



Matthew G. Bevin
Governor

COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
Department of Highways, District 6 Office
421 Buttermilk Pike
Covington, Kentucky 41017
(859) 341-2700
www.transportation.ky.gov/

Greg Thomas
Secretary

November 26, 2019

Duke Energy
Matthew Hughes
139 East 4th Street
Cincinnati, Ohio 45202

Subject: Permit #: 06-2019-01087
Permit Type: Utilities - Gas
Approval

Dear Applicant:

Attached is your permit approval and documentation for the subject permit.

Be advised that all work must be done in conformity with permit and application conditions. If you have any questions, please contact the Permits Section at this office.

Sincerely,

A handwritten signature in black ink that reads "Linzy Brefeld".

Linzy Brefeld
D6 Permits Supervisor

Attachments



An Equal Opportunity Employer M/F/D

APPROVED
November 26, 2019
Kentucky Transportation Cabinet
District 6
06-2019-01087

NOTICE OF COMPLETION OF ENCROACHMENT PERMIT WORK

PERMITTEE

Name: Duke Energy
Contact Person: Matthew Hughes
Address: 139 East 4th Street
City: Cincinnati
State: Ohio
Zip: 45202
Telephone:

PROJECT IDENTIFICATION

Permit Number: 06-2019-01087

I wish to notify the Department of Highways that the above mentioned permit work and any necessary right-of-way restoration have been completed and are ready for final inspection.

Permittee

Please return this form to the address below when work is completed and ready for final inspection.

Please Return to: Permit Engineer
Department of Highways, District 6 Office
421 Buttermilk Pike
Covington, Kentucky 41017
(859) 341-2700
www.transportation.ky.gov/

| LOCATION(S) | | | |
|--|-----------------|-----------|------------|
| Description | County - Route | Latitude | Longitude |
| Install 24" pipeline across KY 3147 by bore method | Boone - KY 3147 | 39.033034 | -84.637049 |

APPROVED
November 26, 2019
Kentucky Transportation Cabinet
District 6
06-2019-01087



ENCROACHMENT PERMIT

KYTC KEPT #: 06-2019-01087

Permittee: Duke Energy

Permit Type / Subtype: Utilities / Gas

Work Completion Date: 11/20/2020

| INDEMNITIES | | |
|---------------------|-----------------|-----------------|
| Type | Amount Required | Tracking Number |
| Performance Bond | \$0.00 | |
| Cash / Check | \$0.00 | |
| Self-Insured | \$0.00 | |
| Payment Bond | \$0.00 | |
| Liability Insurance | \$0.00 | |

This permit has been: **APPROVED** **DENIED**

Linzy Brefeld D6 Permits Supervisor 11/21/2019

SIGNATURE TITLE DATE

The TC 99-1(B), including the application TC-99 1(A) and all related and accompanying documents and drawings make up the permit. It is not a permit unless both the TC 99-1(A) and TC 99-1(B) are both present.

| LOCATION(S) | | | |
|--|-----------------|-----------|------------|
| Description | County - Route | Latitude | Longitude |
| Install 24" pipeline across KY 3147 by bore method | Boone - KY 3147 | 39.033034 | -84.637049 |



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

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 District 6
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KENTUCKY TRANSPORTATION CABINET
 Department of Highways
 PERMITS BRANCH

TC 99-1A
 Rev. 09/2018
 Page 1 of 4

APPLICATION FOR ENCROACHMENT PERMIT

KYTC KEPT #: 06-2019-01087

SECTION 1: APPLICANT CONTACT INFORMATION

| | | | |
|--|---|-----------------------------|---------------------|
| NAME Duke Energy | ADDRESS 139 E 4th St | CITY Cincinnati | |
| EMAIL N/A | | STATE OH | ZIP 45202 |
| CONTACT NAME 1 Casey Bloise (On behalf of Duke Energy) | EMAIL cebloise@burnsmcd.com | PHONE # 614-453-7827 | |
| CONTACT NAME 2 (if applicable) Matthew Hughes | EMAIL Matthew.Hughes2@duke-energy.com | PHONE # 513-287-3026 | |
| | | CELL # | |

SECTION 2: PROPOSED WORK LOCATION

| | | | |
|------------------------------|---------------------------|--------------------------|---|
| ADDRESS O'hara Rd. | CITY Erlanger | STATE Kentucky | ZIP 41018 |
| COUNTY Boone | ROUTE # KY-3147 | MILE POINT 0.7 | LONGITUDE (X) 84°38'13.496" LATITUDE (Y) 39°1'58.98" |

FOR KYTC USE ONLY

Permit Type: Air Right Entrance Utilities Vegetation Removal Other: _____

Location: Left Right Crossing

Access: Full Partial by Permit

SECTION 3: GENERAL DESCRIPTION OF WORK

Install 24" steel pipeline across O'hara Rd. via Auger bore. Bore pits and construction crew operating within ROW during install of bored pipeline.

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.

Casey Bloise
 SIGNATURE

11-4-2019

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.

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 District 6
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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

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APPLICATION FOR ENCROACHMENT PERMIT

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.

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

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APPLICATION FOR ENCROACHMENT PERMIT

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.

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.

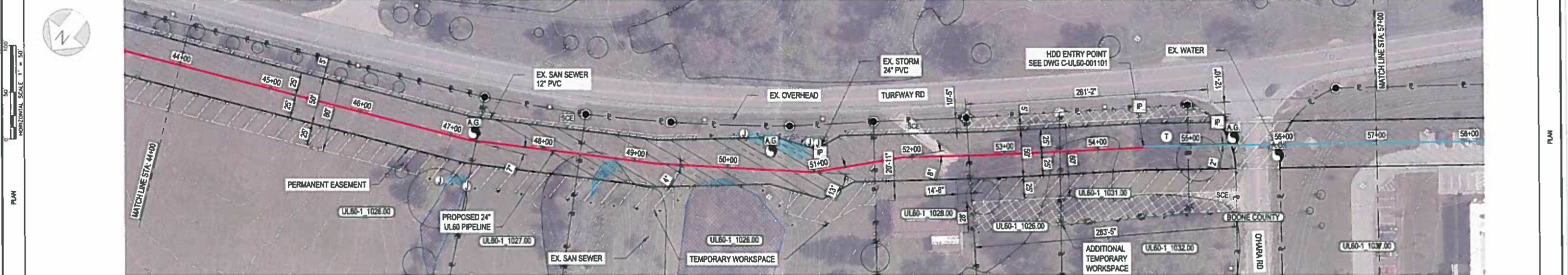
20. Permittee, its successors and assigns, agree to contain and maintain all dirt, mud, and other debris emanating from the encroachment away from the surrounding right-of-way and the travel way of the highway hereafter and at all times that its obligations under the permit remain in effect.

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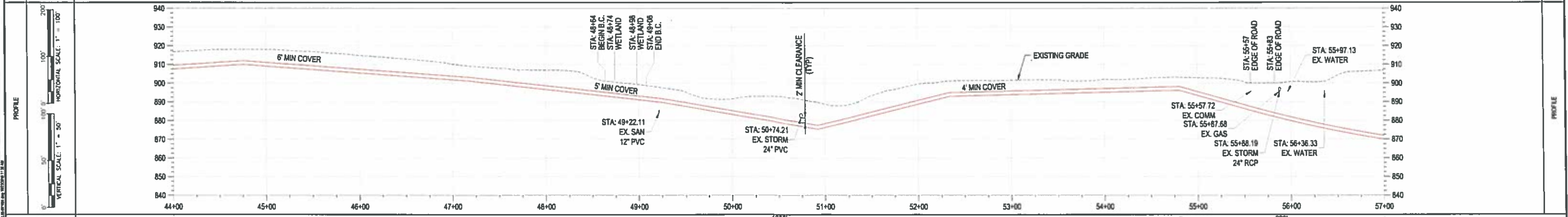
| | | | | | | | | | | |
|--------------|-------------|----------------|----------------|----------------|----------------|----------------|-------------|----------------|--------------|----------------|
| RIGHT-OF-WAY | OWNERSHIP | UL60-1_1026.00 | UL60-1_1027.00 | UL60-1_1026.00 | UL60-1_1028.00 | UL60-1_1026.00 | UL60-1_1031 | UL60-1_1032.00 | BOONE COUNTY | UL60-1_1037.00 |
| | ACREAGE | | | | | | | | | |
| | EASEMENTS | | | | | | | | | |
| | REF DWG NO. | C-UL60-001101 | | | | | | | | |

| | | | | | | | | | |
|------------|----------------------------|---|---|---|---------------------------|----------------------------|---------------------------|--|--|
| STATIONING | STA: 44+75 4' OVERBEND (V) | STA: 47+20 BEND 7' (H-LT) 1" OVERBEND (V) | STA: 49+23 BEND 4' (H-LT) 2" OVERBEND (V) | STA: 50+83 BEND 13' (H-LT) 12" SAG BEND (V) | STA: 51+91 6" BEND (H-RT) | STA: 52+33 6" SAG BEND (V) | STA: 52+80 1" BEND (H-LT) | STA: 54+81 FTG 2' (H-RT) 8" OVERBEND (V) | |
|------------|----------------------------|---|---|---|---------------------------|----------------------------|---------------------------|--|--|



| | | | | | | |
|---------------------------------|-----|--------|------|--------|------|--------|
| PIPE DATA (SLOPE STATIONING) | STA | WELD # | (OD) | LENGTH | (OD) | HEIGHT |
| | STA | WELD # | (OD) | | (OD) | |

FOR PERMITTING PURPOSES ONLY



| | | | |
|--------------|-------|---|-------------|
| MATERIAL | 1080' | 1 | OPEN TRENCH |
| CONST METHOD | 220' | 2 | HDD |
| CLASS / MACP | | | |

BURNS & MCDONNELL
STATE LICENSE #43

PROPRIETARY & CONFIDENTIAL ALL RIGHTS RESERVED * DO NOT SCALE THIS DRAWING * USE DIMENSIONS ONLY

PIEDMONT'S NATURAL GAS FACILITY DRAWINGS ARE CONSIDERED CONFIDENTIAL (OM-1095) * DRAWING IS CURRENT ONLY THROUGH THE LATEST REVISED DATE * TO INSURE THERE IS NO RISK OF INAPPROPRIATE DISCLOSURE ALL PREVIOUS PAPER COPIES OF THIS DRAWING MUST BE DESTROYED IN ACCORDANCE WITH RECORDS & INFO. MANAGEMENT (RIM) POLICY 1001

| NO. | DATE | REVISION(S) DESCRIPTION | BY | CHK | APPD | DESCRIPTION | DATE | INITIALS | APPROVALS |
|-----|------------|-------------------------|-----|-----|------|----------------------------------|------|----------|-----------|
| A | 05/22/2019 | ISSUED FOR 30% REVIEW | AKT | | | CEB EPM AREA CODE | | | |
| B | 09/18/2019 | ISSUED FOR 60% REVIEW | JXV | | | CEB EPM ACCOUNT NUMBER V8191 | | | |
| C | 10/23/2019 | ISSUED FOR PERMITTING | AKT | | | CEB EPM PROJECT NUMBER G7UL02PH1 | | | |

DRAWING BY: AKT
STATION ID: XX-X-XX-XXXX
CHECKER INITIALS: CEB

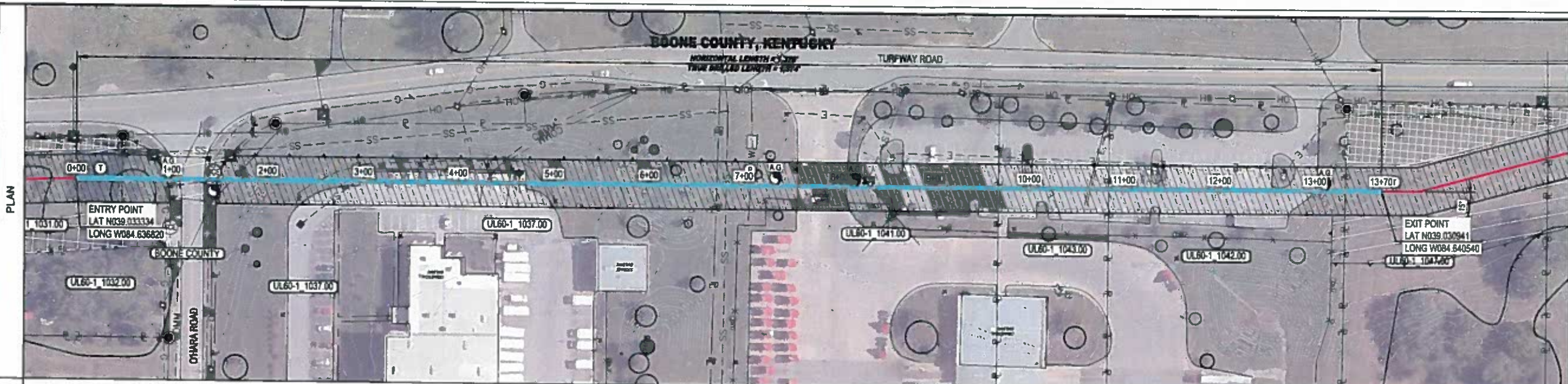
REF. DWG(S)

SHEET(S) 1 OF X
DWG DATE 04/02/2019
DRAWING NUMBER
REVISION

UL60 PIPELINE - PHASE 1
ALIGNMENT SHEET
BOONE COUNTY, KY
ERLANGER, KY

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PNG -C-UL60-001004 C



LEGEND

- PROPOSED PIPELINE
- EXISTING GAS LINE
- EXISTING SANITARY
- EXISTING WATER
- EXISTING OVERHEAD LINE
- EXISTING WATER
- FENCE
- OWNER TAG

PLANNED PROFILE VIEW SCALE
0 50 100

REQUIRED TOLERANCES
HORIZONTAL SCALE 1" = 50'

| ITEM | TOLERANCE |
|---|---|
| PILOT HOLE ENTRY LOCATION | UP TO 5-FEET AHEAD OF OR 5-FEET BEHIND THE ENTRY STAKE. BETWEEN 5-FEET LEFT OR 5-FEET RIGHT OF CENTERLINE. IN THE EVENT THE PILOT HOLE IS ADVANCED FROM ENTRY TO ENTRY OR A PILOT HOLE INTERSECT IS PERFORMED, THIS TOLERANCE SHALL ALSO APPLY TO THE PILOT HOLE EXIT LOCATION. |
| 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 1800'. |
| PILOT HOLE DEPTH | UP TO 2-FEET ABOVE ABOVE THE DESIGN DRILL PROFILE ALLOWED. UP TO 15-FEET BELOW THE DESIGN DRILL PROFILE ALLOWED. |
| PILOT HOLE ALIGNMENT | SHALL REMAIN WITHIN 10-FEET LEFT OR RIGHT OF THE HDD ALIGNMENT. |

STATIONING

STA: 0+00 ENTRY POINT @ 0°
ELEV. 892.65'
LAT: 39.033334, LONG: -84.636820

STA: 0+78 P.C.
ELEV. 892.00, RADIUS = 2,400'

STA: 1+08 EDGE OF ROAD
ELEV. 889.89, PROJECT STA: 55+54

STA: 1+34 EDGE OF ROAD
ELEV. 889.99, PROJECT STA: 55+80

STA: 4+10 P.T.
ELEV. 868.65'

STA: 7+56 EDGE OF DRIVEWAY
PROJECT STA: 52+02

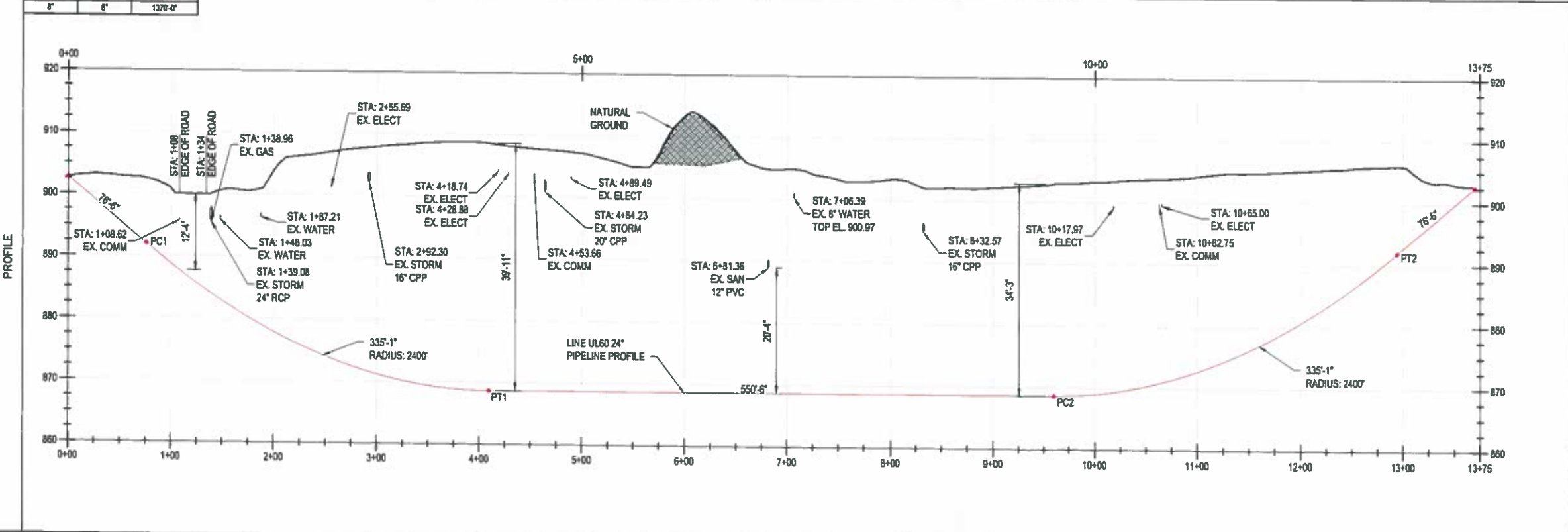
STA: 8+07 EDGE OF DRIVEWAY
PROJECT STA: 52+53

STA: 9+60 P.C.
ELEV. 868.65', RADIUS = 2,400'

STA: 12+94 P.T.
ELEV. 892.01'

STA: 13+70 EXIT POINT @ 0°
ELEV. 892.85'
LAT: 39.030941, LONG -84.640540

| ENTRY ANGLE | EXIT ANGLE | LENGTH OF BORE |
|-------------|------------|----------------|
| 0° | 0° | 1370'-0" |



GENERAL NOTES:

- STATIONING IS IN FEET BY HORIZONTAL MEASUREMENT. FOR HDD SURVEY CONTROL, REFERENCING CENTERLINE OF PIPE. HORIZONTAL CONTROL AND VERTICAL CONTROL ELEV. REF NAVD 88.
- THE GEOTECHNICAL INFORMATION PROVIDED ON THIS DRAWING IS A GENERAL SUMMARY.
- ALL PIPES USED FOR HDD CONSTRUCTION ARE 24" O.D. x 0.500" W.T. API 5L PSL2 X-45 ERW OR LSAW WITH 14-18 MILS FBE COATING & 36-60 MILS POWERCONCRETE COATING.
- ALL PIPES USED FOR OPEN CUT CONSTRUCTION ARE 24" O.D. x 0.500" W.T. API 5L PSL2 X-45 ERW OR LSAW WITH 14-18 MILS FBE COATING & 24" O.D. x 0.375" W.T. API 5L PSL2 X-45 SMLS WITH 60 MILS POWERCONCRETE COATING.
- CONTRACTOR IS RESPONSIBLE FOR CALLING KENTUCKY ONE-CALL 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. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND PROTECT ANY FOREIGN UTILITY THAT MAY BE AFFECTED BY THE HDD OPERATIONS.
- 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. ALL EQUIPMENT MUST ACCESS THE SITE ALONG THE CONSTRUCTION RIGHT-OF-WAY OR FROM APPROVED ACCESS ROADS.
- MAXIMUM WORK SPACE LIMITS ARE DEPICTED. RESTRICT ALL CLEARING TO THE WORK SPACE INDICATED AT THE ENTRY AND EXIT POINTS AND PRODUCT PIPE STRINGING AND FABRICATION AREA ALONG THE CONSTRUCTION RIGHT-OF-WAY. CLEARING BETWEEN THE ENTRY AND EXIT POINTS REQUIRES PRIOR APPROVAL FROM THE ENVIRONMENTAL INSPECTOR AND IS LIMITED TO THE AMOUNT NECESSARY TO STRING SURVEY WIRES AND INSTALL PUMPS AND PIPING TO OBTAIN WATER (WHERE APPROVED).
- 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.
- WATER FOR DRILLING FLUID AND HYDROSTATIC TEST WATER SHALL BE OBTAINED FROM AN APPROVED SOURCE.
- 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. 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. THE HDD CONTRACTOR SHALL MAKE ALL REASONABLE ATTEMPTS TO MAINTAIN DRILLING FLUID RETURNS DURING PILOT HOLE AND REMAINING OPERATIONS.
- THE DRILLING FLUID PROPERTIES SHALL BE TESTED A MINIMUM OF THREE (3) TIMES PER SHIFT SO THAT THE SUITABILITY OF THE DRILLING FLUID FOR THE GIVEN CONDITIONS CAN BE DETERMINED.
- 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.

PILOT HOLE REQUIREMENTS:

- 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 (TRUCK TRACK, PARATRACK OR EQUIVALENT). THE HDD CONTRACTOR WILL NOTE AND 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 THAT A GYROSCOPIC STEERING TOOL IS UTILIZED.
- 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.
- 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.
- PRIOR TO REAMING, THE CONTRACTOR SHALL SUBMIT AS-BUILT DATA AND CALCULATED LOCATION TO THE COMPANY FOR APPROVAL OF THE PILOT HOLE.

REMAINING REQUIREMENTS:

- 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.
- 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.

INSTALLATION REQUIREMENTS:

- THE CONTRACTOR WILL BE REQUIRED TO SUPPLY A PULLBACK LIFTING PROCEDURE, INCLUDING SUPPORT SPACING AND HEIGHT, AS PART OF THEIR FINAL HDD WORK PLAN.
- 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 1,200-FEET.
- 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.

POST-INSTALLATION REQUIREMENTS:

- 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-BUILT SURVEY DATA USED TO GENERATE THE DRAWING.

DUKE ENERGY'S NATURAL GAS FACILITY DRAWINGS ARE CONSIDERED CONFIDENTIAL (DM-1095) * DRAWING IS CURRENT ONLY THROUGH THE LATEST REVISED DATE * TO INSURE THERE IS NO RISK OF INAPPROPRIATE DISCLOSURE ALL PREVIOUS PAPER COPIES OF THIS DRAWING MUST BE DESTROYED IN ACCORDANCE WITH RECORDS & INFO. MANAGEMENT (RIM) POLICY 1001

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| NO. | DATE | REVISION(S) DESCRIPTION | BY | CHK | APPD | DESCRIPTION | APPROVALS |
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| A | 09/18/2019 | ISSUED FOR 60% REVIEW | AKT | CEB | EPM | AREA CODE | |

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| ACCOUNT NUMBER | PROJECT NUMBER | DRAWING BY | STATION ID | CHECKER INITIALS |
| | G7UL02PH1 | AKT | | AMP |

REGIONAL ENGINEER
MGR TECH REC & STD
PRINCIPAL ENGINEER

DUKE ENERGY | Piedmont Natural Gas

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**UL60 PIPELINE - PHASE 1
HDD ALIGNMENT SHEET
BOONE COUNTY, KY**

ERLANGER, KY

REF. DWG(S)
SHEET(S) 1 OF X | DWG SCALE AS NOTED
DWG DATE 07/19/2019 | SUPERSEDED
DRAWING NUMBER PNG -C-UL60-001101 | REVISION A
C/ERLANGERJLB

ENCROACHMENT PERMIT GENERAL NOTES & SPECIFICATIONS

Permit No. 06-2019-01087

I. SAFETY

A. General Provisions

- All signs and control of traffic shall be in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways, latest edition, Part VI, and safety requirements shall comply with the Permits Manual. Federal law requires that traffic control shall be implemented in accordance with MUTCD standards and KYTC's Standard Specifications for Road and Bridge Construction (KYTC SSRBC) under the supervision of a certified Work Zone Traffic Control Supervisor.
- All work necessary in shoulder or ditch line areas of a state highway shall be scheduled to be promptly completed so that hazards adjacent to the traveled way are kept to an absolute minimum.
- No more than one (1) traveled-lane shall be blocked or obstructed during normal working hours. All signs and flaggers during lane closure shall conform to the MUTCD. The traveled-way and shoulders shall be kept clear of mud and other construction debris at all times during construction of the permitted facility. No non-construction equipment or vehicles or office trailers shall be allowed on the right of way during working hours. The right of way shall be left free and clear of equipment, material, and vehicles during non-working hours.
- When necessary to block one (1) traveled-lane of a state highway, the normal working hours shall be as directed by the Department. No lanes shall be blocked or obstructed during adverse weather conditions (rain, snow, fog, etc.) without specific permission from the Department.
- Working hours shall be between 9:00AM and 3:00PM.
- Date and time restrictions pertaining to this permit are as follows:

B. Explosives

- No explosive devices or explosive material shall be used within state right of way without proper license and approval of the Kentucky Department of Mines and Minerals, Explosive Division.

C. OSHA

- Kentucky Occupational Safety and Health Standards for the construction industry, which has the effect of law, states in part: (Page 52, 1926.651, Specific Excavation Requirements) "Prior to opening an excavation, effort shall be made to determine whether underground installations, (sewer, telephone, water, fuel, electric lines, etc.) will be encountered, and if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined, and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation."

D. Archaeological

- Whenever materials of an archaeological nature are discovered during the course of construction work or maintenance operations, contact shall be made immediately with the Division of Environmental Analysis, which maintains an archaeologist on staff, or with the Office of the State Archaeologist located at the University of Kentucky. Following this consultation, further action shall be decided on a case-by-case basis by the State Highway Engineer or the Transportation Planning Engineer or their designated representative.

E. Environmental

- If the activity to which this permit related disturbs one acre or more of land, you must obtain KPDDES KYFD0 permit. Information can be found at <http://water.ky.gov/permitting/Pages/GeneralPermits.aspx>

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II. UTILITIES

- The permittee shall be responsible for any damage to existing utilities. Any utility modifications or relocations within state right of way necessary, as determined by the Department or by the owner of the utility, shall be at the expense of the permittee and subject to the approval of the Department.
- All existing manholes and valve boxes shall be adjusted to be flush with finished grade.
- Encasement pipe shall conform to current standards for highway crossings in accordance with the Permits Manual. Pipe encasing shall not be required if the pipe crossing is 2" or less.
- Parallel lines shall be constructed between back slope of ditch line and right-of-way line and shall have a minimum of 36-inch cover above top of pipe or conduit.
- All pavement cuts shall be restored per Kentucky Transportation Cabinet standards and specifications.
- Aerial crossing of utility lines shall have a minimum clearance of 24 feet from the high point of the roadway to the low point of the line.
- The clear zone requirement shall be met to the extent possible in accordance with the Roadside Design Guide.
- Minimum depth for underground utilities is 42" under roadways, ramps, and ditch lines and 36" in all other areas within state right of way except for natural gas and petroleum fraction lines.
- Any excavation within 3' of edge of pavement will require flowable fill as backfill.

Utility notes specific to fully-controlled access highways ONLY:

- All work necessary within the right-of-way shall be performed behind a temporary fence erected prior to the start of work. The temporary woven wire fence shall be removed immediately upon completion of work on the right-of-way, and the control of access immediately restored to original condition, in accordance with applicable KYTC SSRBC. All vents, valves, manholes, etc., shall be located outside of the right-of-way. Encasement pipe shall extend from right-of-way line to right-of-way line and shall be one continuous run of pipe. The encasement pipe shall be welded at all joints. The boring pit and tail ditch shall extend past the existing toe of slope or bottom of ditch line and shall be a minimum of 42 inches deep. Work in interstate right-of-way requires approval from FHWA (Federal Highway Administration).

III. DRAINAGE

- Any negative impact to existing drainage will be the applicant's responsibility to repair in accordance with KYTC SSRBC.
- All pipe shall be laid in a straight alignment, to proper grades, and with all materials and methods of installation including bedding and joint seating. Pipe shall not be covered until inspected by the Department and express permission obtained to make backfill. It is the applicant's responsibility to request inspection.
- All gutter lines at the base of new curbs shall be on continuous grades, and pockets of water along with curbs or in entrance areas or other paved areas within the right-of-way shall not be acceptable.
- All drainage structures and appurtenances (manholes, catch basins, curbing, inlet basins, etc.) shall conform to the Department specifications and shall be constructed in accordance with the KYTC's Standard Drawings.

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IV. PAVING

- No bituminous pavement shall be installed within the right of way between November 15 and April 1, nor when the temperature is below 40 degrees Fahrenheit, without the express consent of the Department. No bituminous pavement shall be installed when the underlying course is wet.

- Paving within the right of way shall be as follows:
 - Base (Type): Match Existing, (Thickness) Varies
 - Surface Base (Type) Match Existing, (Thickness) Varies
 - Finished Surface (Type) Bituminous Surface, (Thickness) 8"

Paving requirements specific to this permit:

- Utility companies performing road cuts must restore the pavement to pre-existing condition. Pictures/videos are recommended to ensure proper placement of signs and lane markers that are temporarily removed for paving operations. In some cases, a pre-work inventory may be requested from the Department.
- Existing pavement and shoulder material shall be removed to accommodate the above paving specifications.
- The finished surface of all new pavement within the right of way shall be true to the required slope and grade, uniform in density and texture, free of irregularities, and equivalent in riding qualities to the adjacent highway pavement or as determined by KYTC.
- All materials and methods of construction, including base and subgrade preparation, shall be in accordance with KYTC's Standard Specifications. At least 24 hours notice to the Department is required prior to beginning paving operations.
Phone: 859-341-2700 Name: Mark Brannon
- To ensure proper surface drainage, the new pavement shall be flush with the edge of existing highway pavement and shall slope away from the existing edge of the pavement as specified in drawings.
- Existing edge of pavement shall be saw-cut to provide a straight and uniform joint for new pavement. An approved joint sealer, in accordance with Kentucky Department of Highways Standard Specifications (latest edi-

V. ENTRANCES

- Encroachment permits issued by KYTC in no way supersede local planning/zoning requirements or subdivision regulations. KYTC has no authority with zoning changes.
- Commercial entrances must be paved to the right-of-way line. Any deviations must be approved by KYTC before installation.
- KYTC can dictate drainage improvement installation during construction or after entrance is at final grade. The permit release does not release the permit applicant from drainage maintenance.
- Signs (ground-mounted and span-mounted), stop bars, crosswalk, and proper lane markings must be in place before entrance is open for traffic. Lane width modifications must be approved by the Department.
- Guardrail installation must be pre-approved by the Department and installed by a KYTC pre-qualified contractor. Any guardrail that is removed during construction must be returned to the local KYTC maintenance facility.

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VI. TRAFFIC

- Any contractor performing work within the vicinity of KYTC roadway lighting or traffic signals, must request locates from the KYTC District 6 Traffic section at least one week in advance of starting work in the right-of-way.
- Applicant must maintain all KYTC Roadway signage that is impacted by the permitted work. In the event that any signs have to be moved, it is the applicant's responsibility to mark the sign's location before removal and to install the original or new sign per KYTC standards for sign installation.
- Any thermoplastic or striping damaged during the encroachment must be restored in a timely manner per KYTC standards. Stopbars, arrows, and crosswalks must be thermoplastic material, paint is not acceptable. This work must be performed by a KYTC pre-qualified contractor.
- Excavating near a signal, lighting pole, or anchoring facility must be done so that it does not impact the structural integrity of the pole. Any work that requires a temporary support or anchoring must receive prior approval.
- If the scope of the permit involves a signal build or rebuild, it is the applicant's responsibility to apply for power service (and pay monthly electrical bill) as well as request electrical inspection from the KYTC District 6 Traffic section. If the signal modifications require timing or phasing changes this must be requested at least two weeks in advance of the signal's turn-on date. KYTC will not take ownership of permitted signals until the electrical inspection is formally accepted and approved.
- Work which impacts traffic loops requires 48-hour notice to the KYTC District 6 Traffic section at 859-341-2700. Accidental damage of a traffic loop must be reported immediately to KYTC District 6's emergency line at 859-620-2738. Any disturbed traffic loops must be replaced in a timely manner. Traffic loops out of operation for more than five working days will subject the applicant to the cancellation of the permit. Loop repair must be performed by a KYTC pre-qualified contractor.

VII. SIDEWALK SPECIFICATIONS

A. New Sidewalks

- Sidewalks shall be constructed of Class A concrete (3,500 p.s.i.), shall be ____ feet in width, 8 inches in thickness across the bituminous entrance, and 4 inches in thickness across the remaining sections. The width of the sidewalk must meet current ADA (Americans with Disabilities Act) guidelines.
- Sidewalks shall have tooled joints not less than 1 inch in depth at ____foot intervals, and premolded expansion joints extending entirely through the sidewalk at intervals not to exceed 50 feet.
- All materials and methods of construction, including curing, shall be in accordance with KYTC's latest edition of the Standard Specifications.

B. Existing Sidewalks

- (Applicable if existing sidewalks are being relocated)** Use of the sidewalk shall not be blocked or obstructed and a usable walkway shall be maintained across the construction area at all times per MUTCD (Manual on Uniform Traffic Control Devices). Sidewalk closures must be approved by the Department before implementation.
- The location of ADA ramps (truncated domes/tactile warnings/etc.) will need to be field verified by the Department before installation.
- Any retrofitting will require the adherence to current ADA guidelines.
- Any section of sidewalk that becomes damaged shall be entirely replaced to match existing sections.

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VIII. RIGHT OF WAY RESTORATION

- All disturbed portions of the right of way shall be restored to grass as per Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition). A satisfactory turf, as determined by the Department, shall be established by the permittee prior to release of indemnity. Sodding or seeding shall be as follows:

Lawn or High Maintenance Situation: 70% Lawn Fescue (e.g., variety - Falcon) and 30% Bluegrass **or**
70% Lawn Rye (e.g., variety - Derby) and 30% Bluegrass

Right of Way Lawn Maintenance Situation: 70% KY 31 Fescue and 30% Perennial Rye Grass **or**
100% KY Fescue

- Two tons of clean straw mulch per acre of seeding.
- Prior to seeding, the ground shall be prepared in accordance with Kentucky Department of Highways Standard Specifications for Road and Bridge Construction (latest edition).
- Substitutes for sod such as artificial turf, rocked mulch, or paved areas may be acceptable if they are aesthetically pleasing and receive prior approval from KYTC.
- All ditch-flow lines and all ditch-side slopes shall be sodded.
- Existing concrete right of way markers shall not be disturbed. If damaged in any way, they shall be entirely replaced by the permittee with new concrete markers to match the original markers, in accordance with Kentucky Department of Highways Standard Drawings. Markers that are entirely removed shall be re-established in the proper locations by the permittee and to the satisfaction of the Department.

IX. RIGHT OF WAY FENCE RESTORATION

- The replacement fence shall be a height of at least 48 inches and shall be of sufficient density to contain all animals (if applicable).
- The replacement fence shall be a minimum of 1 foot and a maximum of 2 feet outside the right-of-way line
- The fence materials and design shall meet accepted industry standards and be treated as paintable.
- The permittee shall be required to maintain the fence in a high state of repair.
- The existing fence shall be removed by permittee and stored at the Department's maintenance storage yard for future reuse by the Department.
- The control of access shall not be diminished as a result of replacement of the fence.

NOTICE TO PERMITTEE

THE PERMITTEE AGREES THAT ALL WORK WITHIN THE EXISTING RIGHT OF WAY SHALL BE DONE IN ACORDANCE WITH THE PLANS AS APPROVED AND PERMITTED BY AN ENCROACHMENT PERMIT. ANY CHANGES OR VARIANCES MADE AT THE TIME OF CONSTRUCTION WITHOUT WRITTEN APPROVAL FROM THE DEPARTMENT OF HIGHWAYS SHALL BE REMOVED BY THE PERMITTEE AT NO EXPENSE TO THE DEPARTMENT OF HIGHWAYS AND SHALL BE REDONE BY THE PERMITTEE TO CONFORM WITH THE APPROVED PLANS.

November 19, 2019
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