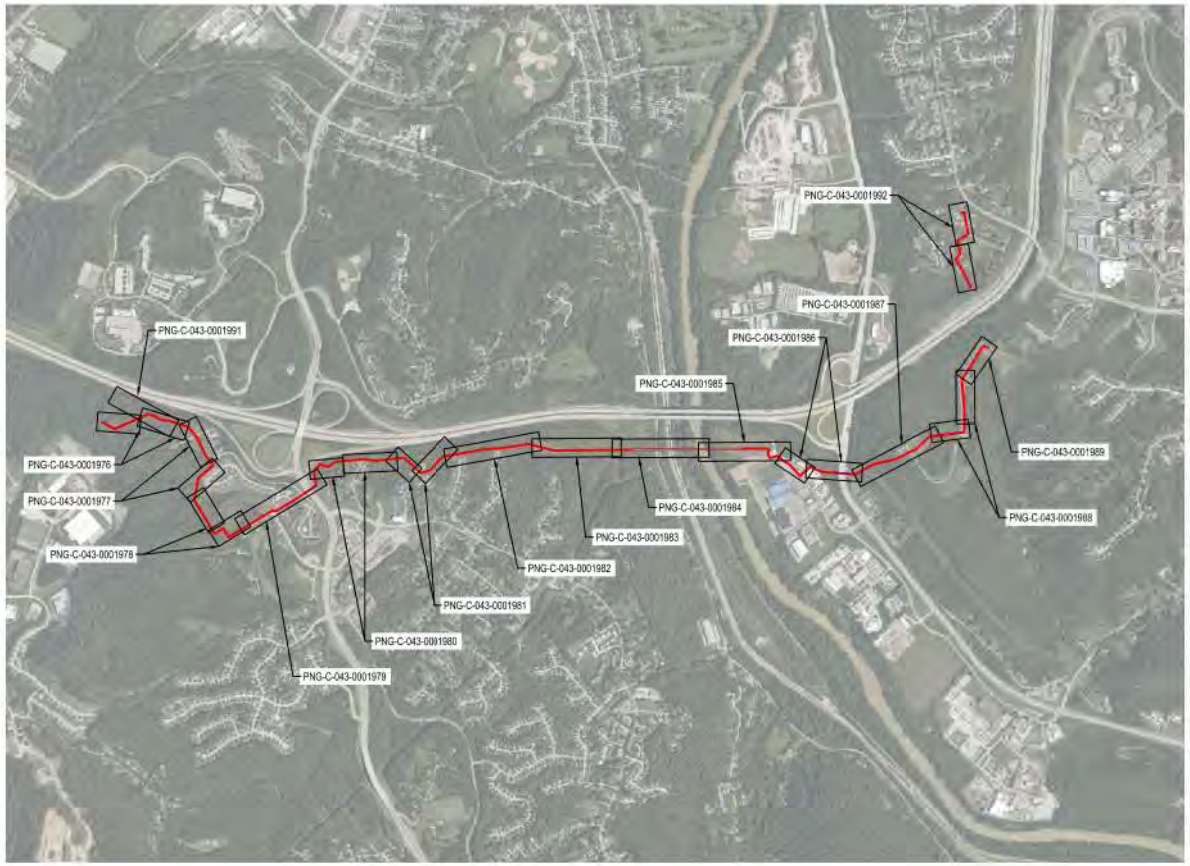

AM07 PHASE 3 PIPELINE

SCALE: 1 : 1000

DRAWING INDEX			
PAGE #	DRAWING NUMBER	SHEET DESCRIPTION	REV.
1	PNG-G-043-0001560	COVER SHEET	B
2	PNG-G-043-0001561	SIGN OFF SHEET	B
3	PNG-G-043-0001562	GENERAL NOTES	B
4	PNG-G-043-0001563	ABBREVIATIONS & LEGEND	B
5	PNG-M-043-0001642	PIPELINE BILL OF MATERIALS 1	A
6	PNG-M-043-0001643	PIPELINE BILL OF MATERIALS 2	A
7	PNG-C-043-0001969	ACCESS ROUTES & LAYDOWN 1	B
8	PNG-C-043-0001970	ACCESS ROUTES & LAYDOWN 2	B
9	PNG-C-043-0001972	AM07 PHASE 3 RETIREMENT PLAN 1	A
10	PNG-C-043-0001973	AM07 PHASE 3 RETIREMENT PLAN 2	A
11	PNG-C-043-0001974	AM07 PHASE 3 RETIREMENT PLAN 3	A
12	PNG-C-043-0001976	AM07 PHASE 3 ALIGNMENT SHEET 1	B
13	PNG-C-043-0001977	AM07 PHASE 3 ALIGNMENT SHEET 2	B
14	PNG-C-043-0001978	AM07 PHASE 3 ALIGNMENT SHEET 3	B
15	PNG-C-043-0001979	AM07 PHASE 3 ALIGNMENT SHEET 4	B
16	PNG-C-043-0001980	AM07 PHASE 3 ALIGNMENT SHEET 5	B
17	PNG-C-043-0001981	AM07 PHASE 3 ALIGNMENT SHEET 6	B
18	PNG-C-043-0001982	AM07 PHASE 3 ALIGNMENT SHEET 7	B
19	PNG-C-043-0001983	AM07 PHASE 3 ALIGNMENT SHEET 8	B
20	PNG-C-043-0001984	AM07 PHASE 3 ALIGNMENT SHEET 9	B
21	PNG-C-043-0001985	AM07 PHASE 3 ALIGNMENT SHEET 10	B
22	PNG-C-043-0001986	AM07 PHASE 3 ALIGNMENT SHEET 11	B
23	PNG-C-043-0001987	AM07 PHASE 3 ALIGNMENT SHEET 12	B
24	PNG-C-043-0001988	AM07 PHASE 3 ALIGNMENT SHEET 13	B
25	PNG-C-043-0001989	AM07 PHASE 3 ALIGNMENT SHEET 14	B
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28	PNG-C-043-0002001	HDD ALIGNMENT SHEET	A
29	PNG-C-043-0002003	BORE CROSSING DETAIL 1	A
30	PNG-C-043-0002004	BORE CROSSING DETAIL 2	A
31	PNG-M-043-0001633	AM07 PHASE 3 EASTERN TIE-IN & ISOLATION	A
32	PNG-M-043-0001635	AM07-E TIE-IN DETAIL	A
33	PNG-M-043-0001636	STA-0810 FEED DETAIL	A
34	PNG-M-043-0001637	STA-0810 BYPASS DETAIL	A
35	PNG-M-043-0001639	UL06 TIE-IN DETAILS 2	A
36	PNG-M-043-0001640	AM07 PHASE 3 ISOLATION VALVE DETAILS	A
37	PNG-C-043-0002011	CONSTRUCTION DETAIL 1	A
38	PNG-C-043-0002012	CONSTRUCTION DETAIL 2	A
39	PNG-C-043-0002013	CONSTRUCTION DETAIL 3	A
40	PNG-C-043-0002014	CONSTRUCTION DETAIL 4	A
41	PNG-C-043-0002015	CONSTRUCTION DETAIL 5	A
42	PNG-C-043-0002016	CONSTRUCTION DETAIL 6	A
43	PNG-C-043-0002017	CONSTRUCTION DETAIL 7	A
44	PNG-C-043-0002018	CONSTRUCTION DETAIL 8	A
45	PNG-C-043-0002019	CONSTRUCTION DETAIL 9	A
46	PNG-C-043-0002020	CONSTRUCTION DETAIL 10	A
47	PNG-C-043-0002023	ENVIRONMENTAL NOTES AND DETAILS 1	A
48	PNG-C-043-0002024	ENVIRONMENTAL NOTES AND DETAILS 2	A
49	PNG-C-043-0002025	ENVIRONMENTAL NOTES AND DETAILS 3	A
50	PNG-C-043-0002026	ENVIRONMENTAL NOTES AND DETAILS 4	A

FOR PERMITTING PURPOSES ONLY

STATE OF KENTUCKY
JOSHUA FUELLING
37266
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGARCH STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

AM07 PHASE 3
COVER SHEET
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)

SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	11/07/2023	SUPERSEDED	—

DRAWING NUMBER: PNG G-043-0001560
REVISION: C

ERLANGER/AM07

DESIGN REVIEW OF COMPLETED CONSTRUCTION JOB

SPONSOR _____ DATE _____

FIELD CHANGE REQUEST DOCUMENT REQUIRED: YES ☐ NO ☐

TRANSMISSION DESIGN DOCUMENT REQUIRED: YES ☐ NO ☐

SYSTEMS OPERATION SUPERVISOR VALVES AND NUMBERS REVIEWED

REVIEWED BY _____

DATE _____

VALVES THAT HAVE BEEN ABANDONED AND REMOVED

# _____	# _____
# _____	# _____
# _____	# _____
# _____	# _____
# _____	# _____
# _____	# _____

CORROSION ENGINEERING

CONDITION OF COATING WHEN DELIVERED TO JOB:

APPR. BY _____

COATING TYPE _____ GOOD ☐ FAIR ☐ POOR ☐

INSPECTION: INSULATION CHECKED

VISUAL ☐ JEEP ☐ NO. CHECKED _____

TYPE PATCH MATERIAL _____

TEST CONN. PER STD. SI-ST-4000

NO. PROPOSED _____

NO. INSTALLED _____

NO. TESTED OK (P/S INDICATOR) _____

PLASTIC SEPARATIONS INSTALLED ☐

CONTINUITY OF COUPLINGS CHECKED ☐

CASING CHECKED FOR SHORT ☐

PERMIT(S) REQUIRED

SEE PROJECT PERMIT MATRIX

SUPERVISOR BLOCK

SUPERVISOR OR CONTRACTOR _____

RECORDED BY _____

DATE STARTED _____ DATE PLACED IN SERVICE _____

DATE COMPLETED _____ PERMIT NO. _____

TRACEABILITY OF PLASTIC MAIN AND SERVICES TESTED UPON COMPLEATION

COMPLETION CONTRACTOR _____

VERIFICATION INSPECTOR _____

FIELD PRESSURE LEAK TEST

ALL PIPELINES REQUIRE LEAK TESTING BEFORE PLACING INTO SERVICE, PRESSURE CHARTS AND FORMS SHOULD BE FORWARDED TO GAS ENGINEERING. SEE FOC-PR-2040.

REQUIRED TEST PRESSURE RANGE:

MIN. - PSIG TO MAX - PSIG

HOURS - MEDIUM AIR/NITROGEN

TESTED BY _____ DATE _____

PROJECT CONTACTS

CONSTRUCTION:

BRAD SEITER 859-466-6690

JON TRAPP 859-250-4785

ENGINEERING SPONSOR:

JOHN PERKINS 513-315-8338

PIPE INSTALLED ON JOB

	WO#	PROJECT	ACTIVITY
INSTALLATION	-	-	-
ABANDONMENT			
RENEW SERVICE M-C			
RENEW SERVICE C-M			
RELOCATE METER			

SIZE	KIND	WALL THICKNESS	EST. PIPE LENGTH	ACTUAL PIPE LENGTH	ACTUAL FITTING &VALVE LENGTH
24"	STEEL/ERW	0.5"	17,770'		
20"	STEEL/ERW	0.375"	1,429'		
12"	STEEL/ERW	0.375"	4'		
8"	STEEL/ERW	0.322"	548'		
6"	STEEL/ERW	0.280"	79'		
		TOTAL	-		

CONFORMING TO THE OFFICE OF PIPELINE SAFETY'S REGULATIONS (SECTION 192.243, PARAGRAPH F), WELDING FOR PIPELINE IS REQUIRED TO BE MAINTAINED AS A PART OF THE PIPELINE'S PERMANENT RECORD.

TO MEET THIS REQUIREMENT, THE INSPECTOR SHALL IDENTIFY EACH WELD OF THIS PIPELINE BY NUMBERING AND LOCATING THE WELD ON THE CONSTRUCTION DRAWING AND COMPLETING THE INFORMATION BLOCK BELOW. NUMBERS MUST MATCH THOSE ON X-RAY SHEET. ALL WELDS MUST BE IN ACCORDANCE WITH COMPANY SPECIFICATION WEL-ST-1000.

TO BE FILLED OUT BY DESIGN ENGINEER

PIPE SIZE	24"	20"	12"	8"	6"
PIPE WALL THK.	0.5"	0.375"	0.375"	0.322"	0.280"
PIPE GRADE	X65	X65	X52	X52	X52
SYMS PER MAOP	13.66%	15.18%	5.72%	9.53%	8.42%
WELDING SPEC.					
% XRAY	100%	100%	100%	100%	100%

TO BE FILLED OUT BY INSPECTOR

TOTAL NO. OF WELDS MADE					
TOTAL NO. OF WELDS X-RAYED					
TOTAL NO. OF WELDS REJECTED					
TOTAL NO. OF WELDS REPAIRED					
TOTAL NO. OF WELDS REPLACED					

NOTE: TOTAL OF REPAIRED PLUS REPLACED WELDS SHOULD EQUAL AMOUNT OF REJECTED WELDS

HYDROSTATIC PRESSURE TEST

ALL LINES OPERATING ABOVE 60 PSIG REQUIRE STRENGTH TESTING BEFORE PLACING INTO SERVICE. PRESSURE CHARTS AND FORMS SHOULD BE FORWARDED TO GAS ENGINEERING. TEST PER PROCEDURE FOC-PR-2040

REQUIRED TEST PRESSURE RANGE:

MIN. _____ PSIG TO MAX _____ PSIG

HOURS 8 MEDIUM WATER

SIGNATURE _____ DATE _____

HYDROSTATIC TEST WATER DISCHARGE REQUIRMENTS

PERMIT REQUIRED FOR ALL DISCHARGE. CONTACT GAS OPERATION REGULATORY COMPLIANCE TO ARRANGE FOR DISCHARGE PERMIT. SAMPLING AND TESTING REQUIRED FOR ALL DISCHARGES TO SURFACE WATERS. CONTACT LOCAL POTW FOR OFFSITE DISCHARGE REQUIREMENTS AND LOCAL WATER DISTRICT.

COUNTY OF	ITEM NO.	SHEET NO.
KENTON, KY	-	-

INSTALLED PIPE & FITTING MAOP VERIFICATION AM07/UL06 TO BE FILLED IN BY MAOP ENGINEER

SIZE	WALL THICKNESS	GRADE	% SYMS
24"	0.5"	X65	13.66%
20"	0.375	X65	15.18%

DESIGN MAOP PER CLASS 3 1000 PSIG. OPERATING OF LINE 370 PSIG
MIN. PRESSURE RATING OF VALVE, FLANGE OR FITTING 1480 PSIG.

I HEREBY CERTIFY THAT ALL MATERIAL INSTALLED IS RATED HIGHER THAN THE DESIGN MAOP OF THIS LINE, AND THAT THE MATERIAL WAS INSTALLED AS DESIGNED UNLESS NOTED ON MATERIAL LIST.

MAOP ENGINEER SIGNATURE _____ DATE _____

HYDROSTATIC TEST PROJECT CONTACTS

CONSTRUCTION MANAGER SCOTT COLVIN (C) 513-417-3211

TFO MANAGER NATHANIEL BOTTS (C) XXX-XXX-XXXX

PROJECT MANAGER KELSEY PACE (C) XXX-XXX-XXXX

GTS ENGINEER

CORROSION ENGINEER MARK MAXWELL (C) XXX-XXX-XXXX

SYSTEM OPERATIONS DEVIN ELLIOTT (C) 937-238-4361

WELD PROCEDURE(S) REQUIRED

SPEC # _____ SPEC # _____

SPEC # _____ SPEC # _____

SPEC # _____ SPEC # _____

SPEC # _____ SPEC # _____

INSTALLED PIPE & FITTING MAOP VERIFICATION AM07 - E HIGH PRESSURE DISTRIBUTION TO BE FILLED IN BY MAOP ENGINEER

SIZE	WALL THICKNESS	GRADE	% SYMS
24"	0.5"	X65	6.46%
12"	0.375"	X52	5.72%
8"	0.322"	X52	4.51%

DESIGN MAOP PER CLASS 3 1000 PSIG. OPERATING OF LINE 175 PSIG
MIN. PRESSURE RATING OF VALVE, FLANGE OR FITTING 1480 PSIG.

I HEREBY CERTIFY THAT ALL MATERIAL INSTALLED IS RATED HIGHER THAN THE DESIGN MAOP OF THIS LINE, AND THAT THE MATERIAL WAS INSTALLED AS DESIGNED UNLESS NOTED ON MATERIAL LIST.

MAOP ENGINEER SIGNATURE _____ DATE _____

INSTALLED PIPE & FITTING MAOP VERIFICATION UL16 DISTRIBUTION TO BE FILLED IN BY MAOP ENGINEER

SIZE	WALL THICKNESS	GRADE	% SYMS
8"	0.322"	X52	9.53%
6"	0.280"	X52	8.42%

DESIGN MAOP PER CLASS 3 1000 PSIG. OPERATING OF LINE 370 PSIG
MIN. PRESSURE RATING OF VALVE, FLANGE OR FITTING 1480 PSIG.

I HEREBY CERTIFY THAT ALL MATERIAL INSTALLED IS RATED HIGHER THAN THE DESIGN MAOP OF THIS LINE, AND THAT THE MATERIAL WAS INSTALLED AS DESIGNED UNLESS NOTED ON MATERIAL LIST.

MAOP ENGINEER SIGNATURE _____ DATE _____

FOR PERMITTING PURPOSES ONLY

STATE OF KENTUCKY JOSHUA FUELLING 37268 LICENSED PROFESSIONAL ENGINEER
2024.05.21 08:32:39-05'00'
PROFESSIONAL ENG/ARCH STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
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DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-

AM07 PHASE 3
SIGN OFF SHEET
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)	PNG-G-043-0001560
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	11/07/2023
SUPERSEDED	
DRAWING NUMBER	PNG G-043-0001561
REVISION	C

C/ERLANGER/AM07

GENERAL NOTES

1. "COMPANY" IS DEFINED AS DUKE ENERGY OR DUKE ENERGY'S APPROVED REPRESENTATIVE.
2. INSTALLER SHALL FURNISH ALL MATERIALS NOT PROVIDED BY THE COMPANY (UNLESS OTHERWISE NOTED ON DRAWINGS OR SPECIFICATIONS) INCLUDING EQUIPMENT TRANSPORTATION, SERVICES AND PERFORM ALL NECESSARY WORK AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREINAFTER.
3. IT SHALL BE THE RESPONSIBILITY OF THE INSTALLER TO VERIFY ALL DIMENSIONS GIVEN ON THE DRAWINGS. ANY ITEM IN QUESTION SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER PRIOR TO PROCEEDING WITH THE WORK.
4. INSTALLER SHALL BE RESPONSIBLE FOR PROTECTION OF ALL SURROUNDING AREAS.
5. ALL BELOW GROUND WELDS SHALL BE COATED WITH A TWO-PART EPOXY (DENSO 7125, 7200, OR 7300) PER PERTINENT DESIGN AND CONSTRUCTION STANDARDS.
6. ALL ABOVE GROUND PIPING TO BE BLASTED TO CORRECT SOCIETY FOR PROTECTIVE COATINGS (SSPC) SURFACE PROFILE. PAINT SYSTEM TO BE UTILIZED SHALL BE PER PERTINENT DESIGN AND CONSTRUCTION STANDARDS.
7. UPON BACKFILLING IN AREAS OF ROCK, BURIED PIPE SHALL HAVE 6" OF SAND PAD FILL PLACED AROUND THE PIPE'S CIRCUMFERENCE.
8. PRESSURE TESTING SHALL MEET THE REQUIREMENTS OF DUKE ENERGY'S CURRENT STRENGTH AND LEAK TEST PROCEDURES AND STANDARDS.
9. INSTALLER SHALL DEWATER ALL HYDROSTATICALLY TESTED PIPING, USING CLEANING PIGS AS REQUIRED, AND DRY TO A DEWPOINT OF -40 °F PER PERTINENT DESIGN AND CONSTRUCTION STANDARDS.
10. ALL WELDS SHALL BE INSPECTED PER DUKE GAS STANDARD WELD-ST-1060.
11. INSTALLER IS REQUIRED TO FOLLOW DUKE ENERGY WELD -ST-1010 WELDING PROCEDURES.
12. ALL EXISTING PIPELINE INFORMATION PER DUKE RECORDS.

CONSTRUCTION NOTES

1. EXISTING OVERHEAD AND BELOW GROUND FACILITIES MAY BE IN THE WORK AREA VICINITY. INSTALLER IS RESPONSIBLE FOR HAVING SUCH FACILITIES LOCATED AND IS RESPONSIBLE FOR MAINTENANCE AND PRESERVATION OF THESE FACILITIES.
2. PER PERTINENT DUKE ENERGY DESIGN AND CONSTRUCTION STANDARDS, INSTALLER IS REQUIRED TO CALL 811 FOR UTILITY LOCATES A MINIMUM OF 72 HOURS AND MAXIMUM OF 10 DAYS PRIOR TO COMMENCEMENT OF WORK. NO EXTRA COMPENSATION WILL BE ALLOWED FOR DELAYS FROM ANY WORK PROVIDED BY OTHER UTILITIES.
3. IF EXISTING UTILITIES OF ANY TYPE ARE ENCOUNTERED IN THE FIELD AND DEEMED TO BE IN CONFLICT WITH INSTALLATION OF FACILITIES, INSTALLER SHALL NOTIFY THE PROJECT MANAGER IMMEDIATELY SO THE CONFLICT MAY BE RESOLVED.
4. WHEN EXISTING DRAINAGE FACILITIES ARE DISTURBED, INSTALLER SHALL PROVIDE AND MAINTAIN TEMPORARY OUTLETS AND CONNECTIONS FOR PRIVATE DRAINS OR SEWERS. RESTORATION OF THESE FACILITIES IS TO BE PERFORMED ONCE CONSTRUCTION IS COMPLETE AND ARE CONSIDERED INCIDENTAL COSTS OF THE PROJECT.
5. ALL DRAWING MEASUREMENTS ARE TO BE TAKEN FROM EXISTING GRADE. FINAL GRADE SHALL BE MATCHED TO SURROUNDING GRADE AS PER PERTINENT DESIGN AND CONSTRUCTION STANDARDS.
6. INSTALLER IS TO REMAIN WITHIN CONSTRUCTION WORKING LIMITS. ACCESS TO AREAS OUTSIDE WORKING LIMITS MUST BE COORDINATED WITH THE OWNER OR DUKE ENERGY PROJECT MANAGER.
7. ALL EXCESS EXCAVATION, CONSTRUCTION DEMOLITION DEBRIS AND UNSUITABLE MATERIALS THAT DO NOT CONTAIN ASBESTOS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED.
8. STANDARD SPECIFICATIONS REFERENCED ON THIS SHEET AND CONSTRUCTION PLANS ARE CONSIDERED AS PART OF THE CONTRACT DOCUMENTS. INCIDENTAL ITEMS OR ACCESSORIES NECESSARY TO COMPLETE THIS WORK MAY NOT BE SPECIFICALLY NOTED, BUT ARE CONSIDERED TO BE A PART OF THIS CONTRACT.
9. BEFORE ACCEPTANCE BY THE OWNER AND FINAL PAYMENT, ALL WORK SHALL BE INSPECTED AND APPROVED BY DUKE ENERGY OR COMPANY REPRESENTATIVE. FINAL PAYMENT SHALL BE MADE AFTER ALL OF THE INSTALLER'S WORK HAS BEEN ACCEPTED AND APPROVED AND IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
10. DURING CONSTRUCTION, ALL LOOSE MATERIAL THAT IS DEPOSITED IN THE FLOW LINE OF GUTTERS, DRAINAGE STRUCTURES, DITCHES, ETC. SUCH THAT THE NATURAL FLOW LINE OF WATER IS OBSTRUCTED, SHALL BE REMOVED AT THE END OF EACH WORK DAY.
11. ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE EXTENDED TO OUTLET INTO AN EXISTING DRAINAGE WAY. A RECORD OF ALL FIELD TILE FOR ONSITE DRAIN PIPE ENCOUNTERED SHALL BE KEPT BY THE INSTALLER AND TURNED OVER TO THE PROJECT MANAGER UPON COMPLETION OF THE PROJECT.
12. INSTALLER IS REQUIRED TO MAINTAIN A SET OF ISSUED FOR CONSTRUCTION DRAWINGS AND ALL PERMITS AT THE JOB SITE. ANY MODIFICATIONS OR ALTERATIONS TO THE PLANS OR SPECIFICATIONS SHALL BE APPROVED BY THE PROJECT MANAGER.
13. INSTALLER IS SOLELY RESPONSIBLE FOR EXECUTION OF HIS/HER WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS. INSTALLER IS RESPONSIBLE FOR THE CONSTRUCTION METHODS AND TECHNIQUES, SEQUENCES, TIME OF PERFORMANCE, AND ALL SAFETY PRECAUTIONS.
14. MINIMUM DEPTH OF BURIAL SHALL BE PER PERTINENT DESIGN AND CONSTRUCTION STANDARDS.
15. ALL PIPELINES BEING CROSSED ARE TO BE PROTECTED WITH A MINIMUM OF THREE (3) 4 FEET X 18 FEET WOODEN MATS.
16. PER PERTINENT DESIGN AND CONSTRUCTION STANDARDS, FOR OPEN DITCH EXCAVATION, A MINIMUM OF TWO FEET OF SEPARATION SHALL BE MAINTAINED BETWEEN ALL CROSSING STRUCTURES. SEPARATION BETWEEN CROSSING STRUCTURES AND PIPELINES THAT ARE INSTALLED VIA DIRECTIONAL DRILLING METHODS IS AT THE DISCRETION OF ENGINEERING.
17. DURING BACKFILLING, A SIX INCH CROWN SHALL BE PLACED ON ALL DISTURBED AREAS. COMPACTION REQUIREMENTS SHALL BE PER PERTINENT DESIGN AND CONSTRUCTION STANDARDS.
18. FLOWABLE FILL MUST BE USED IN ROADWAY AND WITHIN 3' OF ROADWAY PER DUKE STANDARDS.
19. SUE LEVEL B SURVEY ACQUIRED. TOP OF PIPE ELEVATIONS SHOWN FOR KNOWN UTILITY DEPTHS. REMAINING UTILITIES ASSUMED TO HAVE 4 FT. OF COVER. CONTRACTOR TO FIELD VERIFY ALL UTILITY DEPTHS.

CIVIL AND STRUCTURAL NOTES

1. ADDITIONAL EXCAVATIONS BELOW FOOTINGS MAY BE NECESSARY TO REACH UNDISTURBED SOIL. SHOULD THIS OCCUR, THE EXCAVATION SHALL BE BROUGHT TO THE BOTTOM OF THE FOOTING ELEVATION WITH COMPACTED SAND FILL MEETING THE REQUIREMENTS OF MODIFIED PROCTOR COMPACTION TEST (ASTM D1557) TO 95% IN SIX INCH LIFTS.
2. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 1" X 1" 45° CHAMFER.
3. CONCRETE SHALL BE MIXED AND POURED PER PERTINENT DESIGN AND CONSTRUCTION STANDARDS. TESTING SHALL CONFORM TO ACI 318. INSTALLER TO SUPPLY ALL CONCRETE AND TESTING.
4. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 SPECIFICATION. STEEL REINFORCING BAR SHALL CONFORM TO ASTM A615 GRADE 60 AND WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. TIE WIRE SHALL CONFORM TO ASTM A82.
5. UNSUITABLE OR EXCESS EARTH SPOIL SHALL BE DISPOSED OF AT AN APPROVED WASTE LOCATION. SOIL BEING TRANSPORTED ONTO THE JOB SITE SHALL BE APPROVED BY EITHER THE PROJECT MANAGER OR CONSTRUCTION MANAGER.
6. ROCKSHIELD OR SIMILAR COMPANY APPROVED PRODUCT MUST BE INSTALLED BETWEEN ALL PIPE AND FITTINGS THAT COME INTO CONTACT WITH CONCRETE. A LAYER OF NON ABRASIVE MATERIAL SUCH AS FRP SHALL BE INSTALLED BETWEEN ALL PIPE SUPPORTS AND PIPING.
7. ALL FIELD BENDING OF REBAR SHALL BE DONE COLD.

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. INSTALLER IS TO CONSTRUCT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES IN SEQUENCE WITH THE PIPELINE CONSTRUCTION, PROVIDE MAINTENANCE AND ASSURE EFFECTIVENESS THROUGHOUT THE DURATION OF THE PROJECT.
2. AS PER THE CONSTRUCTION STORMWATER PERMIT REQUIREMENTS OUTLINED IN THE KDEP-KOW KPDES PERMIT NO. KYR100000, AREAS LEFT TEMPORARILY UNDISTURBED OR AT FINAL GRADE WILL BE STABILIZED WITHIN 14 DAYS OF ACTIVITY CESSATION.
3. ALL SPOILS INCLUDING ORGANIC SOILS, VEGETATION AND DEBRIS SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF IN SUCH A MANNER AS TO NOT ERODE INTO ANY BODY OF WATER OR WETLAND.
4. PERIMETER EROSION CONTROLS (E.G. SILT FENCING) SHALL BE PLACED AS PER THE PLANS AND WHERE NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE WORK AREA.
5. CATCH-ALL INLET FILTERS ARE REQUIRED AT ALL SEWER INLETS, GRATES AND MANHOLES FOR SEDIMENT CONTROL.
6. TOPSOIL STOCKPILES SHALL BE LOCATED TO AVOID EROSION OF SAID STOCKPILE ONTO OFFSITE AREAS.
7. ALL ENVIRONMENTAL MEASURES SHALL BE PER PERTINENT DESIGN AND CONSTRUCTION STANDARDS, AS OUTLINED IN SWPPP NARRATIVES AND APPLICABLE STORMWATER PERMITS.
8. ALL STREAMS AND WETLANDS WITHIN THE PROJECT WORKSPACE MUST BE MATTED IN AREAS WHERE EQUIPMENT OR VEHICLE ACCESS IS NEEDED. IF A WETLAND OR STREAM IS CROSSED AND THE DECISION IS MADE THAT THE FEATURE DOES NOT NEED TO BE MATTED OVER THE ENTIRETY THEN PERIMETER CONTROLS (E.G. SILT FENCE, FILTER SOCK) MUST BE INSTALLED UP SLOPE FROM THE WATER FEATURE CONTINUOUSLY FROM THE EDGE OF THE WORKSPACE UP TO THE CORNERS OF THE MATTING TO PREVENT SEDIMENT FROM ENTERING THE WATER FEATURE. NOTE THAT THIS REQUIREMENT IS NOT EXPLICITLY LOCATED ON THESE PLANS.
9. CONTRACTOR SHALL INSTALL EROSION CONTROL BMPS IN SEQUENCE WITH PIPELINE CONSTRUCTION. NOT ALL CONTROLS NEED TO BE PRESENT SIMULTANEOUSLY. ALL BMPS ARE SHOWN ON THE PLANS FOR LOCATION AND CLARITY, BUT CONTROLS SHALL BE INSTALLED AS PIPELINE CONSTRUCTION PROGRESSES AND IN ACCORDANCE WITH COMPANY INSPECTOR'S DIRECTION.
10. ALL SEDIMENT RELEASES BEYOND THE SITE PERIMETER CONTROLS AND SPILLS REGARDLESS OF AMOUNT OR LOCATION ARE TO BE IMMEDIATELY REPORTED TO THE DUKE ENERGY ENVIRONMENTAL FIELD PROFESSIONAL. IF THE DUKE ENERGY ENVIRONMENTAL PROFESSIONAL CANNOT BE REACHED, THE DUKE ENERGY SPILL HOTLINE IS TO BE CALLED AT 1-800-527-3853.
11. IN AREAS WHERE IT IS FIELD DETERMINED TO REDUCE WORKSPACE OR IMPACT, EROSION AND SEDIMENT CONTROLS SHALL BE ADJUSTED TO MATCH WORKSPACE BOUNDARIES.

SURVEY INVESTIGATION NOTES:

1. BEARINGS AND COORDINATES ARE RELATIVE TO NAD83 KENTUCKY STATE PLANE, NORTH ZONE, US. FOOT. VERTICAL DATUM IS NAVD88.

CATHODIC PROTECTION & AC MITIGATION NOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL ALL MISCELLANEOUS PARTS TO COMPLETE PROJECT PER CONTRACT DRAWINGS, CONTRACT SPECIFICATIONS, ELECTRICAL CODES, STATE AND LOCAL CODES AND STANDARDS, AND LOCAL ELECTRICAL DISTRIBUTION COMPANY REQUIREMENTS. PARTS INCLUDE, BUT ARE NOT LIMITED TO, WIRING AND MOUNTING MATERIALS, METER SOCKET, DISCONNECT EQUIPMENT, ENCLOSURES, TRANSIENT VOLTAGE SURGE SUPPRESSORS, AC MAIN BUSS TERMINATION, CIRCUIT BREAKERS, AND OTHER ELECTRICAL EQUIPMENT REQUIRED. ACTUAL LENGTH WIRING IS DEPENDENT ON DISTANCE FROM INSTALLATION.

DESIGN NOTES:

1. DESIGNED IN ACCORDANCE WITH PHMSA PART 49 CFR 192 CLASS 3 LOCATION GUIDELINES.
   1.1. ALL WORK WITHIN KENTUCKY TRANSPORTATION CABINET FULLY CONTROLLED ACCESS RIGHT OF WAY ADHERES TO THE DESIGN FACTOR OF CLASS IV PER PART 49 CFR 192.
2. PIPELINES TO BE CATHODICALLY PROTECTED (SEE DWG PNG-E-XXX-000XXXX)
3. DESIGN PRESSURES

AM07 PHASE 3 (TRANSMISSION)
- DESIGN PRESSURE: 1000 PSIG
- MAOP: 370 PSIG

UL06 (TRANSMISSION)
- DESIGN PRESSURE: 1000 PSIG
- MAOP: 370 PSIG

UL16 (DISTRIBUTION)
- DESIGN PRESSURE: 775 PSIG
- MAOP: 370 PSIG

AM07 HIGH PRESSURE DISTRIBUTION
- DESIGN PRESSURE: 525 PSIG
- MAOP: 175 PSIG

4. FOR 24" PIPE, FIELD BEND ALL ANGLES LESS OR EQUAL TO 18 DEGREES. ALL FIELD BENDS REQUIRE 5' TANGENTS. CUT SEGMENTABLE FITTINGS FOR ALL ANGLES ABOVE 18 DEGREES, OR WHERE SPECIFIED.
5. UTILITY DEPTH OF COVER FOLLOWS ASSUMPTIONS BELOW UNLESS POTHOLE DATA IS PROVIDED:
   - 2' COVER (ELECTRIC, FIBER, COMMUNICATION)
   - 4' COVER (WATER, GAS)
   - INVERT DATA USED FOR ALL STORM AND SEWER

KENTUCKY TRANSPORTATION CABINET CONSTRUCTION NOTES:

1. MINIMUM DEPTH OF COVER WITHIN R/W SHALL BE 5-FT UNLESS OTHERWISE APPROVED.
2. CONSTRUCTION SITES SHALL NOT BE ACCESSED DIRECTLY FROM INTERSTATE OR INTERSTATE ACCESS RAMPS.
3. CONSTRUCTION EFFORTS SHALL HAVE NO IMPACT ON INTERSTATE TRAFFIC.
4. CONTRACTOR IS RESPONSIBLE FOR SHIELDING/PROTECTING TRENCHES OR EXCAVATIONS LEFT OPEN WITHIN R/W FOR ANY PERIOD OF NON-WORKING TIME.

FOR PERMITTING PURPOSES ONLY

STATE OF KENTUCKY · JOSHUA FUELLING · 37266 · LICENSED PROFESSIONAL ENGINEER
2024.05.21 08:33:08 -05'00'
PROFESSIONAL ENGINEER STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
GENERAL NOTES
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560

SHEET(S) 1 OF X	DWG SCALE AS NOTED
DWG DATE 11/07/2023	SUPERSEDED —

DRAWING NUMBER: PNG G-043-0001562
REVISION: C

C/ERLANGER/AM07

GENERAL RESTRICTIONS

1. STAY IN ROW/EASEMENTS OR WITHIN PREDETERMINED WORKSPACE AREAS.
2. ONLY USE DESIGNATED POINTS OF ACCESS AS APPROVED BY DUKE.
3. NO DIGGING, WORK, OR STORAGE WITHIN 25' OF POWER LINE OR EQUIPMENT INCLUDING GUY WIRES, EXCEPT AT CROSSINGS OF POWER RIGHT OF WAY DESIGNATED ON PLANS.
4. ANY DOT CROSSING NOTIFICATIONS TO BE MADE AS DICTATED BY THE PERMIT OR STATE DOT PERMIT.
5. INSTALLER IS RESPONSIBLE FOR KNOWING LOCATION OF ALL ENVIRONMENTALLY SENSATIVE AREA RESTRICTIONS PERTAINING TO THIS PROJECT.

ABBREVIATIONS

APPROX.	APPROXIMATE
B.C.	BUOYANCY CONTROL
C/L	CENTERLINE
CMP	CORRUGATED METAL PIPE
COMM	COMMUNICATIONS
CP	CATHODIC PROTECTION
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
E	EASTING
EA	EACH
EL / ELEV	ELEVATION
EX	EXISTING
FLC	FOREIGN LINE CROSSING
FM	FORCE MAIN
FT	FEET
FTG	FITTING
H / HORIZ	HORIZONTAL
HDD	HORIZONTAL DIRECTIONAL DRILL
H-LT	HORIZONTAL LEFT TURN
H-RT	HORIZONTAL RIGHT TURN
IN / INV	INVERT
JAB	JACK AND AUGER BORE
L	LENGTH
LF	LINEAR FEET
MAX	MAXIMUM
MIN	MINIMUM
MH	MANHOLE
N	NORTHING
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OC	OPEN CUT
O.D.	OUTSIDE DIAMETER
PCC	PORTLAND CEMENT CONCRETE
PIV	POST INDICATOR VALVE
P / P/L	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
PVC	POLY VINYL CHLORIDE
R	RADIUS
RD	ROAD
R/W / ROW	RIGHT-OF-WAY
RCP	REINFORCED CONCRETE PIPE
SD	STORM DRAIN
SS	SANITARY SEWER
SSD	SOLID STATE DECOUPLER
STA	STATION
TOP	TOP OF PIPE
TWS	TEMPORARY WORKSPACE
T.C.E.	TEMPORARY CONSTRUCTION EASEMENT
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
UGT	UNDERGROUND TELEPHONE/COMMUNICATIONS
V / VERT	VERTICAL
W	WIDTH
W.T.	WALL THICKNESS
X-ING	CROSSING

LEGEND

- PROPOSED TEMPORARY WORKSPACE.
- PROPOSED PERMANENT EASEMENT
- ADDITIONAL TEMPORARY WORKSPACE (PIPE STRING AREA)
- PROPOSED ROW ENCROACHMENT WORKSPACE
- CONSTRUCTION MATTING
- TRENCH PLUG (SEE DETAIL PNG-C-043-0001803)
- SLOPE BREAKER (SEE DETAIL PNG-C-043-0001803)
- DELINEATED WETLAND
- FEMA 100 YEAR FLOOD AREA
- ACCESS PATH
- STREAM
- DITCH
- TREE LINE
- FO — EX. COMMUNICATION, FIBER, CABLE LINE
- OH — EX. OVERHEAD LINE
- E — EX. ELECTRIC LINE
- FENCE
- G — EX. GAS LINE
- R/W — RIGHT-OF-WAY
- RAILROAD
- SS — EX. SANITARY SEWER
- ST — EX. STORM WATER LINE
- W — EX. WATER LINE
- PROPERTY LINE
- FILTER SOCK RUN ON / RUNOFF PROTECTION
- SILT FENCE RUN ON / RUNOFF PROTECTION
- SUPER SILT FENCE RUNOFF PROTECTION
- EX. MAJOR CONTOUR
- 500 — EX. MINOR CONTOUR
- 501 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- BUOYANCY CONTROL
- 123+00 — PROPOSED GAS LINE
- 123+00 — HORIZONTAL DIRECTIONAL DRILL
- 123+00 — AUGER BORE
- EXCAVATION PIT

- POTHOLE LOCATION
- BORING LOCATION
- FLUSH PIPELINE MARKER
- A.G. — ABOVE GRADE PIPELINE MARKER
- 0.0 — MILE MARKER
- INTERMITTENT STREAM CROSSING (SEE ENV DETAIL PNG-C-043-0002021)
- EPHEMERAL STREAM CROSSING (SEE ENV DETAIL PNG-C-043-0002021)
- J-HOOK
- IP — INLET PROTECTION
- ROCK DITCH CHECK
- FILTER SOCK CHECK DAM
- SOIL STOCK PILE
- SCE — CONSTRUCTION ENTRANCE
- T — TEST STATION (SEE EQUIPMENT SCHEDULES ON PNG-E-XXX-000XXXX)
- PIPELINE RETIREMENT, ABANDONED IN PLACE.
- EXISTING PIPELINE DOWN RATED
- EXISTING PIPELINE TRANSFERRED TO NEW SYSTEM.
- EXISTING PIPELINE REPLACEMENT
- W — WATER METER
- WATER VALVE
- WATER HYDRANT
- ABOVE/BELOW GRADE ELECTRICAL BOX
- MAILBOX
- LIGHT POLE
- STREET SIGN
- S — SANITARY SEWER MANHOLE
- D — STORM DRAIN MANHOLE
- STORM CATCH BASIN
- CURB INLET
- OVERHEAD UTILITY POLE

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STATE OF KENTUCKY — JOSHUA FUELLING — 37266 — LICENSED PROFESSIONAL ENGINEER
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DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-

AM07 PHASE 3
ABBREVIATIONS & LEGEND
COVINGTON, KY

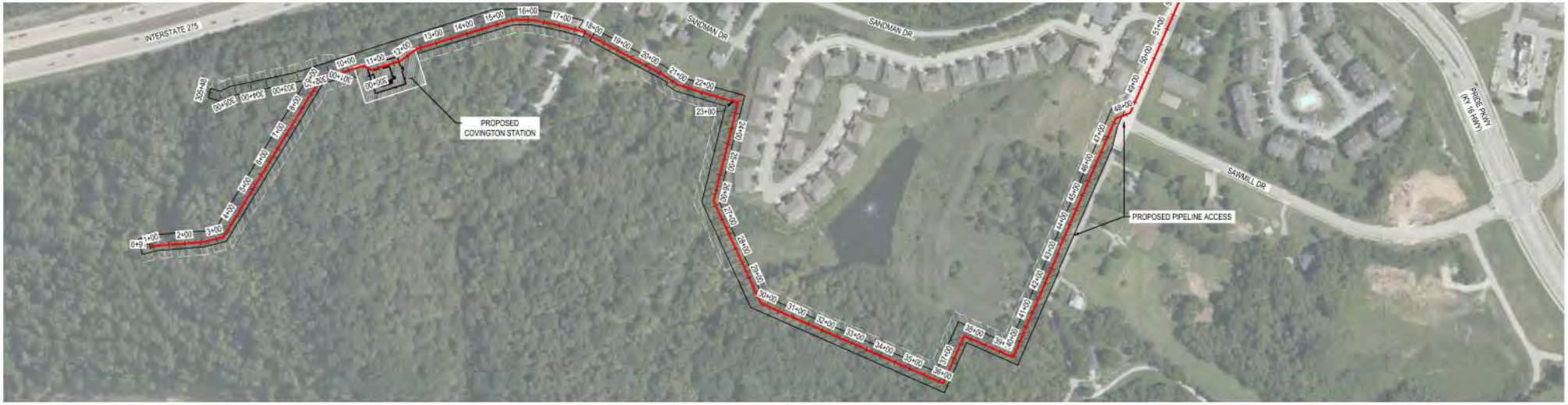
ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001428

SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	11/07/2023	SUPERSEDED	—

DRAWING NUMBER: PNG G-043-0001563
REVISION: C

C/ERLANGER/AM07



PIPELINE ACCESS & LAYDOWN 1
SCALE: 1:100

PIPELINE ACCESS & LAYDOWN 2
SCALE: 1:100

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STATE OF KENTUCKY
JOSHUA FUELLING
37266
LICENSED
PROFESSIONAL ENGINEER
PROFESSIONAL ENGARCH STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
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DESCRIPTION	
AREA CODE	-
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PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
ACCESS AND LAYDOWN OVERVIEW 1
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560

SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	11/29/2023	SUPERSEDED	—

DRAWING NUMBER: PNG C-043-0001969
REVISION: C

C:\ERLANGER\AM07

PIPELINE ACCESS & LAYDOWN 3
SCALE: 1:150

PIPELINE ACCESS & LAYDOWN 4
SCALE: 1:150

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STATE OF KENTUCKY
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DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
ACCESS AND LAYDOWN OVERVIEW 1
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560

SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	11/29/2023	SUPERSEDED	—

DRAWING NUMBER: PNG C-043-0001970
REVISION: C
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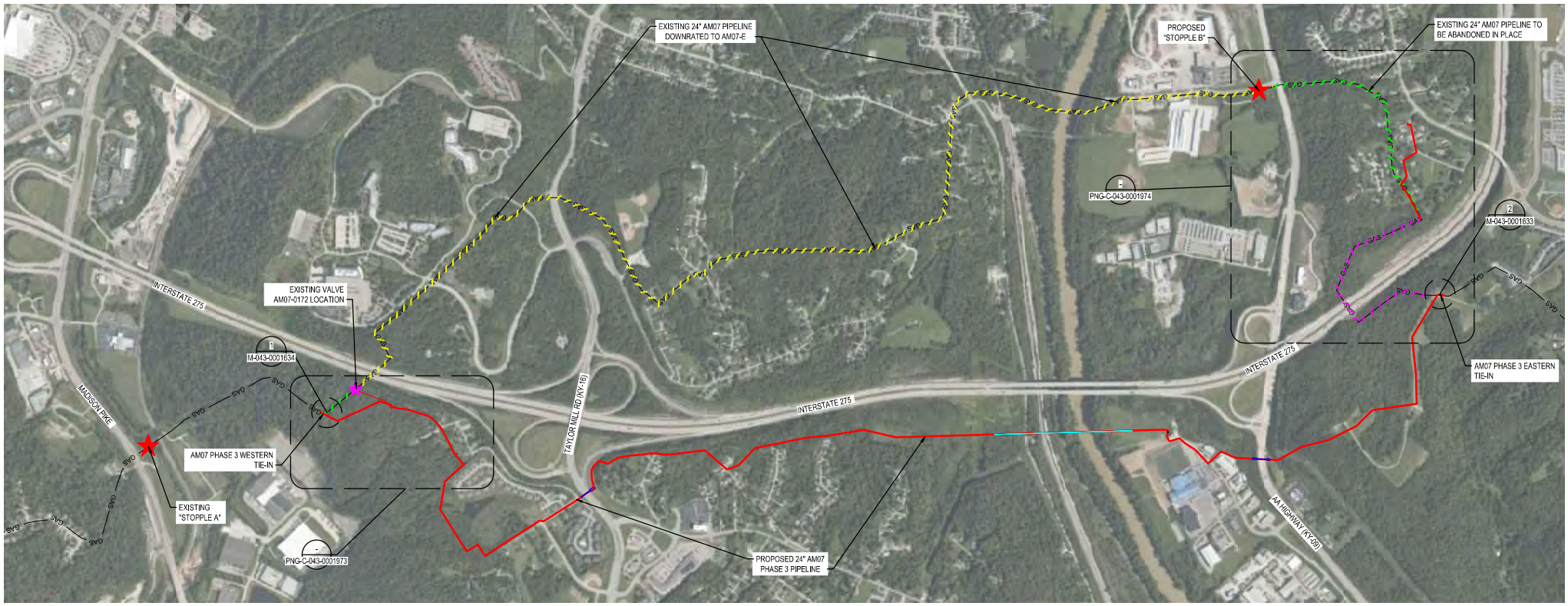


1) AM07 PHASE 3, STEP 1

1. Construct and test AM07 PH3 Pipeline, UL16 Pipeline, AM07-E Pipeline, UL06 MLV, and Covington Station.
   a. Install "Stopple C" & "Stopple D" to isolate and cap existing AM07 section at UL06 MLV and AM07 Phase 3 Eastern Tie-In location. (M-043-0001633 DETAIL 1)
      - Back feed AM07 from UL06.
2. Tie-in AM07 PH3 and AM07-E on the West end.
   a. Isolate existing AM07 Pipeline near West Tie-In
      - Close valves 24" AM07-0172 (2017 Ball Valve) & 8" UL16-0011 (2017 Gate Valve); leaving feed to UL16 active.
      - Utilize existing "Stopple A" near Madison Pike to isolate from the west.
   b. Perform pipe to pipe tie-ins for Phase 3 and AM07-E (M-043-0001634 & M-043-0001635).
3. Place AM07 PH3, UL06 MLV, and Covington Station in service.
   a. Utilize Stopple C and Stopple D near UL06 MLV site to isolate AM07.
      - Back feed AM07 from UL06.
   b. Perform AM07 East tie-in and UL06 MLV tie-in (M-043-0001633).
   c. Open Covington Station Bypass Valve (use bypass not regulation runs).
   d. Release Stopple C and Stopple D to place AM07 PH3 and UL06 Feed into service.
   e. Release Stopple A for continuous flow through AM07.
   f. Open AM07-0172

2) AM07 PHASE 3, STEP 2 (PNG-C-043-0001973)

1. Transition STA-0810 gas supply from existing UL16 to new UL16 feed.
   a. Close NEW 8" UL16 Bypass Valve
   b. Tap UL16 8" and 6" spherical tees (M-043-0001636 & M-043-0001637).
   c. Close UL16-0012 to shut off gas supply from existing AM07 (M-043-0001635).
   d. Cap and isolate old UL16 pipe (M-043-0001636 & M-043-0001637).
      - Isolation via UL16-0012, Existing "Stopple G" and NEW 6" Spherical Tee
      - Install caps to abandon UL16 pipe (M-043-0001635, M-043-0001636 & M-043-0001637).

3) AM07 PHASE 3, STEP 3 (PNG-C-043-0001974)

1. Construct 20" UL06 Pipeline (Construction done in parallel with AM07 PH3 construction)
   a. Isolate UL06 Pipeline.
      - Install 20-inch "Stopple E" at UL06 North Tie-In (M-043-0001639).
      - Install 24-inch "Stopple F" at UL06 South Tie-In (M-043-0001638).
      - Install 24-inch "Stopple B" on west side of Licking Pike (M-043-0001641).
   b. Tie-In proposed UL06 to existing UL06 & place 20" UL06 into service.
   c. Cap existing AM07 east of "Stopple B" (M-043-0001641).
2. Transition Existing AM07 to AM07-E (C-043-0001974).
   a. Transition flow from Covington Bypass to Regulation Run.
   b. Remove UL06-0009 Valve Pit in front yard (C-043-0001974).

AM07 PHASE 3 CONSTRUCTION SEQUENCING

SCALE: 1:600

FOR PERMITTING PURPOSES ONLY

JOSHUA FUELLING 37260 LICENSED PROFESSIONAL ENGINEER
2024.05.21 08:37:11-05'00'
PROFESSIONAL ENG/ARCH STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	AMP
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

-
AM07 PHASE 3
CONSTRUCTION SEQUENCING PLAN
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-C-043-0001560

SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	03/28/2024	SUPERSEDED	—

DRAWING NUMBER: PNG C-043-0001972 | REVISION: B

C/ERLANGER/AM07

1) AM07 PHASE 3, STEP 1

1. Construct and test AM07 PH3 Pipeline, UL16 Pipeline, AM07-E Pipeline, UL06 MLV, and Covington Station.
   a. Install "Stopple C" & "Stopple D" to isolate and cap existing AM07 section at UL06 MLV and AM07 Phase 3 Eastern Tie-In location. (M-043-0001633 DETAIL 1)
      - Back feed AM07 from UL06.
2. Tie-in AM07 PH3 and AM07-E on the West end.
   a. Isolate existing AM07 Pipeline near West Tie-In
      - Close valves 24" AM07-0172 (2017 Ball Valve) & 8" UL16-0011 (2017 Gate Valve); leaving feed to UL16 active.
      - Utilize existing "Stopple A" near Madison Pike to isolate from the west.
   b. Perform pipe to pipe tie-ins for Phase 3 and AM07-E (M-043-0001634 & M-043-0001635).
3. Place AM07 PH3, UL06 MLV, and Covington Station in service.
   a. Utilize Stopple C and Stopple D near UL06 MLV site to isolate AM07.
      - Back feed AM07 from UL06.
   b. Perform AM07 East tie-in and UL06 MLV tie-in (M-043-0001633).
   c. Open Covington Station Bypass Valve (use bypass not regulation runs).
   d. Release Stopple C and Stopple D to place AM07 PH3 and UL06 Feed into service.
   e. Release Stopple A for continuous flow through AM07.
   f. Open AM07-0172

2) AM07 PHASE 3, STEP 2 (PNG-C-043-0001973)

1. Transition STA-0810 gas supply from existing UL16 to new UL16 feed.
   a. Close NEW 8" UL16 Bypass Valve
   b. Tap UL16 8" and 6" spherical tees (M-043-0001636 & M-043-0001637).
   c. Close UL16-0012 to shut off gas supply from existing AM07 (M-043-0001635).
   d. Cap and isolate old UL16 pipe (M-043-0001636 & M-043-0001637).
      - **Isolation via UL16-0012, Existing "Stopple G" and NEW 6" Spherical Tee**
      - **Install caps to abandon UL16 pipe (M-043-0001635, M-043-0001636 & M-043-0001637).**

3) AM07 PHASE 3, STEP 3 (PNG-C-043-0001974)

1. Construct 20" UL06 Pipeline (Construction done in parallel with AM07 PH3 construction)
   a. Isolate UL06 Pipeline.
      - Install 20-inch "Stopple E" at UL06 North Tie-In (M-043-0001639).
      - Install 24-inch "Stopple F" at UL06 South Tie-In (M-043-0001638).
      - Install 24-inch "Stopple B" on west side of Licking Pike (M-043-0001641).
   b. Tie-In proposed UL06 to existing UL06 & place 20" UL06 into service.
   c. Cap existing AM07 east of "Stopple B" (M-043-0001641).
2. Transition Existing AM07 to AM07-E (C-043-0001974).
   a. Transition flow from Covington Bypass to Regulation Run.
   b. Remove UL06-0009 Valve Pit in front yard (C-043-0001974).

AM07 PHASE 3 CONSTRUCTION SEQUENCING

SCALE: 1:80

FOR PERMITTING PURPOSES ONLY

JOSHUA FUELLING 37280 LICENSED PROFESSIONAL ENGINEER
2024.05.21 08:47:47-05'00'
PROFESSIONAL ENG/ARCH STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	AMP
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
CONSTRUCTION SEQUENCING PLAN 2
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-C-043-0001560

SHEET(S) 1 OF X	DWG SCALE AS NOTED
DWG DATE 03/28/2024	SUPERSEDED —

DRAWING NUMBER: PNG C-043-0001973 | REVISION: B

C/ERLANGER/AM07

1) AM07 PHASE 3, STEP 1

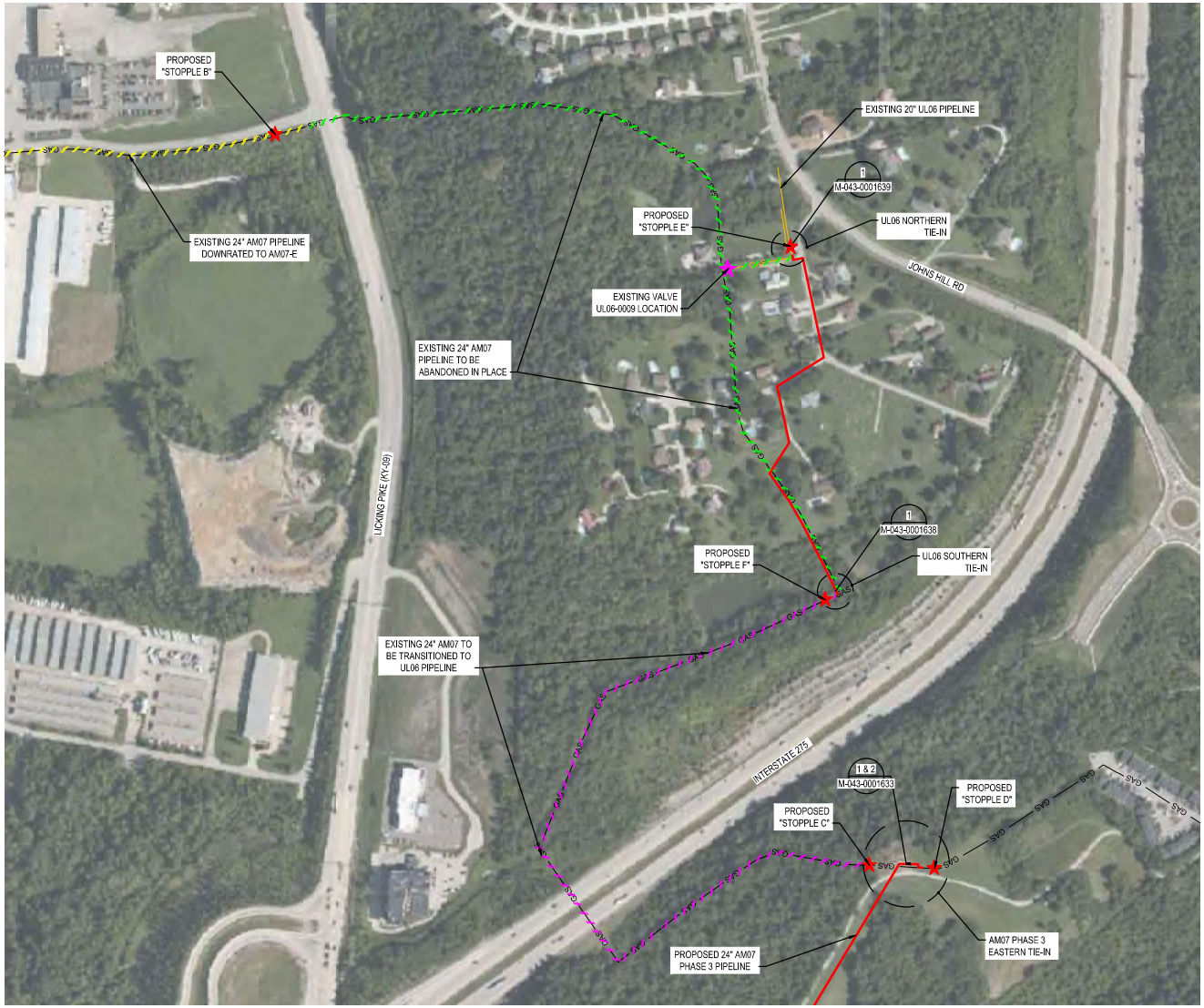
1. Construct and test AM07 PH3 Pipeline, UL16 Pipeline, AM07-E Pipeline, UL06 MLV, and Covington Station.
   a. Install "Stopple C" & "Stopple D" to isolate and cap existing AM07 section at UL06 MLV and AM07 Phase 3 Eastern Tie-In location. (M-043-0001633 DETAIL 1)
      - Back feed AM07 from UL06.
2. Tie-in AM07 PH3 and AM07-E on the West end.
   a. Isolate existing AM07 Pipeline near West Tie-In
      - Close valves 24" AM07-0172 (2017 Ball Valve) & 8" UL16-0011 (2017 Gate Valve); leaving feed to UL16 active.
      - Utilize existing "Stopple A" near Madison Pike to isolate from the west.
   b. Perform pipe to pipe tie-ins for Phase 3 and AM07-E (M-043-0001634 & M-043-0001635).
3. Place AM07 PH3, UL06 MLV, and Covington Station in service.
   a. Utilize Stopple C and Stopple D near UL06 MLV site to isolate AM07.
      - Back feed AM07 from UL06.
   b. Perform AM07 East tie-in and UL06 MLV tie-in (M-043-0001633).
   c. Open Covington Station Bypass Valve (use bypass not regulation runs).
   d. Release Stopple C and Stopple D to place AM07 PH3 and UL06 Feed into service.
   e. Release Stopple A for continuous flow through AM07.
   f. Open AM07-0172

2) AM07 PHASE 3, STEP 2 (PNG-C-043-0001973)

1. Transition STA-0810 gas supply from existing UL16 to new UL16 feed.
   a. Close NEW 8" UL16 Bypass Valve
   b. Tap UL16 8" and 6" spherical tees (M-043-0001636 & M-043-0001637).
   c. Close UL16-0012 to shut off gas supply from existing AM07 (M-043-0001635).
   d. Cap and isolate old UL16 pipe (M-043-0001636 & M-043-0001637).
      - Isolation via UL16-0012, Existing "Stopple G" and NEW 6" Spherical Tee
      - Install caps to abandon UL16 pipe (M-043-0001635, M-043-0001636 & M-043-0001637).

3) AM07 PHASE 3, STEP 3 (PNG-C-043-0001974)

1. **Construct 20" UL06 Pipeline (Construction done in parallel with AM07 PH3 construction)**
   a. **Isolate UL06 Pipeline.**
      - **Install 20-inch "Stopple E" at UL06 North Tie-In (M-043-0001639).**
      - **Install 24-inch "Stopple F" at UL06 South Tie-In (M-043-0001638).**
      - **Install 24-inch "Stopple B" on west side of Licking Pike (M-043-0001641).**
   b. **Tie-In proposed UL06 to existing UL06 & place 20" UL06 into service.**
   c. **Cap existing AM07 east of "Stopple B" (M-043-0001641).**
2. **Transition Existing AM07 to AM07-E (C-043-0001974).**
   a. **Transition flow from Covington Bypass to Regulation Run.**
   b. **Remove UL06-0009 Valve Pit in front yard (C-043-0001974).**



AM07 PHASE 3 CONSTRUCTION SEQUENCING

SCALE: 1:200

FOR PERMITTING PURPOSES ONLY

JOSHUA FUELLING 37298 LICENSED PROFESSIONAL ENGINEER
2024.05.21 08:38:21 -05'00'
PROFESSIONAL ENGINEER STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	AMP
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-

AM07 PHASE 3 CONSTRUCTION SEQUENCING PLAN 3 COVINGTON, KY

ERLANGER, KENTUCKY

REF. DWG(S)	PNG-G-043-0001560
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	03/28/2024
SUPERSEDED	—
DRAWING NUMBER	PNG C-043-0001974
REVISION	B

C/ERLANGER/AM07

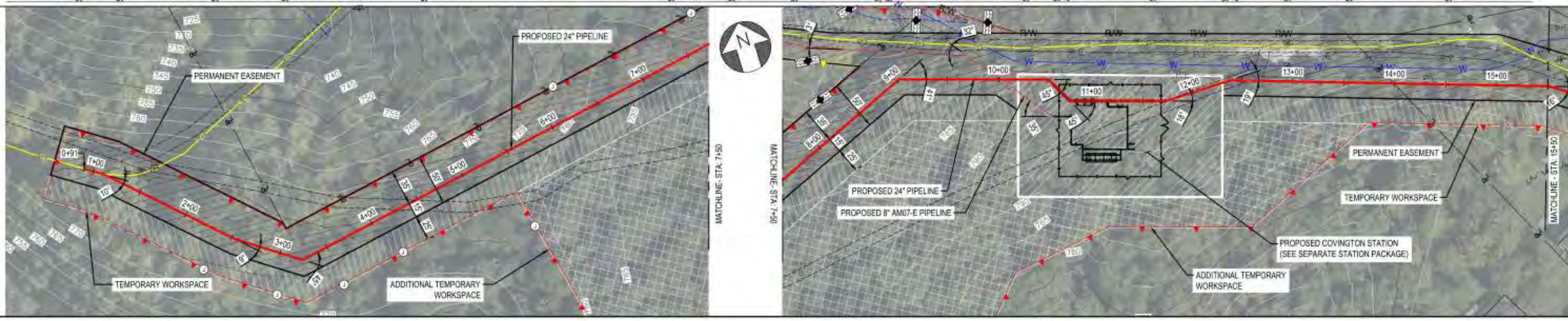
RIGHT-OF-WAY			
OWNERSHIP	PIDN 043-00-00-100.00 TAYLOR DEVELOPMENT CO.	PIDN 057-10-00-016.00 ROBERT A. TAYLOR AND WIFE, SUSAN E. TAYLOR	
ACREAGE			
EASEMENTS			
REF. DWG. NO.			

STATIONING

STA: 1+10 10° BEND (H-RT)
STA: 1+60 2° OVERBEND (V)
STA: 2+55 9° BEND (H-LT)
STA: 3+23 45° FTG (H-LT)
STA: 4+58 4° SAG (V)
STA: 7+00 5° OVERBEND (V)
STA: 7+59 8° OVERBEND (V)
STA: 8+21 8° SAG (V)
STA: 9+02 41° FTG (H-RT) 8° SAG (V)
STA: 10+49 45° FTG (H-LT)
STA: 10+79 45° FTG (H-LT) 4° OVERBEND (V)
STA: 11+73 18° BEND (H-LT)
STA: 12+38 19° FTG (H-RT) 4° OVERBEND (V)
STA: 13+04 3° OVERBEND (V)
STA: 13+64 4° SAG (V)
STA: 14+62 3° SAG (V)

PLAN

HORIZONTAL SCALE: 1" = 50'



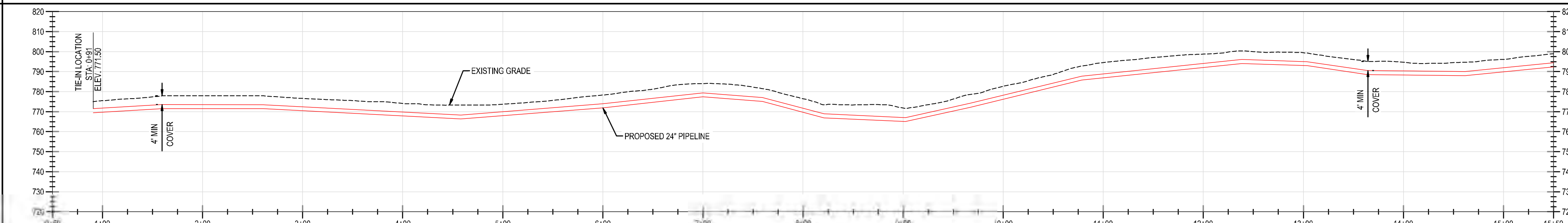
PIPE DATA (SLOPE STATIONING)

STA. | WELD # | (COV.) | JOINT LENGTH | JOINT | HEAT#

FOR PERMITTING PURPOSES ONLY

PROFILE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 25'



MATERIAL
CONST. METHOD — OPEN TRENCH
CLASS / MAOP

JOSHUA FUELLING 37266 LICENSED PROFESSIONAL ENGINEER — STATE OF KENTUCKY
PROFESSIONAL ENGINEER STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3 ALIGNMENT SHEET 1 COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560

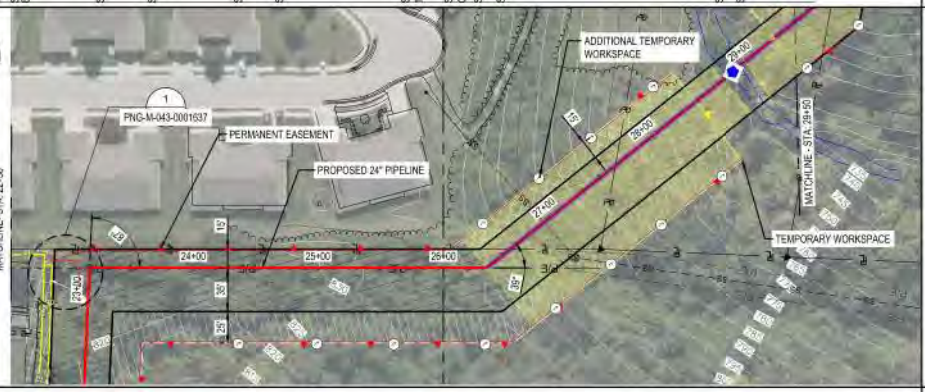
SHEET(S) 1 OF X | DWG SCALE AS NOTED
DWG DATE 11/07/2023 | SUPERSEDED —
DRAWING NUMBER PNG -C-043-0001976 | REVISION C
C/ERLANGER/AM07

	PIDN 057-10-00-016.00 ROBERT A. TAYLOR AND WIFE, SUSAN E. TAYLOR	PIDN 043-00-00-100.00 TAYLOR DEVELOPMENT CO.	PIDN 057-20-00-126.05 THE GRAND LODGE	PIDN 043-00-00-052.06 ERIK R. SUEDKAMP
OWNERSHIP				
ACREAGE				
EASEMENTS				
REF. DWG NO.	PNG-M-043-0001636	PNG-M-043-0001637		

STATIONING

STA: 15+51.16° BEND (H-RT) 2° OVERBEND (V) | STA: 16+08 12° BEND (H-RT) | STA: 16+86.3° BEND (H-RT) 2° OVERBEND (V) | STA: 17+72.14° BEND (H-RT) | STA: 17+95.8° BEND SAG (V) | STA: 18+36.9° OVERBEND (V) | STA: 20+80.6° BEND (H-RT) 3° OVERBEND (V) | STA: 21+19.18° BEND (H-LT) | STA: 21+62 TEE 24" x 8" | STA: 22+37.6° SAG (V) | STA: 23+02 TEE 24" x 6" | STA: 23+17 FTG 87° (H-RT) 6° OVERBEND (V) | STA: 23+80.3° OVERBEND (V) | STA: 24+31.7° SAG (V) | STA: 25+80.4° OVERBEND (V) | STA: 25+35.8° OVERBEND (V) | STA: 26+34.39° FTG (H-LT) 10° OVERBEND (V) | STA: 26+79 19° FTG OVERBEND (V) | STA: 26+92.33° FTG SAG (V) | STA: 27+10.16° OVERBEND (V) | STA: 28+75.13° FTG SAG (V) | STA: 28+92.18° FTG SAG (V)

PLAN

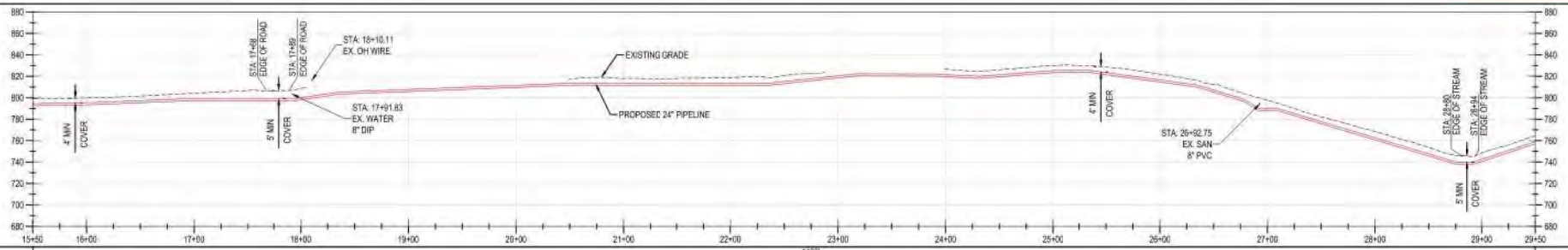


PIPE DATA (SLOPE STATIONING)

FOR PERMITTING PURPOSES ONLY

PROFILE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 50'



MATERIAL
CONST. METHOD: OPEN TRENCH
CLASS / MAOP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

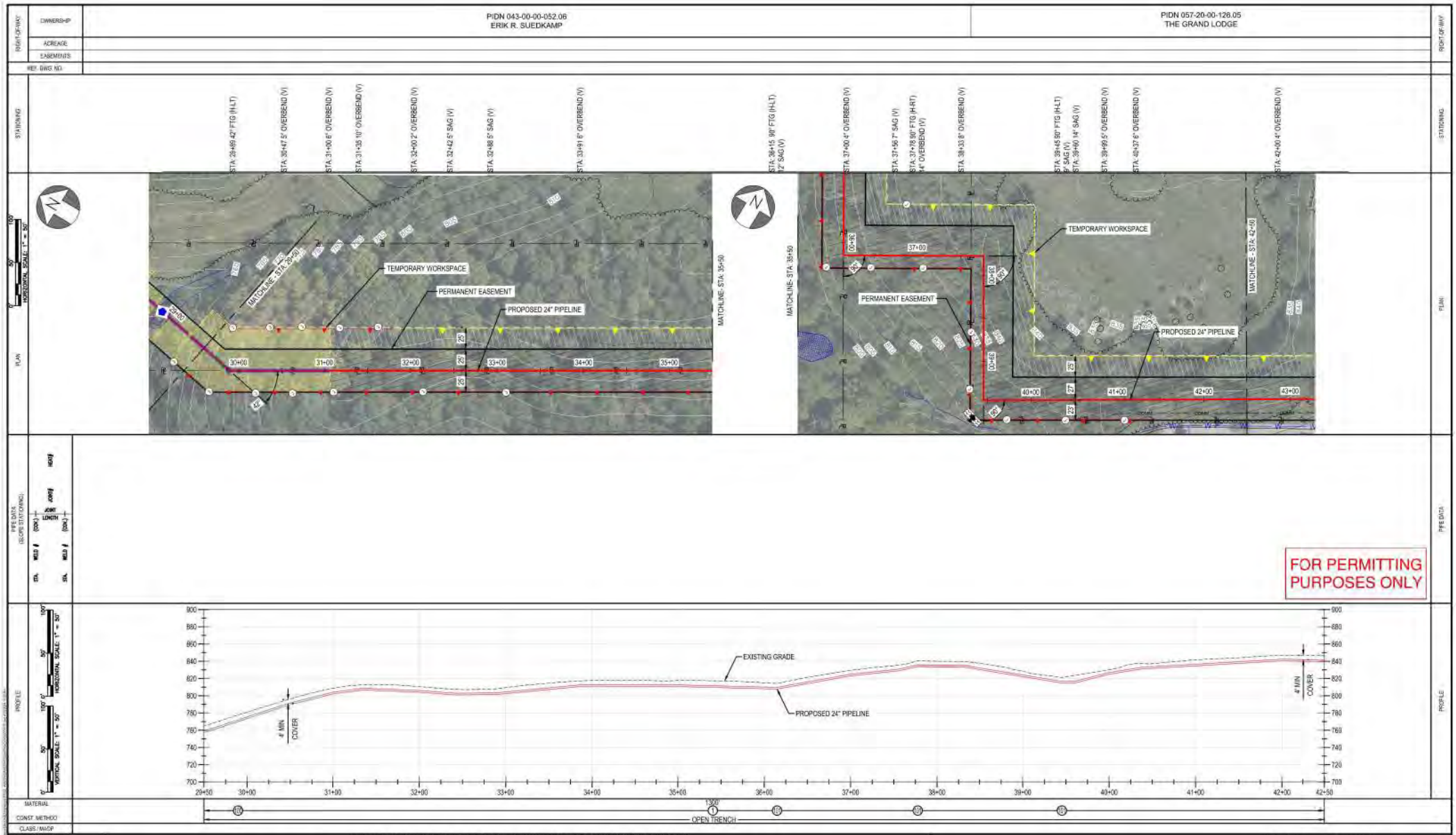
STATE OF KENTUCKY
JOSHUA FUELLING
37268
LICENSED
PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

AM07 PHASE 3
ALIGNMENT SHEET 2
COVINGTON, KY

ERLANGER, KENTUCKY

REF. DWG(S)	PNG-G-043-0001560 PNG-M-043-0001636 PNG-M-043-0001637
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	11/07/2023
SUPERSEDED	—
DRAWING NUMBER	PNG -C-043-0001977
REVISION	C

C:\ERLANGER\AM07



NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JPM	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JPM	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

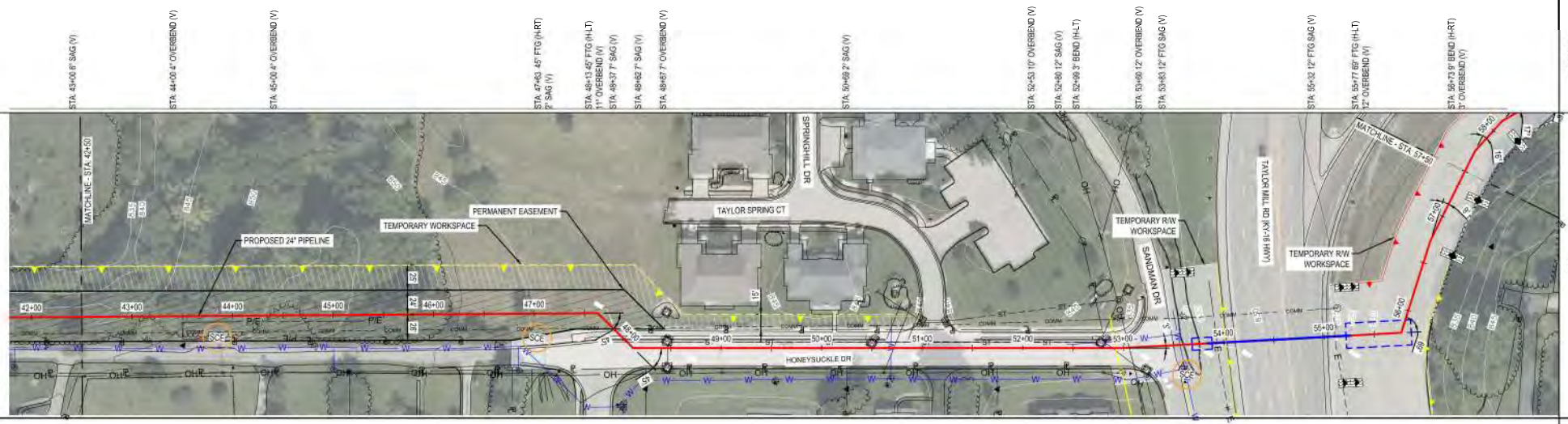
JOSHUA FUELLING 37866 LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGARCH STAMP

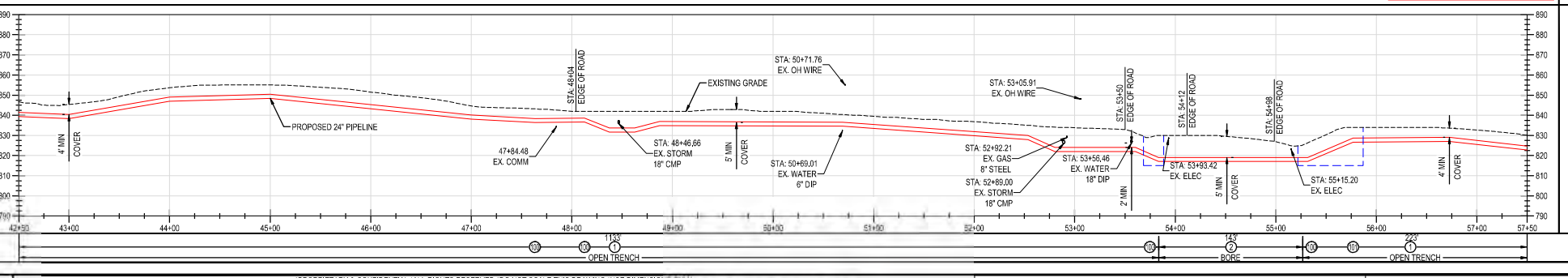
DUKE ENERGY. Piedmont Natural Gas

AM07 PHASE 3
ALIGNMENT SHEET 3
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560
SHEET(S) 1 OF X | DWG SCALE AS NOTED
DWG DATE 11/07/2023 | SUPERSEDED
DRAWING NUMBER PNG -C-043-0001978 | REVISION C

OWNERSHIP	PIDN 057-20-00-126.05 THE GRAND LODGE
ACREAGE	
EASEMENTS	
REF. DWG. NO.	PNG-C-043-0002003





FOR PERMITTING PURPOSES ONLY

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

JOSHUA FUELLING 37866 LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

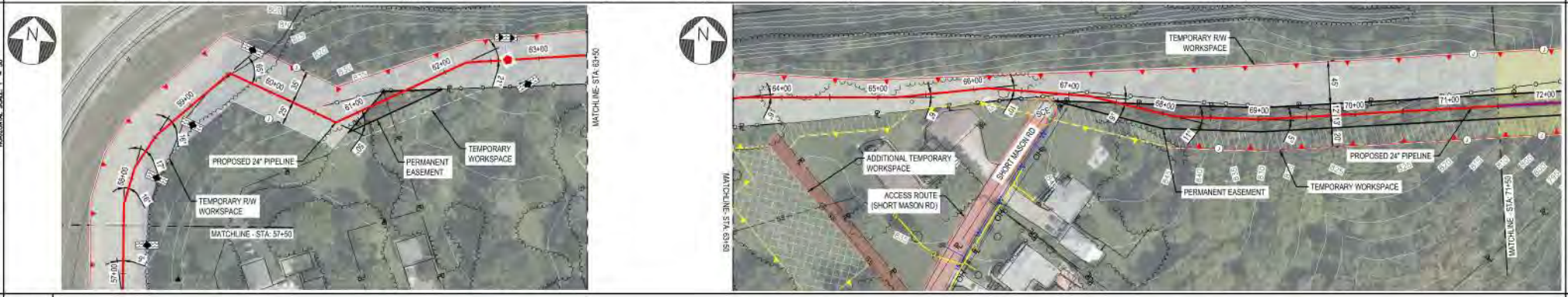
-
AM07 PHASE 3
ALIGNMENT SHEET 4
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)	PNG-C-043-0001560 PNG-C-043-0002003
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	11/07/2023
SUPERSEDED	—
DRAWING NUMBER	PNG -C-043-0001979
REVISION	C

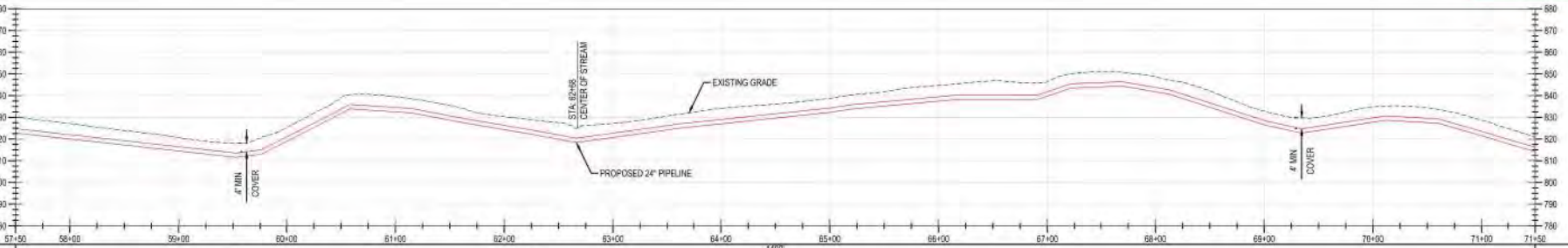
C/ERLANGER/AM07

OWNERSHIP	PIDN 057-20-00-134.05 GABRIEL ALLEN WYATT AND GABREIAL R. WYATT
	PIDN 057-20-00-019.00 MICHAEL P. FITZGERALD
ACREAGE	
EASEMENTS	
REF. DWG NO.	

STA. 57+73 16° BEND (H-RT) | STA. 58+13 17° BEND (H-RT) | STA. 58+53 16° BEND (H-RT) | STA. 59+53.66' FTG (H-RT) 7° SAG (V) | STA. 59+78 15° SAG (V) | STA. 60+58 16° OVERBEND (V) | STA. 60+75 50' FTG (H-LT) | STA. 61+14 4° OVERBEND (V) | STA. 62+24 21° FTG (H-RT) | STA. 62+68 9° SAG (V) | STA. 63+61 6° BEND (H-RT) | STA. 65+26 6° BEND (H-LT) 2° OVERBEND (V) | STA. 66+15 10° BEND (H-RT) 2° OVERBEND (V) | STA. 66+82 9° SAG (V) | STA. 67+22 9° BEND (H-RT) 1° OVERBEND (V) | STA. 67+69 6° OVERBEND (V) | STA. 68+12 11° BEND (H-LT) 4° OVERBEND (V) | STA. 69+01 5° BEND (H-LT) 3° OVERBEND (V) | STA. 69+34 11° SAG (V) | STA. 70+12 6° OVERBEND (V) | STA. 70+61 7° OVERBEND (V)



FOR PERMITTING PURPOSES ONLY



MATERIAL | CONST. METHOD | CLASS / MAOP: OPEN TRENCH

NO	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

JOSHUA FUELLING 37266 LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGARCH STAMP

DUKE ENERGY. Piedmont Natural Gas

AM07 PHASE 3 ALIGNMENT SHEET 5 COVINGTON, KY

ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560

SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	11/07/2023	SUPERSEDED	—

DRAWING NUMBER: PNG -C-043-0001980 | REVISION: C

ERLANGER/AMDT

RIGHT-OF-WAY	OWNERSHIP	PIDN 057-20-00-019.00 MICHAEL P. FITZGERALD	PIDN 057-20-00-130.00 LRE 1, LLC AN OHIO LIMITED LIABILITY COMPANY	PIDN 057-20-00-129.01 MICHAEL D. ECKLAR AND FRANCES R. ECKLAR, HUSBAND AND WIFE	PIDN 057-20-00-128.00 CLEDIOUS & VIRGINIA ELDER	RIGHT-OF-WAY
	ACREAGE					
	EASEMENTS					
	REF. DWG. NO.					

STATIONING

STA: 71+54.4° OVERBEND (V) | STA: 71+97.6° OVERBEND (V) | STA: 73+00 11° SAG (V) | STA: 73+24.48° FTG (H-RT) 10° OVERBEND (V) | STA: 73+61 16° SAG (V) | STA: 74+00 19° SAG (V) | STA: 74+53.2° SAG (V) | STA: 75+47 18° OVERBEND (V) | STA: 75+72 30° FTG SAG (V) | STA: 75+97.25° FTG OVERBEND (V) | STA: 78+94.61° FTG (H-LT) 12° OVERBEND (V) | STA: 79+14 15° SAG (V) | STA: 78+49.26° FTG (H-LT) 14° OVERBEND (V) | STA: 79+19.4° OVERBEND (V) | STA: 79+97 30° FTG SAG (V) | STA: 80+55.4° OVERBEND (V) | STA: 81+46 35° FTG (H-RT) | STA: 82+31.6° OVERBEND (V)

PLAN

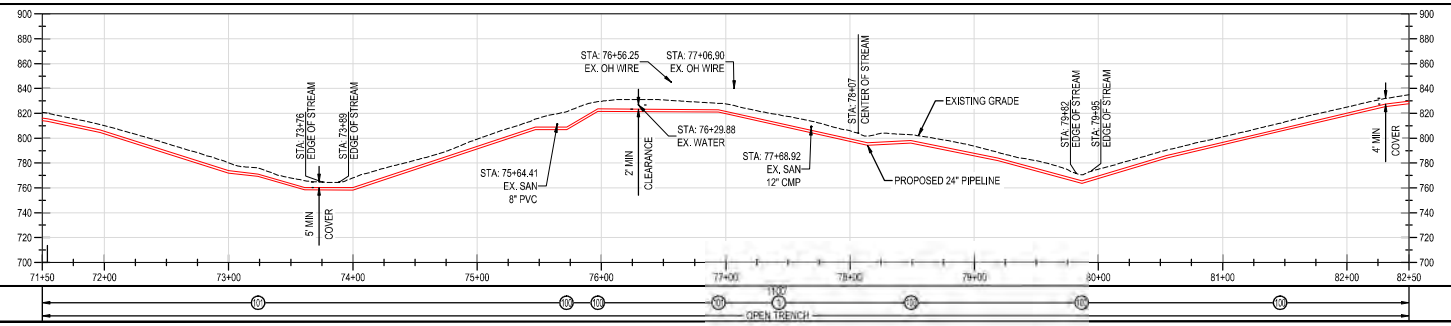
HORIZONTAL SCALE: 1" = 50'

PIPE DATA (SLOPE STATIONING)

STA.	WELD #	JOINT LENGTH (COG)	JOINT #	HEAT #
STA.	WELD #	JOINT LENGTH (COG)	JOINT #	HEAT #

FOR PERMITTING PURPOSES ONLY

PROFILE



HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 50'

MATERIAL
CONST. METHOD
CLASS / MAOP

OPEN TRENCH

STATE OF KENTUCKY · JOSHUA FUELLING · 37286 · LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

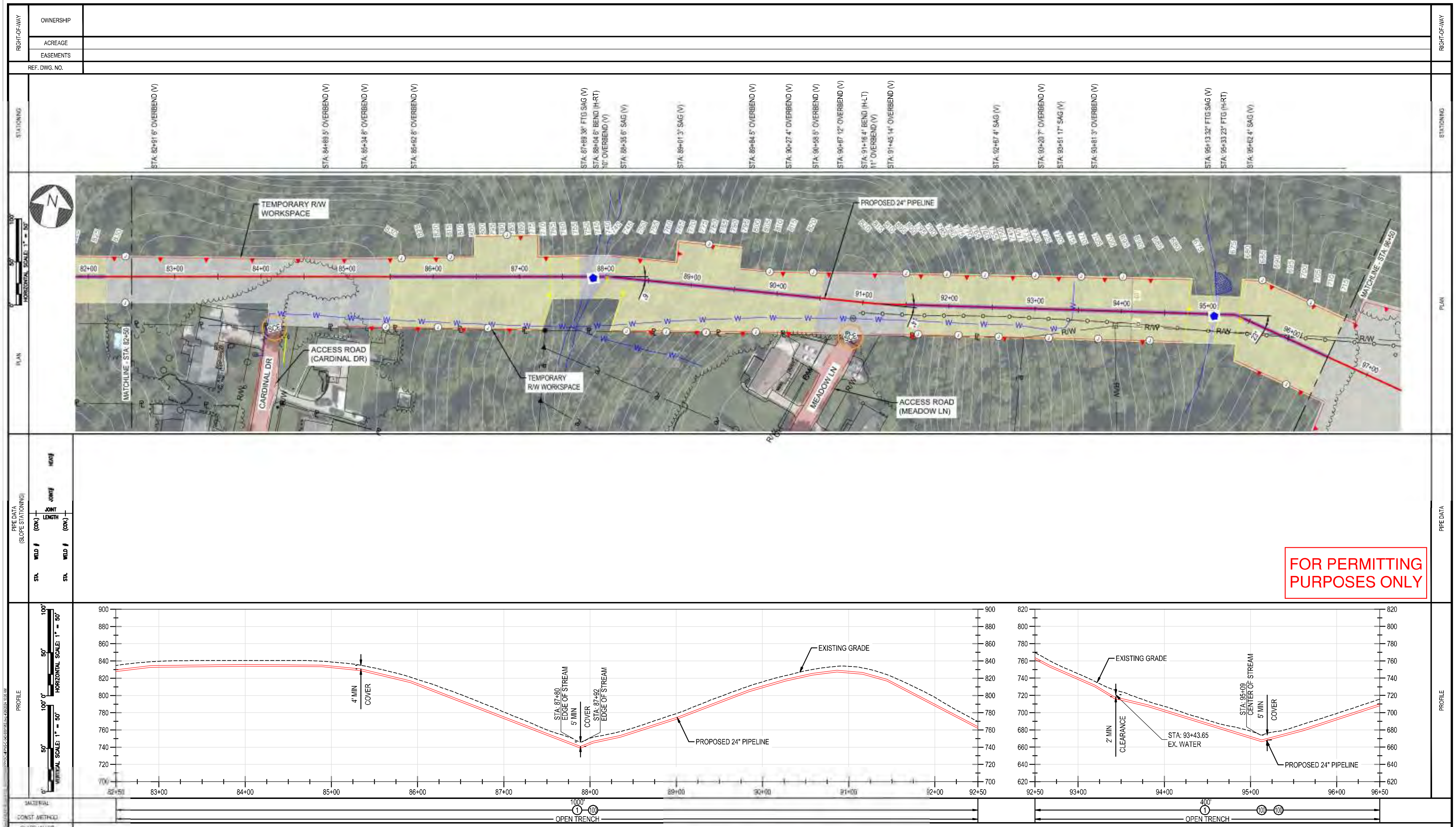
-
AM07 PHASE 3
ALIGNMENT SHEET 6
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-C-043-0001560

SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	11/07/2023	SUPERSEDED	—

DRAWING NUMBER: PNG -C-043-0001981 | REVISION: C

C/ERLANGER/AM07



STATE OF KENTUCKY
JOSHUA PUELLING
37268
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
ALIGNMENT SHEET 7
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560

SHEET(S) 1 OF X | DWG SCALE AS NOTED
DWG DATE 11/07/2023 | SUPERSEDED —

DRAWING NUMBER: PNG -C-043-0001982
REVISION: C

C/ERLANGER/AM07

RIGHT-OF-WAY
OWNERSHIP
ACREAGE
EASEMENTS
REF. DWG. NO.

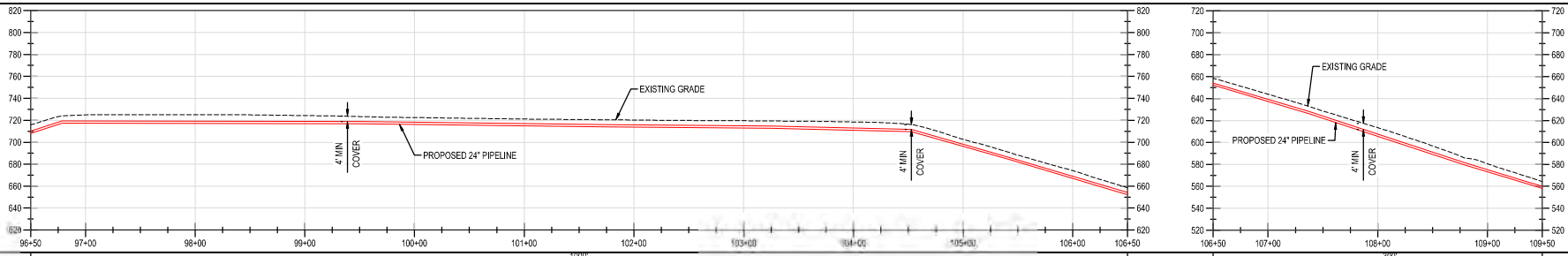
STATIONING
STA: 96+79.18° OVERBEND (V)
STA: 99+50.15° BEND (HLT)
STA: 104+53.15° OVERBEND (V)
STA: 107+37.2° OVERBEND (V)
STA: 108+79.2° SAG (V)

PLAN
HORIZONTAL SCALE: 1" = 50'

PIPE DATA (SLOPE STATIONING)
STA. | WELD # | JOINT LENGTH (ODs) | JOINT # | HEAT #

FOR PERMITTING PURPOSES ONLY

PROFILE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 50'



MATERIAL
CONST. METHOD
CLASS / MAOP
1000' OPEN TRENCH
900' OPEN TRENCH

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

STATE OF KENTUCKY · JOSHUA FUELLING · 37268 · LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

-
AM07 PHASE 3
ALIGNMENT SHEET 8
COVINGTON, KY
ERLANGER, KENTUCKY

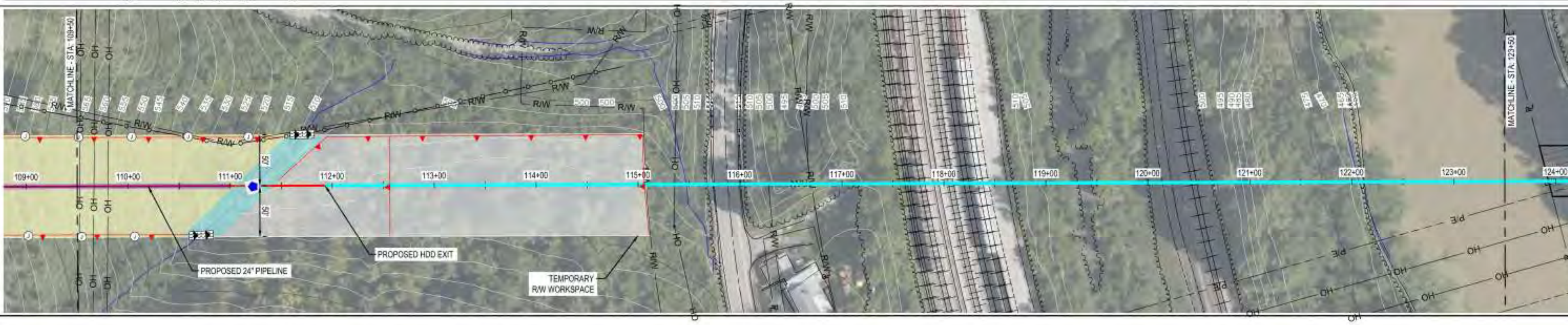
REF. DWG(S) PNG-C-043-0001560
SHEET(S) 1 OF X | DWG SCALE AS NOTED
DWG DATE 11/07/2023 | SUPERSEDED —
DRAWING NUMBER PNG -C-043-0001983 | REVISION C
C/ERLANGER/AM07

RIGHT-OF-WAY	
OWNERSHIP	
ACREAGE	
EASEMENTS	
REF. DWG. NO.	PNG-C-043-0002001

STATIONING

STA: 110+52 2° SAG (V)
STA: 111+02 12° OVERBEND (V)
STA: 111+23 25° FTG SAG (V)
STA: 111+42 14° SAG (V)
STA: 111+67 12° OVERBEND (V)
STA: 112+14 12° FTG (V)

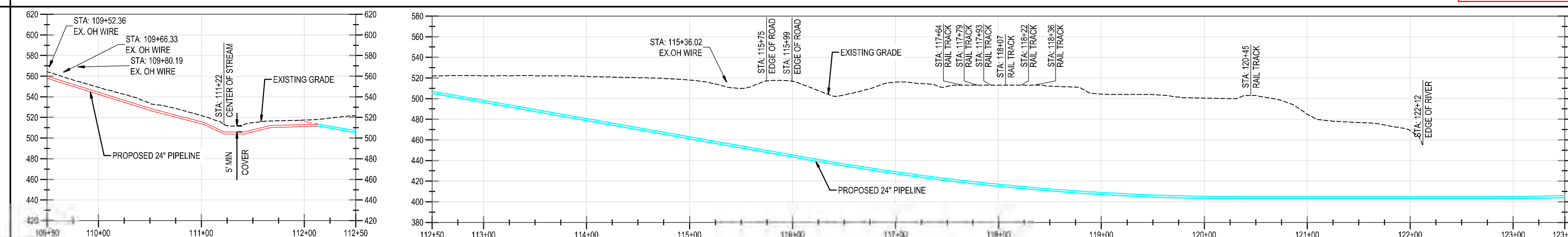
PLAN



PIPE DATA (SLOPE STATIONING)

FOR PERMITTING PURPOSES ONLY

PROFILE



MATERIAL
CONST. METHOD: 264' OPEN TRENCH; 36' HDD; 1100' HDD
CLASS / MAOP

JOSHUA FUELLING 37266 — STATE OF KENTUCKY LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

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NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY · Piedmont Natural Gas
COPYRIGHT 2021

-
AM07 PHASE 3
ALIGNMENT SHEET 9
COVINGTON, KY
ERLANGER, KENTUCKY

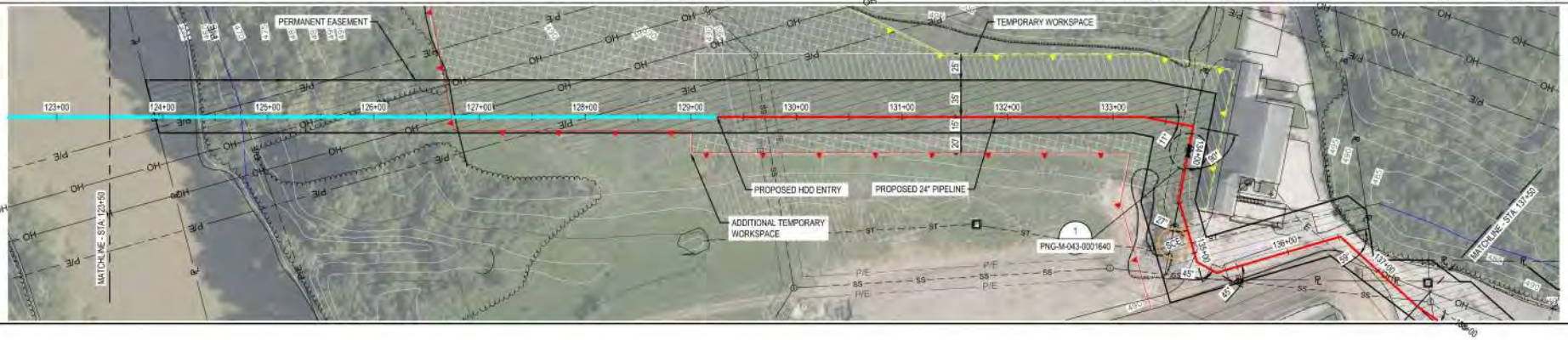
REF. DWG(S): PNG-G-043-0001560, PNG-C-043-0002001
SHEET(S): 1 OF X | DWG SCALE: AS NOTED
DWG DATE: 11/07/2023 | SUPERSEDED: —
DRAWING NUMBER: PNG -C-043-0001984 | REVISION: C
C/ERLANGER/AM07

RIGHT-OF-WAY				
OWNERSHIP		PIDN 999-99-17-734.00 T&C REAL ESTATE HOLDINGS, LLC	PIDN 999-99-17-734.16 TSF REAL ESTATE HOLDINGS, LLC	PIDN 999-99-17-734.00 T&C REAL ESTATE HOLDINGS, LLC
ACREAGE				
EASEMENTS				
REF. DWG. NO.	PNG-C-043-0002001	PNG-M-043-0001640		

STATIONING

STA: 129+03.12" FTG (V)
STA: 129+37.3" SAG (V)
STA: 129+45.3" OVERBEND (V)
STA: 133+29.11" BEND (H-RT)
STA: 133+52.7" SAG (V)
STA: 133+77.90" FTG (H-RT)
6" OVERBEND (V)
STA: 134+00.24" ISOLATION VALVE
STA: 134+48.27" FTG (H-LT)
STA: 135+09.45" FTG (H-LT)
2" SAG (V)
STA: 135+30.45" FTG (H-LT)
STA: 136+52.59" FTG (H-RT)
STA: 137+11.2" OVERBEND (V)
STA: 137+50 BEND 8" (H-LT)
8" SAG (V)

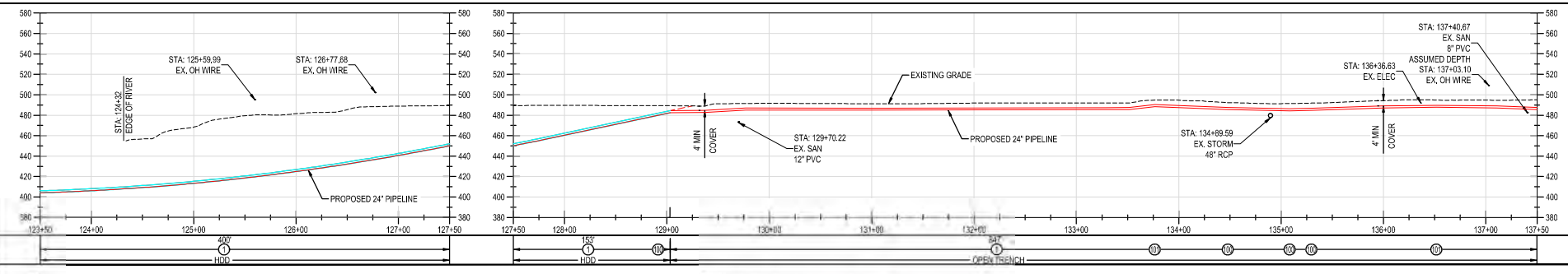
PLAN



PIPE DATA (SLOPE STATIONING)

STA.	WELD #	JOINT LENGTH (ODO.)	JOINT #	REMARKS

PROFILE



FOR PERMITTING PURPOSES ONLY

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	09/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

STATE OF KENTUCKY
JOSHUA FUELLING
37269
LICENSED
PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

-
AM07 PHASE 3
ALIGNMENT SHEET 10
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)	PNG-G-043-0001560 PNG-C-043-0002001 PNG-M-043-0001640
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	11/07/2023
SUPERSEDED	—
DRAWING NUMBER	PNG -C-043-0001985
REVISION	C

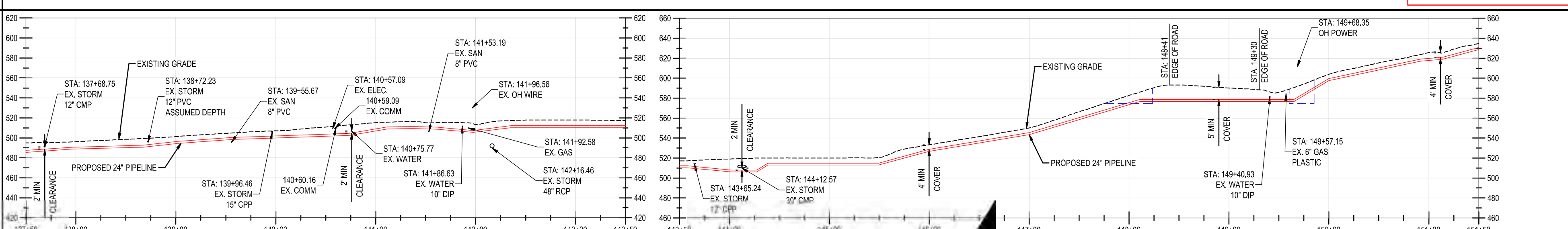
C/ERLANGER/AM07

RIGHT-OF-WAY		
OWNERSHIP	PIDN 999-99-17-734.00 T&C REAL ESTATE HOLDINGS, LLC	PIDN 999-99-17-734.09 T & D RENTAL, LLC
ACREAGE		
EASEMENTS		
REF. DWG. NO.		PNG-C-043-0002004

STATIONING: STA. 137+50 BEND 8° (H-LT) 5° SAG (V); STA. 137+96 2° OVERBEND (V); STA. 138+67 4° SAG (V); STA. 139+03 14° BEND (H-RT) 2° OVERBEND (V); STA. 139+56 2° SAG (V); STA. 140+74 8° SAG (V); STA. 141+12 9° OVERBEND (V); STA. 141+37 90° FTG (H-LT) 3° OVERBEND (V); STA. 141+62 3° OVERBEND (V); STA. 141+98 12° SAG (V); STA. 142+35 7° OVERBEND (V); STA. 143+58 FTG 67° (H-RT) 5° OVERBEND (V); STA. 144+03 BEND 5° SAG (V); STA. 144+28 FTG 32° SAG (V); STA. 144+39 FTG 32° OVERBEND; STA. 145+49 21° FTG (H-LT) 15° SAG (V); STA. 146+00 6° OVERBEND (V); STA. 147+00 8° SAG (V); STA. 148+11 17° FTG OVER (V); STA. 149+65 31° FTG SAG (V); STA. 150+00 19° OVERBEND (V); STA. 150+92 FTG 33° (H-LT) 7° OVERBEND (V); STA. 151+14 BEND 11° SAG (V)

PIPE DATA (SLOPE STATIONING)

FOR PERMITTING PURPOSES ONLY



MATERIAL			
CONST. METHOD	600' OPEN TRENCH	468' OPEN TRENCH	147' BORE / 185' OPEN TRENCH
CLASS / MAOP			

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

STATE OF KENTUCKY JOSHUA FUELLING 37266 LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

DUKE ENERGY. Piedmont Natural Gas

AM07 PHASE 3 ALIGNMENT SHEET 11 COVINGTON, KY

ERLANGER, KENTUCKY

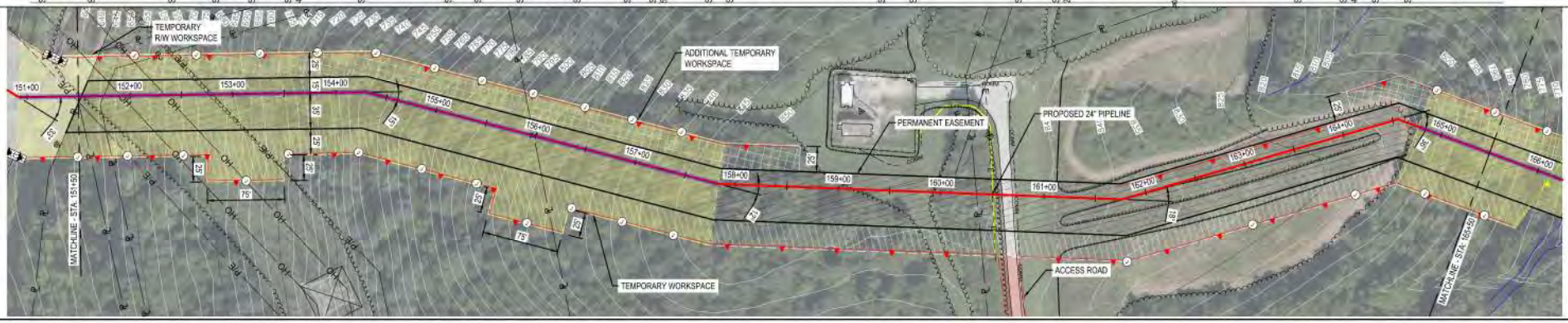
REF. DWG(S) PNG-G-043-0001560, PNG-C-043-0002004

SHEET(S) 1 OF X | DWG SCALE AS NOTED
DWG DATE 11/07/2023 | SUPERSEDED —
DRAWING NUMBER PNG -C-043-0001986 | REVISION C
C/ERLANGER/AM07

RIGHT-OF-WAY				
	OWNERSHIP		PIDN 999-99-18-115.00 CONNIE COOTS AND BETTY S. SMITH	PIDN 999-99-18-115.01 SANITATION DISTRICT 1	PIDN 999-99-20-215.00 COMMONWEALTH OF KENTUCKY
	ACREAGE				
	EASEMENTS				
	REF. DWG. NO.				

STATIONING: STA. 151+90.3' SAG (V); STA. 152+38.2' SAG (V); STA. 153+16.3' SAG (V); STA. 153+50.7' SAG (V); STA. 153+93.6' OVERBEND (V); STA. 154+30.15° BEND (H-RT) 4' OVERBEND (V); STA. 155+00.2' SAG (V); STA. 155+84.7' OVERBEND (V); STA. 156+13.6' SAG (V); STA. 156+54.5' OVERBEND (V); STA. 157+10.5' OVERBEND (V); STA. 157+58.2' SAG (V); STA. 157+83.12° BEND (H-LT) 5' OVERBEND (V); STA. 158+37.2' OVERBEND (V); STA. 158+58.2' OVERBEND (V); STA. 160+05.6' OVERBEND (V); STA. 160+36.6' SAG (V); STA. 161+39.5' OVERBEND (V); STA. 161+76.18° BEND (H-LT) 2' OVERBEND (V); STA. 164+10.2' OVERBEND (V); STA. 164+55.36° FTG (H-RT) 4' OVERBEND (V); STA. 164+85.7' OVERBEND (V); STA. 165+17.5' OVERBEND (V)

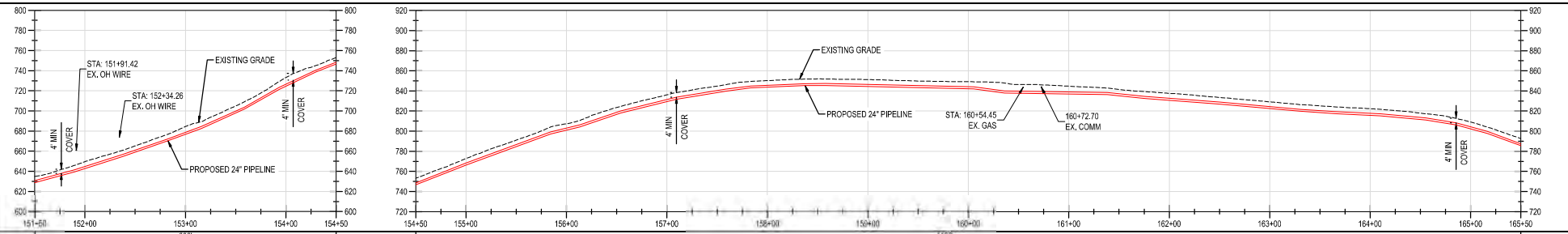
PLAN — HORIZONTAL SCALE: 1" = 50'



PIPE DATA (SLOPE STATIONING)

STA.	WELD #	JOINT LENGTH (DIA.)	JOINT	HEAT

PROFILE — HORIZONTAL SCALE: 1" = 50' / VERTICAL SCALE: 1" = 50'



MATERIAL	300'	1100'
CONST. METHOD	1 OPEN TRENCH	1 OPEN TRENCH
CLASS / MAOP		

FOR PERMITTING PURPOSES ONLY

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

STATE OF KENTUCKY — JOSHUA FUELLING — 37269 — LICENSED PROFESSIONAL ENGINEER — PROFESSIONAL ENGINEER STAMP

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
ALIGNMENT SHEET 12
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-C-043-0001560

SHEET(S) 1 OF X	DWG SCALE AS NOTED
DWG DATE 11/07/2023	SUPERSEDED —

DRAWING NUMBER: PNG -C-043-0001987 — REVISION: C

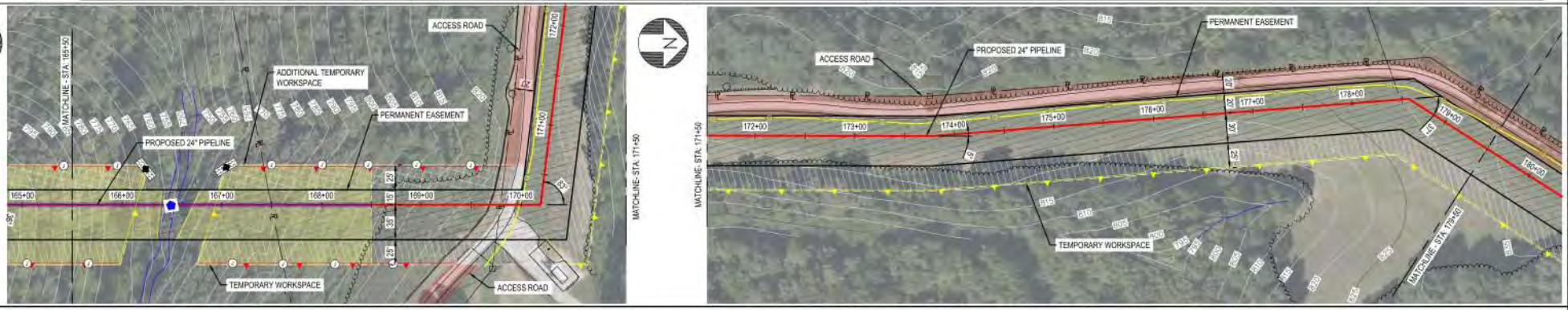
C/ERLANER/AM07

RIGHT-OF-WAY				
OWNERSHIP	PIDN 999-99-20-215.00 COMMONWEALTH OF KENTUCKY	PIDN 999-99-17-663.00 LUKE BEZOLD	PIDN 999-99-20-215.00 COMMONWEALTH OF KENTUCKY	
ACREAGE				
EASEMENTS				
REF. DWG. NO.				

STATIONING

STA: 166+53.34° FTG SAG (V) | STA: 166+86.8° OVERBEND (V) | STA: 167+33.11° SAG (V) | STA: 167+65.6° OVERBEND (V) | STA: 168+28.3° OVERBEND (V) | STA: 168+89.4° OVERBEND (V) | STA: 169+10.2° OVERBEND (V) | STA: 169+70.6° OVERBEND (V) | STA: 170+07.9° SAG (V) | STA: 170+20.83° FTG (H-LT) 10° OVERBEND (V) | STA: 171+00.2° SAG (V) | STA: 171+83.2° SAG (V) | STA: 173+43.2° SAG (V) | STA: 173+77.5° BEND (H-LT) | STA: 176+44.2° SAG (V) | STA: 177+08.2° SAG (V) | STA: 178+57.37° FTG (H-RT)

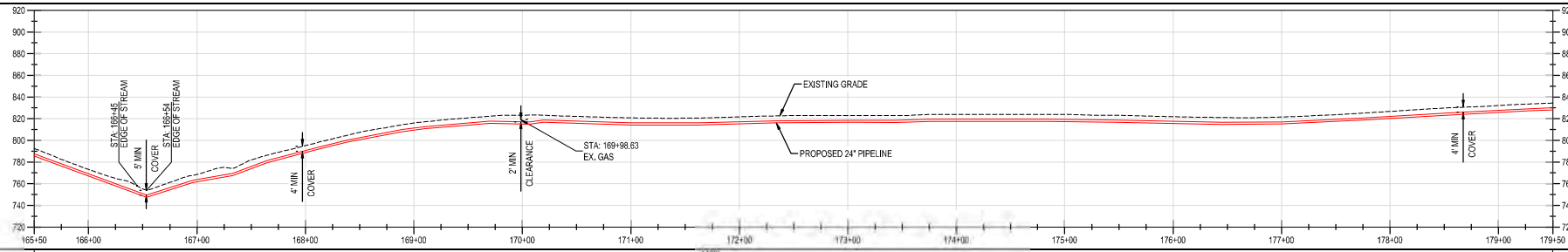
PLAN



PIPE DATA (SLOPE STATIONING)

STA.	WELD #	JOINT LENGTH (CM)	JOINT #	REMARKS

PROFILE



MATERIAL
CONST. METHOD
CLASS / MAOP

FOR PERMITTING PURPOSES ONLY

STATE OF KENTUCKY · JOSHUA FUELLING · 37296 · LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	09/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. · Piedmont Natural Gas

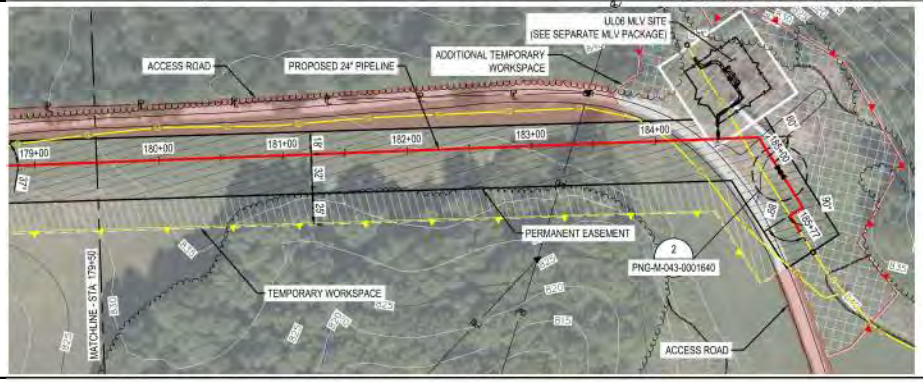
-
AM07 PHASE 3
ALIGNMENT SHEET 13
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)	PNG-C-043-0001560
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	11/07/2023
SUPERSEDED	—
DRAWING NUMBER	PNG -C-043-0001988
REVISION	C

C/ERLANGER/AM07

OWNERSHIP	PIDN 999-99-20-215.00 COMMONWEALTH OF KENTUCKY	PIDN 999-99-20-100.00 COMMOMWEALTH OF KENTUCKY
ACREAGE		
EASEMENTS		
REF. DWG. NO.	PNG-M-043-0001640	

STA: 180+27 2° OVERBEND (V)
STA: 184+11 2° SAG (V)
STA: 184+31 2° OVERBEND (V)
STA: 184+51 24" TEE UL06 FEED
STA: 184+83 FTG 60° (H-RT) 2° OVERBEND (V)
STA: 185+16 24" ISOLATION VALVE
STA: 185+60 FTG 60° (H-RT) 2° OVERBEND (V)
STA: 185+62 FTG 88° (H-LT) 4° SAG (V)

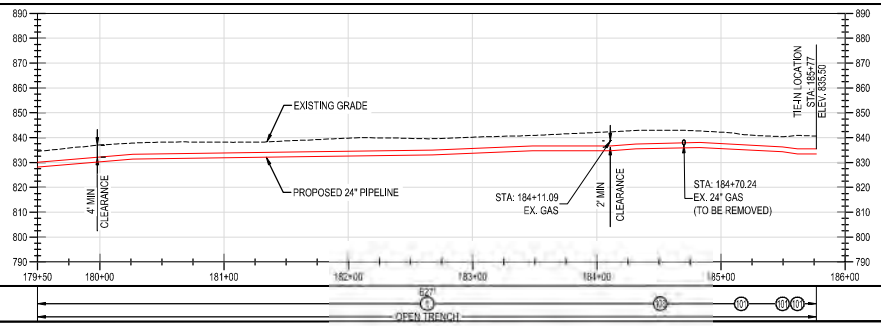


HORIZONTAL SCALE: 1" = 50'

PIPE DATA (SLOPE STATIONING)

STA.	WELD #	JOINT LENGTH (COIL)	JOINT #	HEAT #
STA.	WELD #	JOINT LENGTH (COIL)	JOINT #	HEAT #

FOR PERMITTING PURPOSES ONLY



HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 50'

MATERIAL
CONST. METHOD
CLASS / MAOP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	09/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

JOSHUA FUELLING 37266 LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

-
AM07 PHASE 3
ALIGNMENT SHEET 13
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)	PNG-G-043-0001560 PNG-M-043-0001640
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	11/07/2023
SUPERSEDED	—
DRAWING NUMBER	PNG -C-043-0001989
REVISION	C

C/ERLANGER/AM07

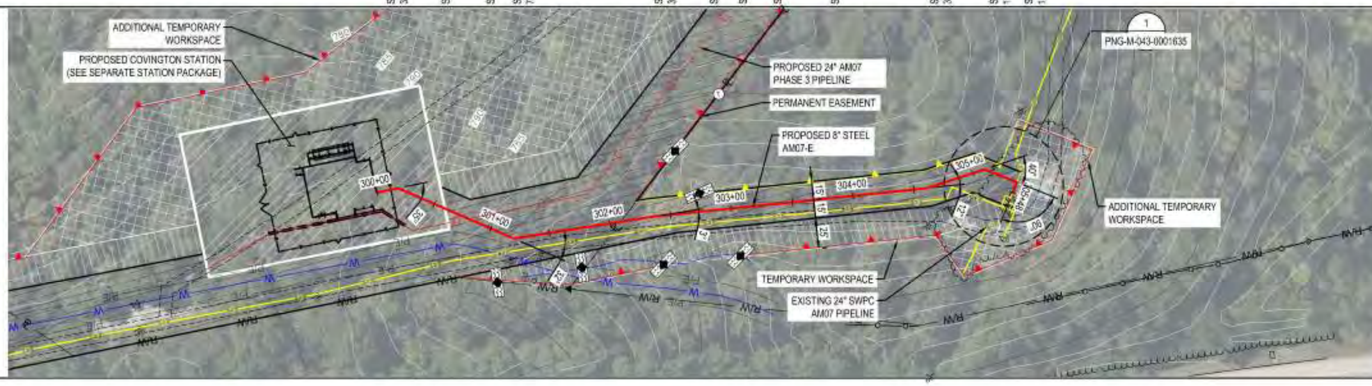
RIGHT-OF-WAY		
OWNERSHIP	PIDN 057-10-00-016.00 ROBERT A. TAYLOR AND WIFE, SUSAN E. TAYLOR DB 269, PG 55	PIDN 057-10-00-025.02 MICHELLE KNUCKLES, LISA KNUCKLES, PAMELA KNUCKLES, ANGELA KNUCKLES AND LARRY KNUCKLES
ACREAGE		
EASEMENTS		
REF. DWG. NO.	PNG-M-043-0001635	

STATIONING

STA. 300+17 35° FTG (H-RT) 3° OVERBEND (V)
STA. 300+57 4° OVERBEND (V)
STA. 300+94 4° OVERBEND (V)
STA. 301+21 32° FTG (H-LT) 7° SAG (V)
STA. 302+36 3° BEND (H-RT) 3° OVERBEND (V)
STA. 302+78 5° SAG (V)
STA. 303+00 3° SAG (V)
STA. 303+28 4° SAG (V)
STA. 303+75 2° OVERBEND (V)
STA. 304+62 12° BEND (H-LT) 3° OVERBEND (V)
STA. 305+10 40° FTG (H-RT) 17° OVERBEND (V)
STA. 305+39 90° FTG (H-RT) 19° SAG (V)

PLAN

HORIZONTAL SCALE: 1" = 50'



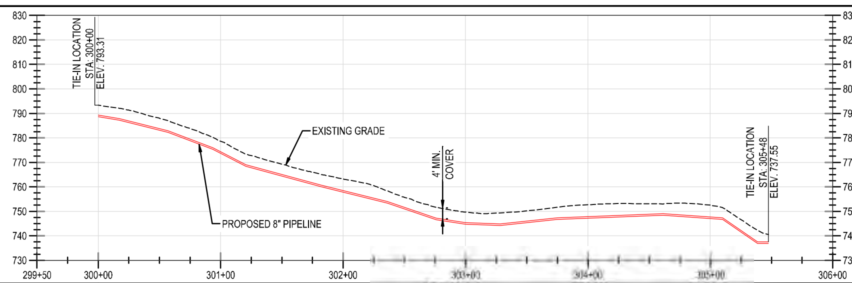
PIPE DATA (SLOPE STATIONING)

STA. | WELD # | (COV.) | JOINT LENGTH | JOINT# | HEAT# | (COV.) | WELD # | STA.

FOR PERMITTING PURPOSES ONLY

PROFILE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 25'



MATERIAL
CONST. METHOD
OPEN TRENCH
CLASS / MAOP

STATE OF KENTUCKY
JOSHUA FUELLING
37268
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

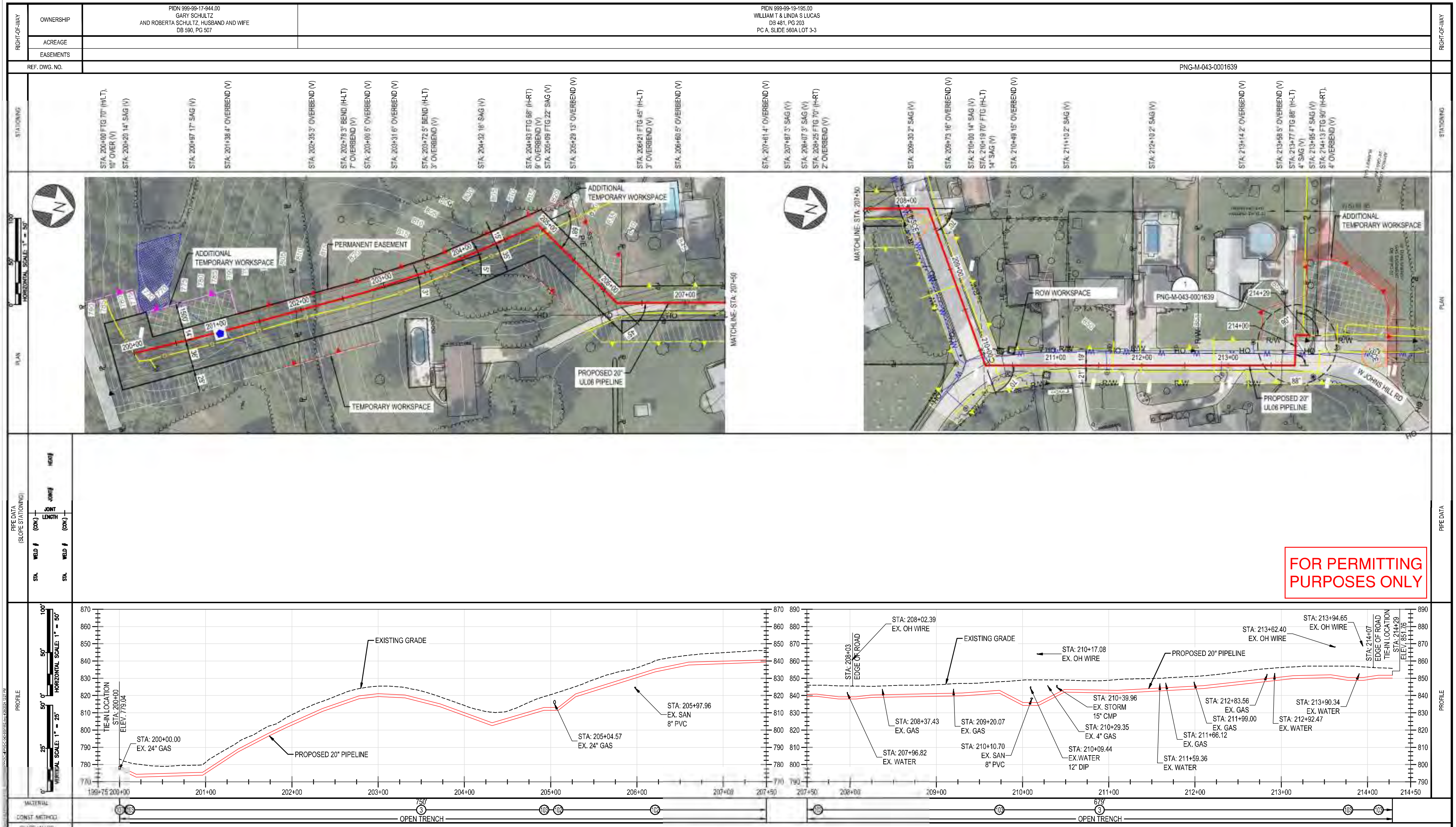
DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY
Piedmont Natural Gas

-
AM07-E
ALIGNMENT SHEET 1
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560
PNG-M-043-0001635

SHEET(S) 1 OF X | DWG SCALE AS NOTED
DWG DATE 11/07/2023 | SUPERSEDED —
DRAWING NUMBER PNG -C-043-0001991 | REVISION C
C/ERLANGER/AM07



*PROPRIETARY & CONFIDENTIAL *ALL RIGHTS RESERVED *DO NOT SCALE THIS DRAWING *USE DIMENSIONS ONLY
DUKE ENERGY & PIEDMONT NATURAL GAS DRAWINGS ARE CONFIDENTIAL *DRAWING IS CURRENT ONLY THROUGH THE LATEST REVISED DATE *TO ENSURE THERE IS NO RISK OF INAPPROPRIATE DISCLOSURE.
ALL PREVIOUS PAPER COPIES OF THIS DRAWING MUST BE DESTROYED IN ACCORDANCE WITH RECORDS & INFO MANAGEMENT (RIM)

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	12/15/2023	ISSUED FOR 30% DESIGN REVIEW	MDM	JMP	JPF
B	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
C	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

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UL06 PIPELINE ALIGNMENT SHEET 1 COVINGTON, KY

ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560, PNG-M-043-0001639

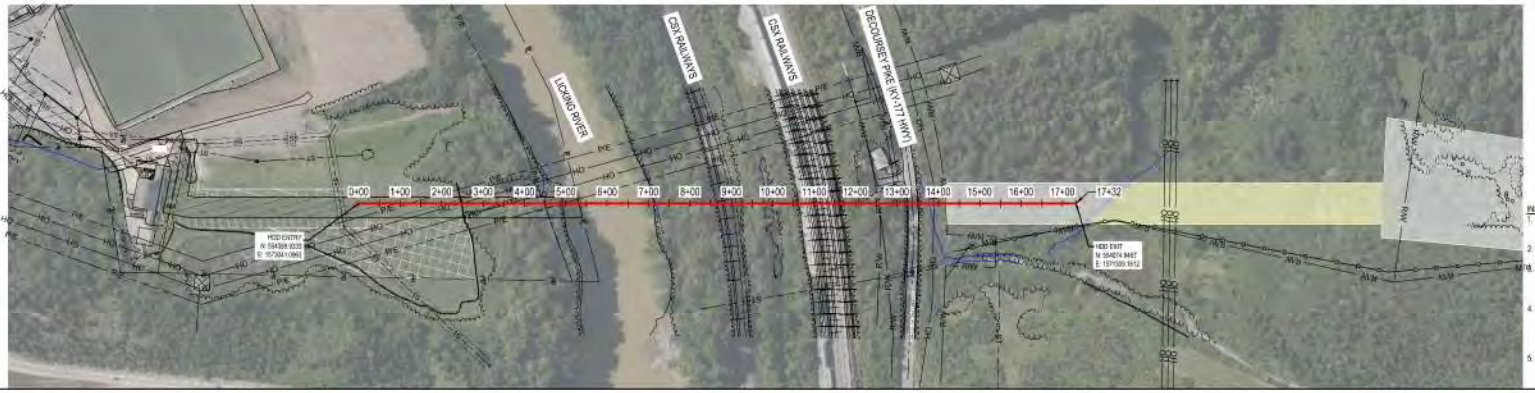
SHEET(S) 1 OF X | DWG SCALE AS NOTED
DWG DATE 11/07/2023 | SUPERSEDED —

DRAWING NUMBER PNG -C-043-0001992 | REVISION C

C/ERLANGER/AM07

STATE OF KENTUCKY JOSHUA PUELLING 37266 LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

PLAN



REQUIRED TOLERANCES	
ITEM	TOLERANCE
PILOT HOLE ENTRY LOCATION	NO MODIFICATIONS SHALL BE MADE WITHOUT APPROVAL FROM THE COMPANY ENGINEER, IN THE EVENT THE PILOT HOLE IS ADVANCED FROM EXIT TO ENTRY OR A PILOT HOLE INTERSECT IS PERFORMED, TOLERANCES SHALL BE APPROVED BY COMPANY ENGINEER.
PILOT HOLE EXIT LOCATION	UP TO 20-FEET BEYOND OR 10-FEET SHORT OF THE EXIT STAKE; BETWEEN 5-FEET LEFT AND 5-FEET RIGHT OF CENTERLINE
MINIMUM ALLOWABLE THREE-JOINT COMBINED RADIUS	OVER ANY CONSECUTIVE THREE-JOINT SECTION SHALL NOT BE LESS THAN 1600'.
PILOT HOLE DEPTH	UP TO 2-FEET ABOVE THE DESIGN DRILL PROFILE ALLOWED. UP TO 10-FEET BELOW THE DESIGN DRILL PROFILE ALLOWED.
PILOT HOLE ALIGNMENT	SHALL REMAIN WITHIN 5-FEET LEFT OR RIGHT OF THE HDD ALIGNMENT.
ENTRY ANGLE	UP TO 1° INCREASE FROM THE DESIGNED ENTRY ANGLE; NO DECREASE IN ENTRY ANGLE WILL BE ALLOWED.
EXIT ANGLE	NO INCREASE FROM THE DESIGNED EXIT ANGLE; UP TO 2° DECREASE IN EXIT ANGLE WILL BE ALLOWED.

INSTALLATION REQUIREMENTS:
1. CONTRACTOR SHALL SUPPLY A PULLBACK LIFTING PROCEDURE, INCLUDING SUPPORT SPACING AND HEIGHT, AS PART OF THEIR FINAL HDD WORK PLAN.
2. CONTRACTOR SHALL ASSESS THE NEED FOR AND SUPPLY APPROPRIATE BALLAST DURING PULLBACK. THE MINIMUM ALLOWABLE RADIUS OF CURVATURE FOR HANDLING AND POSITIONING THE CARRIER PIPE IN PREPARATION FOR PULLBACK OPERATIONS IS 1,600-FEET.
4. THE HDD CONTRACTOR SHALL PROVIDE WITH THEIR HDD WORK PLAN THE MAXIMUM ANTICIPATED PULL FORCE REQUIRED TO INSTALL THE CARRIER PIPE AND THE MAXIMUM ALLOWABLE PULL FORCE THAT CAN BE APPLIED TO THEIR DOWNHOLE TOOLING.
5. THE HDD CONTRACTOR SHALL MONITOR DOWNHOLE ANNULAR PRESSURE THROUGHOUT THE DRILLING PROCESS.

POST-INSTALLATION REQUIREMENTS:
1. THE HDD CONTRACTOR SHALL BE RESPONSIBLE FOR PRODUCING AND SUBMITTING AN AS-BUILT DRAWING OF THE PILOT HOLE SURVEY DATA WITHIN TWO WEEKS OF THE COMPLETION OF PULLBACK OPERATIONS. THIS SHALL INCLUDE A TABULATION OF THE SUPPORTING AS-BUILTS SURVEY DATA USED TO GENERATE THE DRAWING.
2. UPON COMPLETION OF INSTALLATION, A CALIPER PIG SURVEY SHALL BE COMPLETED IN ACCORDANCE WITH CONTRACT DOCUMENTS.

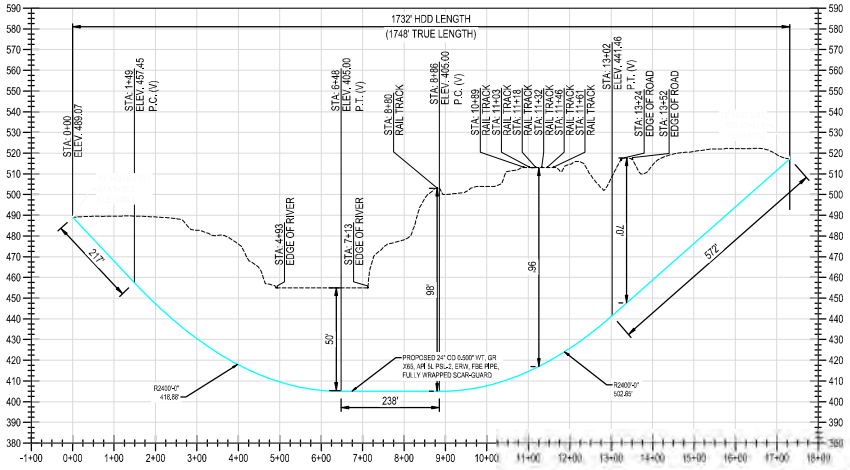
PLAN/PROFILE VIEW SCALE
0 150' 300'
HORIZONTAL SCALE: 1" = 150'

STATIONING

1. STATIONING IS IN FEET BY HORIZONTAL MEASUREMENT, FOR HDD SURVEY CONTROL, REFERENCING CENTERLINE OF PIPE.
2. HORIZONTAL CONTROL NAD 83, KENTUCKY PLANE NORTH ZONE (2248), US FOOT. VERTICAL CONTROL ELEV. REF NAVD 88.
3. GEOTECHNICAL DATA WAS PROVIDED FOR CONTRACTOR REFERENCE IN THE GEOTECHNICAL DATA REPORT FOR HDD-0XX PREPARED BY "COMPANY NAME" DATED MONTH DAY, 20XX.

PROFILE

ENTRY ANGLE	EXIT ANGLE	LENGTH OF BORE
12°	10°	1747'-8"



TOPSOIL, SAND, WELL-GRADED SAND, POORLY-GRADED SAND, WELL-GRADED SAND WITH SILT, POORLY-GRADED SAND WITH SILT, SILT, SILTY SAND, SILTY SAND WITH CLAY SEAMS, SANDY SILT, CLAYEY SILT, LOW PLASTICITY GRAVELLY SILT OR CLAY, HIGH PLASTICITY SILT, LOW PLASTICITY SILT, CLAY, SANDY CLAY, SILTY CLAY, GLACIAL CLAY, GLACIAL SAND, CRYSTALLINE ROCK, MUCK/PEAT, CAVED ROCK, PARTIALLY WEATHERED ROCK, SILTY GRAVEL, ASPHALT, WATER

GENERAL NOTES:
1. DESIGNED IN ACCORDANCE TO TITLE 49 CFR 192 CLASS IV DESIGN FACTOR ON FULLY CONTROLLED HIGHWAYS.
2. STATIONING IS IN FEET BY HORIZONTAL MEASUREMENT, FOR HDD SURVEY CONTROL, REFERENCING CENTERLINE OF PIPE.
3. HORIZONTAL CONTROL NAD 83, VERTICAL CONTROL ELEV. REF NAVD 88.
4. THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY.
5. BORING IS OFFSET FROM THE PIPELINE CENTERLINE AS SHOWN IN THE PLAN VIEW. BORING GROUND SURFACE ELEVATION WAS PROVIDED WITH THE GEOTECHNICAL DATA RECEIVED FOR THIS SITE AS SHOWN ON THE PROFILE VIEW. REFER TO THE APPLICABLE GEOTECHNICAL REPORT IN THE CONTRACT DOCUMENTS FOR MORE DETAILED INFORMATION (PROVIDED BY GEOTECHNOLOGY LLC, DATED 01/18/2023).
6. CONTRACTOR IS RESPONSIBLE FOR CALLING KY 811 AND LOCATING ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING CONSTRUCTION. IF ANY UTILITY IS LOCATED WITHIN 15-FEET OF THE DESIGNED HDD PROFILE AND ALIGNMENT, CONTRACTOR SHALL OBTAIN APPROVAL FROM DUKE ENERGY PRIOR TO INITIATING HDD OPERATIONS.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
8. THE HDD DRILL RIG SHALL BE POSITIONED ON THE ENTRY SIDE OF THE CROSSING UNLESS OTHERWISE APPROVED BY THE PROJECT TEAM. THE USE OF DUAL DRILL RIGS DURING CONSTRUCTION MAY BE AT THE DISCRETION OF THE HDD CONTRACTOR, TO BE APPROVED BY THE PROJECT TEAM.
9. PROJECT AREA SHALL NOT BE ACCESSED VIA I-275 OR ITS AFFILIATED ON/OFF RAMPS. TRAFFIC SHALL NOT BE IMPACTED BY CONSTRUCTION ACTIVITIES.
10. MAXIMUM WORK SPACE LIMITS ARE DEPICTED. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR. FOR ROW MAINTENANCE, A MINIMUM 16' SHALL BE CLEARED FROM GROUND TO SKY ALONG THE ENTIRE HDD TO ENSURE COMPLIANCE WITH PHMSA PART 192 REGULATIONS REQUIRING PATROLS THAT WOULD ALLOW FOR AERIAL SURVEILLANCE OF THE ROW ON THE REQUIRED FREQUENCY.
11. CONTRACTOR SHALL DISPOSE OF EXCESS FLUID IN ACCORDANCE WITH CONTRACT DOCUMENTS AND/OR PERMIT CONDITIONS. UNDER NO CIRCUMSTANCES SHALL DRILLING FLUID BE DISPOSED OF IN WATER BODIES OR WETLANDS. ANY DRILLING FLUID WHICH INADVERTENTLY SURFACES AT POINTS OTHER THAN THE ENTRY OR EXIT POINTS SHALL BE CONTAINED AND COLLECTED TO THE EXTENT PRACTICAL AND DISPOSED OF IN ACCORDANCE WITH CONTRACT DOCUMENTS AND/OR PERMIT CONDITIONS. ALL DISPOSAL LOCATIONS SHALL BE REVIEWED AND APPROVED BY DUKE ENERGY IN ADVANCE.
12. WATER FOR DRILLING FLUID AND HYDROSTATIC TEST WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
13. PRE-INSTALLATION AND POST-INSTALLATION HYDROSTATIC TEST SHALL BE CONDUCTED IN ACCORDANCE WITH THE "HYDROSTATIC TEST" PLAN. TEST WATER SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH PERMIT REQUIREMENTS.
14. THE HDD CONTRACTOR SHALL SUBMIT WITH THEIR HDD WORK PLAN AN ASSESSMENT OF THE POTENTIAL FOR HOLE INSTABILITY AND THEIR PROPOSED MITIGATION PROCEDURES SHOULD HOLE INSTABILITY IMPACT DRILLING OPERATIONS AND/OR INCREASE THE RISK OF A FAILED INSTALLATION.
15. THE HDD CONTRACTOR SHALL MAKE ALL REASONABLE ATTEMPTS TO MAINTAIN DRILLING FLUID RETURNS DURING PILOT HOLE AND REAMING OPERATIONS.
16. THE DRILLING FLUID PROPERTIES SHALL BE TESTED A MINIMUM OF THREE (3) TIMES PER SHIFT SO THE SUITABILITY OF THE DRILLING FLUID FOR THE GIVEN CONDITIONS CAN BE DETERMINED.
17. ALL DRILL PIPE UTILIZED ON THE PROJECT MUST BE INSPECTED AND DRILL PIPE INSPECTION RECORDS FURNISHED TO DUKE ENERGY PRIOR TO USE ON THE PROJECT. THE DRILL PIPE SHALL NOT HAVE BEEN USED ON ANOTHER PROJECT SUBSEQUENT TO ITS LAST INSPECTION.
18. PROPOSED PIPELINE/HDD WILL BE PROTECTED BY THE EXISTING AM07 CATHODIC PROTECTION SYSTEM. ALL TEST STATIONS INSTALLATIONS AND CP EFFORTS ARE TO BE COORDINATED WITH DUKE SYSTEM INTEGRITY DEPARTMENT.

PILOT HOLE REQUIREMENTS:
1. AT ALL TIMES THE HDD CONTRACTOR SHALL PROVIDE AND MAINTAIN INSTRUMENTATION TO DOCUMENT AND ACCURATELY LOCATE THE PILOT HOLE. THIS EFFORT SHALL INCLUDE THE USE OF A DOWNHOLE STEERING TOOL AS WELL AS A SECONDARY SURVEY SYSTEM (TRUTRACK, PARATRACK, OR EQUIVALENT). THE HDD CONTRACTOR WILL NOT BE ALLOWED TO DRILL ANY PORTION OF THE PILOT HOLE WITHOUT THE USE OF A SECONDARY SURVEY SYSTEM UNLESS AGREED TO IN ADVANCE BY THE COMPANY OR IN EVENT A GYROSCOPIC STEERING TOOL IS UTILIZED.
2. AFTER SURVEYING THE SECONDARY SURVEY WIRE, THE HDD CONTRACTOR SHALL REPORT ANY LACK OF CLOSURE THAT MAY INDICATE INCORRECTLY LOCATED ENTRY AND/OR EXIT POINTS OR ANY OTHER POTENTIAL DISCREPANCIES WITH THE DESIGN INFORMATION PROVIDED ON THIS DESIGN DRAWING.
3. IN NO CASE WILL THE PILOT HOLE BE ACCEPTABLE IF ITS LOCATION WOULD RESULT IN THE PIPELINE BEING INSTALLED IN VIOLATION OF THE RIGHT-OF-WAY AND PERMIT STIPULATIONS SECTION OF THE CONTRACT, AND FEDERAL STATE, OR LOCAL PERMIT REQUIREMENTS OR REQUIRED CLEARANCES BETWEEN COMPANY AND FOREIGN OWNED UTILITIES AND STRUCTURES.
4. PRIOR TO REAMING, THE CONTRACTOR SHALL SUBMIT AS-DRILLED DATA AND CALCULATED LOCATION TO THE COMPANY FOR APPROVAL OF THE PILOT HOLE. CONTRACTOR SHALL NOT COMMENCE REAMING UNTIL THE PILOT HOLE IS APPROVED.

REAMING REQUIREMENTS:
1. AFTER COMPLETION OF THE PILOT HOLE, THE HDD CONTRACTOR SHALL MAINTAIN A CONTINUOUS STRING OF DRILL PIPE DOWNHOLE BETWEEN ENTRY AND EXIT AT ALL TIMES EXCEPT WHEN RE-ESTABLISHING A CONTINUOUS STRING OF DRILL PIPE IN THE EVENT OF A TWIST OFF DOWNHOLE.
2. THE HDD CONTRACTOR SHALL COMPLETE AT A MINIMUM ONE (1) SWAB PASS TO EVALUATE THE CONDITION OF THE HOLE PRIOR TO PULLBACK OPERATIONS. THE HDD CONTRACTOR SHALL MEET WITH DUKE ENERGY AND REVIEW THE DATA COLLECTED DURING THE REAMING AND SWAB PASSES BEFORE PULLBACK OPERATIONS BEGIN.

ADDITIONAL NOTES:
1. CONTRACTOR SHALL COMPLETE THE DRILL IN ACCORDANCE WITH DUKE'S HDD SPECIFICATION ENG-GD-3050. ANY DEVIATION PROPOSED BY THE CONTRACTOR TO THE SPECIFICATION SHALL BE APPROVED BY COMPANY ENGINEER IN WRITING BEFORE IMPLEMENTATION.
2. CONTACT KYTC DISTRICT 6 TO LOCATE UNDERGROUND LINES FOR SIGNALS AND LIGHTING.
3. CONTACT TRIMARC TO LOCATE UNDERGROUND ELECTRIC AT TURKEYFOOT RD & I-275.
4. HDD ENTRY SITE WITHIN KYTC R/W WILL BE SECURED BY CONTRACTOR TO PROTECT THE SAFETY OF PEDESTRIAN TRAFFIC.

FOR PERMITTING PURPOSES ONLY

MATERIAL:
CLASS / MAOP:

STATE OF KENTUCKY
JOSHUA FUELLING
37266
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGINEER STAMP

NO	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	

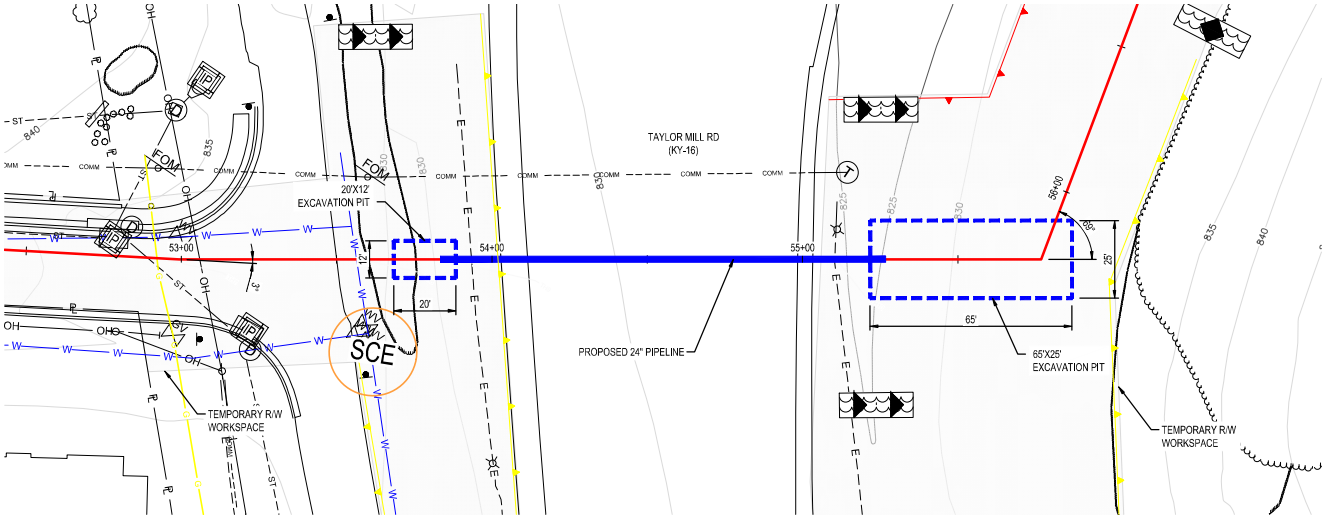
DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
HDD ALIGNMENT SHEET
COVINGTON, KY
ERLANGER, KENTUCKY

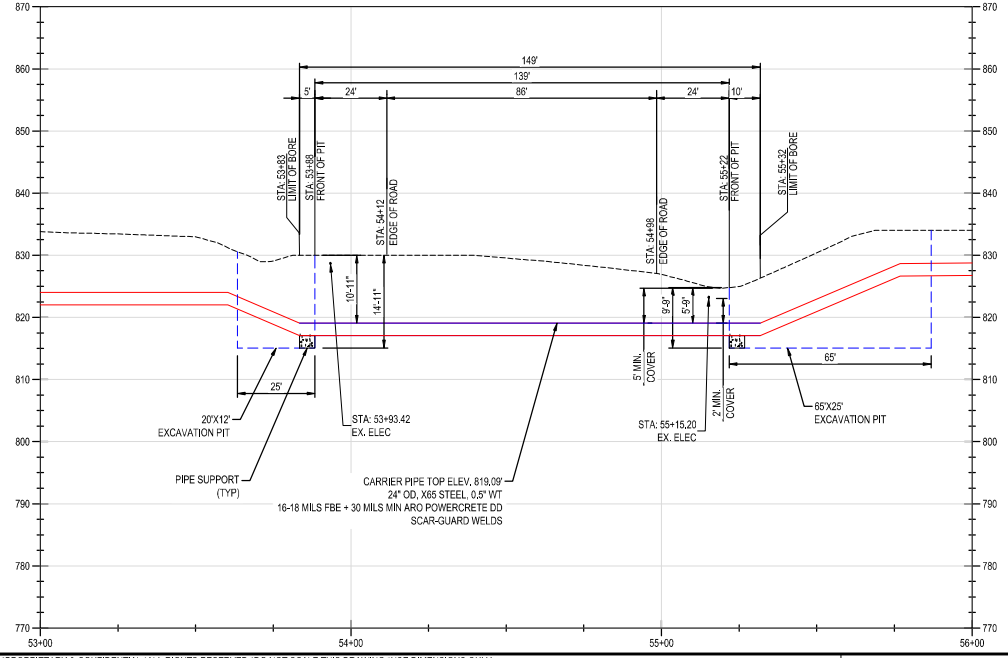
REF. DWG(S)	0X-XXXXX-XXXX-20XX - SHT 1 0X-XXXXX-XXXX-20XX - SHT 1
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	04/10/2024
SUPERSEDED	—
DRAWING NUMBER	PNG -C-043-0002001
REVISION	B

DISCIPLINE / RESOURCE CENTER / LINE NUMBER

PLAN



PROFILE



HORIZONTAL VIEW SCALE
0 20' 40'
HORIZONTAL SCALE: 1" = 20'

VERTICAL VIEW SCALE
0 10' 20'
HORIZONTAL SCALE: 1" = 10'

FOR PERMITTING PURPOSES ONLY

JOSHUA FUELLING 37266 LICENSED PROFESSIONAL ENGINEER
2024.05.21 09:12:36-05'00'
PROFESSIONAL ENG/ARCH STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
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B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

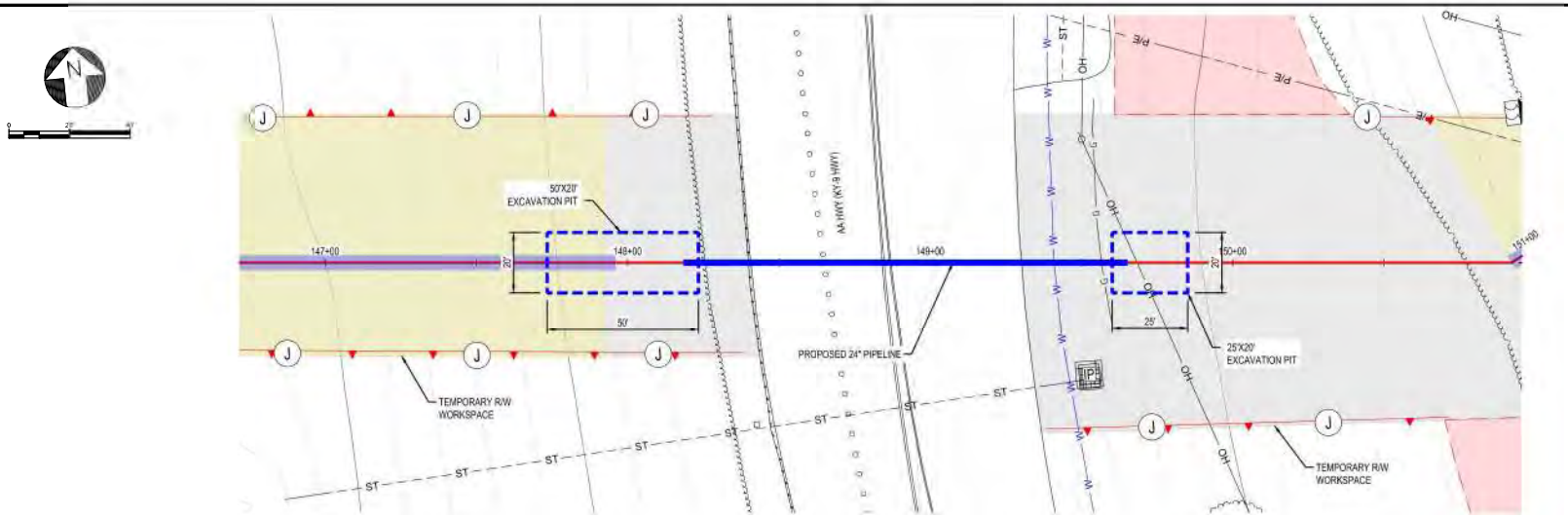
DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

-
AM07 PHASE 3
BORE CROSSING DETAIL 1
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)	G-XXX-000XXX1
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	04/10/2024
SUPERSEDED	—
DRAWING NUMBER	PNG C-043-0002003
REVISION	B

C/ERLANGER/AM07

PLAN



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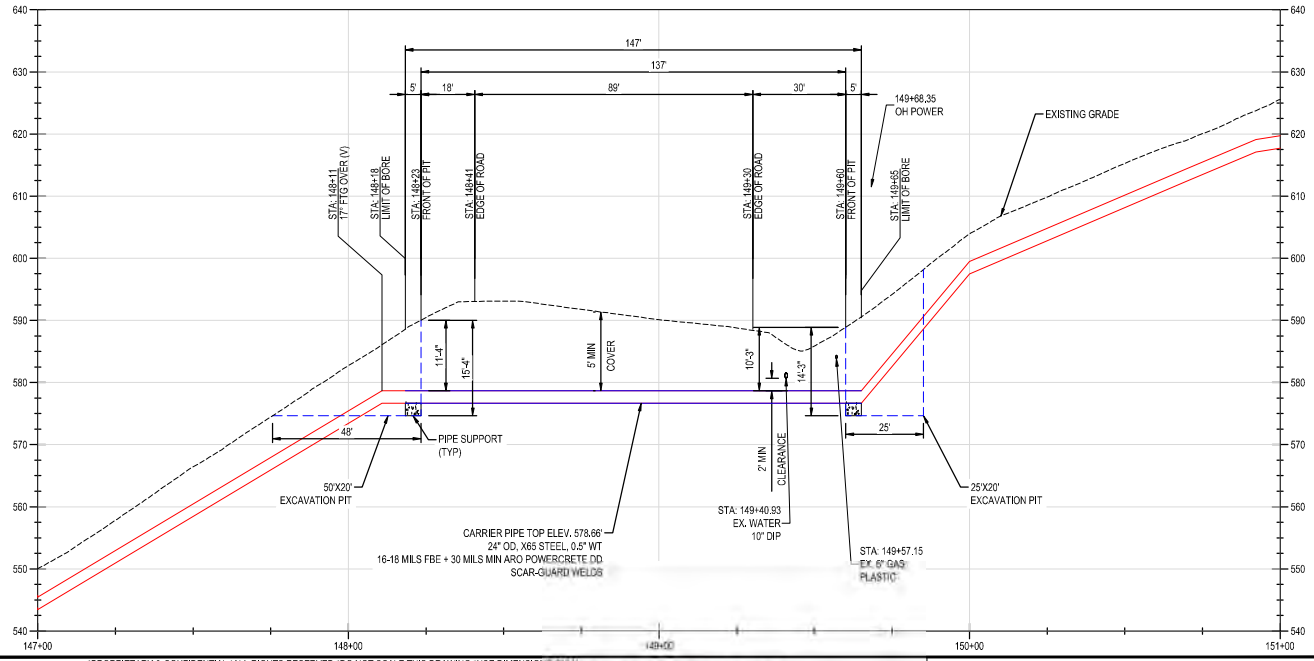


HORIZONTAL VIEW SCALE
HORIZONTAL SCALE: 1" = 20'
VERTICAL VIEW SCALE
HORIZONTAL SCALE: 1" = 10'

FOR PERMITTING PURPOSES ONLY

JOSHUA FUELLING 37266 LICENSED PROFESSIONAL ENGINEER STATE OF KENTUCKY
PROFESSIONAL ENGINEER STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

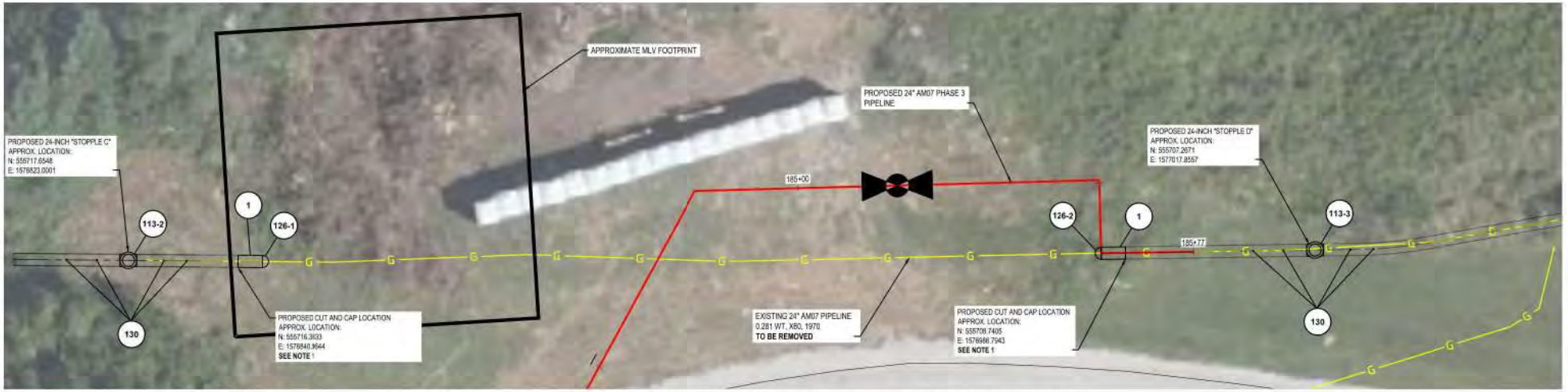
DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
BORE CROSSING DETAIL 2
COVINGTON, KY
ERLANGER, KENTUCKY

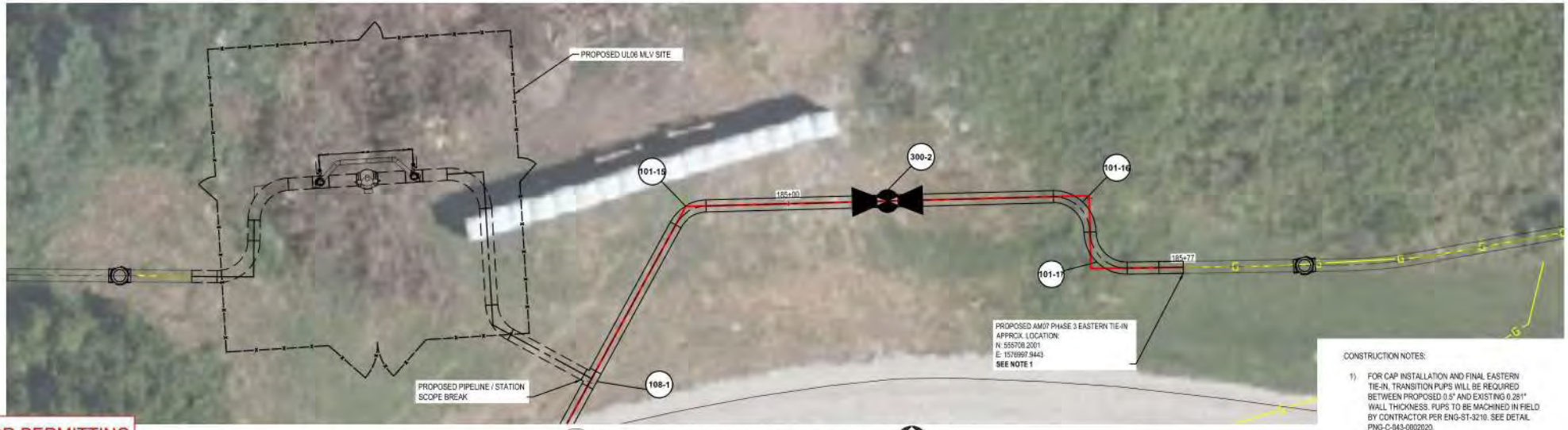
REF. DWG(S)	G-XXX-000XXX1
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	04/10/2024
SUPERSEDED	—
DRAWING NUMBER	PNG C-043-0002004
REVISION	B

C/ERLANGER/AM07



UL06 MLV AND AM07 PHASE 3 EASTERN TIE-IN ISOLATION AND RETIREMENT DETAIL

1 PNG-C-043-0001974



CONSTRUCTION NOTES:

1) FOR CAP INSTALLATION AND FINAL EASTERN TIE-IN, TRANSITION PUPS WILL BE REQUIRED BETWEEN PROPOSED 0.5" AND EXISTING 0.281" WALL THICKNESS. PUPS TO BE MACHINED IN FIELD BY CONTRACTOR PER ENG-ST-3210. SEE DETAIL PNG-C-043-0002020.

2 PNG-C-043-0001974 AM07 PHASE 3 EASTERN FINAL TIE-IN

FOR PERMITTING PURPOSES ONLY

JOSHUA FUELLING 37266 LICENSED PROFESSIONAL ENGINEER
2024.05.20 08:49:42 -05'00'
PROFESSIONAL ENGINEER STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
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B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
EASTERN TIE-IN AND ISOLATION DETAIL
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)	PNG-G-043-0001560 PNG-C-043-0001974 PNG-C-043-0001989
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	04/08/2024
SUPERSEDED	—
DRAWING NUMBER	PNG M-043-0001633
REVISION	B

M:\ERLANGER\AM07

AM07-E TIE-IN LOCATION

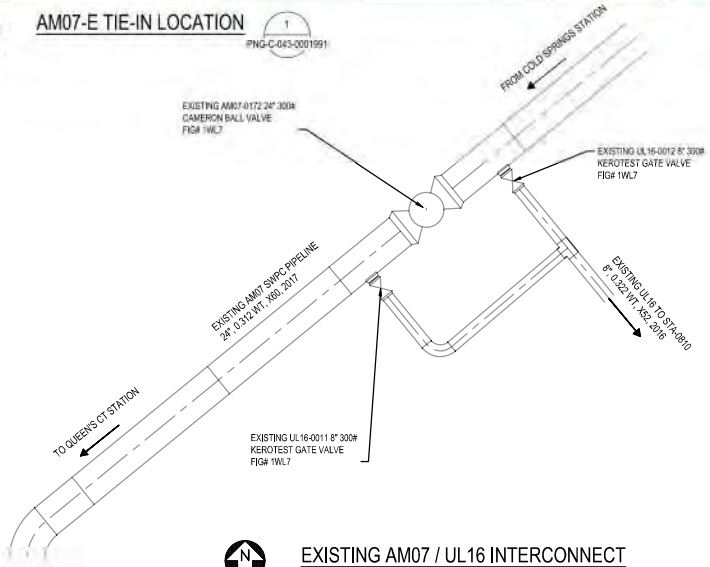
SCALE: 1:10

1 PNG-C-043-0001991

CONSTRUCTION NOTES:

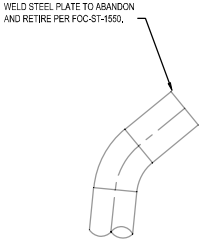
1) FOR SEQUENCING OF CAP INSTALLATION, PLEASE REFER TO DRAWINGS C-043-0001972 - C-043-0001974.

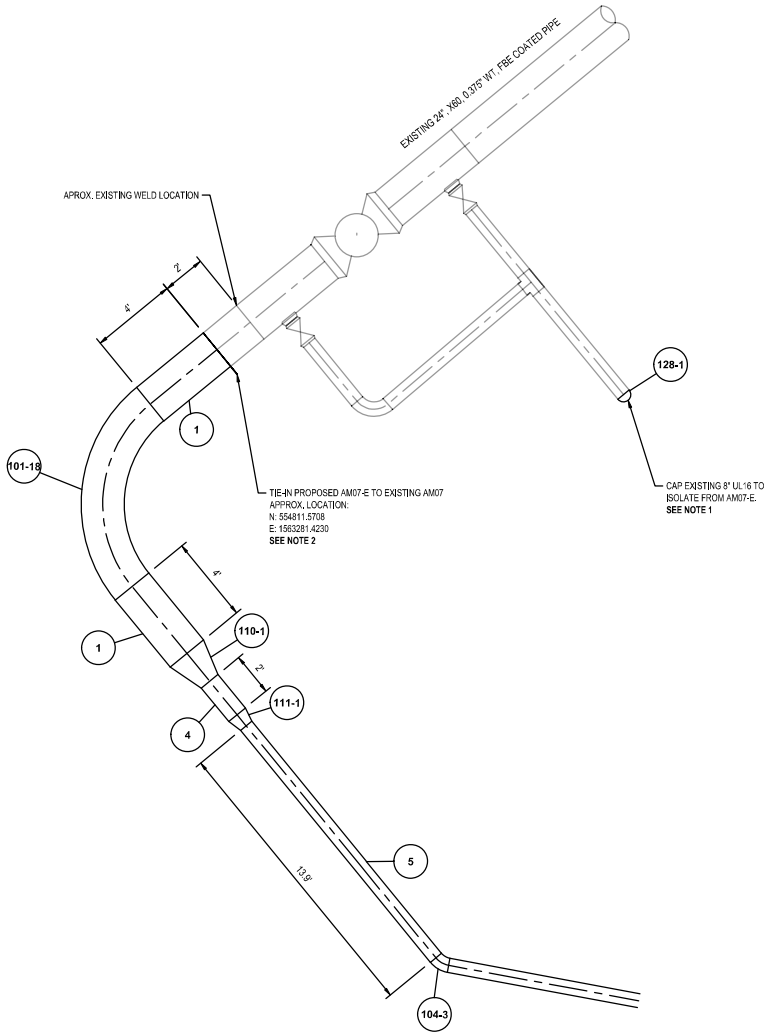
2) TRANSITION PUP WILL BE REQUIRED BETWEEN PROPOSED 0.5" AND EXISTING 0.312" WALL THICKNESS. PUPS TO BE MACHINED IN FIELD BY CONTRACTOR PER ENG-ST-3210. SEE DETAIL PNG-C-043-0002020.



EXISTING AM07 / UL16 INTERCONNECT

SCALE: NTS





PROPOSED AM07-E TIE-IN

SCALE: NTS

FOR PERMITTING PURPOSES ONLY

NO	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

STATE OF KENTUCKY · JOSHUA FUELLING · 37266 · LICENSED PROFESSIONAL ENGINEER · 2/24/2024 · PROFESSIONAL ENGINEER STAMP

DUKE ENERGY. · Piedmont Natural Gas

-
AM07 PHASE 3
AM07-E TIE-IN DETAIL
COVINGTON, KY
ERLANGER, KENTUCKY

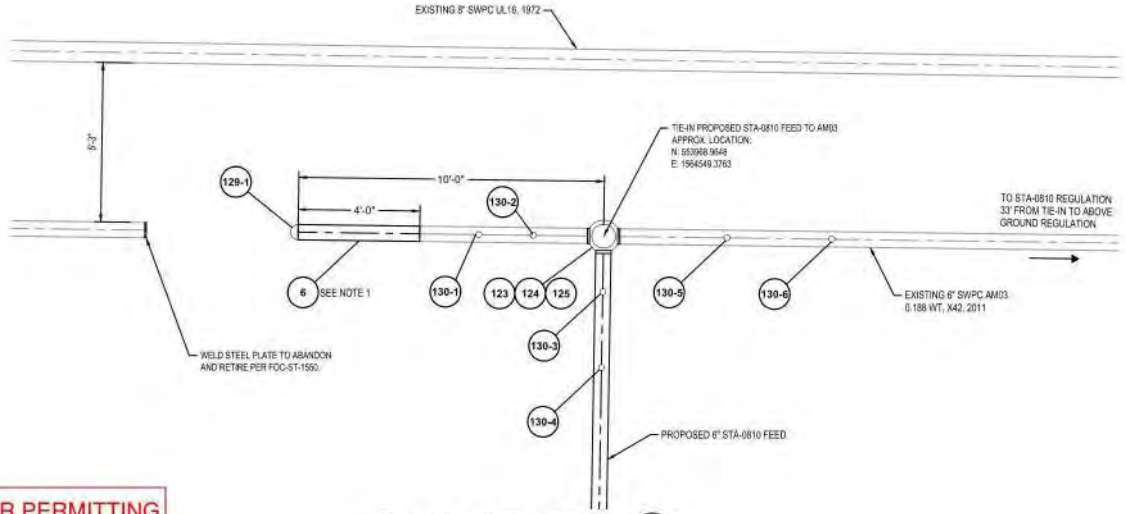
REF. DWG(S)	PNG-G-043-0001560, PNG-G-043-0001973
SHEET(S)	1 OF X
DWG SCALE	AS NOTED
DWG DATE	03/28/2024
SUPERSEDED	—
DRAWING NUMBER	PNG M-043-0001635
REVISION	B

M:\ERLANGER\AM07

EXISTING UL16 & STA-0810

SCALE: 1" = 8'

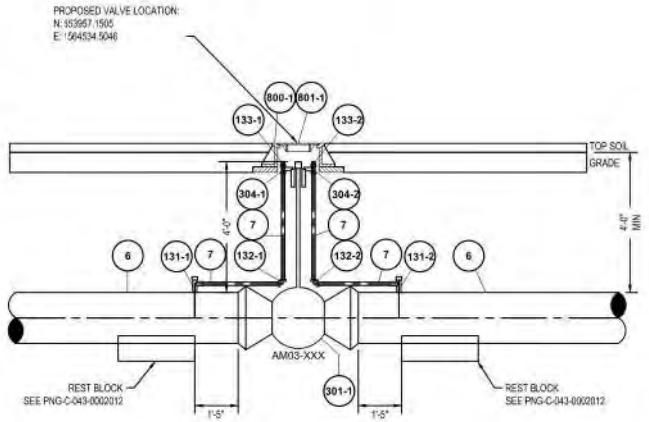
1 PNG-C-043-0001977



1 THIS DWG

STA-0810 TIE-IN DETAIL

SCALE: 1" = 2'



DETAIL 2

SCALE: NTS THIS SHEET

CONSTRUCTION NOTES:

1) TRANSITION PUP WILL BE REQUIRED BETWEEN PROPOSED 0.280" AND EXISTING 0.188" WALL THICKNESS. PUPS TO BE MACHINED IN FIELD BY CONTRACTOR PER ENG-ST-3210. SEE DETAIL PNG-C-043-0002020.

VALVE #: AM03-XXX SIZE: 6"
MANUFACTURER: SER. #:
MODEL #: W.O.G./M.O.P.:
GATE ☐ PLUG ☐ OTHER: BALL
TURNS TO OPEN:
LOCATION:
FT IN
FT IN
FT IN
BOX ☐ PIT ☐ COVER AT MAIN T IN
PRESSURE STEMS LOCATED N S E W
REMARKS:

FOR PERMITTING PURPOSES ONLY

STATE OF KENTUCKY
JOSHUA FUELLING
37266
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL ENGARCH STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

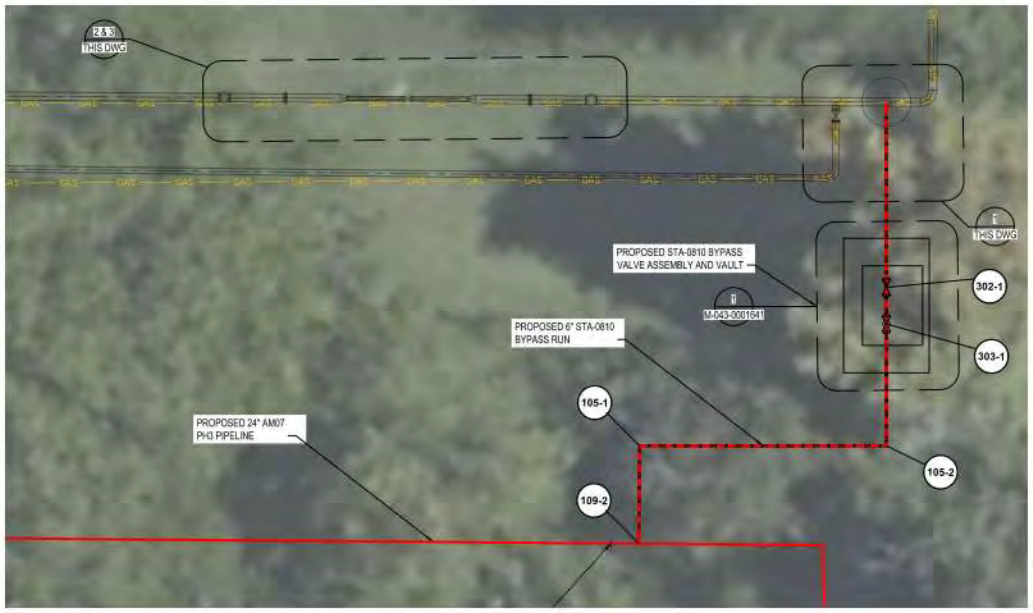
-
AM07 PHASE 3
STA-0810 FEED DETAIL
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S): G-XXX-000XXX1

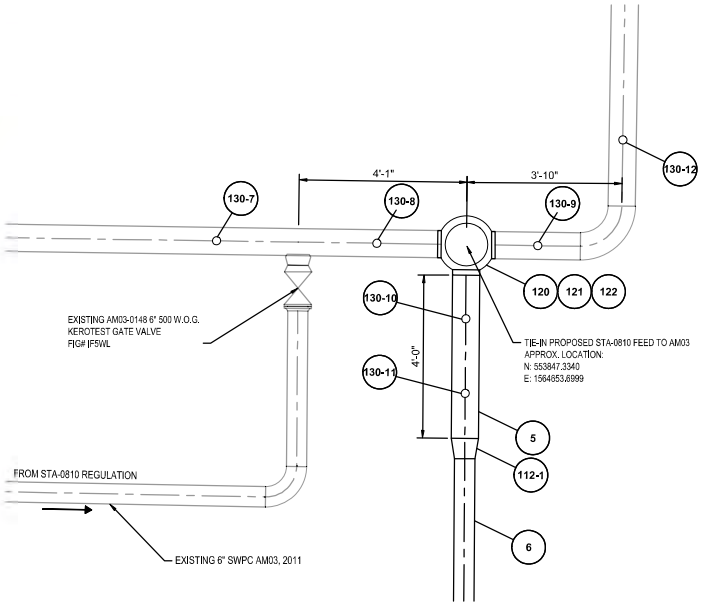
SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	04/08/2024	SUPERSEDED	

DRAWING NUMBER: PNG M-043-0001636
REVISION: B

M:\ERLANGER\AM07\

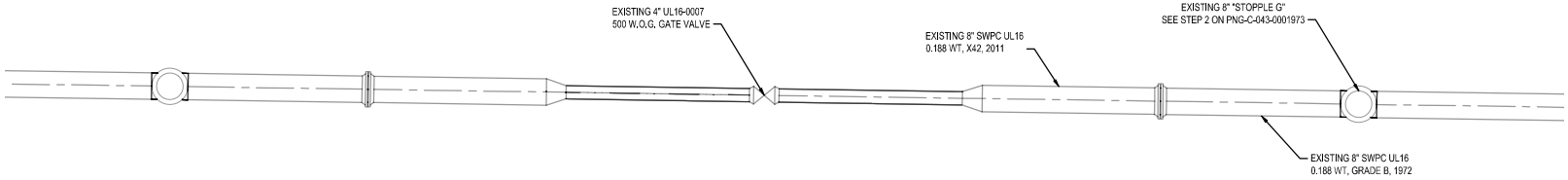


PROPOSED STA-0810 BYPASS RUN (1 / PNG-C-043-0001977) SCALE: 1" = 5'

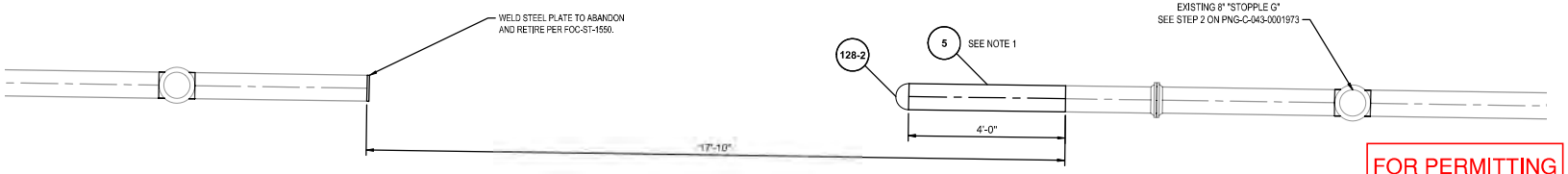


1 THIS DWG PROPOSED STA-0810 BYPASS TIE-IN SCALE: 1" = 1.5'

2 THIS DWG EXISTING STA-0810 BYPASS VALVE SCALE: 1" = 1.5'



3 THIS DWG EXISTING STA-0810 BYPASS VALVE REMOVAL & ISOLATION SCALE: 1" = 1.5'



CONSTRUCTION NOTES:

1) TRANSITION PUP WILL BE REQUIRED BETWEEN PROPOSED 0.322" AND EXISTING 0.188" WALL THICKNESS. PUPS TO BE MACHINED IN FIELD BY CONTRACTOR PER ENG-ST-3210. SEE DETAIL PNG-C-043-0002020.

FOR PERMITTING PURPOSES ONLY

STATE OF KENTUCKY · JOSHUA FUELLING · 37258 · LICENSED PROFESSIONAL ENGINEER · PROFESSIONAL ENGINEER STAMP

NO	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/22/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
STA-0810 BYPASS DETAIL
COVINGTON, KY
ERLANGER, KENTUCKY

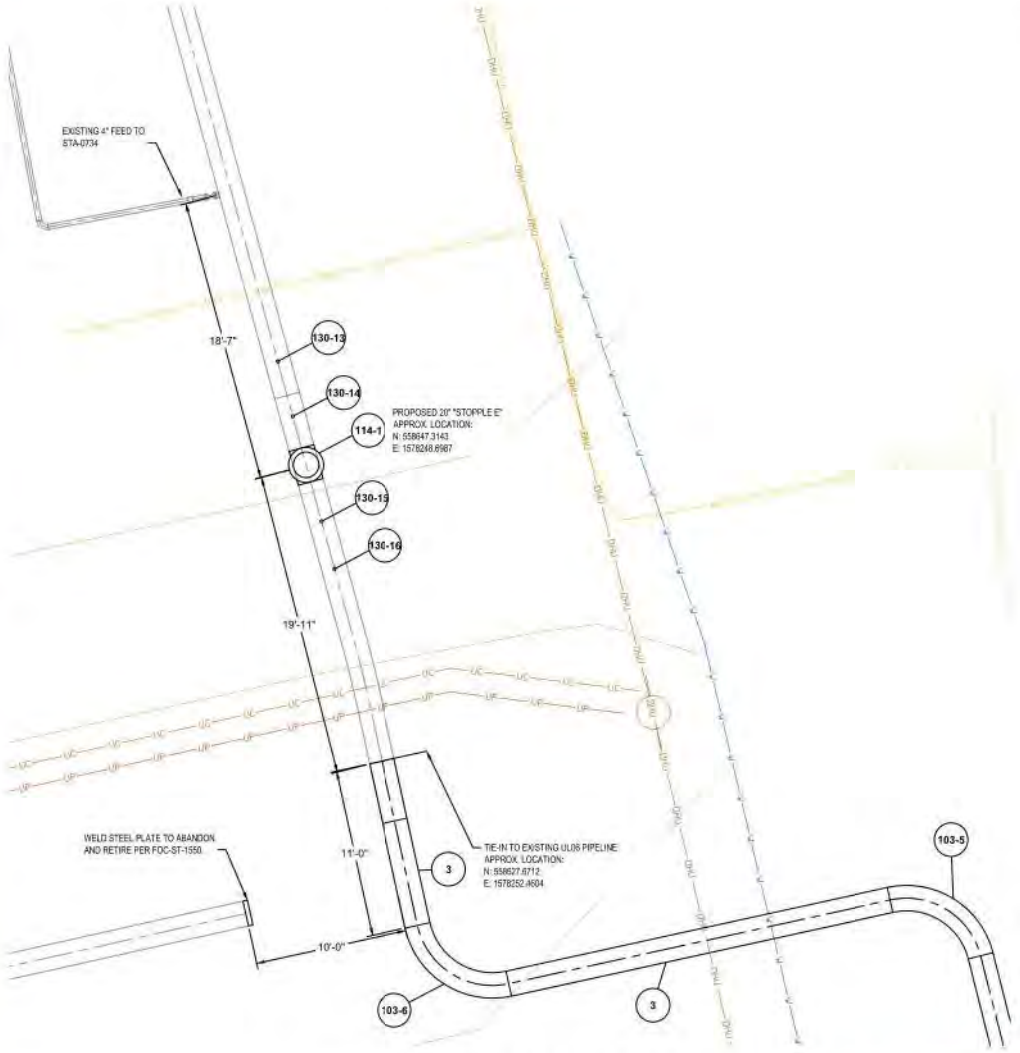
REF. DWG(S)	G-XXX-000XXX1
SHEET(S) 1 OF X	DWG SCALE AS NOTED
DWG DATE 04/08/2024	SUPERSEDED —
DRAWING NUMBER	REVISION
PNG M-043-0001637	B
M:\ERLANGER\AM07	

UL06 NORTH TIE-IN VICINITY MAP (1 / PNG-C-043-0001992)

SCALE: 1" = 30'

1 THIS DWG — UL06 & STA-0734 EXISTING CONDITIONS

SCALE: 1" = 10'



2 THIS DWG — PROPOSED UL06 NORTH TIE-IN

SCALE: 1" = 4'

FOR PERMITTING PURPOSES ONLY

STATE OF KENTUCKY — JOSHUA FUELLING — 37266 — LICENSED PROFESSIONAL ENGINEER — 2024.08.05 09:29:58 -05'00' — PROFESSIONAL ENGINEER STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	JPF
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

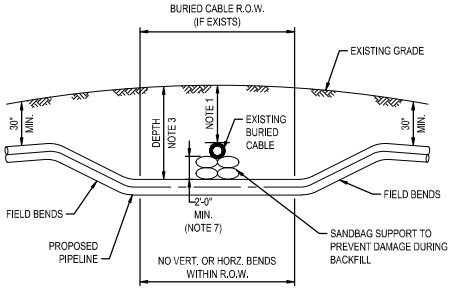
-
AM07 PHASE 3
UL06 TIE-IN DETAIL 2
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S) PNG-G-043-0001560

SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	04/08/2024	SUPERSEDED	—

DRAWING NUMBER: PNG M-043-0001639 — REVISION: B

M:\ERLANGER\AM07\

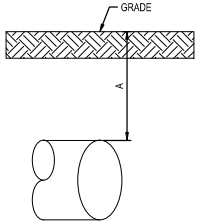


NOTES:
1. BURIED CABLE LOCATIONS & PIPE DEPTHS TO BE DETERMINED BY ELECTRONIC MEANS IN ADVANCE OF PIPELINE CONSTRUCTION AND CONFIRMED BY CAREFULLY EXPOSING BY HAND DIGGING WHEN WITHIN 24" IN ANY DIRECTION FROM THE PIPELINE.
2. OWNER OF BURIED CABLE(S) SHALL BE NOTIFIED 48 HOURS IN ADVANCE OF EXCAVATION OF CROSSING.
3. DEPTH OF PIPELINE INCLUDING 2'-0" MIN. CLEARANCE SHALL BE MAINTAINED FOR THE FULL ANGULAR WIDTH OF BURIED CABLE R.O.W.
4. PROPOSED PIPELINE MAY ONLY CROSS ABOVE BURIED CABLE(S) WHERE APPROVED IN WRITING BY BURIED CABLE OWNER.
5. CONTRACTOR TO SUPPORT EXPOSED CABLE WITH WOOD PLANK OR STRUCTURAL STEEL DURING CONSTRUCTION.
6. CONTRACTOR TO UTILIZE CAUTION WITH PLACEMENT OF BACKFILL TO MINIMIZE POSSIBLE DAMAGE TO THE CABLE.

CROSS SECTION OF BURIED CABLE R.O.W.

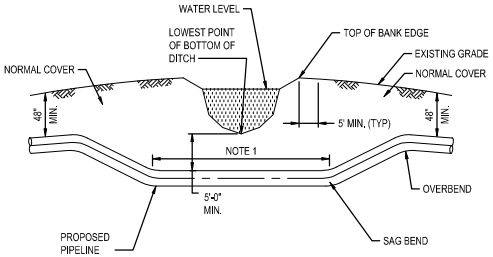
SCALE: N.T.S.

PIPE LOCATION	DEPTH OF COVER (A)
NORMAL	4'-0"
STREAM/WATERBODY CROSSING	5'-0"
WETLAND CROSSING	5'-0"
ROAD CROSSING	5'-0"
RAILROAD CROSSING	10'-0"



PIPELINE DEPTH OF COVER

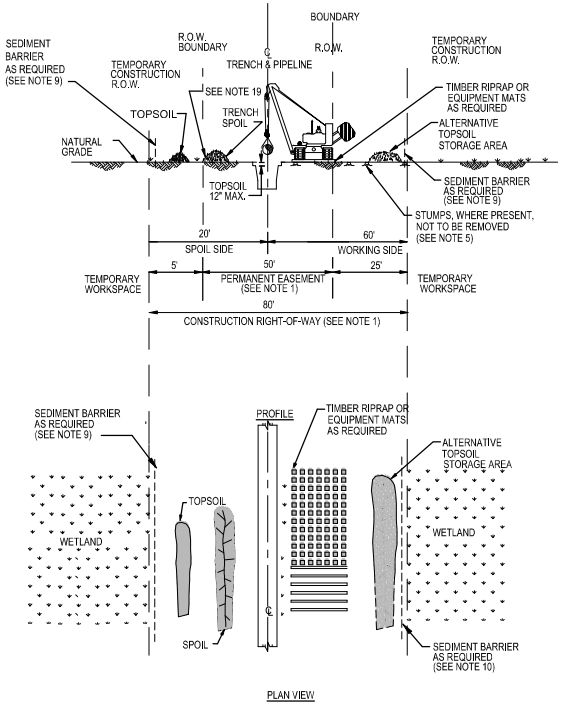
SCALE: N.T.S.



NOTE:
1. PIPELINE WEIGHTS OR ANCHORS TO BE INSTALLED PER PLANS OR AS DIRECTED BY COMPANY.

TYPICAL OPEN CUT STREAM CROSSING

SCALE: N.T.S.



PLAN VIEW

TYPICAL WETLAND CROSSING

SCALE: N.T.S.

NOTE:
1. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 80 FEET WIDE CONSISTING OF 50 FEET OF PERMANENT EASEMENT AND UP TO 30 FEET OF TEMPORARY WORKSPACE.
2. THE SAME LAYOUT APPLIES WHETHER CONSTRUCTION R.O.W. DOES OR DOES NOT ABUT A FOREIGN R.O.W.
3. LOCATE ANY EXTRA TEMPORARY WORK SPACE AREAS AT LEAST 25 FEET FROM EDGE OF WETLAND AND WITHIN THE APPLICABLE FULL WIDTH CONSTRUCTION R.O.W.
4. CLEARING OF VEGETATION AND TREES IS PROHIBITED BETWEEN TEMPORARY EXTRA WORK SPACE AND THE EDGE OF THE WETLAND
5. CUT VEGETATION AND TREES OFF AT GROUND LEVEL, LEAVING EXISTING ROOT SYSTEMS IN PLACE WHEREVER PRACTICABLE, AND REMOVE CUTTINGS FROM THE WETLAND FOR DISPOSAL.
6. LIMIT CONSTRUCTION EQUIPMENT TO ONE PASS THROUGH WETLANDS TO THE EXTENT PRACTICABLE.
7. NO REFUELING OF EQUIPMENT WITHIN 100 FEET OF WETLAND EXCEPT IN ACCORDANCE WITH THE SPCC PLAN.
8. IF SATURATED AT TIME OF CONSTRUCTION, REDUCE SOIL COMPACTION BY UTILIZING WIDE-TRACK OR BALLOON TIRE CONSTRUCTION EQUIPMENT OR NORMAL EQUIPMENT OPERATED ON TIMBER RIPRAP OR EQUIPMENT MATS.
9. AVOID ADJACENT WETLANDS. INSTALL SEDIMENT BARRIERS IMMEDIATELY AFTER INITIAL GROUND DISTURBANCE AND AT THE EDGE OF THE CONSTRUCTION R.O.W. ALONG THE WETLAND AS DIRECTED BY THE COMPANY'S INSPECTOR.
10. WETLAND AREAS SHALL HAVE SILT FENCING AND ONE LAYER OF FILTER SOCK INSTALLED NO CLOSER THAN 25 FEET FROM POINT OF WETLAND DELINEATION.
11. THIS DRAWING REFLECTS "TRENCH ONLY" TOPSOIL STRIPPING PROCEDURE FOR AREAS WHERE STANDING WATER OR SATURATED SOIL ARE NOT PRESENT.
12. SALVAGE UP TO 12" OF TOPSOIL OVER TRENCH AT LOCATIONS IDENTIFIED ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE COMPANY'S INSPECTOR. MAINTAIN SEPARATION BETWEEN TOPSOIL AND TRENCH SPOIL.
13. LEAVE GAPS IN TOPSOIL AND SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT USE TOPSOIL FOR PADDING. AVOID SCALPING VEGETATED GROUND SURFACE WHEN BACKFILLING SPOIL PILE.
14. IN UNSATURATED CONDITIONS, SPOIL MAY BE USED TO STABILIZE THE WORKING SIDE.
15. IF SATURATED AT TIME OF CONSTRUCTION, LEAVE HARD PLUGS AT THE EDGE OF WETLAND UNTIL JUST PRIOR TO TRENCHING.
16. TRENCH THROUGH WETLANDS.
17. LOWER-IN PIPE, INSTALL TRENCH BREAKERS AT WETLAND EDGES AS DIRECTED BY THE COMPANY'S INSPECTOR TO PREVENT DRAINAGE. BACKFILL UPON COMPLETION OF CONSTRUCTION.
18. REMOVE ALL TIMBER, RIPRAP OR EQUIPMENT MATS FROM WETLANDS UPON COMPLETION OF CONSTRUCTION.
19. RESTORE GRADE TO NEAR PRE-CONSTRUCTION TOPOGRAPHY AND REPLACE TOPSOIL, WHERE SALVAGED, WITHOUT A CROWN OVER THE TRENCH.
20. IF STANDING WATER IS NOT PRESENT, SEED AS SPECIFIED.
21. TOPSOIL AND TRENCH SPOIL RELATIVE POSITIONS CAN, AS DIRECTED BY THE COMPANY'S INSPECTOR, BE REVERSED.

FOR PERMITTING PURPOSES ONLY

STATE OF KENTUCKY
JOSHUA FUELLING
37269
LICENSED PROFESSIONAL ENGINEER
2024.05.21 09:26:23 -05'00'
PROFESSIONAL ENGARCH STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	AMP
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

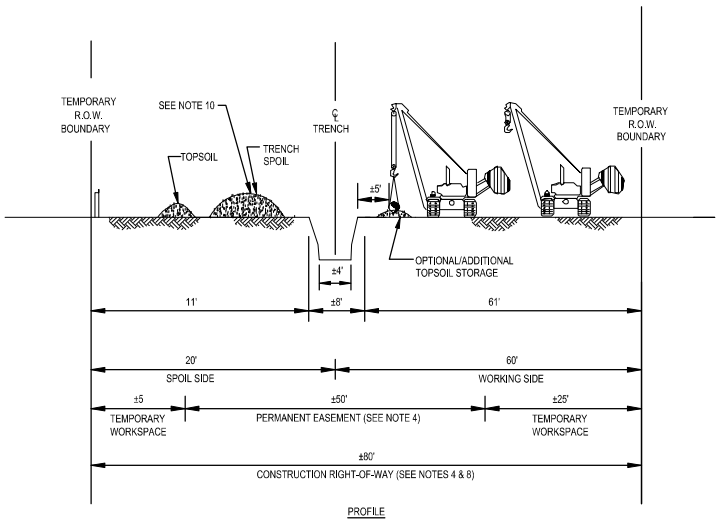
DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
CONSTRUCTION DETAILS 3
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)

SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	04/05/2024	SUPERSEDED	—

DRAWING NUMBER: PNG -C-043-0002013
REVISION: B
C/ERLANGER/AM07



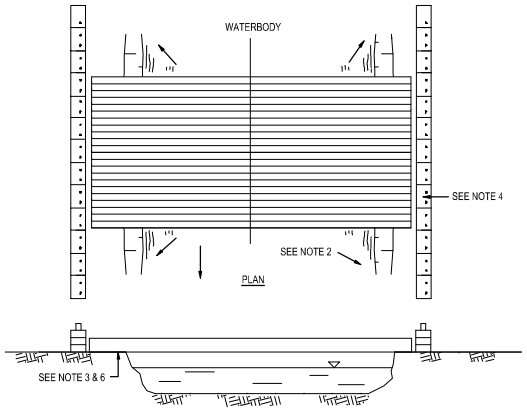
PROFILE

NOTES:

1. UTILIZE THE "TRENCH ONLY" TOPSOIL SALVAGE METHOD AT LOCATIONS SUCH AS RIPARIAN AREAS OR UNMANAGED WOODLAND, WHERE IDENTIFIED ON THE CONSTRUCTION DRAWINGS, OR AS DIRECTED BY THE COMPANY'S REPRESENTATIVE.
2. THE TRENCH ONLY METHOD IS NOT TO BE USED ON AGRICULTURAL LAND EXCEPT AS DIRECTED BY THE COMPANY INSPECTOR (PER LANDOWNER REQUEST).
3. FOR TRENCH ONLY STRIPPING, THE STRIPPED AREA SHALL BE WIDE ENOUGH TO ACCOMMODATE TRENCHING EQUIPMENT
4. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 80 FEET WIDE CONSISTING OF 50 FEET OF PERMANENT EASEMENT AND 30 FEET OF TEMPORARY WORKSPACE. EXTRA TEMPORARY WORK SPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL AND RIVER CROSSINGS AND OTHER SPECIAL CIRCUMSTANCES, AS REQUIRED. CERTAIN SITUATIONS MAY REQUIRE A NARROWER WIDTH.
5. STOCKPILE TOPSOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE COMPANY'S INSPECTOR. KEEP TOPSOIL CLEAN OF ALL CONSTRUCTION DEBRIS
6. LEAVE GAPS IN TOPSOIL AND SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH TOPSOIL INTO CREEKS OR WETLANDS. DO NOT USE TOPSOIL FOR PADDING.
7. AVOID SCALPING VEGETATED GROUND SURFACE WHEN BACKFILLING SPOIL AND TOPSOIL PILES.
8. SAME LAYOUT APPLIES WHERE CONSTRUCTION R.O.W. DOES NOT ABUT EXISTING R.O.W.
9. TEMPORARILY SUSPEND TOPSOIL HANDLING OPERATIONS DURING INORDINATELY WINDY CONDITIONS UNTIL MITIGATIVE MEASURES TO MINIMIZE WIND EROSION CAN BE IMPLEMENTED.
10. TOPSOIL AND TRENCH SPOIL RELATIVE POSITIONS CAN, AS DIRECTED BY THE COMPANY'S INSPECTOR, BE REVERSED.

TYPICAL 80' WORKSPACE TOPSOIL SEPARATION

SCALE: N.T.S.



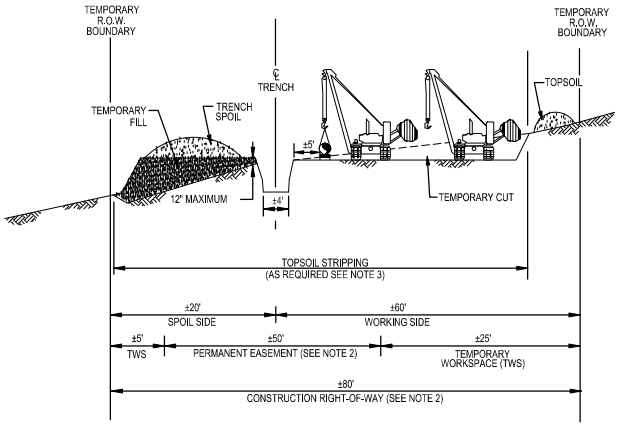
PROFILE

NOTES:

1. THIS TYPE OF BRIDGE IS GENERALLY USED ON NARROW CROSSINGS, LESS THAN 20 FEET WIDE WITH APPROPRIATE BANK CONFIGURATION. MULTIPLE MATS MAY BE LAYERED FOR HEAVIER EQUIPMENT CROSSINGS.
2. BRIDGE IS ANCHORED AND/OR TIED OFF TO ANCHOR BLOCKS FOR STABILITY. BRIDGE SHOULD BE TEMPORARILY REMOVED IF HIGH WATER RENDERS IT UNSAFE TO USE.
3. IF REQUIRED, UTILIZE APPROACH FILLS OF CLEAN GRANULAR MATERIAL, SWAMP MATS, SKIDS OR OTHER SUITABLE MATERIALS TO AVOID CUTTING THE BANKS WHEREVER FEASIBLE. ENSURE ADEQUATE FREEBOARD. AS REQUIRED, ENSURE THAT FILL MATERIAL IF USED DOES NOT SPILL INTO WATERCOURSE INCLUDING REMOVAL OF DIRT FROM DECK DURING OPERATION.
4. CONSTRUCT SEDIMENT BARRIERS ACROSS THE ENTIRE CONSTRUCTION R.O.W. TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERBODY. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY. SILT FENCE, HAY BALES OR SANDBAGS MAY BE USED INTERCHANGEABLY.
5. REMOVE BRIDGES AS SOON AS POSSIBLE AFTER PERMANENT SEEDING UNLESS OTHERWISE DIRECTED BY COMPANY REPRESENTATIVE. THE STRUCTURE IS TO BE REMOVED IF THERE IS MORE THAN ONE MONTH BETWEEN FINAL GRADING AND SEEDING, AND ALTERNATIVE ACCESS TO THE CONSTRUCTION R.O.W. IS AVAILABLE.
6. DISPOSE OF ANY ROCK AS DIRECTED BY COMPANY REPRESENTATIVE.
7. RESTORE AND STABILIZE BED AND BANKS TO APPROXIMATE PRE-CONSTRUCTION CONDITIONS.

TYPICAL TIMBER MAT WATERBODY BRIDGE

SCALE: N.T.S.



PROFILE

NOTES:

1. SIDE HILL CONSTRUCTION CUT AND FILL SHALL BE ALLOWED WHENEVER, IN THE OPINION OF THE CONTRACTOR, STEEP SIDE HILL CONSTRUCTION IS WARRANTED FOR PERSONNEL AND/OR EQUIPMENT SAFETY CONSIDERATIONS.
2. CONSTRUCTION RIGHT-OF-WAY WILL TYPICALLY BE 80 FEET WIDE CONSISTING OF 50 FEET OF PERMANENT EASEMENT AND 30 FEET OF TEMPORARY WORKSPACE. EXTRA TEMPORARY WORK SPACE WILL BE NECESSARY AT MAJOR ROAD, RAIL AND RIVER CROSSINGS AND OTHER SPECIAL CIRCUMSTANCES, AS REQUIRED. CERTAIN SITUATIONS MAY REQUIRE A NARROWER WIDTH.
3. THIS DRAWING REFLECTS "TRENCH, SPOIL, AND WORKING SIDE" TOPSOIL STRIPPING PROCEDURE AS NEEDED FOR HILL SIDE LEVELING. SALVAGE TOPSOIL OVER TRENCH UNDER THE SPOIL PILE AND FROM TEMPORARY CUT AND FILL AREAS AT LOCATIONS IDENTIFIED OF THE CONSTRUCTION ALIGNMENT SHEETS OR AS DIRECTED BY THE COMPANY'S REPRESENTATIVE.
4. STOCKPILE TOPSOIL AS SHOWN OR IN ANY CONFIGURATION APPROVED BY THE COMPANY'S REPRESENTATIVE. KEEP TOPSOIL CLEAN OF ALL CONSTRUCTION DEBRIS.
5. LEAVE GAPS IN TOPSOIL AND SPOIL PILES AT OBVIOUS DRAINAGES. DO NOT PUSH TOPSOIL INTO CREEKS OR WETLANDS. DO NOT USE TOPSOIL FOR PADDING. AVOID SCALPING VEGETATED GROUND SURFACE WHEN BACKFILLING TOPSOIL PILE.

TYPICAL SIDE HILL CONSTRUCTION

SCALE: N.T.S.

FOR PERMITTING PURPOSES ONLY

STATE OF KENTUCKY
JOSHUA FUELLING
37268
LICENSED PROFESSIONAL ENGINEER
2024.05.21 09:28:43-05'00'
PROFESSIONAL ENGIARCH STAMP

NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	AMP
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

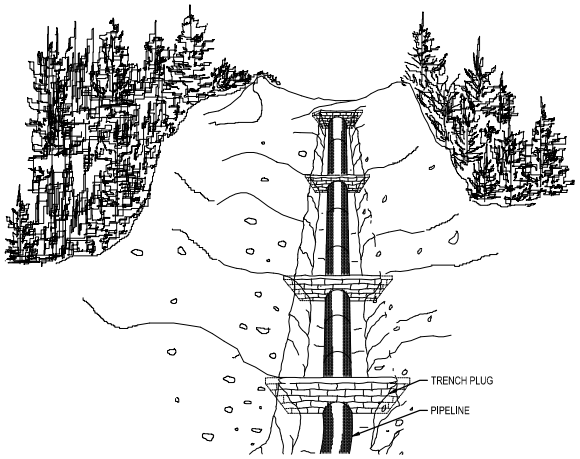
-
AM07 PHASE 3
CONSTRUCTION DETAILS 4
COVINGTON, KY
ERLANGER, KENTUCKY

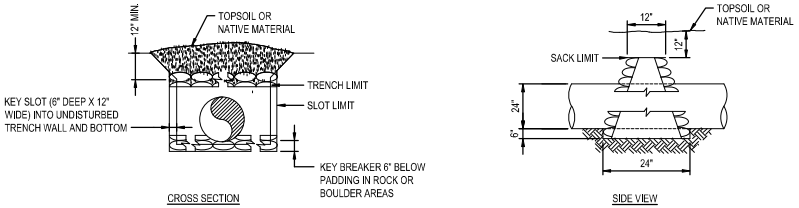
REF. DWG(S)

SHEET(S) 1 OF X	DWG SCALE AS NOTED
DWG DATE 04/05/2024	SUPERSEDED —

DRAWING NUMBER	REVISION
PNG -C-043-0002014	B

C/ERLANGER/AM07

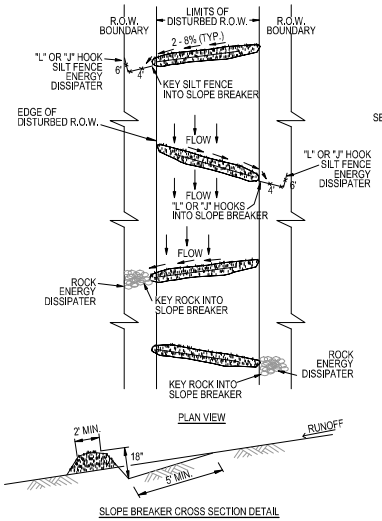


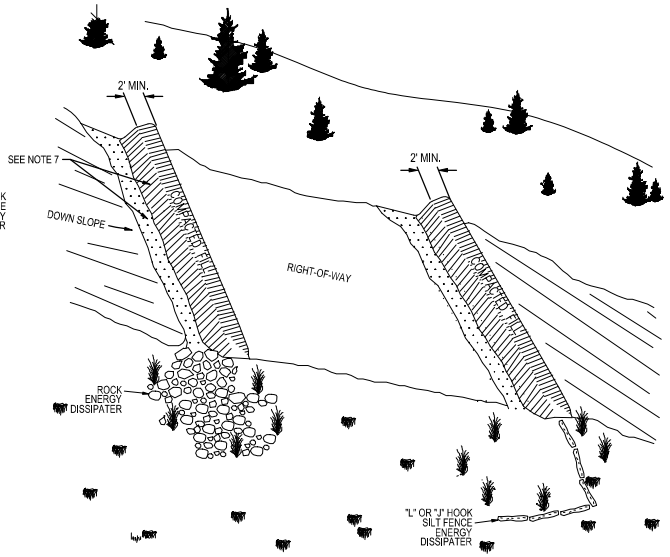


NOTES:
1. TRENCH PLUGS SHALL BE INSTALLED:
   - **ON UPLAND SLOPES, AT THE SAME SPACING AS SLOPE BREAKERS AND UP SLOPE OF SLOPE BREAKERS;**
   - ON SLOPES ALONG THE TRENCH LINE WHERE THE NATURAL DRAINAGE PATTERN, PROFILE, AND TYPE OF BACKFILL MATERIAL MAY RESULT IN LOSS OF BACKFILL MATERIAL OR ALTERATION OF THE NATURAL PATTERN;
   - AT THE BASE OF SLOPES ADJACENT TO WATERBODIES AND WETLANDS;
   - WHERE NEEDED TO AVOID DRAINING A WETLAND;
   - IN CULTIVATED LAND AND RESIDENTIAL AREAS WHERE PERMANENT SLOPE BREAKERS ARE NOT TYPICALLY INSTALLED, AT THE SAME SPACING AS IF PERMANENT SLOPE BREAKERS WERE REQUIRED
2. PLUGS SHALL BE INSTALLED IN ACCORDANCE WITH DUKE CONSTRUCTION STANDARDS AND AS DIRECTED
   - BY COMPANY'S INSPECTOR. SACK BREAKS SHALL UTILIZE OPEN WEAVE HEMP OR JUTE SACKS FILLED WITH MINIMUM OF 55LBS OF SUBSOIL, SAND OR A MIXTURE OF 1 PART CEMENT TO 6 PARTS SAND OR SUBSOIL AS DETERMINED BY COMPANY'S INSPECTOR
   - POLYURETHANE FOAM BREAKERS MAY BE USED IN-LEIU-OF SACK BREAKERS, WHEN APPROVED BY COMPANY'S REPRESENTATIVE.
3. PLUG SPACING AND CONFIGURATION MAY BE CHANGED AS DIRECTED BY COMPANY. DEPTH OF DITCH MAY VARY WITH SITE CONDITIONS.
4. ALL MATERIALS SHALL BE SUPPLIED BY CONTRACTOR.

TYPICAL TRENCH PLUG

SCALE: N.T.S.





MAXIMUM CONTRIBUTION AREA TO SLOPE BREAKER USING SLOPE LENGTH	
SLOPE	SLOPE LENGTH (FT.)
0% - 2%	250
3% - 10%	125
11% - 20%	100
21% - 33%	75
34% - 50%	50
>50%	25

NOTES:
1. SLOPE BREAKERS SHALL BE CONSTRUCTED OF COMPACTED NATIVE SOIL AND INSTALLED AT LOCATIONS AS REQUIRED BY DUKE CONSTRUCTION STANDARDS OR AS DIRECTED BY THE COMPANY'S REPRESENTATIVE.
2. SLOPE BREAKERS SHALL BE CONSTRUCTED AS SHOWN, ALTERNATING FLOW TO OPPOSITE SIDES OF RIGHT-OF-WAY EVERY OTHER BREAK INSTALLED OR OTHER PATTERN AS DIRECTED BY THE COMPANY'S REPRESENTATIVE.
3. SLOPE BREAKERS SHALL BE CONSTRUCTED AT 2-8% GRADIENT ACROSS THE SLOPE.
4. THE SLOPE BREAKERS SHALL BE 18" DEEP (AS MEASURED FROM THE TROUGH TO THE TOP OF THE SLOPE BREAKER). THE THROUGH WILL BE A MINIMUM OF 5' WIDE ACROSS THE WIDTH OF THE RIGHT-OF-WAY.
5. THE OUTLET OF THE SLOPE BREAKER MUST FREELY DISCHARGE ALL RUNOFF OFF THE DISTURBED RIGHT-OF-WAY INTO AN ENERGY DISSIPATER.
6. WHERE SLOPE BREAKERS EXTEND BEYOND THE EDGE OF THE CONSTRUCTION RIGHT-OF-WAY TO DIRECT RUNOFF INTO STABLE, WELL VEGETATED AREAS, THESE LOCATIONS MUST BE APPROVED BY THE COMPANY'S REPRESENTATIVE.
7. SHORT-TERM BIODEGRADABLE DOUBLE NET STRAW EROSION CONTROL BLANKETS SHALL BE INSTALLED ACROSS ENTIRIETY OF EACH BREAKER AND BREAKER CHANNEL.

FLOW ENERGY DISSIPATER NOTES:
1. THE OUTLET SHALL CONTAIN AN ENERGY DISSIPATER IF THE COMPANY'S INSPECTOR DETERMINES EXISTING VEGETATION IS NOT SUFFICIENTLY STABLE TO PREVENT EROSION. THE ENERGY DISSIPATER SHALL BE CONSTRUCTED AS FOLLOWS:
   - OUTFALL END OF DISSIPATER SHOULD BE LOWER THAN SLOPE BREAKER END.
   - SILT FENCE OR ROCK DISSIPATERS SHOULD BE KEYED INTO THE END OF THE SLOPE BREAKER.
   - PROVIDE ENOUGH AREA INSIDE "L" TO CAPTURE AND HOLD SEDIMENT.

TYPICAL SLOPE BREAKER

SCALE: N.T.S.

FOR PERMITTING PURPOSES ONLY

JOSHUA FUELLING 37256 LICENSED PROFESSIONAL ENGINEER
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NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	AMP
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
CONSTRUCTION DETAILS 5
COVINGTON, KY
ERLANGER, KENTUCKY

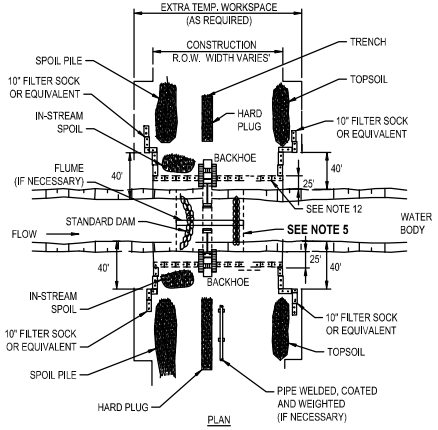
REF. DWG(S)

SHEET(S) 1 OF X	DWG SCALE AS NOTED
DWG DATE 04/05/2024	SUPERSEDED —

DRAWING NUMBER: PNG -C-043-0002015
REVISION: B
C/ERLANGER/AM07

NOTES:

1. METHOD APPLIES TO WATERBODIES WHERE DOWNSTREAM SILTATION MUST BE AVOIDED. FLUMES ARE GENERALLY NOT RECOMMENDED FOR USE ON WATERBODIES WITH A BROAD UNCONFINED CHANNEL, PERMEABLE SUBSTRATE, EXCESSIVE DISCHARGE, OR WHERE A SIGNIFICANT AMOUNT OF BED OR BANK ALTERATION IS REQUIRED TO INSTALL FLUMES OR DAMS,
2. SCHEDULE CROSSING DURING LOW FLOW PERIOD IF POSSIBLE.
3. COMPLETE ALL WATERCOURSE ACTIVITIES AS EXPEDIENTLY AS POSSIBLE.
4. NO REFUELING OF MOBILE EQUIPMENT WITHIN 125 FEET OF WATERBODY.
5. **IN STREAM CONSTRUCTION DISTURBANCE LIMITED TO 15' WIDTH.**
6. IN AGRICULTURAL LAND, STRIP TOPSOIL FROM SPOIL STORAGE AREA.
7. IN-STREAM SPOIL TO BE STORED ON BANKS A MINIMUM OF 10 FEET FROM TOP OF THE BANK.
8. LEAVE HARD PLUGS AT THE STREAM BANK EDGE UNTIL JUST PRIOR TO PIPE INSTALLATION.
9. IF FLUME METHOD IS UTILIZED, SIZE FLUME TO HANDLE 150% ANTICIPATED FLOWS. INSTALL FLUME IN WATERCOURSE AND MAINTAIN CORRECT ALIGNMENT UNTIL REMOVED.
10. CONSTRUCT UPSTEAM DAM FOLLOWED BY DOWNSTREAM DAM, INSTALL A FLANGE ON UPSTREAM END OF FLUME AND SEAL TO SUBSTRATE WITH SANDBAGS AND POLYETHYLENE LINER WHERE NECESSARY TO ENSURE A WATER TIGHT BARRIER. "KEY" DAMS INTO BANKS OR CONSTRUCT SECONDARY DAM, IF NECESSARY.
11. PUMP STREAM CHANNEL BETWEEN DAMS, IF NECESSARY. DISCHARGE WATER THROUGH A DEWATERING STRUCTURE AND ONTO A STABLE WELL VEGETATED AREA TO PREVENT EROSION AND SEDIMENTATION. NO HEAVILY SILT-LADEN WATER MAY BE DISCHARGED IN THE STREAM.
12. CONSTRUCT SEDIMENT BARRIERS (FILTER SOCK AND/ OR SILT FENCE) TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERCOURSE, CONSTRUCTED SEDIMENT BARRIERS SHALL EXTEND ALONG THE SIDES OF THE STOCKPILES AND THE ENDS OF DAMS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
13. COMPLETE PREFABRICATION OF IN-STREAM PIPE SECTION AND WEIGHT PIPE AS NECESSARY PRIOR TO COMMENCEMENT OF IN-STREAM ACTIVITY.
14. TRENCH THROUGH WATERCOURSE. INSTALL TEMPORARY (SOFT) PLUGS. IF NECESSARY, TO CONTROL WATER FLOW AND TRENCH SLOUGHING.
15. MAINTAIN STREAM FLOW, IF PRESENT, THROUGH FLUME OR PUMP THROUGHOUT CROSSING CONSTRUCTION.
16. LOWER-IN PIPE, INSTALL TRENCH PLUG AND BACKFILL IMMEDIATELY.
17. BACKFILL WITH NATIVE MATERIAL.
18. RESTORE WATERCOURSE CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
19. RESTORE STREAM BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.

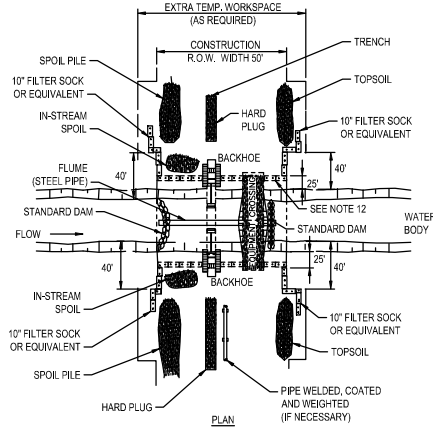


EPHEMERAL STREAM OPEN CUT DETAIL

SCALE:N.T.S.

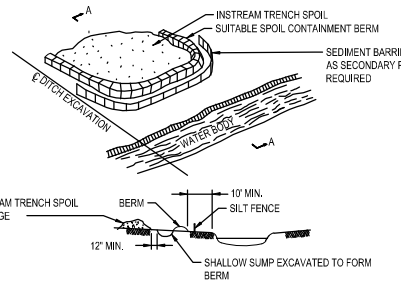
NOTES:

1. METHOD APPLIES TO WATERBODIES WHERE DOWNSTREAM SILTATION MUST BE AVOIDED. FLUMES ARE GENERALLY NOT RECOMMENDED FOR USE ON WATERBODIES WITH A BROAD UNCONFINED CHANNEL, PERMEABLE SUBSTRATE, EXCESSIVE DISCHARGE, OR WHERE A SIGNIFICANT AMOUNT OF BED OR BANK ALTERATION IS REQUIRED TO INSTALL FLUMES OR DAMS,
2. SCHEDULE CROSSING DURING LOW FLOW PERIOD IF POSSIBLE.
3. COMPLETE ALL WATERCOURSE ACTIVITIES AS EXPEDIENTLY AS POSSIBLE.
4. NO REFUELING OF MOBILE EQUIPMENT WITHIN 125 FEET OF WATERBODY.
5. **CONSTRUCTION ROW WIDTH LIMITED TO 50' FOR OPEN CUT CROSSING AND TEMPORARY EQUIPMENT CROSSING INSTALLATION.**
6. IN AGRICULTURAL LAND, STRIP TOPSOIL FROM SPOIL STORAGE AREA.
7. IN-STREAM SPOIL TO BE STORED ON BANKS A MINIMUM OF 10 FEET FROM TOP OF THE BANK.
8. LEAVE HARD PLUGS AT THE STREAM BANK EDGE UNTIL JUST PRIOR TO PIPE INSTALLATION.
9. SIZE FLUME TO HANDLE 150% ANTICIPATED FLOWS. INSTALL FLUME IN WATERCOURSE AND MAINTAIN CORRECT ALIGNMENT UNTIL REMOVED.
10. CONSTRUCT UPSTEAM DAM FOLLOWED BY DOWNSTREAM DAM, INSTALL A FLANGE ON UPSTREAM END OF FLUME AND SEAL TO SUBSTRATE WITH SANDBAGS AND POLYETHYLENE LINER WHERE NECESSARY TO ENSURE A WATER TIGHT BARRIER. "KEY" DAMS INTO BANKS OR CONSTRUCT SECONDARY DAM, IF NECESSARY.
11. PUMP STREAM CHANNEL BETWEEN DAMS, IF NECESSARY. DISCHARGE WATER THROUGH A DEWATERING STRUCTURE AND ONTO A STABLE WELL VEGETATED AREA TO PREVENT EROSION AND SEDIMENTATION. NO HEAVILY SILT-LADEN WATER MAY BE DISCHARGED IN THE STREAM.
12. CONSTRUCT SEDIMENT BARRIERS (FILTER SOCK AND/ OR SILT FENCE) TO PREVENT SILT LADEN WATER AND SPOIL FROM FLOWING BACK INTO WATERCOURSE, CONSTRUCTED SEDIMENT BARRIERS SHALL EXTEND ALONG THE SIDES OF THE STOCKPILES AND THE ENDS OF DAMS. BARRIERS MAY BE TEMPORARILY REMOVED TO ALLOW CONSTRUCTION ACTIVITIES BUT MUST BE REPLACED BY THE END OF EACH WORK DAY.
13. COMPLETE PREFABRICATION OF IN-STREAM PIPE SECTION AND WEIGHT PIPE AS NECESSARY PRIOR TO COMMENCEMENT OF IN-STREAM ACTIVITY.
14. TRENCH THROUGH WATERCOURSE. INSTALL TEMPORARY (SOFT) PLUGS. IF NECESSARY, TO CONTROL WATER FLOW AND TRENCH SLOUGHING.
15. MAINTAIN STREAM FLOW, IF PRESENT, THROUGH FLUME THROUGHOUT CROSSING CONSTRUCTION.
16. LOWER-IN PIPE, INSTALL TRENCH PLUG AND BACKFILL IMMEDIATELY.
17. BACKFILL WITH NATIVE MATERIAL.
18. RESTORE WATERCOURSE CHANNEL TO APPROXIMATE PRE-CONSTRUCTION PROFILE AND SUBSTRATE.
19. RESTORE STREAM BANKS TO APPROXIMATE ORIGINAL CONDITION AND STABILIZE, AS REQUIRED.



INTERMITTENT STREAM OPEN CUT DETAIL

SCALE:N.T.S.



SECTION A-A

NOTES:

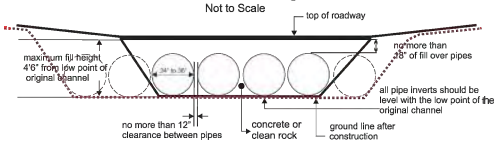
1. SOIL CONTAINMENT BERMS ARE TO BE USED WHERE INSTREAM TRENCH SPOIL COULD REENTER THE WATERCOURSE DIRECTLY OR INDIRECTLY AND WITH SIMULTANEOUS UTILIZATION OF SEDIMENT BARRIERS IF REQUIRED.
2. MATERIAL USED FOR THE CONTAINMENT BERM SHOULD BE A MINIMUM OF 10 FT. FROM THE WATERS EDGE. IT SHOULD BE KEPT TO A HEIGHT WHICH REMAINS STABLE DURING THE CONSTRUCTION PERIOD.
3. CARE SHOULD BE TAKEN THAT THE SPOIL PILE DOES NOT OVERTOP THE CONTAINMENT BERM.
4. THE CONTAINMENT BERM SHOULD BE DISMANTLED AND THE SITE RESTORED TO THE ORIGINAL CONDITION UPON COMPLETION OF THE WATER CROSSING.
5. WHERE POSSIBLE, RIPARIAN VEGETATION SHALL BE LEFT IN PLACE.
6. STAGED MOVEMENT OF INSTREAM SPOIL MAY BE REQUIRED IF QUANTITIES ARE EXCESSIVE.
7. CARE AND ATTENTION MUST BE TAKEN TO ENSURE SPOIL CONTAINMENT BERMS ARE MAINTAINED.
8. FULL CONSIDERATION FOR OVERALL SLOPE STABILITY IS REQUIRED WHEN SELECTING A SPOIL CONTAINMENT LOCATION.

TYPICAL TEMPORARY SOIL CONTAINMENT BERM FOR WATERBODY TRENCH SPOILS

SCALE:N.T.S.

Standard Drawing

Not to Scale



Notes:

1. This is a conceptual drawing. The number and size of pipes and other details will vary depending on specific site conditions.
2. The pipes and backfill must be contained within the stream channel as shown above. During the construction of the approaches and access roadway across the floodplain, unstable and unconsolidated materials unsuitable for roadways may be excavated and replaced with riprap, crushed stone, or other stable road construction materials. This may only be done, however, with the following provisions: (1) the disposal of excess, unconsolidated materials thus excavated must be outside of the floodplain and (2) the finished surface of the completed road may be no more than three inches (3") above the pre-construction surface of the floodplain at any point beyond the top of banks.

LOW-WATER CROSSING

SCALE: N.T.S.

FOR PERMITTING PURPOSES ONLY

NOTES:

1. ALL SEDIMENT RELEASES BEYOND THE SITE PERIMETER CONTROLS AND SPILLS REGARDLESS OF AMOUNT OR LOCATION ARE TO BE IMMEDIATELY REPORTED TO THE DUKE ENERGY ENVIRONMENTAL FIELD PROFESSIONAL. IF THE DUKE ENERGY ENVIRONMENTAL PROFESSIONAL CANNOT BE REACHED, THE DUKE ENERGY SPILL HOTLINE IS TO BE CALLED AT 1-800-527-3853.

STATE OF KENTUCKY
JOSHUA FUELLING
37288
LICENSED PROFESSIONAL ENGINEER
2024.05.21 08:43:53-05'00'
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NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
A	04/26/2024	ISSUED FOR 60% DESIGN REVIEW	MDM	JMP	AMP
B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

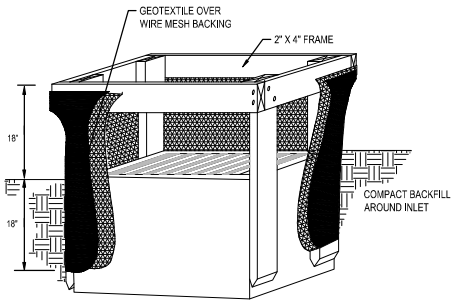
DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
ENVIRONMENTAL NOTES AND DETAILS 1
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)

SHEET(S) 1 OF X	DWG SCALE AS NOTED
DWG DATE 04/05/2024	SUPERSEDED —

DRAWING NUMBER: PNG -C-043-0002023
REVISION: B
C/ERLANGER/AM07



SECTION

INSTALLATION:

1. CONSTRUCT PRIOR TO UPSLOPE LAND DISTURBANCE.
2. CONSTRUCT WOODEN FRAME FROM 2"X4" LUMBER. DRIVE POSTS 1' INTO THE GROUND AT EACH CORNER DIRECTLY AGAINST THE CONCRETE BOX AND ASSEMBLE THE TOP FRAME WITH AN OVERLAP JOINT SHOWN BELOW. THE TOP FRAME SHALL BE SET AT AN ELEVATION THAT DOES NOT CAUSE PONDED WATER TO BACKUP INTO UNWANTED AREAS.
3. THE WIRE MESH AND GEOTEXTILE SHALL BE TIGHTLY STRETCHED AND FASTENED TO THE FRAME.
4. THE GEOTEXTILE SHALL OVERLAP ACROSS ONE SIDE OF THE INLET SO THE ENDS OF THE CLOTH ARE NOT FASTENED TO THE SAME POST.
5. BACKFILL SHALL BE PLACED IN THE 18" TRENCH AROUND THE INLET IN COMPACTED 6" LAYERS UNTIL THE ELEVATION OF THE TOP OF THE GRATE IS REACHED.

MAINTENANCE:

1. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES ONE-HALF THE HEIGHT OF THE PRACTICE. THE REMOVED SEDIMENT MUST BE STABILIZED AND SHOULD NOT BE PLACED WHERE IT COULD EVENTUALLY BE CONVEYED BACK TO THE INLET VIA SURFACE RUNOFF.
2. REPLACE AND PROPERLY DISPOSE OF DAMAGED SILT FENCE MATERIAL.
3. AREA WHERE SURFACE FLOW HAS CUT UNDER THE SILT FENCE MATERIAL WITHIN THE TRENCH SHALL BE RE-COMPACTED WITH APPROPRIATE MATERIAL (I.E. HIGH CLAY CONTENT)

REMOVAL:

1. PULL OUT ALL SILT FENCE MATERIAL AND STAKES AND PROPERLY DISPOSE OF OFF-SITE.
2. RE-GRADE AREA SEDIMENT HAS ACCUMULATED AS NECESSARY AND ESTABLISH VEGETATION ON ANY RESULTING DISTURBED AREAS.

ALTERNATIVE MANUFACTURED YARD DRAIN INLET PROTECTION PRODUCTS ARE AVAILABLE AND CAN BE USED, BUT ARE SUBJECT TO APPROVAL BY DUKE REPRESENTATIVE.

DROP INLET PROTECTION

SCALE:N.T.S.

INSTALLATION:

1. AASHTO #1 (1.5-3.5 INCH) STONE OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT A MINIMUM 6-INCH THICKNESS FOR LIGHT DUTY USE OR AT LEAST 10-INCH THICKNESS FOR HEAVY-DUTY USE.
2. THE ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS (30-FT MINIMUM ON A SINGLE RESIDENTIAL LOT; 70-FT MINIMUM ELSEWHERE).
3. A GEOTEXTILE SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:

MINIMUM TENSILE STRENGTH	200 lbs.
MINIMUM PUNCTURE STRENGTH	80 psi.
MINIMUM TEAR STRENGTH	50 lbs.
MINIMUM BURST STRENGTH	320 psi.
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EOS < 0.6 mm
PERMEABILITY	1X10-3 cm/sec

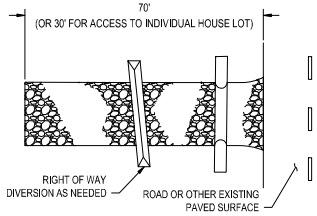
4. IF NEEDED, A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OUT ONTO PAVED SURFACES.
5. IF NEEDED, A WATER BAR SHALL BE CONSTRUCTED TO PREVENT SURFACE WATER FROM FLOWING ALONG THE LENGTH OF THE ENTRANCE UT ONTO PAVED SURFACE.

MAINTENANCE:

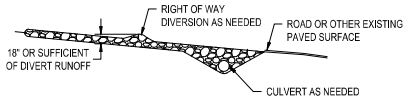
1. TOP DRESS WITH ADDITIONAL STONE AS SITE CONDITIONS DEMAND.
2. REMOVE MUD TRACKED ONTO PUBLIC STREETS IMMEDIATELY VIA SCRAPING OR SWEEPING.
3. ENSURE THE ENDS OF A TEMPORARY CULVERT PIPE (IF UTILIZED) ARE NOT BLOCKED AND THAT THE PIPE IS FREE OF DEBRIS THROUGHOUT.

REMOVAL:

1. THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.
2. PULL OUT ALL CONSTRUCTION ENTRANCE MATERIAL AND PROPERLY DISPOSE OF OFF-SITE. STONE CAN BE BLENDED INTO THE SURROUNDING LANDSCAPE AS SITE CONDITIONS ALLOW.
3. RE-GRADE THE AREA AS NECESSARY AND ESTABLISH VEGETATION ON ANY RESULTING DISTURBED AREAS.



PLAN VIEW

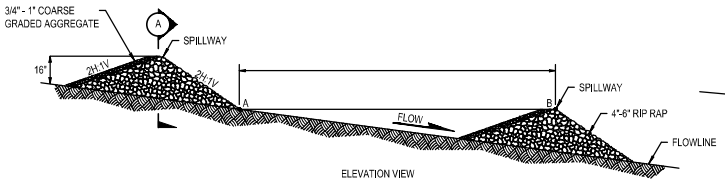


PROFILE VIEW

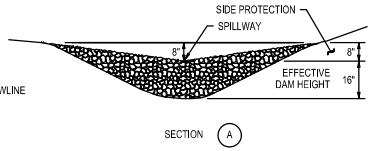
STABILIZING CONSTRUCTION ENTRANCE

SCALE:N.T.S.

SPACE CHECK DAMS THE DISTANCE APART WHERE POINTS "A" AND "B" ARE THE SAME ELEVATION



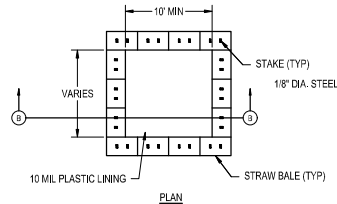
ELEVATION VIEW



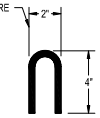
SECTION A

ROCK DITCH CHECK

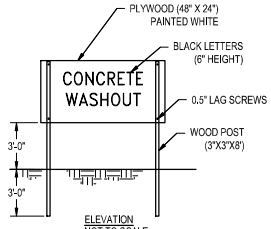
SCALE: N.T.S.



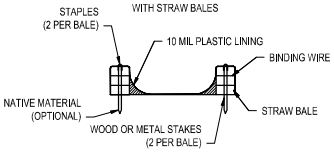
PLAN
NOT TO SCALE
TYPE "ABOVE GRADE"
WITH STRAW BALES



STAPLE DETAIL
NOT TO SCALE



ELEVATION
NOT TO SCALE



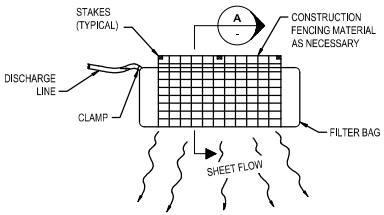
SECTION B-B
NOT TO
SCALE

NOTES:

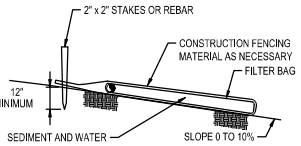
1. CONCRETE WASHOUT WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WASHOUT CONVEYANCE.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED ADJACENT TO THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. WASHOUT PIT MUST BE INSPECTED FREQUENTLY TO ENSURE LINER IS INTACT.
4. ONCE 75% OF ORIGINAL PIT VOLUME IS FILLED OR LINER IS TORN, MATERIAL MUST BE REMOVED AND PROPERLY DISPOSED OF ONCE HARDENED. LINER SHALL BE REPLACED IF TORN.

CONCRETE WASHOUT AREAS

SCALE:N.T.S.



PLAN



SECTION "A-A"

NOTES:

1. INSTALL A DEWATERING GEOTEXTILE FILTER BAG AS DIRECTED BY THE COMPANY'S INSPECTOR TO PREVENT THE FLOW OF HEAVILY SILT LADEN WATER INTO WATERBODIES OR WETLANDS.
2. DISCHARGE SITE SHALL BE WELL VEGETATED AND THE TOPOGRAPHY OF THE SITE SUCH THAT WATER WILL FLOW AWAY FROM ANY WORK AREAS. THE AREA DOWN SLOPE FROM THE DEWATERING SITE MUST BE REASONABLY PLANE OR STABILIZED BY VEGETATION OR OTHER MEANS TO ALLOW THE FILTERED WATER TO CONTINUE AS SHEET FLOW.
3. TO ATTACH THE DISCHARGE HOSE, CUT A CORNER OF THE BAG, INSERT DISCHARGE HOSE, AND SECURE THE HOSE TO THE BAG.
4. A SINGLE FILTER BAG SHOULD NOT BE USED FOR FLOWS GREATER THAN 600 GALLONS PER MINUTE.
5. REPLACE FILTER BAG BEFORE IT IS COMPLETELY FILLED WITH SEDIMENT. MONITOR DISCHARGE TO AVOID OVER PRESSURING DUE TO PLUGGING, WHICH MAY RESULT IN RUPTURE.
6. DISPOSE OF USED FILTER BAG AND SEDIMENT AT A SITE APPROVED BY THE COMPANY'S INSPECTOR.

TYPICAL GEOTEXTILE FILTER BAG FOR DEWATERING

SCALE:N.T.S.

FOR PERMITTING PURPOSES ONLY

NOTES:

1. ALL SEDIMENT RELEASES BEYOND THE SITE PERIMETER CONTROLS AND SPILLS REGARDLESS OF AMOUNT OR LOCATION ARE TO BE IMMEDIATELY REPORTED TO THE DUKE ENERGY ENVIRONMENTAL FIELD PROFESSIONAL. IF THE DUKE ENERGY ENVIRONMENTAL PROFESSIONAL CANNOT BE REACHED, THE DUKE ENERGY SPILL HOTLINE IS TO BE CALLED AT 1-800-527-3853.

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NO.	DATE	REVISION(S) DESCRIPTION	DRAFTING/DESIGN	CHECKER/REVIEWER	APPROVING ENGINEER
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B	05/20/2024	ISSUED FOR PERMITTING	MDM	JMP	JPF

DESCRIPTION	
AREA CODE	-
ACCOUNT NUMBER	-
PROJECT NUMBER	AW6387
DWG TYPE	PIPELINE
SERVICE ID	-
STATION ID	-

DUKE ENERGY. Piedmont Natural Gas

-
AM07 PHASE 3
ENVIRONMENTAL NOTES AND DETAILS 2
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)

SHEET(S)	1 OF X	DWG SCALE	AS NOTED
DWG DATE	04/05/2024	SUPERSEDED	—
DRAWING NUMBER		REVISION	
PNG -C-043-0002024		B	

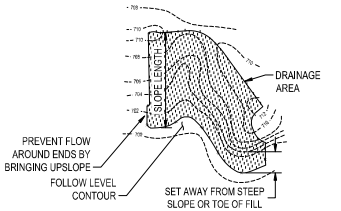
C/ERLANGER/AM07

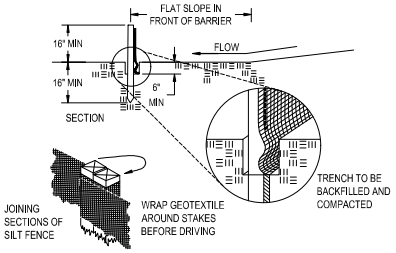
SILT FENCE

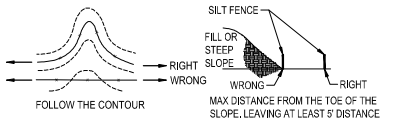
INSTALLATION:
1. CONSTRUCT PRIOR TO UPSLOPE LAND DISTURBANCE.
2. PLACE CONTINUOUS LENGTHS OF SILT FENCE ALONG A CONSISTENT CONTOUR SO AS TO PREVENT THE CONCENTRATION OF RUNOFF AT LOW POINTS IN THE FENCE.
3. TO PREVENT FLOW AROUND ENDS, EXTEND EACH OF A CONTINUOUS LENGTH OF SILT FENCE UPSLOPE (90° TO THE CONTOUR) SO THE ENDS ARE AT A HIGHER ELEVATION OR 20-FEET IN HORIZONTAL DISTANCE, WHICHEVER IS ACHIEVED FIRST.
4. AT A MINIMUM, THE BOTTOM 8-INCHES OF THE SILT FENCE MATERIAL MUST BE PLACED IN A TRENCH (MINIMUM 6-INCH DEPTH) THAT IS CUT WITH A TRENCHER, CABLE LAYING MACHINE, OR OTHER SUITABLE DEVICE. THE TRENCH SHALL NOT BE CONSTRUCTED WITH THE TILT BLADE OF A BULLDOZER.
5. THE TRENCH MUST BE BACKFILLED WITH SOIL AND PROPERLY COMPACTED, WHEN AGGRESSIVELY PULLED UPWARD BETWEEN TWO CONSECUTIVE STAKES. THE MATERIAL SHOULD NOT PULL OUT OF THE GROUND.
6. STAKES (MIN. 32-INCH LENGTH, 2"X2" HARDWOOD OF GOOD QUALITY) MUST BE PALCED ON THE DOWNSLOPE SIDE OF THE SILT FENCE MATERIAL.
7. SILT FENCE MATERIAL MUST BE PULLED TIGHT BETWEEN CONSECUTIVE STAKES TO ENSURE THE FENCE DOES NOT SAG.
8. WHEN IT IS NECESSARY TO JOIN TWO SEPARATE LENGTHS OF SILT FENCE TO FORM A CONTINUOUS RUN, THE END OF TWO SEPARATE LENGTHS MUST BE JOINED TOGETHER BY FIRST OVERLAPPING THEM AND THEN TWISTING THEM TOGETHER AT LEAST 180° PRIOR TO DRIVING THE STAKES INTO THE GROUND.

MAINTENANCE:
1. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES 1/3RD THE HEIGHT OF THE SILT FENCE. THE REMOVED SEDIMENT MUST BE STABILIZED AND SHOULD NOT BE PLACED WHERE IT COULD EVENTUALLY BE CONVEYED BACK TO THE SILT FENCE VIA SURFACE RUNOFF.
2. REPLACE AND PROPERLY DISPOSE OF DAMAGED SILT FENCE MATERIAL.
3. AREAS WHERE SURFACE FLOW HAS CUT UNDER THE SILT FENCE MATERIAL WITHIN THE TRENCH SHALL BE RE-COMPACTED WITH APPROPRIATE MATERIAL (I.E. HIGH CLAY CONTENT).

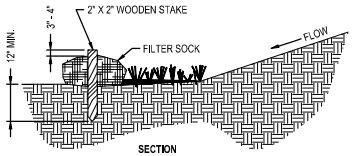
REMOVAL:
1. PULL OUT ALL SILT FENCE MATERIAL AND STAKES AND PROPERLY DISPOSE OF OFF-SITE.
2. RE-GRADE AREA WHERE SEDIMENT HAS ACCUMULATED AS NECESSARY AND ESTABLISH VEGETATION IN ANY RESULTING DISTURBED AREAS.







SILT FENCE
SCALE: N.T.S.



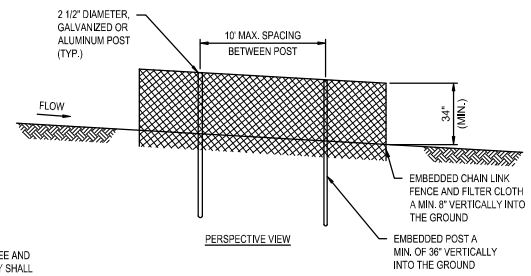
SLOPE	RATIO (H:V)	8"	12"	18"	24"
0% - 2%	10:1 - 20:1	125	250	300	350
10% - 20%	50:1 - 10:1	100	125	200	250
2% - 10%	10:1 - 5:1	75	100	150	200
20% - 33%	5:1 - 2:1		50	75	100
>50%	>2:1		25	50	75

NOTES:
1. MATERIALS - COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH, THEY SHALL BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF A PARTICLES RANGING FROM 3/8" TO 2".
2. FILTER SOCKS INSTALLED IN RIPARIAN OR WETLAND BOUNDARY AREAS SHALL BE CONSTRUCTED OF NATURAL FIBER MESH NETTING AND SUITABLE COMPOST MATERIAL.
3. FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE ABOVE SPECIFICATIONS FOR COMPOST PRODUCTS.

INSTALLATION:
1. FILTER SOCKS WILL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GENERALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MID-SLOPE.
2. FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE, SHALL BE SEEDED AT THE TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION.
3. FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATED FLOW SITUATIONS OR IN RUNOFF CHANNELS.

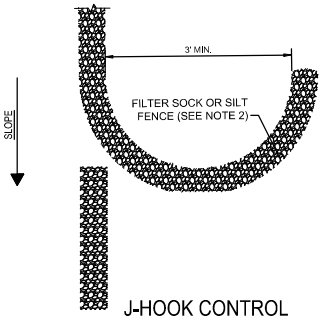
MAINTENANCE:
1. ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
2. REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE PRACTICE.
3. WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE.
4. REMOVAL - FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH AS WAY AS TO FACILITATE AND NOT OBSTRUCT SEEDINGS.

FILTER SOCK
SCALE: N.T.S.



SUPER SILT FENCE DETAIL
SCALE: N.T.S.

IF AND WHERE REQUIRED BY THE LOCAL SOIL CONSERVATION DISTRICT AND / OR THE PROJECT ENGINEER



J-HOOK CONTROL
SCALE: N.T.S.

NOTES:
1. INSTALL J-HOOKS AT LOCATIONS INDICATED ON PLANS OR WHERE COMPANY REPRESENTATIVE DETERMINES NECESSARY.
2. J-HOOK INSTALLATION MATERIAL SHALL MATCH UP-GRADIENT E&SC TYPE (FILTER SOCK / SILT FENCE)
3. UP-GRADIENT E&SC TYPE (FILTER SOCK / SILT FENCE) AND J-HOOK SHALL BE ONE CONTINUOUS LINE.
4. START DOWN-GRADIENT E&SC TYPE AS CLOSE AS POSSIBLE TO THE UP-GRADIENT J-HOOK.
5. SPACING BETWEEN J-HOOKS SHALL BE NO GREATER THAN 100'.

FOR PERMITTING PURPOSES ONLY

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STATE OF KENTUCKY
JOSHUA FUELLING
37260
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AM07 PHASE 3
ENVIRONMENTAL NOTES AND DETAILS 3
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)

SHEET(S) 1 OF X	DWG SCALE AS NOTED
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DRAWING NUMBER: PNG -C-043-0002025
REVISION: B
C/ERLANGER/AM07

SEED SPECIES & MIXTURES	SEEDING RATE (LBS)		SOIL PH	OTHER NOTES
	PER ACRE	PER 1000 SQ. FT		
MIXTURES FOR RELATIVELY FLOT OR SLIGHTLY SLOPING AREAS				
PERENNIAL RYEGRASS	25 TO 35	1	5.6 TO 7.0	APPLY LIME AT 2 TONS PER ACRE IF SOIL PH IS BELOW 5.5; USE 400-800 LB FERTILIZER (10-10-10) ON POOR SOILS.
+ TALL FESCUE	15 TO 30	1		
TALL FESCUE	40 TO 50	1.5	5.6 TO 7.5	
+ LADINO OR WHITE CLOVER	1 TO 2	2 OZ		
MIXTURES FOR STEEP SLOPES, BANKS, CUTS, AND OTHER LOW MAINTAENANCE AREAS				
SMOOTH BROMEGRASS	25 TO 35	1	5.5 TO 7.5	TRACK STEEP SLOPES WITH DOZER UP AND DOWN HILL BEFORE SEEDING.MULCH SLOPES AFTER SEEDING WITH 2 TO 3 TONS OF STRAW OR 6 TONS OF WOOD CHIPS PER ACRE. USE TACKIFIER ON MULCH, DISK IT IN, OR PUNCH IN WITH SHEEP-FOOT, FOR EXTREME SLOPES USE EROSION CONTROL BLANKETS AFTER SEEDING. 20' SPACING ON STAPLES
+ RED CLOVER	10 TO 20	0.5		
TALL FESCUE	40 TO 50	1	5.5 TO 7.5	
+ WHITE OR LADINO CLOVER	1 TO 2	2 OZ		
ORCHARDGRASS	20 TO 30	1	5.6 TO 7.0	
+ RED CLOVER	10 TO 20	0.5		
+ LADINO CLOVER	1 TO 2	2 OZ		
LAWNS AND OTHER HIGH TRAFFIC OR HIGH MAINTENANCE AREAS				
BLUEGRASS	105 TO 140	3	5.5 TO 7.0	DO NOT ESTABLISH GRASSED LAWNS NEAR STREAMS OR WETLANDS - LEAVE A 15 TO 30 FT BUFFER OF NATURAL VEGETATION.
PERENNIAL RYEGRASS (TURF)	45 TO 60	2	5.6 TO 7.0	
+ BLUEGRASS	79 TO 90	2.5		
CHANNELS AND OTHER AREAS OF CONCENTRATED WATER FLOWS				
PERENNIAL RYEGRASS	100 TO 150	3	5.6 TO 7.0	SEED DITCHES AND CHANNELS THICKLY. DO NOT USE FERTILIZER NEAR DITCH OR CHANNEL BOTTOM. USE EROSION CONTROL BLANKETS WHEN CHANNEL BOTTOM SLOOPES EXCEED 3%. SILT CHECK DAMS ARE REQUIRED WHEN SLOPES EXCEED 5%.USE ROCK FOR CHECK DAMS.
+ WHITE OR LADINO CLOVER	45 TO 60	2 OZ		
TALL FESCUE	100 TO 1500	3	5.5 TO 7.5	
+ PERENNIAL RYEGRASS	15 TO 20	0.5		
+ KENTUCKY BLUEGRASS	15 TO 20	0.5		

SITE PREPARATION:

1. SOIL SHOULD BE CAPABLE OF SUPPORTING PERMANENT VEGETATION AND HAVE AT LEAST 25% SILT AND CLAY TO PROVIDE AN ADEQUATE AMOUNT OF MOISTURE HOLDING CPACITY. AN EXCESSIVE AMOUNT OF POROUS SAND WILL NOT CONSISTENTLY PROVIDE SUFFICIENT MOISTURE FOR GOOD GROWTH REGARDLESS OF OTHER SOIL FACTORS.
   - 1.1. PLAN TO SEED ALL AREAS AS SOON AS FINAL GRADE IS REACHED.
   - 1.2. WHERE COMPACTED SOILS OCCUR, THEY SHOULD BE BROKEN UP SUFFICIENTLY TO CREATE A FAVORABLE ROOTING DEPTH OF 6 - 8 INCHES.
   - 1.3. STOCKPILE TOPSOIL TO APPLY TO SITES THAT ARE OTHERWISE UNSUITED FOR ESTABLISHING VEGETATION. APPROXIMATELY 400 CUBIC YARDS OF TOPSOIL PER ACRE ARE NEEDED FOR APPLICATION DEPTHS OF 3 INCHES (~9.3 CUBIC YARDS PER 1,000 SQUARE FEET).

SEEDBED PREPARATION:

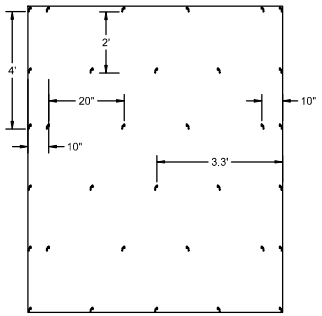
1) SPREAD LIME (IN LIEU OF A SOIL TEST RECOMMENDATION) ON ACID SOIL AND SUBSOIL, AT A RATE OF ONE TON PER ACRE OF AGRICULTURAL GROUND LIMESTONE. FOR BEST RESULTS, TEST THE SOIL—THIS CAN REDUCE THE EXPENSE OF UNNEEDED LIME AND FERTILIZER AND POTENTIAL EXCESS NUTRIENT LOSS THROUGH RUNOFF AND LEACHING.
2) FERTILIZER (IN LIEU OF A SOIL TEST RECOMMENDATION) SHOULD BE APPLIED AT A RATE OF NO MORE THAN 800 POUNDS PER ACRE OF 10-10-10 ANALYSIS. FOR BEST RESULTS. TEST THE SOIL TO DETERMINE FERTILIZER REQUIREMENTS. IN LIMESTONE AREAS WITH STREAMS AND RIVERS IMPACTED BY HIGH ALGAE CONCENTRATIONS, USE 10-0-10 FERTILIZER.
3) WORK THE LIME AND FERTILIZER INTO THE SOIL WITH A DISK HARROW, SPRINGTOOTH HARROW, OR OTHER SUITABLE FIELD EQUIPMENT TO A DEPTH OF 4 INCHES, ON SLOPING LAND, THE FINAL OPERATION MUST BE ON THE CONTOUR.

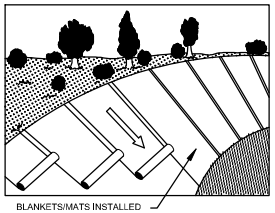
MAINTENANCE:

1) WATER THE SOIL UNTIL THE GRASS IS FIRMLY ESTABLISHED, THIS IS ESPECIALLY NEEDED WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY AND HOT SEASON, OR ON SITES WITH STEEP SLOPES OR OTHER ADVERSE CONDITIONS.
2) INSPECT ALL SEEDED AREAS FOR FAILURES AND MAKE NECESSARY REPAIRS, REPLACEMENTS, RESEEDINGS, AND REMULCHING WITHIN THE PLANTING SEASON.
3) IF STAND IS INADEQUATE, (LESS THAN 85 PERCENT GROUNDCOVER) SEED OVER THE SITE AND FERTILIZE, USING HALF OF THE SEEDING RATE ORIGINALLY APPLIED, AND APPLY MULCH.
4) IF STAND IS MORE THAN 60 PERCENT DAMAGED, REESTABLISH THE STAND. FOLLOW THE ORIGINAL SEEDBED PREPARATION METHODS, SEEDING AND MULCHING RECOMMENDATIONS, AND APPLY LIME AND FERTILIZER AS NEEDED ACCORDING TO A SOIL TEST.

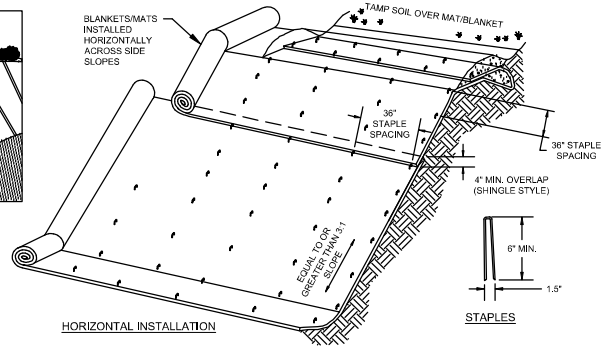
PERMANENT SEEDING

SCALE: N.T.S.





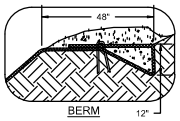
VERTICAL INSTALLATION



HORIZONTAL INSTALLATION

NOTES:

1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. USE ON SIDE SLOPES EXCEEDING A 3:1 SLOPE AND DISTURBED STREAMBANKS.
5. **THE FOLLOWING BLANKET TYPES SHALL BE UTILIZED:**
   - **A. TENSAR NORTH AMERICAN GREEN SC250 ON STREAMBANKS AND SLOPES 1:1 OR GREATER.**
   - **B. SHORT-TERM BIODEGRADABLE DOUBLE-NET STRAW BLANKET ON 3:1 SLOPES OR GREATER. THESE BLANKETS ARE NOT REQUIRED ON SLOPES PROTECTED BY SLOPE BREAKER INSTALLATION.**
   - **C. SHORT-TERM BIODEGRADABLE SINGLE-NET STRAW ON LESSER SLOPES, FLAT FLOODPLAIN, AND WORKSPACE AREAS.**
6. FOR STREAMBANK STABILIZATION;
   - A. TUCK/UNDERLAP BASE OF BLANKET TO PREVENT HIGH WATER FROM REMOVING BLANKET AND SEED.
   - B. STAPLE SPACING MAY NEED TO BE DECREASED.
   - C. PREPARE SUBGRADE PRIOR TO INSTALLING BLANKET BY REMOVING DISPLACED ROCKS AND WOODY DEBRIS.
   - D. USE VERTICAL INSTALLATION. USE STAPLE SPACING SHOWN TO THE LEFT.
   - E. INSTALL OVER ENTIRE 50' ROW AND ANY ADDITIONAL DISTURBED STREAMBANKS. INSTALL VERTICALLY OVER BANK TO A POINT AT LEAST 10' UPSLOPE OF WATER LEVEL.



EROSION CONTROL BLANKETS

SCALE: N.T.S.

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STATE OF KENTUCKY — JOSHUA FUELLING — 37356 — LICENSED PROFESSIONAL ENGINEER
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DUKE ENERGY. Piedmont Natural Gas

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AM07 PHASE 3
ENVIRONMENTAL NOTES AND DETAILS 4
COVINGTON, KY
ERLANGER, KENTUCKY

REF. DWG(S)

SHEET(S) 1 OF X	DWG SCALE AS NOTED
DWG DATE 04/05/2024	SUPERSEDED —

DRAWING NUMBER: PNG -C-043-0002026 | REVISION: B

C/ERLANGER/AM07

Photograph 1: View of Sample Plot (SP)-1 located in palustrine forested (PFO) Wetland (W)-1, facing north.

Photograph 2: View of wetland SP-1, facing east.

Photograph 3: View of wetland SP-1, facing south.

Photograph 4: View of wetland SP-1, facing west.

Photograph 5: View of upland SP-2, facing south.

Photograph 6: View of upland SP-3, facing south.

Photograph 7: View of ephemeral Stream (S)-1, facing northeast.

Photograph 8: View of ephemeral S-2, facing southeast.

Photograph 9: View of intermittent S-3, facing north.

Photograph 10: View of ephemeral S-4, facing southwest.

Photograph 11: View of perennial S-5 (Licking River), facing south.

Photograph 12: View of intermittent S-6, facing west.

Photograph 13: View of intermittent S-7, facing southwest.

Photograph 14: View of intermittent S-8, facing south.

Photograph 15: View of intermittent S-9, facing south.

Photograph 16: View of intermittent S-10, facing south.

Photograph 17: View of ephemeral S-11, facing southwest.

Photograph 18: View of intermittent S-12, facing northeast.

Photograph 19: View of ephemeral S-13, facing north.

Photograph 20: View of ephemeral S-14, facing north.

Photograph 21: View of ephemeral S-15, facing east.

Photograph 22: View of ephemeral S-16, facing west.

Photograph 23: View of intermittent S-17, facing east.

Photograph 24: View of ephemeral S-18, facing west.

Photograph 25: View of ephemeral S-19, facing east.

Photograph 26: View of ephemeral S-20, facing north.

Photograph 27: View of ephemeral S-21, facing southwest.

Photograph 28: View of ephemeral S-22, facing northwest.

Photograph 29: View of ephemeral S-23, facing southeast.

Photograph 30: View of intermittent S-24, facing west.

Photograph 31: View of ephemeral S-25, facing northwest.

Photograph 32: View of ephemeral S-26, facing south.

Photograph 33: View of ephemeral S-27, facing south.

Photograph 34: View of ephemeral S-28, facing west.

Photograph 35: Representative image of upland forest habitat within the Survey Area.

Photograph 36: Representative image maintained lawn habitat within the Survey Area.

Photograph 37: Representative image old field habitat within the Survey Area.

Photograph 38: Representative image new field habitat within the Survey Area.

Photograph 39: Representative image scrub-shrub habitat within the Survey Area.

Photograph 40: Representative view of a potential bat roost tree within the Survey Area.

Photograph 41: Representative view of a potential bat roost tree within the Survey Area.

BURNS McDONNELL

June 3, 2024

Greg McKay
Chief – North Branch
U.S. Army Corps of Engineers – Louisville District Regulatory Division Office
RDN, Room 752
P.O. Box 59
Louisville, KY 40201-0059

Re: Nationwide Permit Pre-Construction Notification for Section 404/Section 10
AM07 Phase 3 Pipeline Replacement Project
Duke Energy Kentucky, Inc.

Dear Mr. McKay:

Burns & McDonnell, on behalf of Duke Energy, Kentucky Inc. (Duke Energy) submits this request for a preliminary jurisdictional determination and Section 404 Nationwide Permit (NWP)/Section 10 authorization for the AM07 Phase 3 Pipeline Replacement Project (Project) located in Kenton and Campbell Counties, Kentucky. The Project has been designed to avoid and minimize impacts to wetlands and other water bodies and meets the conditions for authorization under an NWP 12 – Oil or Natural Gas Pipeline Activities. We request agency review of the enclosed permit application and confirmation of NWP applicability.

AM07 Phase 3 is a 24-inch natural gas pipeline. In order to upgrade aging infrastructure, the project proposes to replace 15,530 feet (approximately 2.94 miles) of 24-inch-diameter steel pipeline (AM07), approximately 3,220 feet of 20-inch-diameter pipeline (UL06) and 820 feet of 8-inch-diameter pipeline (UL16). Approximately 18,478 feet (3.5 miles) of 24-inch high pressure distribution will be relocated from a new Covington Station to a tie-in on the east side of I-275/I-9. In addition to the AM07 24-inch relocation efforts, relocation is required for the UL06 tie-in (1,425 feet) and UL16 tie-in (550 feet) on the west and east side of the line.

Efforts have been made to avoid and minimize impacts to waters of the U.S. and sensitive species and habitat to the extent practicable. A wetland delineation was completed, and the results are included with this application (Attachment 4). During the environmental field survey, a much larger survey area was evaluated to capture data within both preferred and alternate routes. One wetland (PFO), one open water pond and 28 streams (perennial, intermittent, ephemeral) were identified within the Survey Area. It is Burns & McDonnell's professional opinion that one wetland and ten streams are considered jurisdictional. Photos documenting existing habitat and resources are included with this application as Attachment 7.

Temporary impacts to waters of the U.S. are proposed and are associated with temporary construction crossings necessary to access the pipeline ROW and adjacent workspaces. Permanent impacts to waters of the U.S. have been avoided. Temporary impacts are unavoidable; however, impacts have been minimized to the maximum extent practicable. The project proposes

530 West Spring Street \ Suite 100 \ Columbus, OH 43215
O 614-453-7833 \ burnsmcd.com

to temporarily impact a total of 715 linear feet (0.125 acre) of eleven intermittent and ephemeral streams. Of the eleven streams with proposed impacts, seven of those streams are considered jurisdictional streams (intermittent) with 450 linear feet of proposed impact. Information on these impacts is included in the attached permit application form and other attachments. Temporary impacts to jurisdictional streams may include excavation to the pipeline elevation crossing, placement of culverts, timber mats and clean fill rock for vehicles and equipment, and tree and vegetation clearing activities within the pipeline easement and temporary workspace located adjacent to the streams. Best management practices will be employed to keep any sediment from the banks from entering the channels.

In January 2024, Burns & McDonnell conducted initial Project coordination with the U.S. Fish and Wildlife Service (USFWS) Kentucky Field Office and Kentucky Department of Fish and Wildlife Resources (KDFWR), and agency response letters are included with this application (Attachment 3). Burns & McDonnell received a response from the USFWS and KDFWR in February and March 2024, regarding the Project.

USFWS response stated that that they have no comments at this time, and to refer species listed in the official IPaC species list obtained from the IPaC website. The Kentucky state-wide determination key was completed, and the letter is attached with this permit application along with the official IPaC (Attachment 4). The Indiana bat and northern long-eared bat determination keys will be completed following submittal of a bat mist net study plan and determination letters will be provided.

KDFWR indicated that the following federal listed species are recorded within ten miles of the Project: five federally listed mussel species, one federally listed fish species (federal listed tuxedo darter), one federally listed reptile species (federal potentially threatened alligator snapping turtle), and three federally listed bat species. The KDFWR also indicated that the following state listed species are recorded within one mile of the Project: five bird species (state endangered red-breasted nuthatch), one bat species (state threatened tri-colored bat), two amphibian species. Finally, the KDFWR stated that no trout streams, fish spawning areas, sensitive waterways, wildlife management areas, natural lands, or other protected areas are located within the Project footprint or one mile.

Regarding mussel species, the KDFWR indicated that no records of mussel species were found within Licking River near the area of concern, therefore, it is unlikely that the proposed Project will significantly affect these species.

Regarding bat species, the KDFWR requests coordination with USFWS KFO regarding tree removal activities. Due to the presence of federally listed bat species near the Project, USFWS may have seasonal clearing requirements.

During the environmental field survey, Burns & McDonnell conducted a search for potential listed species suitable habitat. Licking River may contain suitable habitat that could support listed mussel species; however, the Project proposes to bore under the river with no in-water work activities planned. Coordination with KDFWR indicated that no records for mussel species were found within the Licking River near the Survey Area. Several intermittent streams may be temporarily impacted during project construction activities. These stream banks were searched for mussel shells, and none were found. At this time, it is anticipated that no adverse impacts to mussel species are anticipated within Licking River or other streams onsite. The Kentucky state-wide determination key was completed, and the letter is attached with this permit application along with the official IPaC (Attachment 4). The determination letter issued a may effect call for listed mussel species. The Indiana bat and northern long-eared bat determination keys will be completed following submittal of a bat mist net study plan and determination letters will be provided. Potential habitat was noted that could support several listed species of birds during the winter and migratory seasons. However, given the mobility of these species it is unlikely any adverse impacts would occur to these species.

Burns & McDonnell assessed forested habitat located throughout the Survey Area. Multiple potential bat roost habitat trees were identified within the forested portions of the Survey Area (Attachment 4). A bat mist net survey will be conducted in June 2024 and a report documenting findings can be provided. Both the USFWS and KDFWR note the potential presence of listed bat species near the project. Tree clearing activities are recommended during the winter season in order to avoid impacts to species. The Survey Area consists primarily of upland forest habitat, upland disturbed grassland and commercial/residential areas with lack of suitable habitat for the other listed species.

A cultural resources desktop review was completed by Burns & McDonnell in November 2023. There are seven historic resources in close proximity to the Project, but due to the nature of the Project, they are unlikely to be adversely impacted. There are 31 archaeological sites recorded within 2 km of the Project. Although none are mapped within the Project corridor, one mound site is mapped within 60 feet. The accuracy of the mapping is unknown, however, so a detailed archaeological survey of that area is recommended. Additionally, survey of any areas not covered by previous cultural resource investigations will likely be required by KHC. A cultural resources field survey is planned for June 2024 and a report documenting the findings of the survey can be provided.

Greg McKay
U.S. Army Corps of Engineers – Louisville District Regulatory Division Office
June 3, 2024
Page 4

The following documents are attached to support this preliminary jurisdictional determination request and application. Please refer to Figure 1a included with this transmittal letter that identifies the preferred pipeline route centerline and environmental survey area corridor.

- Attachment 1: Application for Department of the Army Permit Form and Supplemental Information Sheet
- Attachment 2: Resource Impact Tables
- Attachment 3: USFWS KDFWR Consultation
- Attachment 4: Wetland Delineation Report for the AM07 Phase 3 Pipeline Replacement Project
- Attachment 5:Vicinity Map
- Attachment 6: Design Drawings
- Attachment 7: Survey Area Photographs

If you have any questions or need any additional information, please don't hesitate to contact Brooke Harrison by telephone at (216) 527-4781 or by email at bharrison@burnsmcd.com. Your attention to this matter is appreciated.

Sincerely,

Brooke Harrison
Project Manager

Enclosure

cc: Bradley Seiter, Duke Energy
Steve Lane, Duke Energy
James Culbertson, Burns & McDonnell
Brittany Webb, Burns & McDonnell
Joshua Pedersen, Burns & McDonnell

ATTACHMENT 1 – APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT FORM AND SUPPLEMENTAL INFORMATION SHEET

U.S. Army Corps of Engineers (USACE)

NATIONWIDE PERMIT PRE-CONSTRUCTION NOTIFICATION (PCN)

33 CFR 330. The proponent agency is CECW-CO-R.

Form Approved - OMB No. 0710-0003 Expires: 02-28-2022

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority	Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Program of the Corps of Engineers (Corps); Final Rule 33 CFR 320-332.
Principal Purpose	Information provided on this form will be used in evaluating the nationwide permit pre-construction notification.
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 the agency coordination process.
Disclosure	Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

The public reporting burden for this collection of information, 0710-0003, 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 the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. 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 RESPONSE TO THE ABOVE EMAIL.

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	3. DATE RECEIVED	4. DATE 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 - Brad Middle - Last - Seiter	First - Brooke Middle - Last - Harrison
Company - Duke Energy	Company - Burns & McDonnell
Company Title - Senior Project Manager	E-mail Address - bharrison@burnsmcd.com
E-mail Address - brad.seiter@duke-energy.com	
6. APPLICANT'S ADDRESS	**9. AGENT'S ADDRESS**
Address- 139 East 4th Street	Address- 530 West Spring Street, Suite 100
City - Cincinnati State - OH Zip - 45202 Country - USA	City - Columbus State - OH Zip - 43215 Country - USA
7. APPLICANT'S PHONE NOs. with AREA CODE	**10. AGENT'S PHONE NOs. with AREA CODE**
a. Residence b. Business c. Fax d. Mobile	a. Residence b. Business c. Fax d. Mobile
513-287-4415 859-466-6690	380-390-2516

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Burns & McDonnell to act in my behalf as my agent in the processing of this nationwide permit pre-construction notification and to furnish, upon request, supplemental information in support of this nationwide permit pre-construction notification.

Digitally signed by Brad Seiter Date: 2024.05.31 16:24:10 -04'00'

SIGNATURE OF APPLICANT — DATE: 2024-05-31

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME or TITLE (*see instructions*)
AM07 Phase 3 Pipeline Replacement Project

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

13. NAME OF WATERBODY, IF KNOWN (*if applicable*)
S-1, S-3, S-5, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-17

14. PROPOSED ACTIVITY STREET ADDRESS (*if applicable*)
See Attached Wetland Delineation Report

15. LOCATION OF PROPOSED ACTIVITY (*see instructions*)

Latitude	°N	Longitude	°W
39.021061	-84.500642	center of Project	

City: Covington, Taylor Mill, Wilder
State: KY
Zip:

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (*see instructions*)
State Tax Parcel ID
Municipality
Section
Township
Range

17. DIRECTIONS TO THE SITE
From the USACE Louisville District North Branch Office take I-71N and travel approximately 91 miles. Take exit 185 to merge onto I-275 E and travel approximately 5 miles. Take exit 79 for KY-16 toward Pride Pkwy/Taylor Mill/Covington and travel approximately 0.5 miles. Turn right onto KY-16W/Taylor Mill Road and travel 0.2 miles. Turn left onto Taylor Mill Road, turn left onto Meadow Lane. Directions take you to the center of the Project (39.021061, -84.500642). Travel west and east to view the remainder of the routes and station location.

18. IDENTIFY THE SPECIFIC NATIONWIDE PERMIT(S) YOU PROPOSE TO USE
NWP 12-Section 404/Section 10

19. DESCRIPTION OF PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)
Please refer to the attached supplemental information sheet.

20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (*see instructions*)
Please refer to the attached supplemental information sheet.

21. PURPOSE OF NATIONWIDE PERMIT ACTIVITY (*Describe the reason or purpose of the project, see instructions*)
The purpose of the project is to replace most of an existing route consisting of approximately 2.94 miles of 24-inch-diameter steel pipeline (AM07), 3,220 feet of 20-inch pipeline (UL06) and 820 feet of 8-inch pipeline relocation (UL16). Approximately 18,478 feet of 24-inch high pressure distribution will be relocated from a new Covington Station to a tie-in on the east side of I-275/I-9. In addition to the AM07 24-inch relocation efforts, relocation is required for the UL06 tie-in (1,425 feet) and UL16 tie-in (550 feet) on the west and east side of the line.

Construction is scheduled to start April 2025 is be completed by October 2025.

22. QUANTITY OF WETLANDS, STREAMS, OR OTHER TYPES OF WATERS DIRECTLY AFFECTED BY PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)

Acres	Linear Feet	Cubic Yards Dredged or Discharged
Streams=0.125	Streams=715	Streams=142.22; 135

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site.

23. List any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. (*see instructions*)
N/A

24. If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and requires pre-construction notification, explain how the compensatory mitigation requirement in paragraph (c) of general condition 23 will be satisfied, or explain why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required for the proposed activity.
No permanent impacts are proposed and no loss of waters of the U.S., therefore no compensation or mitigation is anticipated.

25. Is any portion of the nationwide permit activity already complete? ☐ Yes ☒ No If Yes, describe the completed work:

26. List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity. (*see instructions*)

Please refer to the attached supplemental information sheet.

27. List any historic properties that have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic property or properties. (*see instructions*)

A cultural resources desktop review was completed by Burns & McDonnell in November 2023. There are seven historic resources in close proximity to the Project, but due to the nature of the Project, they are unlikely to be adversely impacted. There are 31 archaeological sites recorded within 2 km of the Project. Although none are mapped within the Project corridor, one mound site is mapped within 60 feet. The accuracy of the mapping is unknown, however, so detailed archaeological survey of that area is recommended. Additionally, survey of any areas not covered by previous cultural resource investigations will likely be required by KHC. A cultural resources field survey is planned for June 2024 and a report documenting findings of the survey can be provided.

28. For a proposed NWP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, identify the Wild and Scenic River or the "study river":

N/A

29. If the proposed NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, have you submitted a written request for section 408 permission from the Corps district having jurisdiction over that project? ☐ Yes ☐ No

If "yes", please provide the date your request was submitted to the Corps district: N/A

30. If the terms of the NWP(s) you want to use require additional information to be included in the PCN, please include that information in this space or provide it on an additional sheet of paper marked Block 30. (*see instructions*)

N/A

31. Pre-construction notification is hereby made for one or more nationwide permit(s) to authorize the work described in this notification. I certify that the information in this pre-construction notification is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE
		Brooke Harrison Digitally signed by Brooke Harrison Date: 2024.05.31 14:52:19 -04'00'	2024-05-31

The pre-construction notification must be signed by the person who desires to undertake the proposed activity (applicant) and, if the statement in Block 11 has been filled out and signed, the authorized agent.

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.

AM07 Phase 3 - NWP 12 Supplemental Information

Block 19: Description of Proposed Nationwide Permit Activity

The purpose of the project is to replace most of an existing route consisting of approximately 2.94 miles of 24-inch-diameter steel pipeline (AM07), 3,220 feet of 20-inch pipeline (UL06) and 820 feet of 8-inch pipeline relocation (UL16). Approximately 18,478 feet of 24-inch high pressure distribution will be relocated from a new Covington Station to a tie-in on the east side of I-275/I-9. In addition to the AM07 24-inch relocation efforts, relocation is required for the UL06 tie-in (1,425 feet) and UL16 tie-in (550 feet) on the west and east side of the line.

During construction activities eleven temporary stream crossings (S-1, S-3, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-17) will be necessary to access the new pipeline right-of-way and install the new pipe. Most of the streams proposed for temporary impacts have 50 or greater bank disturbance. These streams are located in areas where steep slope installation measures are being taken leading up to and away from the stream requiring 50 feet or greater of bank disturbance. Additionally, the Project proposes to bore under a section of the navigable Licking River (S-5) to install the new pipeline. The Licking River will be crossed utilizing a Horizontal Directional Drill installation method (HDD). The HDD is proposed for a length of approximately 1700’ and will reach a depth of 50’ below the river surface. Bore hole locations are east and west of the Licking River. The bore hole located on the east side of the Licking River is within the 100-year floodplain. A temporary laydown yard is also located along the east side of the river, north of the pipeline and within the 100-year floodplain. No impact will occur to the Licking River; however, this section of Licking River is classified as a navigable water, therefore, information is provided to support a Section 10 permit.

The existing pipeline will be abandoned in place and the new pipe will be installed within the new easement locations. Minor tree and vegetation clearing will be necessary to access the new pipeline easement. Streams will be dammed to utilize a flume bypass. Within temporary stream crossings for S-3, S-7, S-8, S-9, S-10, S-12, and S-17 a temporary equipment crossing will be installed. Multiple culverts of different sizes will be placed within these stream crossings and timber mats will be placed on top. Clean rock will be temporarily placed between the culverts to stabilize the crossing. For S-1, S-11, and S-14 no culverts will be required under the timber matting. Installation of the new pipe will occur by excavating a trench. Spoils from open cutting activities will be temporary sidecast and erosion and sediment controls will be installed along with best management practices (BMPs) to protect spoils and prevent runoff. Temporary workspaces will be located adjacent along both sides of streambanks. These temporary workspaces will involve minor tree and vegetation clearing and will be temporarily matted to reduce impact. Following completion of construction activities, the trench will be backfilled, restored to pre-construction contours, and seeded as appropriate.

Stream S-13 is located within workspace and will be temporarily matted to prevent impact. This stream has 100 feet of temporary disturbance, respectively, and cannot be reduced further due to location of stream within workspace. No wetlands are located within pipeline alignment or workspaces; therefore, no wetland impacts are anticipated. Following completion of construction activities, timber matting will be removed, areas will be restored to pre-construction contours, and seeded as appropriate. Please refer to the impact tables in Attachment 2 and design drawings in Attachment 6 for additional information.

AM07 Phase 3 - NWP 12 Supplemental Information

Block 20: Description of Proposed Mitigation Measures

The Project has been designed to minimally impact streams and avoid impacts to wetlands. A wetland delineation of the project was conducted before final Project design was completed and included a larger survey area to capture data for preferred and alternate routes (Attachment 4). This allowed for the temporary work areas and access road to be designed to avoid and minimize impacts to waters of the U.S. where practicable. Removal of vegetated buffer will be limited to necessary access area and stream buffer will be maintained to the extent practicable. The pipeline will be constructed in a way to maintain flow and allow for dry excavation, and no equipment will be operating within the stream channel. Best management practices will be utilized to minimize erosion. After Project construction, temporary work areas will be returned to pre-construction contours and re-vegetated as appropriate. Because there are no permanent impacts, no compensation or mitigation is anticipated.

Block 22: Quantity of Wetlands, Streams, or Other Types of Waters Directly Affected by Proposed Nationwide Permit Activity

Acres	Linear Feet	Cubic Yards Dredged or Discharged
Streams=0.125	Streams=715	Streams=142.22;135

Block 26: List names of any species listed as endangered or threatened under the ESA that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity.

In January 2024, consultation letters requesting any records of documented species within the Survey Area were sent to USFWS and KDFWR. In February 2024, a response letter from the USFWS Kentucky Field Office (KFO) (Attachment 3) stated that that they have no comments at this time, and to refer species listed in the official IPaC species list obtained from the IPaC website (Appendix D of Attachment 4). The Kentucky state-wide determination key was completed, and the letter is attached with this permit application along with the official IPaC (Attachment 4). The determination letter issued a may effect call for listed mussel species. The Indiana bat and northern long-eared bat determination keys will be completed following submittal of a bat mist net study plan and determination letters will be provided. In March 2024, a response letter from the KDFWR (Attachment 3) indicated that the following federal listed species are recorded within ten miles of the Project: five federally listed mussel species, one federally listed fish species (federal listed tuxedo darter), one federally listed reptile species (federal potentially threatened alligator snapping turtle), and three federally listed bat species. The KDFWR also indicated that the following state listed species are recorded within one mile of the Project: five bird species (state endangered red-breasted nuthatch), one bat species (state threatened tri-colored bat), two amphibian species. Finally, the KDFWR stated that no trout streams, fish spawning areas, sensitive waterways, wildlife management areas, natural lands, or other protected areas are located within the Project footprint or one mile.

Regarding mussel species, the KDFWR indicated that no records of mussel species were found within Licking River near the area of concern, therefore, it is unlikely that the proposed Project will significantly affect these species.

AM07 Phase 3 - NWP 12 Supplemental Information

Regarding bat species, the KDFWR requests coordination with USFWS KFO regarding tree removal activities. Due to the presence of federally listed bat species near the Project, USFWS may have seasonal clearing requirements.

KDFWR recommends that erosion control measures be implemented prior to construction to reduce runoff and minimize impacts to state-listed aquatic species. Avoidance of nylon monofilament blanket-style matting is recommended (use organic coir matting instead) as it can kill wildlife.

During the environmental field survey, Burns & McDonnell conducted a search for potential listed species suitable habitat. Licking River may contain suitable habitat that could support listed mussel species; however, the Project proposes to bore under the river with no in-water work activities planned. Coordination with KDFWR indicated that no records for mussel species were found within the Licking River near the Survey Area. Several intermittent streams are proposed for temporary impact during project construction activities. These stream banks were searched for mussel shells, and none were found. At this time, no adverse impacts to mussel species are anticipated within Licking River or other streams onsite. The Kentucky state-wide determination key was completed, and the letter is attached with this permit application along with the official IPaC (Attachment 4). The determination letter issued a may effect call for listed mussel species. The Indiana bat and northern long-eared bat determination keys will be completed following submittal of a bat mist net study plan and determination letters will be provided. Potential habitat was noted that could support several listed species of birds during the winter and migratory seasons. However, given the mobility of these species it is unlikely any adverse impacts would occur to these species. Please refer to stream and representative habitat photographs in Attachment 7 for more information.

Burns & McDonnell assessed forested habitat located throughout the Survey Area. Multiple potential bat roost habitat trees were identified within the forested portions of the Survey Area (Attachment 4). A bat mist net survey will be conducted in June 2024 and a report documenting findings can be provided. Both the USFWS and KDFWR note the potential presence of listed bat species near the project. Tree clearing activities is recommended during the winter season in order to avoid impacts to species. The Survey Area consists primarily of upland forest habitat, upland disturbed grassland and commercial/residential areas with lack of suitable habitat for the other listed species.

ATTACHMENT 2 – IMPACT TABLES

ATTACHMENT 2

AM07 Phase 3 Pipeline Replacement Project – Stream Impacts

Stream Number	Stream Name	Feature Type	Preliminary Jurisdictional Determination	Impacts					Impact Duration	Impact Cause
				Linear Feet	Width	Acres	Cubic Yards of Fill	Cubic Yards of Dredge *		
1	Unnamed Tributary	Ephemeral	Non-Jurisdictional	110	5	0.013	0	7.41	Temporary	Open cut trench (15') with temporary timber matting for workspace and access (95'). No culverts or fill in stream. Timber mats will be removed post-construction.
2	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
3	Unnamed Tributary	Intermittent	Jurisdictional	50	9	0.010	15	13.33	Temporary	Open cut trench with temporary timber mat and culvert crossing. Timber mats and culverts will be removed post-construction.
4	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
5	Licking River	Perennial	Jurisdictional	0	0	0	0	0	No Impact; New Pipeline will HDD under stream	HDD 50' under stream, no impact. Section 10 permit required for boring activities under a navigable water.
6	Unnamed Tributary	*Intermittent* **	Jurisdictional	0	0	0	0	0	No Impact	N/A

ATTACHMENT 2

Stream Number	Stream Name	Feature Type	Preliminary Jurisdictional Determination	Impacts					Impact Duration	Impact Cause
				Linear Feet	Width	Acres	Cubic Yards of Fill	Cubic Yards of Dredge *		
7	Unnamed Tributary	Intermittent	Jurisdictional	150	10	0.034	16.67	14.81	Temporary	Open cut trench (50') with temporary timber matting for workspace (100') and culvert crossing. Timber mats and culverts will be removed post-construction.
8	Unnamed Tributary	Intermittent	Jurisdictional	50	10	0.012	16.67	14.81	Temporary	Open cut trench with temporary timber mat and culvert crossing. Timber mats and culverts will be removed post-construction.
9	Unnamed Tributary	Intermittent	Jurisdictional	50	12	0.014	20	17.78	Temporary	Open cut trench with temporary timber mat and culvert crossing. Timber mats and culverts will be removed post-construction.
10	Unnamed Tributary	Intermittent	Jurisdictional	50	13	0.015	21.67	19.26	Temporary	Open cut trench with temporary timber mat and culvert crossing. Timber mats and culverts will be removed post-construction.
11	Unnamed Tributary	Ephemeral	Non-Jurisdictional	40	5	0.005	0	7.41	Temporary	Open cut trench (15') with temporary timber matting for workspace and access (25'). No culverts or fill in stream. Timber mats will be removed post-construction.

ATTACHMENT 2

Stream Number	Stream Name	Feature Type	Preliminary Jurisdictional Determination	Impacts					Impact Duration	Impact Cause
				Linear Feet	Width	Acres	Cubic Yards of Fill	Cubic Yards of Dredge *		
12	Unnamed Tributary	Intermittent	Jurisdictional	50	13	0.015	21.67	19.26	Temporary	Open cut trench with temporary timber mat and culvert crossing. Timber mats and culverts will be removed post-construction.
13	Unnamed Tributary	Ephemeral	Non-Jurisdictional	100	0	0	0	0	Temporary	Temporary placement of timber mats for workspace over stream with no culverts or fill within stream. Timber mats will be removed post-construction.
14	Unnamed Tributary	Ephemeral	Non-Jurisdictional	15	5	0.002	0	7.41	Temporary	Open cut trench (15'). No culverts or fill in stream.
15	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
16	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
17	Unnamed Tributary	Intermittent	Jurisdictional	50	14	0.005	23.33	20.74	Temporary	Open cut trench with temporary timber mat and culvert crossing. Timber mats and culverts will be removed post-construction.
18	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
19	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
20	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A

ATTACHMENT 2

Stream Number	Stream Name	Feature Type	Preliminary Jurisdictional Determination	Impacts					Impact Duration	Impact Cause
				Linear Feet	Width	Acres	Cubic Yards of Fill	Cubic Yards of Dredge *		
21	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
22	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
23	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
24	Unnamed Tributary	Intermittent	Jurisdictional	0	0	0	0	0	No Impact	N/A
25	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
26	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
27	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
28	Unnamed Tributary	Ephemeral	Non-Jurisdictional	0	0	0	0	0	No Impact	N/A
Total Proposed Impacts to Non-Jurisdictional Streams				**265**		**0.02**	**0**	**22.22**		
Total Proposed Impacts to Jurisdictional Streams				**450**		**0.105**	**135**	**120**		
Total Proposed Stream Impact				**715**		**0.125**	**135**	**142.22**		

*Open cut trench excavation volume is calculated based on the assumption of a 8’ deep channel.

**Stream located outside Project Area.

ATTACHMENT 2

AM07 Phase 3 Pipeline Replacement Project – Wetland/Pond Impacts

Wetland/Pond Number	Wetland Name	Feature Type	Preliminary Jurisdictional Determination	Impacts			Impact Duration	Impact Cause
				Acres	Cubic Yards of Fill	Cubic Yards of Dredge		
1	W-1	PFO	Jurisdictional	0	0	0	No impact	N/A
1	P-1	Open Water	Non-Jurisdictional	0	0	0	No impact	N/A
Total Proposed Impacts to Wetlands/Ponds				**0**	**0**	**0**		

ATTACHMENT 3 – USFWS AND KDFWR CONSULTATION

Harrison, Brooke

From: Bishop, Seth R <seth_bishop@fws.gov>
Sent: Wednesday, February 7, 2024 4:35 PM
To: Harrison, Brooke
Subject: FWS 2024-0037659; AM07 Phase 3 Pipeline Replacement Project, Campbell & Kenton Co., KY

Follow Up Flag: Follow up
Flag Status: Flagged

Brooke,

The KFO does not have any comments on this project at this time. The official species list you obtained from the Service's IPaC website will show you which species should be considered when evaluating potential effects to listed species from the project. When you are ready to evaluate potential effects, you can either use the determination keys on the IPaC website or submit a project package to our office for review. There is guidance on both of these options on our website (https://www.fws.gov/office/kentucky-ecological-services/kentucky-field-office-project-review-guidance).

Thanks for reaching out to our office. Let me know if you have any questions or need additional assistance at this time.

Seth

Seth R. Bishop
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Kentucky Field Office
330 West Broadway, Room 265
Frankfort, KY 40601
(502) 545-4532

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 05/09/2024 12:32:31 UTC
Project Code: 2024-0037659
Project Name: AM07 Phase 3 Pipeline Replacement Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do..

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of

this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
(502) 695-0467

PROJECT SUMMARY

Project Code: 2024-0037659
Project Name: AM07 Phase 3 Pipeline Replacement Project
Project Type: Pipeline - Onshore - Maintenance / Modification - Below Ground
Project Description: The project includes installation of approximately 2.94 miles of 24-inch pipeline.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.02446515,-84.47469053261406,14z

Counties: Campbell and Kenton counties, Kentucky

ENDANGERED SPECIES ACT SPECIES

There is a total of 16 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 5 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS

Gray Bat *Myotis grisescens* — Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- The project area includes potential gray bat habitat.

Species profile: https://ecos.fws.gov/ecp/species/6329
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/6422.pdf

Indiana Bat *Myotis sodalis* — Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
This species only needs to be considered under the following conditions:
- The project area includes 'potential' habitat. All activities in this location should consider possible effects to this species.

Species profile: https://ecos.fws.gov/ecp/species/5949
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/6422.pdf

Northern Long-eared Bat *Myotis septentrionalis* — Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- This species only needs to be considered if the project includes wind turbine operations.

Species profile: https://ecos.fws.gov/ecp/species/9045
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/6422.pdf

Tricolored Bat *Perimyotis subflavus* — Proposed Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/10515

CLAMS

NAME	STATUS

Clubshell *Pleurobema clava* — Endangered

Population: Wherever found; Except where listed as Experimental Populations
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3789
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Fanshell *Cyprogenia stegaria* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/4822
General project design guidelines:

NAME	STATUS

https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Longsolid *Fusconaia subrotunda* — Threatened

There is **final** critical habitat for this species. Your location overlaps the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/9880

Northern Riffleshell *Epioblasma rangiana* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/527
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Orangefoot Pimpleback (pearlymussel) *Plethobasus cooperianus* — Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- The species may be affected by projects that significantly impact the Ohio River.

Species profile: https://ecos.fws.gov/ecp/species/1132
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Pink Mucket (pearlymussel) *Lampsilis abrupta* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7829
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Rabbitsfoot *Quadrula cylindrica cylindrica* — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5165
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Ring Pink (mussel) *Obovaria retusa* — Endangered

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:
- The species may be affected by projects that significantly impact the Ohio River.

Species profile: https://ecos.fws.gov/ecp/species/4128
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

Rough Pigtoe *Pleurobema plenum* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6894
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/NH5B6BDARVEFRP24QYQTXBWWZI/documents/generated/5639.pdf

NAME	STATUS
Salamander Mussel *Simpsonaias ambigua* There is **proposed** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6208	Proposed Endangered
Snuffbox Mussel *Epioblasma triquetra* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4135	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

There are 2 critical habitats wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Longsolid *Fusconaia subrotunda* https://ecos.fws.gov/ecp/species/9880#crithab	Final
Salamander Mussel *Simpsonaias ambigua* https://ecos.fws.gov/ecp/species/6208#crithab	Proposed

IPAC USER CONTACT INFORMATION

Agency: Burns & McDonnell
Name: Brooke Harrison
Address: 530 West Spring Street, Suite 100
City: Columbus
State: OH
Zip: 43215
Email bharrison@burnsmcd.com
Phone: 3803902516

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Kentucky Ecological Services Field Office
J C Watts Federal Building, Room 265
330 West Broadway
Frankfort, KY 40601-8670
Phone: (502) 695-0467 Fax: (502) 695-1024
Email Address: kentuckyes@fws.gov

In Reply Refer To: 05/09/2024 12:49:36 UTC
Project code: 2024-0037659
Project Name: AM07 Phase 3 Pipeline Replacement Project

Subject: Consistency letter for the project named 'AM07 Phase 3 Pipeline Replacement Project' for specified threatened and endangered species that may occur in your proposed project location consistent with the Kentucky Determination Key (DKey)

Dear Brooke Harrison:

The U.S. Fish and Wildlife Service (Service) received on **May 09, 2024** your effect determination(s) for the 'AM07 Phase 3 Pipeline Replacement Project' (Action) using the Kentucky (DKey) within the Information for Planning and Consultation (IPaC) system. The Service developed this system in accordance with the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based on your answers and the assistance of the Service's Kentucky DKey, you made the following effect determination(s) for the proposed Action:

Species	**Listing Status**	**Determination**
Clubshell (*Pleurobema clava*)	Endangered	May affect
Fanshell (*Cyprogenia stegaria*)	Endangered	May affect
Gray Bat (*Myotis grisescens*)	Endangered	May affect
Longsolid (*Fusconaia subrotunda*)	Threatened	May affect
Northern Riffleshell (*Epioblasma rangiana*)	Endangered	May affect
Orangefoot Pimpleback (pearlymussel) (*Plethobasus cooperianus*)	Endangered	May affect
Pink Mucket (pearlymussel) (*Lampsilis abrupta*)	Endangered	May affect
Rabbitsfoot (*Quadrula cylindrica cylindrica*)	Threatened	May affect
Ring Pink (mussel) (*Obovaria retusa*)	Endangered	May affect
Rough Pigtoe (*Pleurobema plenum*)	Endangered	May affect
Snuffbox Mussel (*Epioblasma triquetra*)	Endangered	May affect

Consultation Status

May Affect Determinations: Species with May Affect determinations are those for which the DKey was unable to provide a conclusion or those for which you were either unsure about the determination or you chose to make a “may affect” determination. If the DKey was unable to provide a conclusion, this does not necessarily mean that the project is likely to adversely affect the species. If you think the project may affect the species or want additional technical assistance, please follow the instructions in the "Additional Coordination" section below. If a federal action agency chooses to make a "no effect" determination for the species, there is no statutory requirement to request concurrence with that determination; however, the federal action agency should document the supporting information for this determination in their files. This documentation would typically demonstrate a lack of suitable habitat within the action area, show that no impacts to suitable habitat would occur, or provide information that the species is not reasonably certain to occur in the action area even though suitable habitat is present.

The Service recommends that your agency contact the Kentucky Ecological Services Field Office or re-evaluate the Action in IPaC if: 1) the scope, timing, duration, or location of the Action changes, 2) new information reveals the Action may affect listed species or designated critical habitat, or 3) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Kentucky Ecological Services Field Office should take place before project changes are final or resources committed.

The following species and/or critical habitats may also occur in your project area and **are not** covered by this conclusion:

- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Northern Long-eared Bat *Myotis septentrionalis* Endangered
- Salamander Mussel *Simpsonaias ambigua* Proposed Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

To address effects to other federally listed or proposed species and/or their designated critical habitat, you can request project-specific review by following the instructions in the “Next Steps” section of your species list letter, or you may use another determination key, if available.

Additional Coordination

To request additional technical assistance or consultation, please email your request to KentuckyES@fws.gov and include relevant site-specific information. The Kentucky Ecological Services Field Office will respond within 30 days of your submittal.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

AM07 Phase 3 Pipeline Replacement Project

2. Description

The following description was provided for the project 'AM07 Phase 3 Pipeline Replacement Project':

> The project includes installation of approximately 2.94 miles of 24-inch pipeline.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.02446515,-84.47469053261406,14z

QUALIFICATION INTERVIEW

1. Will the proposed Action involve Federal funding, permitting, or authorization, or will it be carried out by a Federal Agency?

   Yes

2. Are you the lead Federal Action Agency or designated non-federal representative requesting concurrence on behalf of the lead Federal Action Agency?

   Yes

3. [Hidden Semantic] Does the action area intersect critical habitat?

   Automatically answered
   Yes

4. Will the proposed Action involve construction or operation of wind turbines?

   No

5. Will the proposed Action involve blasting (other than a fireworks display)?

   No

6. Will the proposed Action involve a new point source discharge from a facility other than a water treatment plant or storm water system?

   No

7. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g. leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

   No

8. Will the proposed Action include the removal, replacement, repair and/or maintenance of an existing bridge or culvert?

   No

9. Will the proposed Action involve perennial stream loss that would require an individual permit under 404 of the Clean Water Act?

   No

10. Will the proposed Action involve discharge of sediment into a stream?

    No

11. Does the Action Area contain any caves (including their associated sinkholes, fissures, or other karst features), rockshelters, underground quarries, or abandoned mine portals (including associated underground workings)?

    No

12. [Hidden Semantic] Does the Action Area intersect the Kentucky AOI of the gray bat?

    Automatically answered
    Yes

13. Will the proposed Action involve drilling or boring?

    Yes

14. Prior to the drilling or boring, will the project proponent conduct appropriate preliminary evaluations to ensure that proposed drilling or boring is unlikely to encounter karst voids or other voids?

    Yes

15. Will the project proponent contact the Field Office if potentially suitable gray bat hibernacula or roosting habitat is encountered during drilling or boring?

    No

16. Will the proposed Action involve a new point source discharge into a stream or change an existing point source discharge (e.g., outfalls; leachate ponds)?

    No

17. Will the proposed Action include any activities that would alter stream flow, such as hydropower energy production, impoundments, intake structures, diversion structures, and/or turbines?

    No

18. Will the proposed Action involve dredging or in-stream gravel mining?

    No

19. Will the proposed Action involve resource extraction (e.g., mining, oil/gas, logging), including exploration activities?

    No

20. Will the proposed Action involve stream impacts (perennial or intermittent) that would require an individual permit under 404 of the Clean Water Act?

    No

21. Will the proposed Action involve activities that would contribute measureable nonpoint source pollution to streams (e.g., sediment, nutrients, etc.)? *See the following EPA webpage for more examples of nonpoint source pollution and activities that can produce it: https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution*

    No

22. Will the proposed Action involve new or increased use of public recreational OHV trails?

    No

23. Will the proposed Action disturb the channel or bank of a perennial or intermittent stream?

    Yes

24. [Hidden Semantic] Does the project area intersect the AOI of the snuffbox?

    Automatically answered
    Yes

25. [Hidden Semantic] Does the project area intersect the AOI of the clubshell (*Pleurobema clava*)?

    Automatically answered
    Yes

26. [Hidden Semantic] Does the project area intersect the AOI of the fanshell (*Cyprogenia stegaria*)?

    Automatically answered
    Yes

27. [Hidden Semantic] Does the project area intersect the AOI of the northern riffleshell (*Epioblasma torulosa rangiana*)?

    Automatically answered
    Yes

28. [Hidden Semantic] Does the project area intersect the AOI of the orangefoot pimpleback (*Plethobascus cooperianus*)?

    Automatically answered
    Yes

29. [Hidden Semantic] Does the project area intersect the AOI of the pink mucket (*Lampsilis abrupta*)?

    Automatically answered
    Yes

30. [Hidden Semantic] Does the project area intersect the AOI of the rabbitsfoot (*Theliderma (= Quadrula) cylindrica*)?

    Automatically answered
    Yes

31. [Hidden Semantic] Does the project area intersect the AOI of the ring pink (*Obovaria retusa*)?

    Automatically answered
    Yes

32. [Hidden Semantic] Does the project area intersect the AOI of the rough pigtoe (*Pleurobema plenum*)?

    Automatically answered
    Yes

33. [Hidden Semantic] Does the project area intersect the AOI of the longsolid?

    Automatically answered
    Yes

IPAC USER CONTACT INFORMATION

Agency: Burns & McDonnell
Name: Brooke Harrison
Address: 530 West Spring Street, Suite 100
City: Columbus
State: OH
Zip: 43215
Email bharrison@burnsmcd.com
Phone: 3803902516

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Army Corps of Engineers

KENTUCKY DEPARTMENT OF FISH & WILDLIFE RESOURCES

Rich Storm
Commissioner

#1 Sportsman's Lane
Frankfort, Kentucky 40601
Phone (502) 564-3400
Fax (502) 564-0506

Brian Clark
Deputy Commissioner

Gabe Jenkins
Deputy Commissioner

March 18, 2024

Burns & McDonnell
Attn: Brooke Harrison, Project Manager
530 West Spring Street, Suite 100
Columbus, Ohio 43215

RE: Project Review Request
AM07 Phase 3 Pipeline Replacement Project
Kenton and Campbell Counties, Kentucky

Dear Ms. Harrison:

The Kentucky Department of Fish and Wildlife Resources (KDFWR) has received your request for an environmental review regarding the proposed AM07 Phase 3 Pipeline Replacement Project in Kenton and Campbell Counties, KY. The proposed project area has been reviewed for impacts wildlife resources and other sensitive areas. The following comments are provided:

KDFWR Records Review:

Our records indicate the following federally listed and proposed listed species occur within ten (10) miles of the proposed project areas. Be advised that the KDFWR does not have the authority to confirm compliance with the Endangered Species Act. Please coordinate with the U.S. Fish and Wildlife Service for specific recommendations and compliance requirements for these federally listed species.

Scientific Name	Common Name	Class	Federal Status
Etheostoma lemniscatum	Tuxedo Darter	Actinopterygii	E
Cyprogenia stegaria	Fanshell	Bivalvia	E
Fusconaia subrotunda	Longsolid	Bivalvia	T
Lampsilis abrupta	Pink Mucket	Bivalvia	E
Plethobasus cyphyus	Sheepnose	Bivalvia	E
Theliderma cylindrica	Rabbitsfoot	Bivalvia	T
Macrochelys temminckii	Alligator Snapping Turtle	Chelonia	PT
Myotis septentrionalis	Northern Long-Eared Bat	Mammalia	T
Myotis sodalis	Indiana Bat	Mammalia	E
Perimyotis subflavus	Tricolored Bat	Mammalia	PE

The following state-listed species were recorded within one (1) mile of the proposed project area:

Scientific Name	Common Name	Class	Federal Status	KSNPC Status
Lithobates pipiens	Northern Leopard Frog	Amphibia	N	S
Plethodon cinereus	Eastern Red-backed Salamander	Amphibia	N	S
Accipiter striatus	Sharp-shinned Hawk	Aves	N	S
Lanius ludovicianus	Loggerhead Shrike	Aves	N	S
Passerculus sandwichensis	Savannah Sparrow	Aves	N	S
Pheucticus ludovicianus	Rose-breasted Grosbeak	Aves	N	S
Sitta canadensis	Red-breasted Nuthatch	Aves	N	E
Perimyotis subflavus	Tricolored Bat	Mammalia	PE	T

The KDFWR recently updated the Kentucky State Wildlife Action Plan (SWAP) under a federal grant from the U.S. Fish and Wildlife Service. The updated SWAP is a user-friendly guide for conservation of species of greatest conservation need (SGCN) in the state. The KDFWR invites you to review the updated SWAP on its website (https://app.fw.ky.gov/kyswap/). Species experts from the public and private sectors helped develop the SWAP by determining which species were rare, vulnerable, declining in population, or for which there was not enough information to determine status, and therefore had the greatest need for conservation actions. The SWAP is intended to provide guidance to developers, regulators, resource agencies, the public, and other stakeholders to conserve SGCN by prioritizing threats and recommending conservation actions for each species. The KDFWR is promoting the use of the SWAP to prevent declines in SGCN thereby preventing the need to list them in the Endangered Species Act. SGCN status does not invoke regulatory restrictions or requirements. However, the KDFWR encourages project sponsors to consider actions that provide conservation benefits to these species such as minimization of habitat encroachment, using buffer areas near projects to provide habitat, or other measures. Please refer to the SWAP for specific conservation actions that may benefit the SGCN identified within one (1) mile that may be compatible with the proposed project:

Scientific Name	Common Name	Class	Federal Status	KSNPC Status
Ambystoma barbouri	Streamside Salamander	Amphibia	N	N
Lithobates pipiens	Northern Leopard Frog	Amphibia	N	S
Plethodon cinereus	Eastern Red-backed Salamander	Amphibia	N	S
Accipiter striatus	Sharp-shinned Hawk	Aves	N	S
Butorides virescens	Green Heron	Aves	N	N
Coccyzus americanus	Yellow-billed Cuckoo	Aves	N	N
Empidonax traillii	Willow Flycatcher	Aves	N	N
Falco sparverius	American Kestrel	Aves	N	N
Gallinago delicata	Wilson's Snipe	Aves	N	N
Hylocichla mustelina	Wood Thrush	Aves	N	N
Lanius ludovicianus	Loggerhead Shrike	Aves	N	S
Melanerpes erythrocephalus	Red-headed Woodpecker	Aves	N	N
Passerculus sandwichensis	Savannah Sparrow	Aves	N	S
Protonotaria citrea	Prothonotary Warbler	Aves	N	N
Scolopax minor	American Woodcock	Aves	N	N
Setophaga cerulea	Cerulean Warbler	Aves	N	N
Setophaga discolor	Prairie Warbler	Aves	N	N

Spiza americana	Dickcissel	Aves	N	N
Spizella pusilla	Field Sparrow	Aves	N	N
Sturnella magna	Eastern Meadowlark	Aves	N	N
Cambarus bartonii cavatus	Appalachian Brook Crayfish	Malacostraca	N	N
Faxonius rusticus	Rusty Crayfish	Malacostraca	N	N
Perimyotis subflavus	Tricolored Bat	Mammalia	PE	T

No trout streams, fish spawning areas, or sensitive waterways were identified as occurring in the project footprint. It is possible that wetlands occur near the project area based on a desktop review of the National Wetlands Inventory Mapping and soil data. Additionally, numerous streams are depicted on topographic maps and hydrologic map data, including the Licking River. An on-site review of the project footprint is recommended. The KDFWR requests that you coordinate the proposed project with the U. S. Army Corps of Engineers (USACE) and the Kentucky Division of Water (KDOW) prior to any work within the waterways or wetland habitats of Kentucky.

There were no wildlife management areas, natural lands, or other protected areas identified in a review of such records within the footprint of the project or within one (1) mile.

KDFWR Comments and Guidance:

The federally listed mussel species are typically found in flowing waters of medium to large rivers in main channels over mud, firm sand, and gravel substrates. No records were found within the Licking River near the area of concern, therefore it is unlikely that the proposed project will significantly affect these species.

The federally listed bat species occur in forests, caves, or mine portals at different times of the year. The Northern Long-Eared Bat and the Tricolored bat typically overwinter in caves or mines and spend the remainder of the year in forested habitats. The Indiana Bat relies on trees for maternity seasons and may use caves or mine portals throughout the year. The KDFWR asks that you coordinate any tree removal activities with the U.S. Fish and Wildlife Service Kentucky Field Office. Due to the presence of federally listed bat species near the project site, the USFWS may have seasonal requirements for removing those trees, especially those greater than 3” diameter-at-breast height (dbh). Removing these trees during the winter months would reduce possible direct impacts to tree-roosting bat species.

To minimize impacts to nearby state-listed and SGCN aquatic species, KDFWR recommends that erosion control measures be developed and implemented prior to construction to reduce siltation into waterways located within/near the project area. Such erosion control measures may include, but are not limited to silt fences, staked straw bales, brush barriers, sediment basins, and diversion ditches. Erosion control measures will need to be inspected regularly and repaired as needed. If blanket-style matting is used for erosion control, please avoid using the nylon monofilament netting as it can entangle and kill wildlife. An alternative blanket style control is organic coir matting, which degrades naturally and provides excellent soil protection and moisture retention for seed germination—as well as controlling erosion runoff without unnecessarily impacting wildlife.

Thank you for coordinating with KDFWR. Please contact Emily Lawson at 502-892-4472 or emilym.lawson@ky.gov if you have further questions or require additional information.

Sincerely,

Emily Lawson
Environmental Branch Coordinator

ATTACHMENT 4 – WETLAND DELINEATION REPORT

May 29, 2024

Mr. Bradley Seiter, P.E.
Senior Project Manager
Natural Gas Major Projects
Duke Energy Kentucky, Inc.
139 E. 4th Street
Cincinnati, OH 45202

Re: Wetland Delineation and Protected Species Report
AM07 Phase 3 Pipeline Replacement Project
Duke Energy Kentucky, Inc.
Burns & McDonnell Project No.: 160357

Dear Mr. Seiter,

Burns & McDonnell was retained by Duke Energy Kentucky, Inc. (Duke Energy) to provide a wetland delineation and protected species habitat assessment for the AM07 Phase 3 Pipeline Replacement Project (Project) located in Kenton and Campbell Counties, Kentucky (Figure 1).

The purpose of this assessment was to identify any wetlands or other waterbodies present within the Project that may be considered Waters of the United States (WOTUS) and subject to regulation by the U.S. Army Corps of Engineers (USACE) under the federal Clean Water Act or by the State of Kentucky. The Project was also assessed for the presence of threatened and endangered species habitat. The following sections provide information on the proposed Project and summarize the results of the wetland delineation and protected species habitat assessment.

INTRODUCTION
The project includes installation of approximately 2.94 miles of 24-inch pipeline with several major crossings, 0.60 miles of 20-inch pipeline and 820-feet of 8-inch pipeline relocation. Approximately 15,530 feet of 24" high pressure distribution will be relocated from a new Covington Station to a tie-in on the east side of I-275/I-9 interchange. In addition to the AM07 24-inch relocation efforts, relocation is required for the UL06 tie-in and UL16 tie-ins on the west and east side of the line. In addition to pipeline and station scope, new MLVs are required for compliance.

The wetland delineation and protected species habitat assessment was conducted within an approximately 133-acre area (Survey Area), encompassing the segments and construction areas.

METHODS
The following discussions summarize the methods used for the review of existing data and the wetland delineation and protected species habitat assessment.

Existing Data Review
Burns & McDonnell reviewed available background information for the Project prior to conducting a site visit. This available background information included the 2022 U.S. Geological Survey (USGS) 7.5 minute topographic maps (Covington, KY and Newport, KY quadrangles), U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, National Agriculture Imagery Program (NAIP) aerial photography (2023), USGS National Hydrography Dataset (NHD), Federal Emergency Management Agency (FEMA) 2011 National Flood Hazard Layer (NHFL), and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) 2019 Soil Survey Geographic (SSURGO) digital data for Kenton and Cambell Counties, Kentucky. Figures 2 and 3 in Appendix A depict this data.

Additionally, a USFWS Information for Planning and Consultation (IPaC) report and review of Kentucky Department of Wildlife Resources (KDFWR) County species lists review (Appendix D) was conducted to review known threatened and endangered species habitats that might be present in the Survey Area.

The presence of environmental resources based only on aerial, NWI, and NHD maps or other background information cannot be assumed to be an accurate assessment of the location and extent of jurisdictional resources and species habitat. Identification criteria differ between the USFWS, USGS, and the USACE. As a result, wetlands, streams or other water resources shown on a NWI or NHD map may not be under the jurisdiction of the USACE, and all USACE-jurisdictional resources are not always included on NWI and NHD maps. Furthermore, potential species habitat cannot be identified without conducting a field visit. Therefore, a field visit was conducted to identify any environmental resources that may be present.

Wetland Delineation
Wetland scientists with Burns & McDonnell completed a wetland delineation of the Survey Area on February 20th and 21st and May 16th, 2024. The Survey Area included the areas where proposed Project activities would occur. The delineation was completed in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual* (1987 Manual) and the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0* (Regional Supplement). The Survey Area was searched for the presence of wetlands, streams, and other waters of the U.S. (WOTUS). Wetlands are identified by the presence of wetland hydrology, a predominance of hydrophytic vegetation, and hydric soils. Streams are identified by the presence of a defined bed and bank and an ordinary high-water mark or evidence of flow. The site was also assessed for the presence of potential habitat capable of supporting protected species.

A sample plot was established at a representative location and a Wetland Determination Data Form from the Regional Supplement was completed to characterize the Survey Area (Appendix B). Locations of sample plots and other identified features were surveyed using a sub-meter-accurate global positioning system (GPS) unit. Photographs were taken onsite and are included in Appendix C.

Protected Species
In November 2023, the USFWS Information for Planning and Consultation (IPaC) report and the KDFWR County Lists (Appendix D) were researched for federal and state protected species present to identify what may be present within and near the Survey Area.

In January 2024, consultation letters requesting any records of documented species within the Survey Area were sent to USFWS and KDFWR. Please refer to Appendix F for agency correspondence letters.

An onsite habitat assessment was performed to identify potential habitat of federally and state-protected species within the Survey Area. A general bat habitat survey to identify potential roost habitat trees (i.e. trees larger than 3 inches in diameter breast height (dbh) that also displayed characteristics such as loose bark, hollows, sloughing, and crevasses) within forested habitat of the Survey Area was conducted. The Survey Area was also assessed for the presence of potential habitat that could support other listed species.

RESULTS

The following sections describe the results of the existing data review and the completed wetland delineation.

Existing Data Review
The existing USGS topographic maps were reviewed to familiarize Burns & McDonnell wetland personnel with the topography and potential locations of wetlands and other waterbodies (Figures 1-2). The USGS topographic maps indicate the Survey Area crosses hills and ridgelines along the Licking River as well as the floodplain on either side of the Licking River. USFWS NWI data depicts two NWI features labeled as freshwater ponds; USGS NHD data depicts fifteen streams located within the Survey Area. FEMA regulated floodway and floodplains are present in the Survey Area (Figure 3) and are associated with the Licking River. Aerial imagery indicates the Survey Area consists of industrial and residential areas (Figures 3 and 4).

The NRCS SSURGO digital data indicates that portions of 15 soil map units are located in the Survey Area. None are included on local and national hydric soil lists (Figure 3). Soil map units identified within the Survey Area are listed below:

- A1D: Alluvial land, steep, (wheeling, 25 to 30 percent slopes, rarely flooded)
- Cg: Chagrin gravelly silty clay loam (sensabaugh 0 to 4 percent slopes, occasionally flooded)
- EdE2: Eden silty clay loam, 20 to 35 percent slopes, eroded
- FcC: Faywood silty clay loam, 6 to 12 percent slopes
- FcD: Faywood silty clay loam, 12 to 20 percent slopes
- HcA: Huntington silty clay loam, 0 to 4 percent slopes, clayey substratum, occasionally flooded
- L1C: Licking silty clay loam, 6 to 12 percent slopes
- LkA: Licking silt loam, 0 to 2 percent slopes
- N1B: Nicholson silt loam, 2 to 6 percent slopes
- N1C: Nicholson silt loam, 6 to 12 percent slopes
- No: Nolin silt loam, 0 to 2 percent slopes, occasionally flooded
- uAsoB: Ashton silt loam, 2 to 6 percent slopes, occasionally flooded
- Ur: Urban land
- W: Water
- WoD: Woolper silty clay loam, 12 to 20 percent slopes

Wetland Delineation and Protected Species Habitat Assessment
On February 20th and 21st and May 16th, 2024 a Burns & McDonnell wetland scientist and GIS specialist conducted a wetland delineation and protected species habitat assessment of the Survey Area and recorded the location and extent of features identified within the Survey Area. Upland habitat within the Survey Area consists primarily of upland forest and maintained grassland largely within residential and commercial areas. Typical vegetation within forest upland habitat consists of common hackberry (*Celtis occidentalis*), honey locust (*Gleditsia triacanthos*), amur honeysuckle (*Lonicera maackii*), black walnut (*Juglans nigra*), wild onion (*Allium canadense*), and northern red oak (*Quercus rubrum*). Typical vegetation within this upland maintained lawn habitat consists of Kentucky bluegrass (*poa pratensis*), English plantain (*Plantago lanceolata*), and common dandelion (*Taraxacum officinale*). Typical vegetation within upland scrub-shrub habitat consists of amur honeysuckle. Typical vegetation within upland old field habitat consists of northern red oak, hawthorn species (*Crataegus spp*.), common teasel (*Dipsacum fullonum*), and Kentucky bluegrass. Typical vegetation within upland new field habitat consists of Kentucky bluegrass and goldenrod species (*Solidago spp*.).

Land cover and delineated features from the site visit are discussed in detail in the Delineated Areas section below.

Delineated Areas

One wetland and 28 streams were identified during the wetland delineation effort. One stream (S-6) was identified outside but immediately adjacent to the Survey Area. The wetland and streams are described by type below, and their locations are shown on Figure 4. The USACE's antecedent precipitation tool (APT) was used to determine if rainfall was within a normal range preceding and during the delineation timeframe (Appendix E). Both February 20 and 21 experienced normal conditions although the overall Braugh Index indicated a mild drought for the region. For May 16, the area experienced wetter than normal conditions although the overall Braugh Index still indicated a mild drought for the region. Ultimately, field conditions were considered normal for the time of year in February and slightly wetter than normal in May.

WETLANDS

Table 1 provides the size and type of each wetland delineated.

Table 1: Type and Size of Wetland Delineated

Wetland Number	Wetland Type[a]	Area of Wetland Delineated (acre)
W-1	PFO	0.01
	Total:	**0.01**

a - Symbols for wetland type: PEM = palustrine emergent wetland, PSS = palustrine scrub-shrub wetland, PFO = palustrine forested wetland

Wetland (W)-1

W-1 is a PFO wetland, totaling 0.01 acres, delineated within the Survey Area (Photographs 1-4). Dominant vegetation within the PFO wetland included fowl manna grass (*Glyceria striata*). Observed indicators of wetland hydrology included drainage patterns (B10), crayfish burrows (C8), and a positive FAC-neutral test (D5). Observed hydric soil indicator was depleted matrix (F3). Data is in the SP-1 determination form.

Mr. Bradley Seiter, P.E.
Duke Energy Kentucky, Inc.
May 29, 2024

STREAMS

Table 2 provides the type and size of each stream delineated.

Table 2: Type and Size of Streams Delineated

Stream Number	Stream Type	Length (feet)	OHWM Width (feet)	OHWM Depth (feet)	RPW[a]	Proposed Crossing Method
S-1	Ephemeral	113	5.0	0.5	No	Open cut trench
S-2	Ephemeral	119	5.0	1.0	No	N/A
S-3	Intermittent	276	5.8	3.0	Yes	Open cut trench
S-4	Ephemeral	162	3.1	1.2	No	N/A
S-5 (Licking River)	Perennial	218	270	12-15 [b]	Yes	HDD
S-6[c]	*Intermittent*	*174*	*10.5*	*3.0*	*Yes*	N/A
S-7	Intermittent	431	7.2	0.3	Yes	Open cut trench
S-8	Intermittent	247	4.0	0.2	Yes	Open cut trench
S-9	Intermittent	263	10.3	1.2	Yes	Open cut trench
S-10	Intermittent	252	6.2	1.1	Yes	Open cut trench
S-11	Ephemeral	210	3.8	1.3	No	Open cut trench
S-12	Intermittent	291	6.5	2.2	Yes	Open cut trench
S-13	Ephemeral	115	3.7	0.6	No	Timber matting
S-14	Ephemeral	77	3.3	2.0	No	Open cut trench
S-15	Ephemeral	290	2.0	0.3	No	N/A
S-16	Ephemeral	49	1.2	0.2	No	N/A
S-17	Intermittent	278	5.7	0.5	Yes	Open cut trench
S-18	Ephemeral	75	1.3	0.2	No	N/A
S-19	Ephemeral	439	4.0	1.5	No	N/A
S-20	Ephemeral	130	2.9	1.3	No	N/A
S-21	Ephemeral	392	1.6	1.0	No	N/A
S-22	Ephemeral	68	3.0	0.5	No	N/A

Stream Number	Stream Type	Length (feet)	OHWM Width (feet)	OHWM Depth (feet)	RPW[a]	Proposed Crossing Method
S-23	Ephemeral	192	2.5	0.3	No	N/A
S-24	Intermittent	587	1.0	0.3	Yes	N/A
S-25	Ephemeral	296	3.0	1.0	No	N/A
S-26	Ephemeral	103	2.0	0.5	No	N/A
S-27	Ephemeral	121	2.0	0.5	No	N/A
S-28	Ephemeral	79	2.0	0.5	No	N/A
Total Length	**Perennial**	**218**				
	Intermittent	**2,625**				
	Ephemeral	**3,030**				

a – RPW = Relatively Permanent Water = flows continuously at least 3 months
b – Approximation base on USGS stream gauge data. https://waterdata.usgs.gov/monitoring-location/03254520/#parameterCode=00065&period=P30D&showMedian=false
c – Streams S-6 is outside but immediately adjacent to the survey limits. It is not included in stream length totals.

Stream (S)-1

S-1 is a non-relatively permanent ephemeral stream located in the portion of the Survey Area north of I-275 (Photograph 7). A total of 113 feet of S-1 was delineated within the Survey Area. S-1 had an ordinary high water mark (OHWM) width of 5.0 feet and an OHWM depth of 0.5 feet.

S-2

S-2 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 8). A total of 119 feet of S-2 was delineated within the Survey Area. S-2 had an OHWM width of 5.0 feet and an OHWM depth of 1.0 foot.

S-3

S-3 is a relatively permanent intermittent stream located within the Survey Area (Photograph 9). A total of 276 feet of S-3 was delineated within the Survey Area. S-3 had an OHWM width of 5.8 feet and an OHWM depth of 3.0 feet.

S-4
S-4 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 10). A total of 162 feet of S-4 was delineated within the Survey Area. S-4 had an OHWM width of 3.1 feet and an OHWM depth of 1.2 feet.

S-5
S-5, also known as the Licking River, is a relatively permanent perennial stream located mid-way through the Survey Area (Photograph 11). S-5 receives flow from S-6. A total of 218 feet of S-5 was delineated within the Survey Area. S-5 had an OHWM width of 270 feet and an approximate OHWM depth of 12-15 feet.

S-6
S-6 is a relatively permanent intermittent stream located just outside of the northern limit of the Survey Area (Photograph 12). S-6 is tributary to S-5 and receives flow from S-7. Stream information and location was captured to confirm whether or not it intersects with the project area.

S-7
S-7 is a relatively permanent intermittent stream located within the Survey Area (Photograph 13). S-7 is tributary to S-6. A total of 431 feet of S-7 was delineated within the Survey Area. S-7 had an OHWM width of 7.2 feet and an OHWM depth of 0.3 feet.

S-8
S-8 is a relatively permanent intermittent stream located within the Survey Area (Photograph 14). A total of 247 feet of S-8 was delineated within the Survey Area. S-8 had an OHWM width of 4.0 feet and an OHWM depth of 0.2 feet.

S-9
S-9 is a relatively permanent small intermittent stream located within the Survey Area (Photograph 15). A total of 263 feet of S-9 was delineated within the Survey Area. S-9 had an OHWM width of 10.3 feet and an OHWM depth of 1.2 feet.

S-10
S-10 is a relatively permanent small intermittent stream located within the Survey Area (Photograph 16). S-10 receives flow from S-11. A total of 252 feet of S-10 was delineated within the Survey Area. S-10 had an OHWM width of 6.2 feet and an OHWM depth of 1.1 feet.

S-11
S-11 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 17). S-11 is tributary to S-10. A total of 210 feet of S-11 was delineated within the Survey Area. S-11 had an OHWM width of 3.8 feet and an OHWM depth of 1.3 feet.

S-12
S-12 is a relatively permanent small intermittent stream located within the Survey Area (Photograph 18). S-12 receives flow from S-13. A total of 291 feet of S-12 was delineated within the Survey Area. S-12 had an OHWM width of 6.5 feet and an OHWM depth of 2.2 feet.

S-13
S-13 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 19). S-13 is tributary to S-12. A total of 115 feet of S-13 was delineated within the Survey Area. S-13 had an OHWM width of 3.7 feet and an OHWM depth of 0.6 feet.

S-14
S-14 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 20). A total of 77 feet of S-14 was delineated within the Survey Area. S-14 had an OHWM width of 3.3 feet and an OHWM depth of 2.0 feet.

S-15
S-15 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 21). A total of 290 feet of S-15 was delineated within the Survey Area. S-15 had an OHWM width of 2.0 feet and an OHWM depth of 0.3 feet.

S-16
S-16 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 22). A total of 49 feet of S-16 was delineated within the Survey Area. S-16 had an OHWM width of 1.2 feet and an OHWM depth of 0.2 feet.

S-17
S-17 is a relatively permanent intermittent stream located within the Survey Area (Photograph 23). A total of 278 feet of S-17 was delineated within the Survey Area. S-17 had an OHWM width of 5.7 feet and an OHWM depth of 0.5 feet.

S-18
S-18 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 24). A total of 75 feet of S-18 was delineated within the Survey Area. S-18 had an OHWM width of 1.3 feet and an OHWM depth of 0.2 feet.

S-19
S-19 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 25). A total of 439 feet of S-19 was delineated within the Survey Area. S-19 had an OHWM width of 4.0 feet and an OHWM depth of 1.5 feet.

S-20
S-20 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 26). S-20 is tributary to S-21. A total of 130 feet of S-20 was delineated within the Survey Area. S-20 had an OHWM width of 2.9 feet and an OHWM depth of 1.3 feet.

S-21
S-21 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 27). S-21 receives flow from S-20. A total of 392 feet of S-21 was delineated within the Survey Area. S-21 had an OHWM width of 1.6 feet and an OHWM depth of 1.0 feet.

S-22
S-22 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 28). A total of 68 feet of S-22 was delineated within the Survey Area. S-22 had an OHWM width of 3.0 feet and an OHWM depth of 0.5 feet.

S-23
S-23 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 29). A total of 192 feet of S-23 was delineated within the Survey Area. S-23 had an OHWM width of 2.5 feet and an OHWM depth of 0.3 feet.

S-24
S-24 is a relatively permanent intermittent stream located within the Survey Area (Photograph 30). A total of 587 feet of S-24 was delineated within the Survey Area. S-23 had an OHWM width of 1.0 foot and an OHWM depth of 0.3 feet.

S-25
S-25 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 31). A total of 296 feet of S-25 was delineated within the Survey Area. S-25 had an OHWM width of 3.0 foot and an OHWM depth of 1.0 feet.

S-26
S-26 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 32). A total of 103 feet of S-26 was delineated within the Survey Area. S-26 had an OHWM width of 2.0 foot and an OHWM depth of 0.5 feet.

S-27
S-27 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 33). A total of 121 feet of S-27 was delineated within the Survey Area. S-27 had an OHWM width of 2.0 foot and an OHWM depth of 0.5 feet.

S-28
S-28 is a non-relatively permanent ephemeral stream located within the Survey Area (Photograph 34). A total of 79 feet of S-28 was delineated within the Survey Area. S-28 had an OHWM width of 2.0 foot and an OHWM depth of 0.5 feet.

PONDS
Table 3 provides a summary of ponds identified within the Survey Area.

Table 3: Summary of Ponds within the Survey Area

Pond Number	Area of Wetland Delineated in Survey Area (acre)
P-1	0.08
Total:	**0.08**

Pond (P)-1
P-1 is a PUB recreational pond totaling 0.08 acres delineated within the Survey Area. P-1 is located in the portion of the Survey Area north of I-275, extends west outside of the Survey Area and receives flow from S-1.

Protected Species
The USFWS IPaC report and the KDFWR County lists (Appendix D) were reviewed to determine the potential for threatened and endangered species to be present within and near the Survey Area. No Critical Habitat for the federally listed species was identified during the IPaC database review. Listed species, and the designation of their listing, are identified in Table 4. If available, habitat types for the respective species are also listed in Table 4.

Table 4: Threatened and Endangered Species with Potential to be within the Survey Area

Species	Status[a]	County	Habitat Type	Habitat Observed
Fish				
Lake Sturgeon (*Acipenser fulvescens*)	SE	Campbell	Large freshwater lake and river ecosystems.	No
Alligator Gar (*Atractosteus spatula*)	SE	Kenton	Large rivers that have a large overflow floodplain.	No
Mussel				
Elktoe (*Alasmidonta marginata*)	ST	Kenton/ Campbell	Drainage from large rivers	No

Species	Status[a]	County	Habitat Type	Habitat Observed
Spectaclecase *(Cumberlandia monodonta)*	SE	Campbell	Large rivers in areas sheltered from the main force of the river current.	No
Fanshell (*Cyprogenia stegaria*)	FE, SE	Kenton/ Campbell	Medium to large rivers in gravel riffles.	No
Catspaw (*Epioblasma obliquata*)	SE	Kenton/ Campbell	Shallow, gravelly riffle zones in larger rivers.	No
Northern Riffleshell *(Epioblasma rangiana)*	FE, SE	Kenton/ Campbell	Preferred habitat appears to require swiftly moving water. The high oxygen concentrations in swift streams may be necessary for survival. It is a species of riffle areas of smaller streams, and as such has fared better than larger river species, which have been heavily impacted by dredging and impoundment.	No
Snuffbox *(Epioblasma triquetra)*	FE, SE	Campbell	Riffles of small and medium creeks, in large rivers, and in shoals and wave-washed shores of lakes	Yes
Longsolid *(Fusconaia subrotunda)*	FT, ST	Kenton/ Campbell	Sand and gravel in streams and small rivers, but also may be found in coarse gravel and cobble in larger rivers.	Yes
Pink Mucket *(Lampsilis abrupta)*	FE, SE	Kenton/ Campbell	Mud and sand and in shallow riffles and shoals swept free of silt in major rivers and tributaries.	Yes
Pocketbook *(Lampsilis ovata)*	SE	Kenton/ Campbell	Found in small streams to large rivers with moderate to strong currents but can survive in standing water. The most suitable substrate consists of a mixture of gravel and coarse sand mixed with some silt or mud.	Yes
Creek Heelsplitter *(Lasmigona compressa)*	SE	Campbell	Rivers and streams of various sizes, even in very small creeks and is rare in lakes. Found on substrates of gravel, sand, or mud.	Yes

Species	Status[a]	County	Habitat Type	Habitat Observed
Ring Pink (*Obovaria retusa*)	FE, SE	Kenton/ Campbell	Large rivers with gravel and sand bars present.	No
Round Hickorynut *(Obovaria subrotunda)*	ST	Kenton	Sand and gravel in riffle, run, and pool habitats in streams and rivers, but also may be found in sandy mud.	No
Orangefoot Pimpleback (*Plethobasus cooperianus*)	FE, SE	Kenton/ Campbell	This species is found in medium to large rivers in sand, gravel, and cobble substrates in riffles and shoals in deep water and steady currents as well as some shallower shoals and riffles.	Yes
Sheepnose (*Plethobasus cyphyus*)	SE	Campbell	Medium to large rivers in gravel or mixed sand and gravel.	No
Clubshell (*Pleurobema clava*)	FE, SE	Kenton/ Campbell	Medium to large rivers in gravel or mixed sand and gravel.	Yes
Rough Pigtoe (*Pleurobema plenum*)	FE, SE	Kenton/ Campbell	This species is found in medium to large rivers (20 m wide or greater) in sand, gravel, and cobble substrates in shoals. It is occasionally found on flats and muddy sand.	No
Pyramid Pigtoe *(Pleurobema rubrum)*	SE	Kenton	Large to medium rivers with riffles or shoals and coarse-particle substrates with stable mud and muddy sand bottoms.	No
Salamander Mussel (*Simpsonaias ambigua*)	PE, ST	Kenton/ Campbell	Under flat rocks or ledges of rock walls alongside mudpuppy salamanders	No

Species	Status[a]	County	Habitat Type	Habitat Observed
Rabbitsfoot (*Quadrula cylindrica cylindrica*)	FT, SE	Campbell	Typical habitat for this species is small to medium rivers with moderate to swift currents, and in smaller streams it inhabits bars or gravel and cobble close to the fast current. It is found in medium to large rivers in sand and gravel.	Yes
Mammal				
Indiana Bat (*Myotis sodalis*)	FE, SE	Kenton/ Campbell	Winter hibernacula includes caves or abandoned mines. Summer roosting habitat includes wooded areas containing dead or dying trees or living trees that have cracks, crevices, and/or exfoliating bark and a diameter-at-breast-height (dbh) of 5 inches or greater. Tend to forage within forest or along forest edges.	Yes
Northern Long-eared Bat (*Myotis septentrionalis*)	FE, SE	Kenton/ Campbell	Winter hibernacula includes caves or abandoned mines. Summer roosting habitat includes wooded areas containing dead or dying trees or living trees that have cracks, crevices, and/or exfoliating bark and a dbh of 3 inches or greater. Tend to forage in forests or along forest edges.	Yes
Gray Bat *(Myotis grisescens)*	FE	Kenton/ Campbell	Gray bats generally live in caves year-round in areas with limestone karst geology.	No
Little Brown Bat *(Myotis lucifugus)*	ST	Kenton/ Campbell	Little brown bats use a wide range of habitats and often use human-made structures for resting and maternity sites. They typically roost in caves and mines in the winter, and they can be found in trees, artificial structures, bat houses, under rocks and in piles of wood in the summer.	Yes

Species	Status[a]	County	Habitat Type	Habitat Observed
Tricolored Bat *(Perimyotis subflavus)*	ST	Kenton	During the spring, summer and fall, tricolored bats primarily roost among live and dead leaf clusters of live or recently dead deciduous hardwood trees. During spring months, bats emerge and migrate to summer habitat in wooded areas where they generally roost under loose bark or snags on dead or dying trees. During the winter, tricolored bats hibernate in caves and mines, road-associated culverts, as well as sometimes in tree cavities and abandoned water wells.	Yes
Reptile				
Kirtland's Snake (*Clonophis kirtlandii*)	ST	Kenton/ Campbell	Requires moist-soil environments to survive and is always found near a permanent or seasonal water source, including wetlands, streams, reservoirs, lakes, or ponds. Often found in or near crayfish burrows. When above ground, almost always found under natural or artificial cover objects.	No
Bird				
Spotted Sandpiper (*Actitis macularius*)	SE	Kenton/ Campbell	Nesting near streams, rivers, and lakes in open and wooded country, they require a shore for foraging and herbaceous cover for their nests. During migration and winter, they can be found almost anywhere near water, including mudflats, beaches, breakwaters, sewage ponds, and even in irrigation ditches.	No

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Species	Status[a]	County	Habitat Type	Habitat Observed
Great Egret *(Ardea alba)*	ST	Campbell	Marshes, swampy woods, tidal estuaries, lagoons, mangroves, streams, lakes, and ponds; also fields and meadows.	No
Brown Creeper *(Certhia Americana)*	ST	Kenton/ Campbell	Preferred habitat includes forest, woodlands, forested floodplains and swamps. Scrub and parks are also used in winter and during migration. Most often found in coniferous and mixed forests.	Yes
Northern Harrier *(Circus hudsonius)*	ST	Kenton	Found in open areas such as grasslands, marshes, and fields soaring low over the ground.	No
Least Flycatcher *(Empidonax minimus)*	SE	Kenton	Open woods, aspen groves, orchards, shade trees. Breeds in deciduous or mixed woodlands, seldom in purely coniferous groves. Usually around clearings or edges, but sometimes in the interior of dry woods.	Yes
Peregrine Falcon *(Falco peregrinus)*	SE	Kenton/ Campbell	Often nests on ledge or hole on face of rocky cliff or crag. Riverbanks, tundra mounds, open bogs, large stick nests of other species, tree hollows, and man-made structures.	No
American Coot *(Fulica Americana)*	SE	Kenton/ Campbell	Freshwater lakes, ponds, marshes, and larger rivers, wintering also on brackish estuaries and bays. Also, on land bordering these habitats. Calm open water with plenty of algae and other aquatic vegetation.	No
Hooded Merganser *(Lophodytes cucullatus)*	ST-	Kenton/ Campbell	Streams, lakes, swamps, marshes, and estuaries; winters mostly in freshwater but also regularly in estuaries and sheltered bays.	No
Black-crowned Night-heron *(Nycticorax nycticorax)*	ST	Campbell	Marshes, shores; roosts in trees. Found in a wide variety of aquatic habitats, around both fresh and salt water, including marshes, rivers, ponds, mangrove swamps, tidal flats, canals, rice fields.	No

Species	Status[a]	County	Habitat Type	Habitat Observed
Bachman's Sparrow *(Peucaea aestivalis)*	SE	Kenton	Mature pine forest in open grassy understory.	No
Pied-billed Grebe *(Podilymbus Podiceps)*	SE	Kenton/ Campbell	Ponds, lakes, marshes; in winter, also salt bays. In breeding season, chooses sites with heavy marsh vegetation but with some open water also. In migration and winter, still most likely on marshy freshwater ponds, but also on more open waters, including estuaries and coastal bays.	No
Vesper Sparrow *(Pooecetes gramineus)*	SE	Kenton/ Campbell	Habitats include plains, prairies, dry shrublands, savannas, weedy pastures, fields, sagebrush, arid scrub, and woodland clearings.	Yes
Blackburnian Warbler *(Setophaga fusca)*	ST	Kenton	Breeds in boreal coniferous and mixed forests, especially spruce and hemlock. When migrating, occurs in all kinds of trees and brush.	Yes
Red-breasted Nuthatch *(Sitta canadensis)*	SE	Kenton/ Campbell	Nesting habitat almost always has many conifers, such as spruce, fir, hemlock, either in pure stands or mixed with deciduous trees. Mature forest preferred. In migration and winter may appear in any wooded habitat, but conifers always chosen if available.	Yes
Northern Shoveler *(Spatula clypeata)*	SE	Kenton/ Campbell	Nests near shallow freshwater lake, pond, marsh, etc. Nests on the ground, usually near edge of water. In migration and winter in both freshwater and brackish habitats, and in cultivated fields.	No

Species	Status[a]	County	Habitat Type	Habitat Observed
Blue-winged Teal *(Spatula discors)*	ST	Kenton/ Campbell	Marshes, ponds, sloughs, lakes, and sluggish streams. In migration and when not breeding, in both freshwater and brackish situations. Prefers freshwater marshes, ponds, and sloughs, but occurs also in river pools, salt ponds, coastal lagoons, estuaries, and flooded pastures.	No
Golden-winged Warbler *(Vermivora chrysoptera)*	SE	Kenton	Shrubby habitats such as regenerating clearcuts, wet thickets, tamarack bogs, and aspen or willow stands.	No
Insects				
Northern Metalmark *(Calephelis borealis)*	ST	Campbell	Habitats are openings within forested or wooded areas. Such openings may be natural outcrops, shale or limestone barrens, glades or powerline right of ways.	No
Sixbanded Longhorn Beetle (*Dryobius sexnotatus*)	ST	Kenton	Mature hardwood forests with large, overmature trees.	No

(a) PE = Proposed Endangered, FE = Federally Endangered, FT = Federally Threatened, SE = State Endangered, ST = State Threatened.

Sources: USFWS Information for Planning and Consultation, accessed November 8, 2023, at: https://ecos.fws.gov/ipac/location/index. Kentucky Department of Fish and Wildlife Resources, Threatened, Endangered, and Special Concern Species of Kentucky for Campbell and Kenton Counties, accessed November 8, 2023; USFWS ECOS Species by County Report for Campbell and Kenton Counties, Kentucky, accessed November 8, 2023.

In January 2024, consultation letters requesting any records of documented species within the Survey Area were sent to USFWS and KDFWR. In February 2024, a response letter from the USFWS Kentucky Field Office (KFO) (Appendix F) stated that that they have no comments at this time, and to refer species listed in the official IPaC species list obtained from the IPaC website (Appendix D). IPaC Determination letters will be completed following development of a final alignment. In March 2024, a response letter from the KDFWR (Appendix F) indicated that the following federal listed species are recorded within ten miles of the Project: five federally listed mussel species, one federally listed fish species (federal listed tuxedo darter), one federally listed reptile species (federal potentially threatened alligator snapping turtle), and three federally

listed bat species. The KDFWR also indicated that the following state listed species are recorded within one mile of the Project: five bird species (state endangered red-breasted nuthatch), one bat species (state threatened tri-colored bat), two amphibian species. Finally, the KDFWR stated that no trout streams, fish spawning areas, sensitive waterways, wildlife management areas, natural lands, or other protected areas are located within the Project footprint or one mile.

Regarding mussel species, the KDFWR indicated that no records of mussel species were found within Licking River near the area of concern, therefore, it is unlikely that the proposed Project will significantly affect these species.

Regarding bat species, the KDFWR requests coordination with USFWS KFO regarding tree removal activities. Due to the presence of federally listed bat species near the Project, USFWS may have seasonal clearing requirements.

KDFWR recommends that erosion control measures be implemented prior to construction to reduce runoff and minimize impacts to state-listed aquatic species. Avoidance of nylon monofilament blanket-style matting is recommended (use organic coir matting instead) as it can kill wildlife.

During the environmental field survey, Burns & McDonnell conducted a search for potential listed species suitable habitat. Licking River may contain suitable habitat that could support listed mussel species, however, the Project proposes to bore under the river with no in-water work activities planned. Coordination with KDFWR indicated that no records for mussel species were found within the Licking River near the Survey Area. Several intermittent streams may be temporarily impacted during project construction activities. These stream banks were searched for mussel shells and none were found. At this time it is anticipated that no adverse impacts to mussel species are anticipated within Licking River or other streams onsite. Determination letters for USFWS will be completed following selection of the final alignment and provide further guidance on federally listed species. Potential habitat was noted that could support several listed species of birds during the winter and migratory seasons. However, given the mobility of these species it is unlikely any adverse impacts would occur to these species. Please refer to stream and representative habitat photographs in Appendix C for more information,

Burns & McDonnell assessed forested habitat located throughout the Survey Area. 61 potential bat roost habitat trees were identified within the forested portions of the Survey Area (Figure 4). Photographs 40 and 41 are characteristic of the potentially suitable habitat trees observed. Although a species-specific survey was not conducted, no bats were observed while on-site. Both the USFWS and KDFWR note the potential presence of listed bat species near the project. Tree clearing activities is recommended during the winter season in order to avoid impacts to species.

The Survey Area consists primarily of upland forest habitat, upland disturbed grassland and commercial/residential areas with lack of suitable habitat for the other listed species.

SUMMARY

Burns & McDonnell conducted a wetland delineation and onsite habitat assessment within the Survey Area to identify protected species habitat, wetlands, and other waterbodies. One wetland totaling 0.01 acres, 27 streams totaling 5,873 linear feet, and one pond totaling 0.08 acres were identified within the Survey Area. One stream was identified outside but immediately adjacent to the Survey Area. Mapped FEMA floodplain and floodway are associated with one of the streams, the Licking River.

USACE – Louisville District and the Kentucky Department of Water (KDOW) regulate impacts to jurisdictional wetlands and streams. If permanent fill will be placed in jurisdictional wetlands or streams that exceed 0.1 acre of impact, a Pre-Construction Notification will need to be submitted to the USACE Louisville District to receive coverage under Nationwide Permit (NWP)12. General conditions of NWP 12 must be followed even if permanent impacts are less than 0.1 acre. Additionally, state permits may also be necessary. Furthermore, the section of Licking River within the Survey Area is listed as a navigable water and is regulated under Section 10. Any work within, over or under this stream will need to be coordinated with the USACE – Louisville District.

On March 20, 2023, the “Revised Definition of WOTUS” rule became effective. On April 12, 2023, a district court judge in North Dakota issued an order preliminarily enjoining, in 24 States (not including Kentucky), the 2023 rule issued by EPA and the Department of the Army defining “waters of the United States.” On May 25, 2023, U.S. Supreme Court issued a decision in the Sackett v EPA case. The agencies are presently interpreting "waters of the United States" consistent the Supreme Court’s decision in Sackett. The agencies are developing a rule to amend the final "Revised definition of ‘Waters of the U.S.’" published in the Federal Register on January 18, 2023, and consistent with the Sackett ruling. This final rule was published in the Federal Register on September 8, 2023, with the same effective date.

On November 15, 2023, the U.S. Environmental Protection Agency and the USACE issued an update to the revised rules relevant for implementing either the 2023 rule or the pre-2015 regulatory regime. Based on this document, the USACE will use the “Relatively Permanent Standard” for determining if a tributary is jurisdictional. Relatively permanent waters (RPW) include tributaries that have flow or standing water year-round or continuously during certain times of year. RPWs do not include tributaries with flow or standing water for only a short

duration in direct response to precipitation. “Direct response to precipitation” is intended to distinguish between episodic periods of flow associated with discrete precipitation events versus continuous flow for extended periods of time (USEPA 2023). With the new rules, the USACE no longer uses the term “ephemeral streams”. However, ephemeral streams are those tributaries that flow for short durations as a direct response to rain events and as such, based on the current guidance, are not RPWs. A USACE jurisdictional determination is recommended if wetland and stream impacts will occur to verify jurisdictional status and boundaries.

Suitable habitat for listed mussel and avian species were noted as present during the environmental field survey. Based on coordination with the KDFWR, field observations, and methods of construction, it is unlikely that this Project will have adverse impacts on listed mussel or avian species. KDFWR recommends that erosion control measures be implemented prior to construction to reduce runoff and minimize impacts to state-listed aquatic species. 61 individual potential habitat trees capable of supporting protected bat species were identified in the upland forested habitat of the Survey Area. Necessary tree clearing should be conducted between October 1st and March 31st to avoid impacts to bats. Although the KFO provided no specific comments regarding species within the project area, it is recommended that tree cutting occur from October 1 through March 31 and that tree clearing activities in KY should be coordinated with the USFWS Kentucky Field Office. Lack of suitable habitat was noted for other listed species.

If you have any questions or require additional information, please contact Brooke Harrison by telephone at (380) 390-2516 or by email at bharrison@burnsmcd.com.

Sincerely,

Brooke Harrison

Brooke Harrison
Project Manager

Attachments:

- Appendix A - Figures
- Appendix B - Wetland Determination Data Forms
- Appendix C - Site Photographs
- Appendix D - USFWS IPAC Report and County Species Lists
- Appendix E - Antecedent Precipitation Tool

Mr. Bradley Seiter, P.E.
Duke Energy Kentucky, Inc.
May 29, 2024
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Appendix F - Agency Correspondence Letters

cc: Steve Lane, Duke Energy
Brittany Webb, Burns & McDonnell
James Culbertson, Burns & McDonnell
Josh Pedersen, Burns & McDonnell
Antonio Hornstein, Burns & McDonnell

APPENDIX A - FIGURES

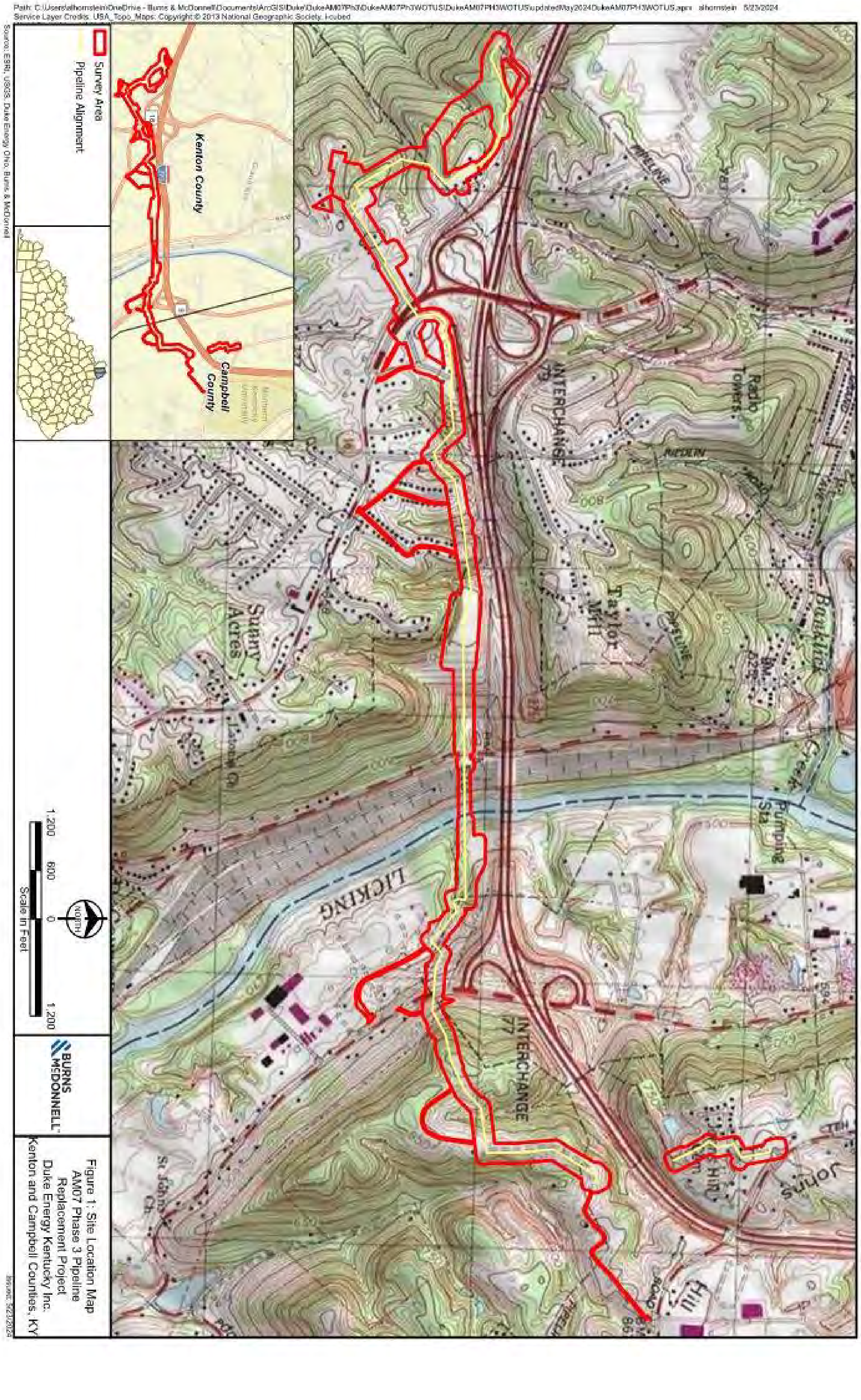
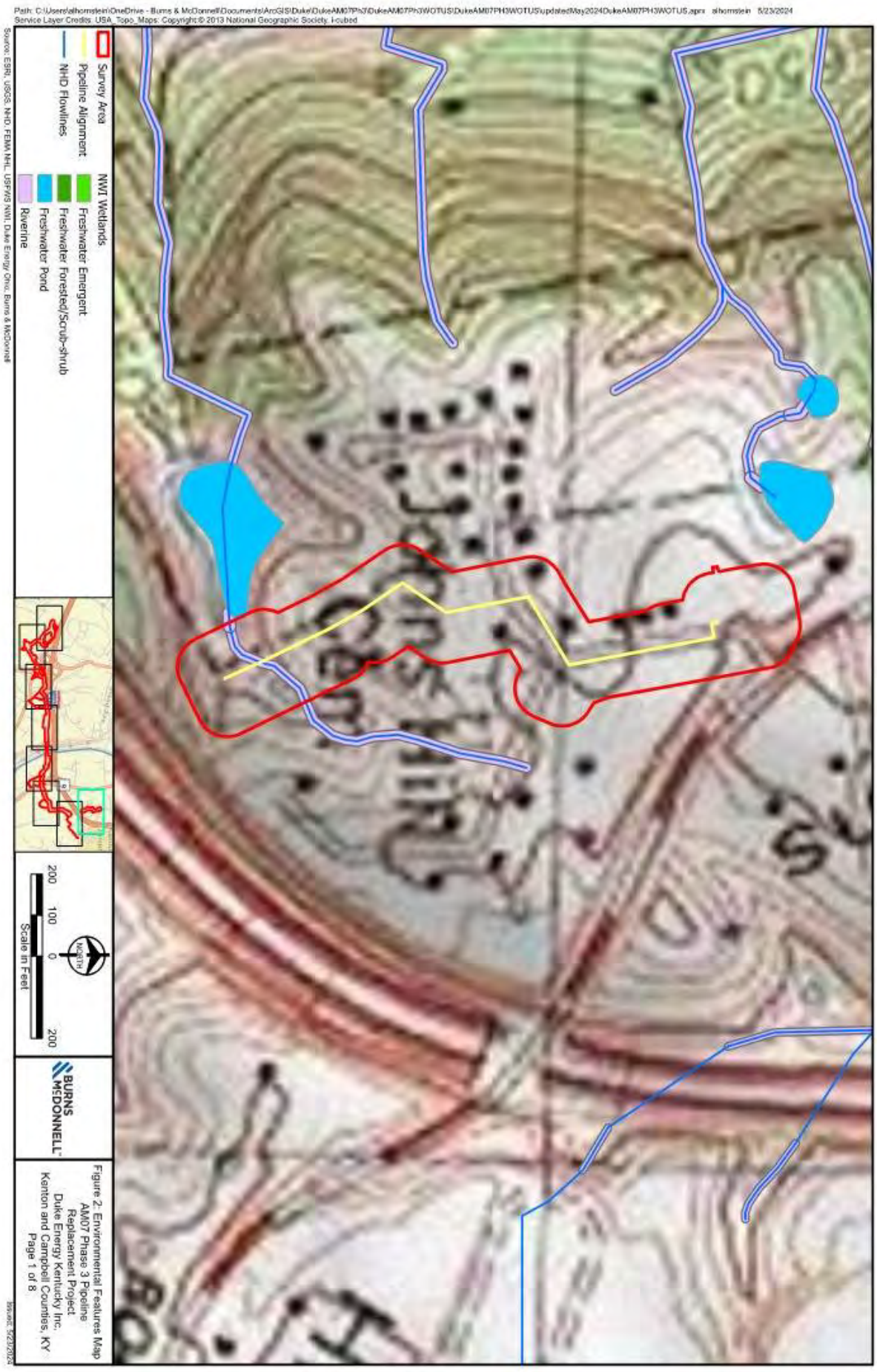


Figure 1: Site Location Map
AM07 Phase 3 Pipeline Replacement Project
Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY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Source: ESRI, USGS, NHD, FEMA NHL, USFWS NWI, Duke Energy Ohio, Burns & McDonnell
Survey Area
Pipeline Alignment
NHD Flowlines
NWI Wetlands
Freshwater Emergent
Freshwater Forested/Scrub-Shrub
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Figure 2: Environmental Features Map
AM07 Phase 3 Pipeline
Replacement Project
Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY
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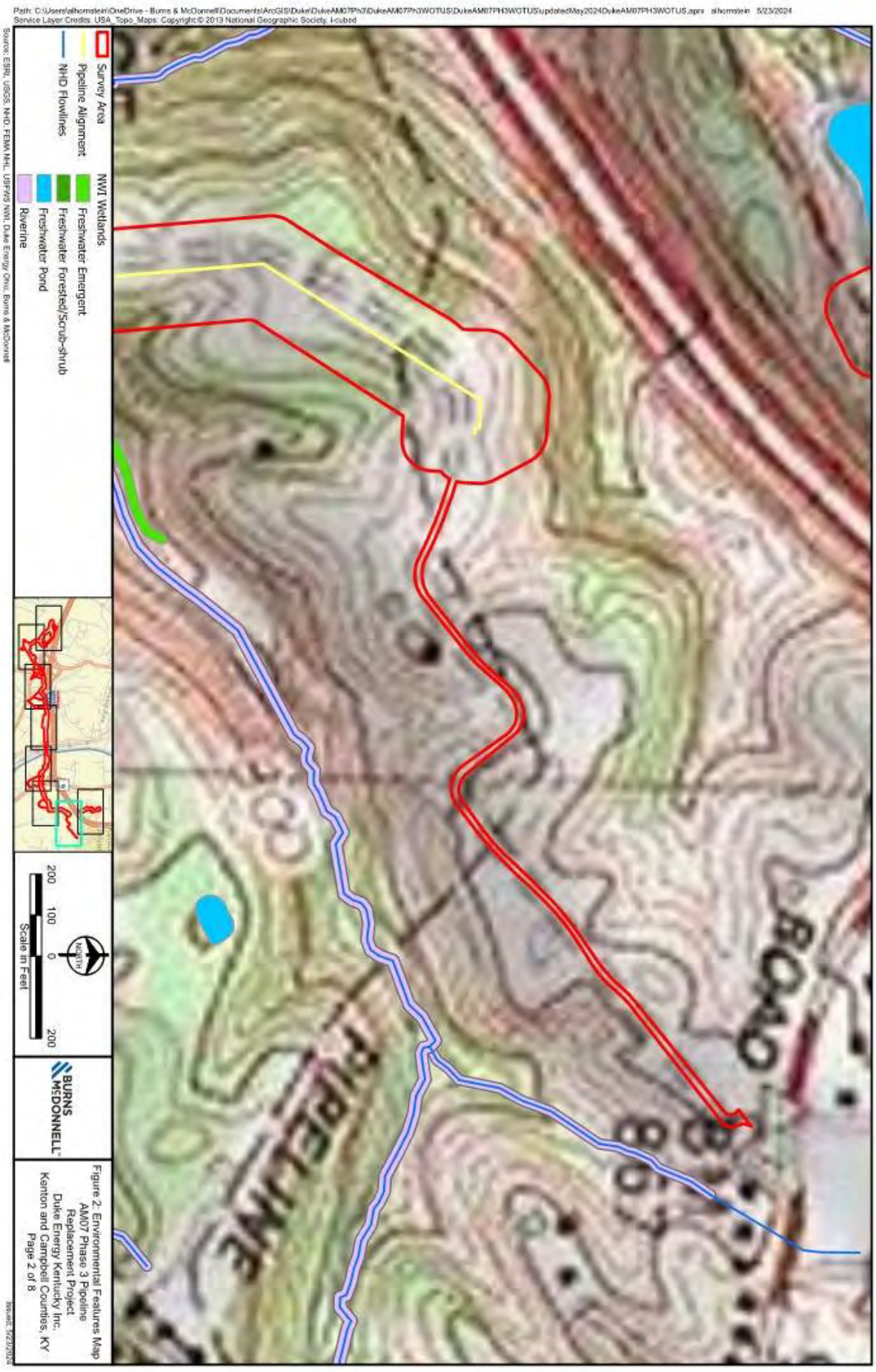
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AM07 Phase 3 Pipeline
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Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY
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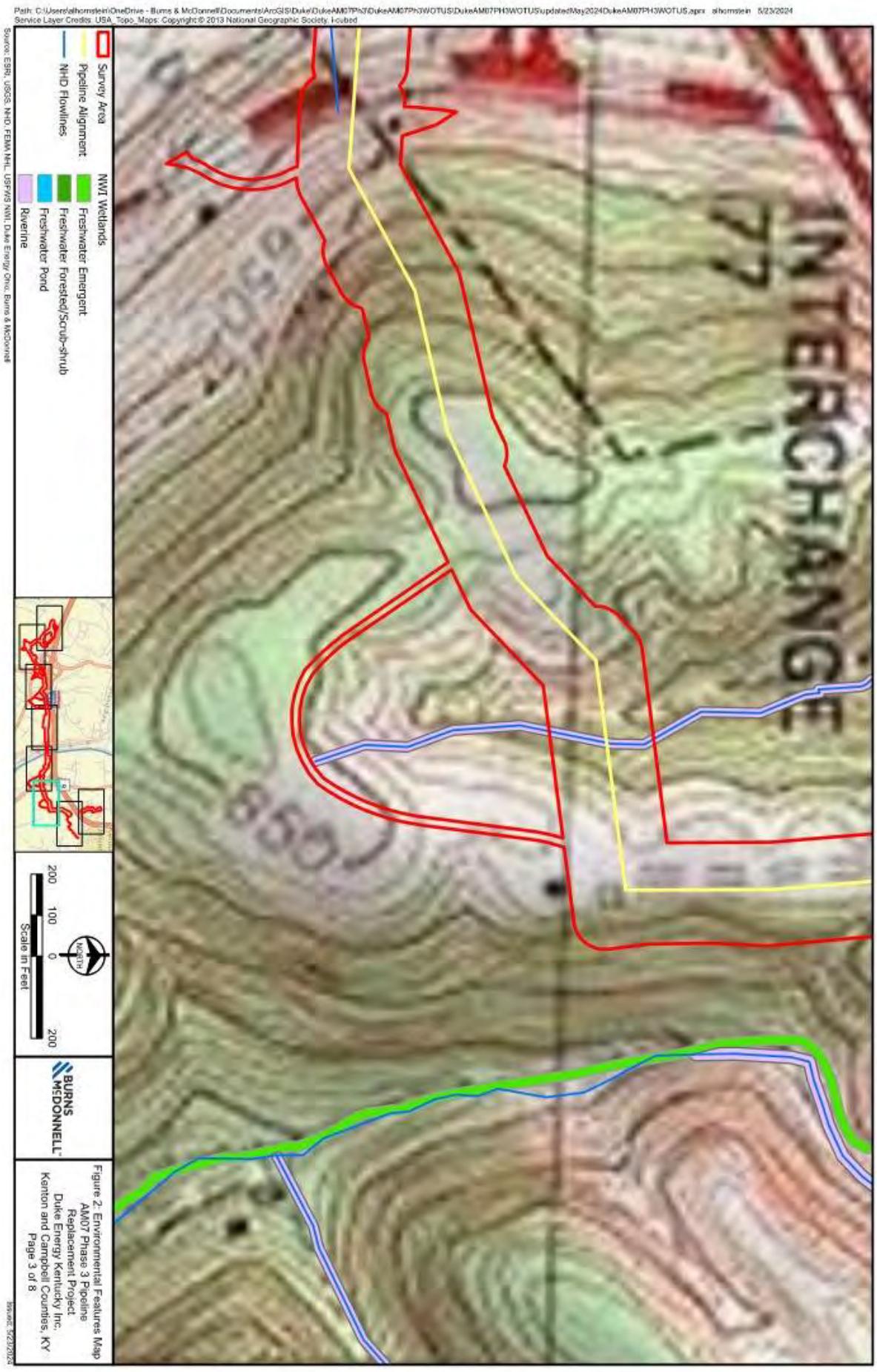
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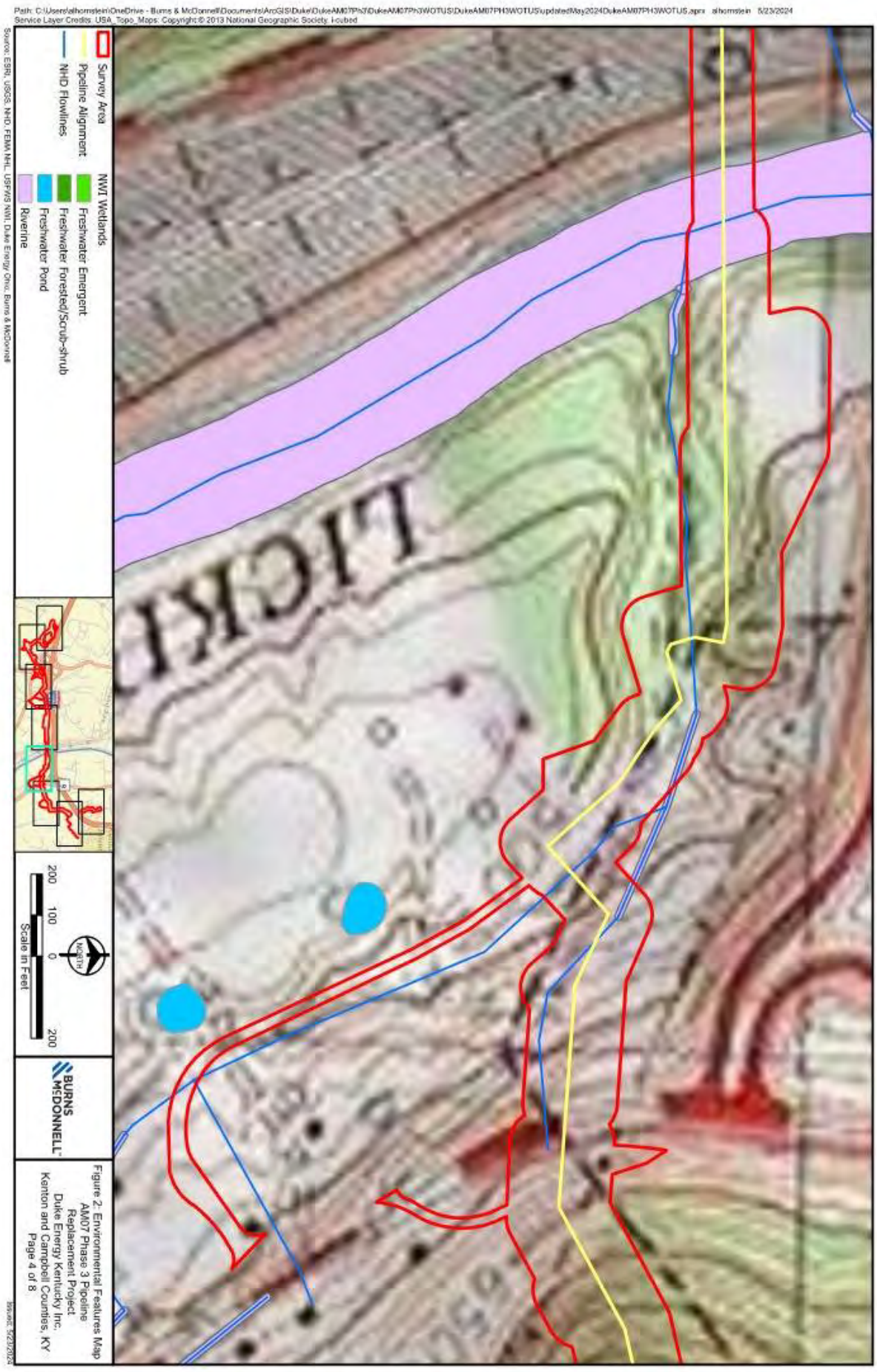
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Kenton and Campbell Counties, KY
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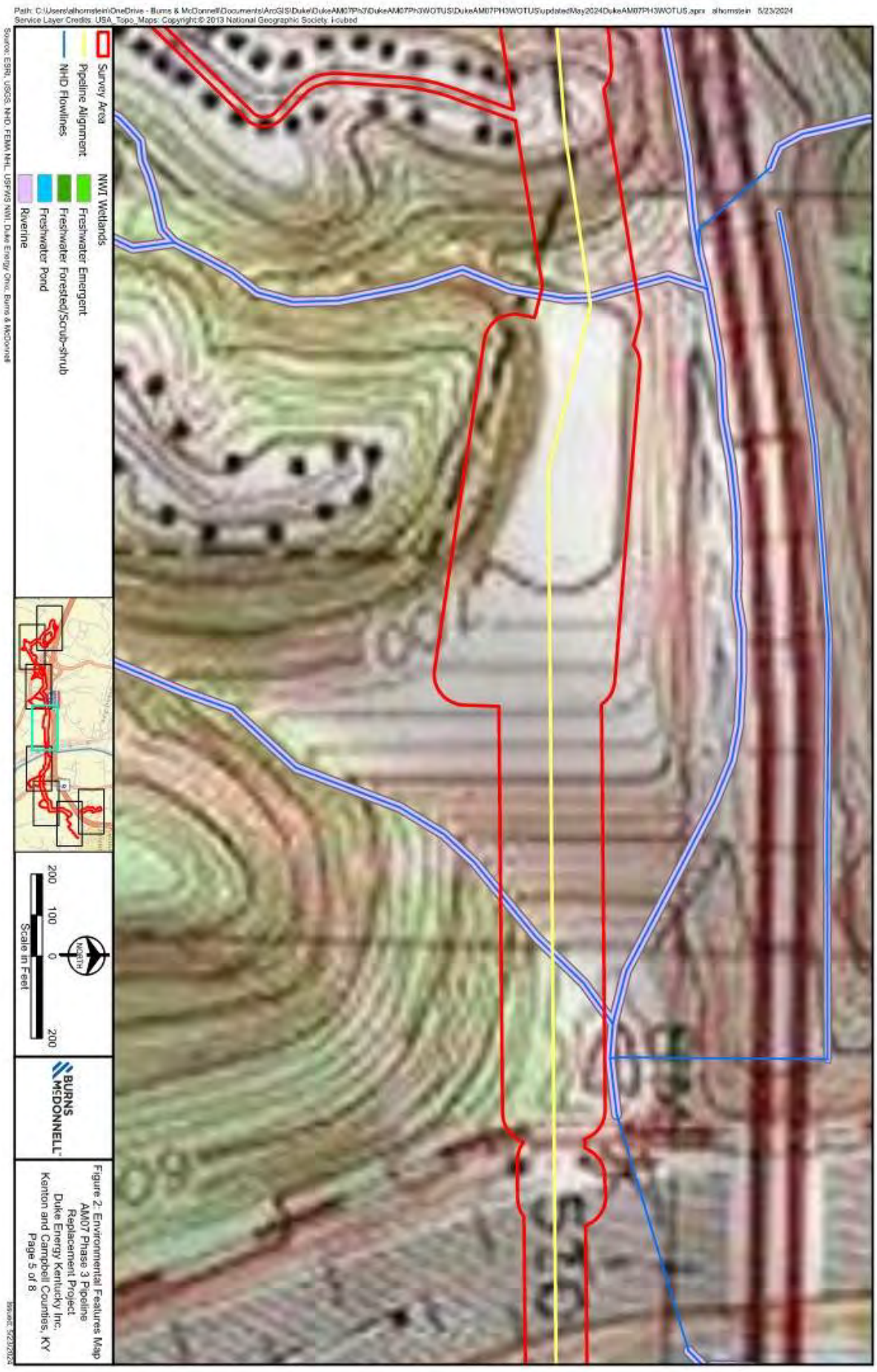
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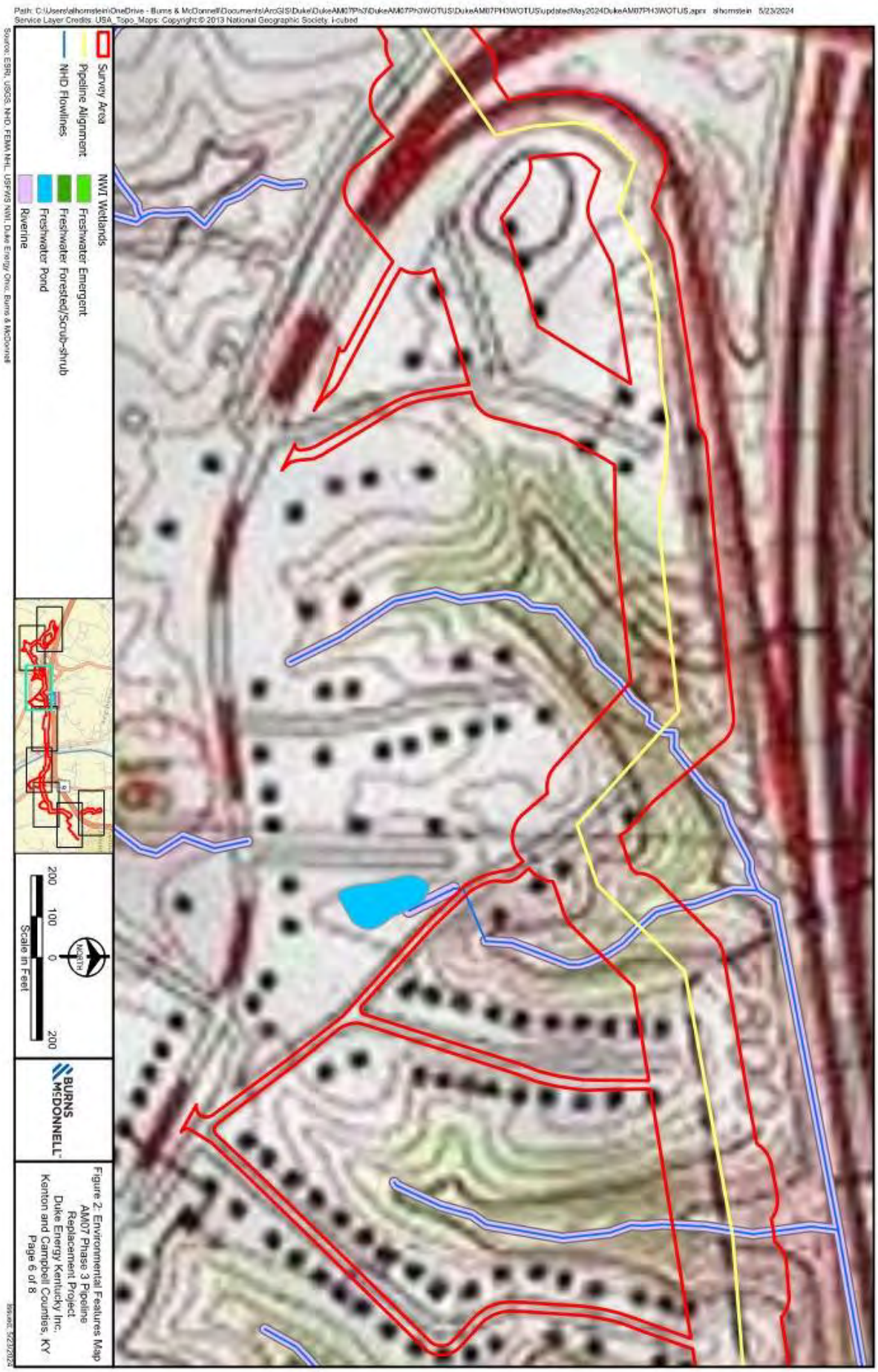
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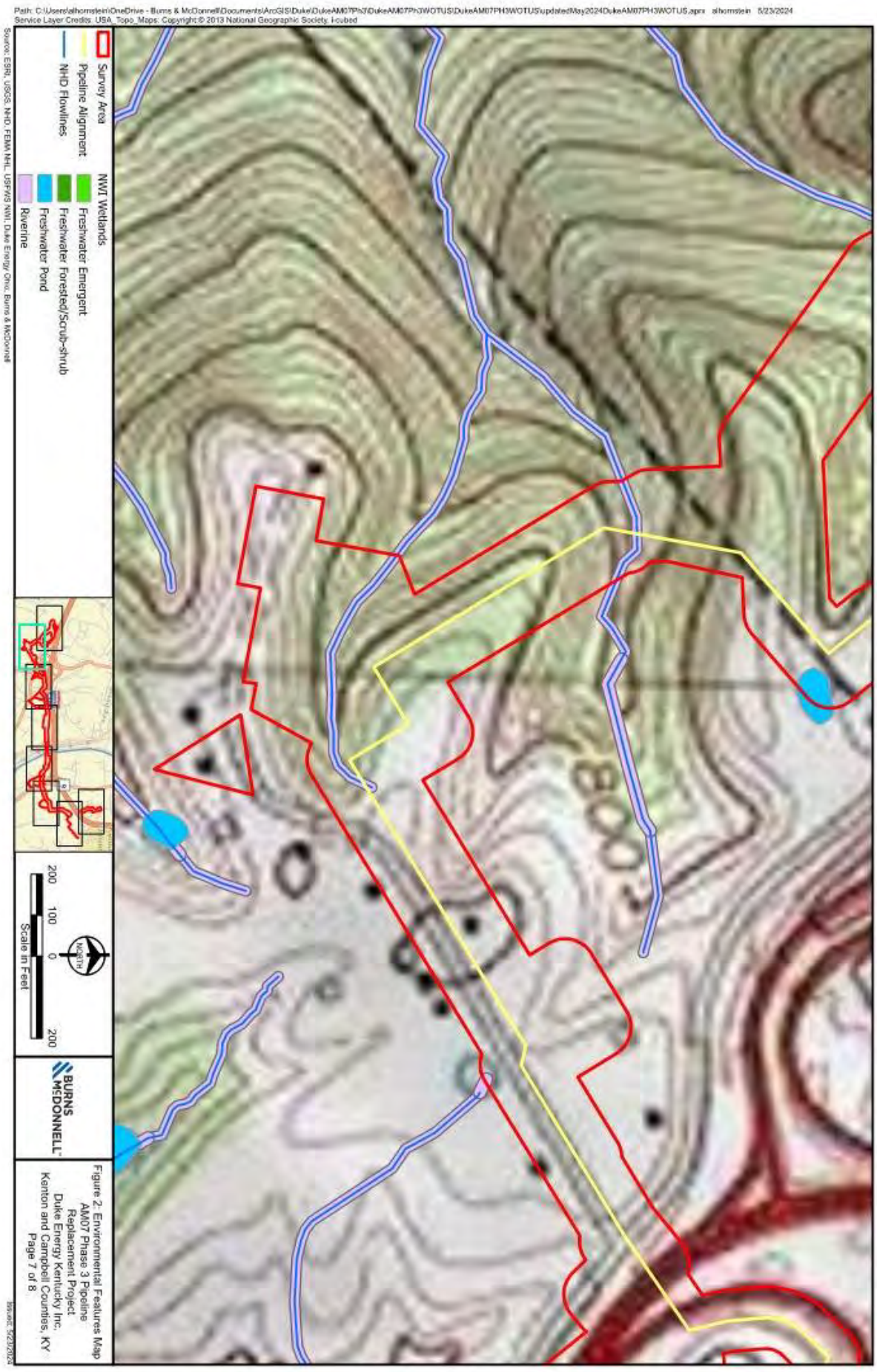
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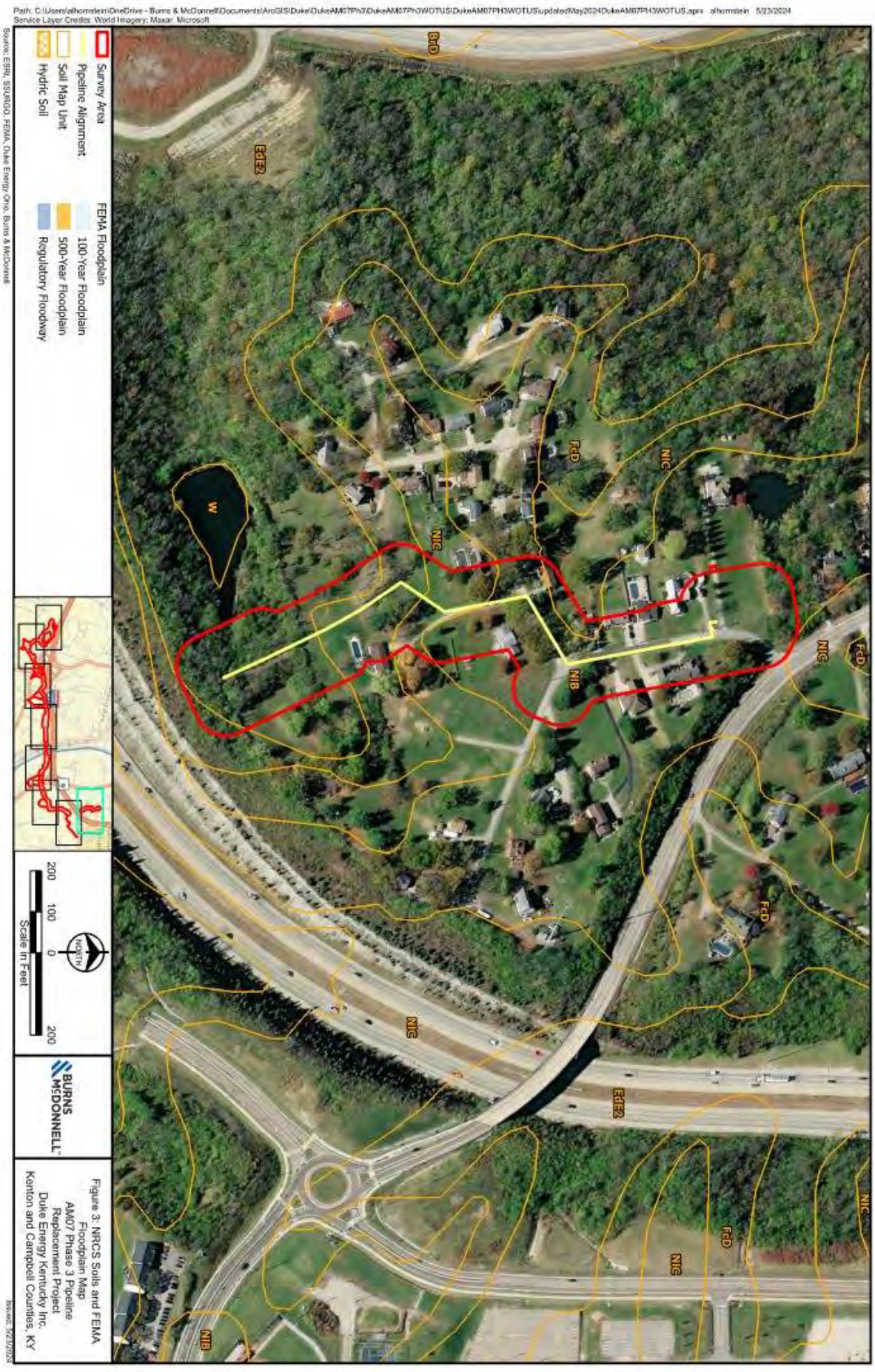
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100-Year Floodplain
500-Year Floodplain
Regulatory Floodway
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Figure 3: NRCS Soils and FEMA Floodplain Map
AM07 Phase 3 Pipeline
Replacement Project
Duke Energy Kentucky Inc.
Kenton and Campbell Counties, KY
Sources: ESRI, SSURGO, FEMA, Duke Energy Ohio, Burns & McDonnell
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