



LG&E Energy LLC  
220 West Main Street (40202)  
P.O. Box 32030  
Louisville, Kentucky 40232

RECEIVED

JUL 7 2005

PUBLIC SERVICE  
COMMISSION

July 7, 2005

Elizabeth O'Donnell  
Executive Director  
Kentucky Public Service Commission  
211 Sower Boulevard  
Frankfort, Kentucky 40602-0615

**RE: Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity for the Construction of Transmission Facilities in Jefferson, Bullitt, Meade and Hardin Counties, Kentucky**  
**Case No. 2005-00142**

Dear Ms. O'Donnell:

Enclosed please find an original and ten (10) copies of Louisville Gas and Electric Company's ("LG&E") and Kentucky Utilities Company's ("KU") Response to the First Data Request of Dennis and Cathy Cunningham dated June 30, 2005 in the above-referenced docket.

Should you have any questions concerning the enclosed, please do not hesitate to contact me at (502) 627-4110.

Sincerely,

John Wolfram  
Manager, Regulatory Affairs

cc: Parties of Record

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

<b>JOINT APPLICATION OF LOUISVILLE GAS</b>	)	
<b>AND ELECTRIC COMPANY AND KENTUCKY</b>	)	
<b>UTILITIES COMPANY FOR A CERTIFICATE</b>	)	
<b>OF PUBLIC CONVENIENCE AND NECESSITY</b>	)	<b>CASE NO. 2005-00142</b>
<b>FOR CONSTRUCTION OF TRANSMISSION</b>	)	
<b>FACILITIES IN JEFFERSON, BULLITT, MEADE,</b>	)	
<b>AND HARDIN COUNTIES, KENTUCKY</b>	)	

**RESPONSE OF**  
**LOUISVILLE GAS AND ELECTRIC COMPANY**  
**AND**  
**KENTUCKY UTILITIES COMPANY**  
**TO DENNIS AND CATHY CUNNINGHAM'S**  
**FIRST DATA REQUEST**  
**DATED JUNE 30, 2005**

**FILED: July 7, 2005**



**LOUISVILLE GAS AND ELECTRIC COMPANY  
KENTUCKY UTILITIES COMPANY**

**CASE NO. 2005-00142**

**Response to Dennis and Cathy Cunningham's First Data Request  
Dated: June 30, 2005**

**Question No. 1**

**Responding Witness: J. Nate Mullins / Counsel**

- Q-1. Please provide a copy of any studies that have been undertaken or commissioned by LG&E or KU concerning alternative routes or alternative configurations for the proposed transmission facilities, and concerning the need for the proposed 750 MW supercritical pulverized coal fired base load generating unit to be constructed at the Trimble County Generating Station ("TC2"), described in the statement of basis in the above referenced joint application.
- A-1. As to alternative routes or alternative configurations for the proposed transmission facilities, please see the Direct Testimony of J. Nate Mullins herein and the studies attached hereto. As to the need for TC2, the Companies object on grounds that the information sought is not relevant to the subject-matter of this proceeding nor reasonably calculated to lead to the discovery of admissible evidence. Without waiver of that objection, please see the direct and rebuttal testimony of David J. Sinclair, as well as the cross-examination of Mr. Sinclair, in Commission Case No. 2004-00507.

**Mill Creek – Hardin County**

345 kV Transmission Line

Alternative Route Evaluation

**Route Descriptions:**

The first three routes parallel existing 138 kV transmission lines from Mill Creek Power Plant through the Fort Knox Military Reservation to Tip Top Substation for approximately 15 miles.

**West Route:**

The West Route continues west along existing transmission lines to the edge of the Fort Knox Military Reservation for approximately 2.5 miles. At that point the West Route will be rebuilt with the existing transmission line for approximately 3 miles. At which point the route leaves the existing transmission line corridor west of the Flaherty community and heads in a southerly direction for approximately 9 miles through mainly agricultural and forested areas. Next, the route heads in a southeasterly direction for approx. 8 miles until meeting an existing 138 kV transmission line approximately 4 miles west of Hardin County Substation.

**Central Route:**

The Central Route also continues west along the existing transmission lines to the edge of the Fort Knox Military Reservation. At this point this route turns south running just to the east of the Flaherty community encountering low-density residential and agricultural areas. The route continues in a southerly direction for approximately 18 miles until reaching the same 138 kV transmission line as the West Route.

After meeting the existing (name voltage) transmission line. These Alternate Routes will rebuild with this existing line into Hardin County Substation.

**East Route:**

The Far East Route leaves Mill Creek and heads in an eastern direction paralleling an existing 345 kV transmission line for approx 11.5 miles north of Fort Knox Military Reservation through forest and spotty, low density residential land use. After the route is east of Fort Knox in the Shepherdsville area, it parallels another existing 345 kV transmission line, which runs in a north south direction east of the fort for approx. 23.5 miles. For approx. 7.5 miles the existing line as well as the alternate route parallel Interstate 65. The land use in this area is mainly higher density residential, commercial, and industrial areas with some agricultural land use and forest land cover in between interstate exits. The alternate route does however deviate from an exact parallel with the existing lines to avoid relocating approx. 30 structures of mixed land use including residential.

After leaving the interstate, the route parallels an existing 161 kV transmission line still in a southerly direction. The land use becomes more agricultural and

forested with some low density residential. After paralleling the 161 kV transmission line for approx. 8 miles, the route parallels an existing 138 kV transmission line, running in a southwesterly direction, south of the Fort Knox Military Reservation toward the Elizabethtown area. It parallels the 138 kV for approx. 7 miles, while the residential developments become increasingly denser.

After crossing State Highway 210, the transmission line leaves existing transmissions and heads cross country toward Hardin County substation. The land use is mainly dense industrial with some residential in this area. The route also crosses some major transportation routes such as Lincoln Parkway, Interstate 65, and Western Kentucky Parkway in this 4 mile stretch.

### **Cost Analysis:**

A thorough cost analysis was performed on each alternative by analyzing cost of each angle, cost of length of single circuit vs. double circuit, property cost, and clearing cost. These costs are entered in as one of the items in the Metrics Spreadsheet.

Overall the West Route cost the least. The Central Route is third, while the East Route is by far the most expensive.

The West route has the least angles, which translates to a lower cost for angled structures. It also has lower property cost, due to the amount of rebuild and the rural, agricultural nature of the route. The amount of double circuit, rebuild length is what pushes this route to second in cost.

The Central Route is the second most expensive. The route has the third highest property cost and the third most angled structures. Although this route has the lowest clearing cost, this factor is not enough to lower the overall costs significantly.

The East Route was the most expensive. It was the longest route being 6 miles longer than the West Route. It also had the most amounts of angles, primarily due to avoiding structures. This route also had the largest property cost due to the more urbanized environment the route is located. (See Cost Spreadsheet)

### **Metrics:**

A standard set of metrics is collected for each route. These numbers are normalized to basic units and weighted based on the importance of each item. The items are divided into three categories: Built Environment, Natural Environment, and Engineering. (See Selection Spreadsheet)

#### **Built Environment:**

In the Built Environment, the West Route scores the best. The Central is. The East Route scores by far the worst. On the West Route, there are no residences within 50' of the proposed route that aren't currently in close proximity to existing transmission lines. The West Route also has the lowest number of churches and cemeteries. The East Route has greater impact to all categories with exception to agricultural buildings and historic resources.

**Natural Environment:**

In the Natural Environment, the West Route scores the best. The Central Route is second, and the East is last. In the four categories in the Natural Environment section, the West Route scores best in three: Stream/River Crossings, Wetland Areas, and Floodplain Areas. The exception is the Natural Forested Areas, however the East Route has the most and the Central Route as the least. The East Route has the highest number of stream and river crossings and floodplain acreage as well.

**Engineering:**

In the Engineering Section, the West Route scores the best. The Central Route is second. The East Route scores the worst. The most significant factor that pushes the West Route to score the best is that this route utilizes more rebuild opportunities than the others. Although the West Route is not the least expensive, the rebuild criterion is given priority over total cost. Likewise, the Route parallels more with existing facilities but has no rebuild opportunities.

**Conclusion:**

The West Route out scores the other alternatives in all categories. The primary reasons are no new residents will be in close proximity to the route, fewer streams, wetlands, and floodplain crossed, and more rebuild.

**Expert Judgment:**

After the Alternatives are ranked and scored, the top routes are ranked again in the Expert Judgment Model. (See Expert Judgment Spreadsheet) In this model, qualitative criteria are reviewed. Each category is given a weight based on the characteristics of the project. For this project Special Permit Issues and Schedule Delay Risk were weighted as the most important categories. The West Route scored the best. The Central Route scored third and the East Route scored a close fourth due to schedule delay issues. The East Route crossed by far the largest number of parcels, multiple interstate crossings, and close proximity to residential areas.

Mill Creek - Hardin County  
345 kV Transmission Line  
Alternate Route Cost Analysis

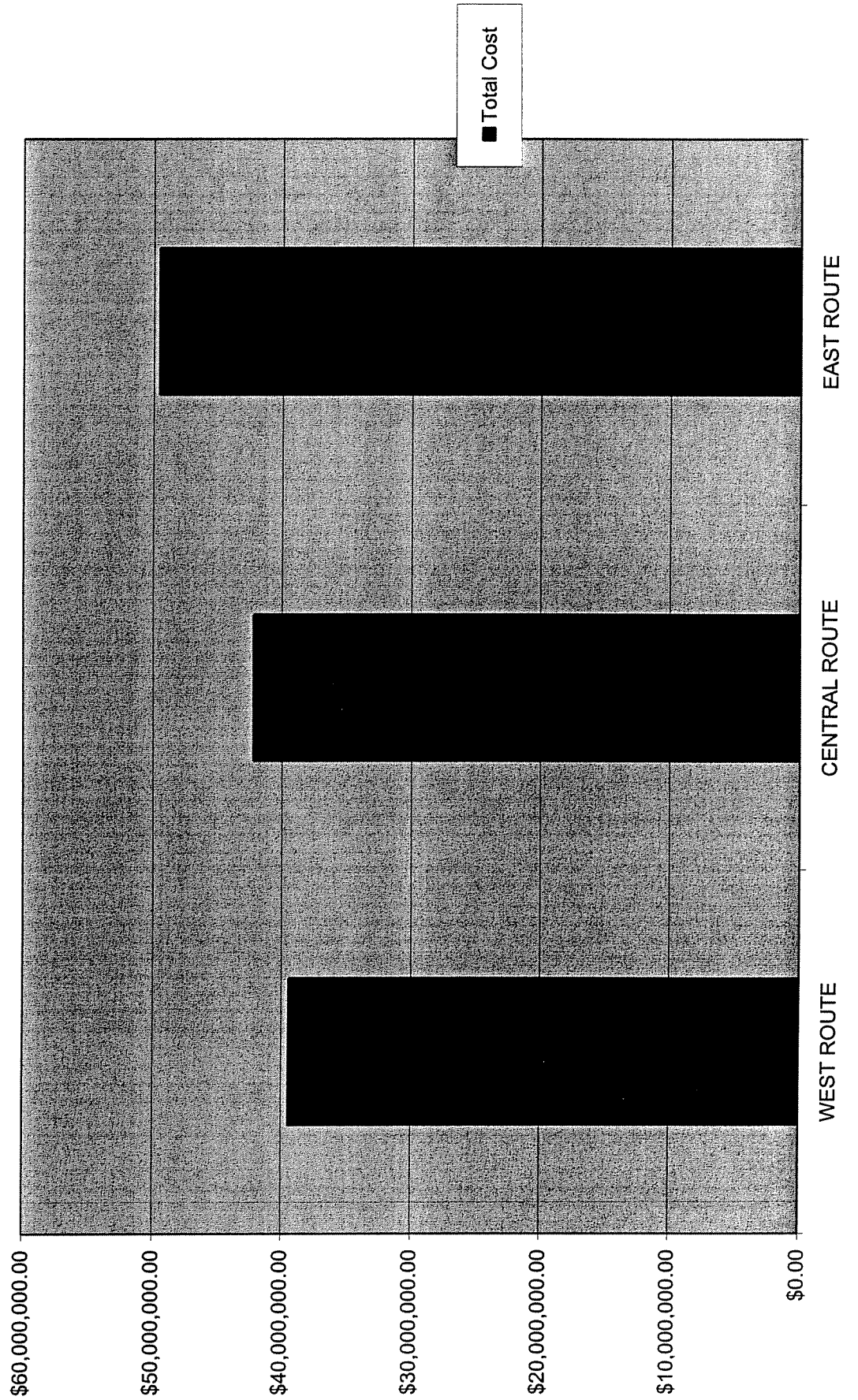
	WEST ROUTE	CENTRAL ROUTE	EAST ROUTE
FIXED COST	\$2,854,000.00	\$2,854,000.00	\$2,854,000.00
ANGLE COST	\$8,603,000.00	\$14,578,000.00	\$16,804,000.00
SINGLE CIRCUIT LENGTH COST	\$18,375,280.00	\$18,694,480.00	\$25,594,520.00
DOUBLE CIRCUIT LENGTH COST	\$8,397,760.00	\$4,632,460.00	\$0.00
<b>Construction Sub-Total</b>	<b>\$38,230,040.00</b>	<b>\$40,758,940.00</b>	<b>\$45,252,520.00</b>
Clearing Cost	\$790,603.00	\$669,465.00	\$979,237.00
30% PVA FMV	\$400,799.40	\$802,004.70	\$3,321,201.60
*Number of Parcels	114	158	338
<b>TOTAL COST</b>	<b>\$39,421,442.40</b>	<b>\$42,230,409.70</b>	<b>\$49,552,958.60</b>

\*30% PVA FMV and Number of Parcels do not include parcels crossed while rebuilding an existing transmission line, Fort Knox properties, or LG&E properties



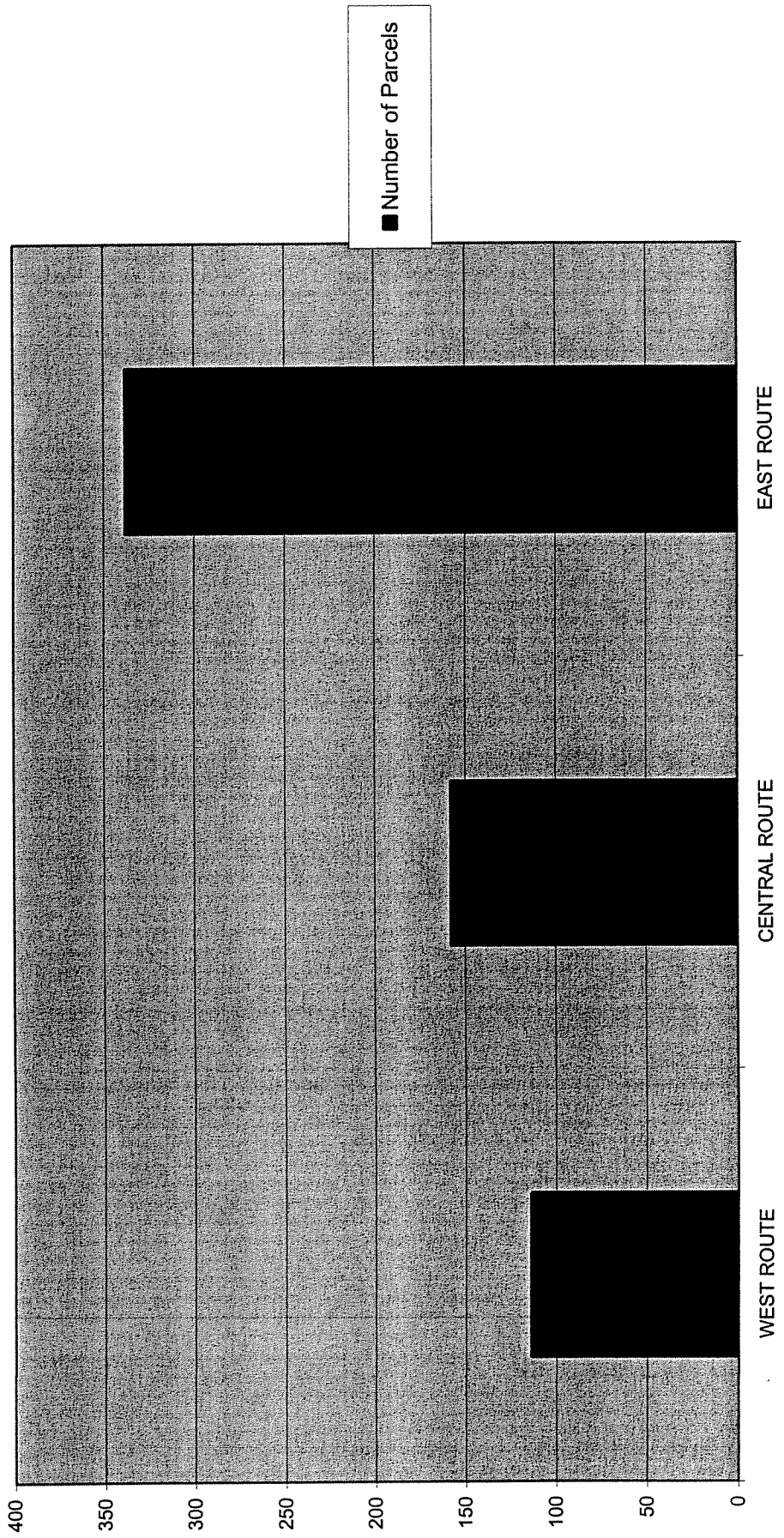
Mill Creek - Hardin County  
345 KV Transmission Line  
Alternate Route Cost Analysis

### Total Project Cost Comparison



Mill Creek - Hardin County  
345 kV Transmission Line  
Alternate Route Analysis

Number of Parcels Comparison



Mill Creek - Hardin County  
345 kV Transmission Line  
Alternate Route Statistics Normalized

**DATA**

**Numbers Normalized**

**FOR ALL ROUTES**

	WEST ROUTE	CENTRAL ROUTE	EAST ROUTE
Feature	Unit	Unit	Unit
Residences within ROW	0	0	2
<i>Normalized</i>	0.00	0.00	1.00
Proximity to Residences (within 300')	16	50	116
<i>Normalized</i>	0.00	0.34	1.00
Proposed Developments	2	2	4
<i>Normalized</i>	0.00	0.00	1.00
Proximity Commercial Buildings(within 300')	0	0	2
<i>Normalized</i>	0.00	0.00	1.00
Proximity Industrial Buildings(within 300')	1	2	9
<i>Normalized</i>	0.00	0.13	1.00
School, Day Care, Church, Cemetery, and Park Parcels Crossed	0	0	0
<i>Normalized</i>	0.00	0.00	0.00
NRHP Listed Structures and Districts (1500' from edge of R/W)	2	2	1
<i>Normalized</i>	1.00	1.00	0.00
<b>Natural</b>			
Natural Forests (Acres)	454.37	384.75	562.78
<i>Normalized</i>	0.39	0.00	1.00
Stream/River Crossings	33.00	42.00	83.00
<i>Normalized</i>	0.00	0.18	1.00
Wetland Areas (Acres)	22.81	28.90	11.99
<i>Normalized</i>	0.64	1.00	0.00
Floodplain Areas (Acres)	105.20	107.50	153.18
<i>Normalized</i>	0.00	0.05	1.00
<b>Engineering</b>			
Length (Miles)	41.90	39.20	48.11
<i>Normalized</i>	0.30	0.00	1.00
Miles of Rebuild with Existing T/L*	7.36	4.06	0.00
<i>Normalized</i>	1.00	0.55	0.00
<i>Inverted</i>	0.00	0.45	1.00
Miles of Co-location with Existing Utilities*	14.95	14.95	29.43
<i>Normalized</i>	0.00	0.00	1.00
<i>Inverted</i>	1.00	1.00	0.00
Miles of Co-location with Roads*	0.00	0.00	0.00
<i>Normalized</i>	0.00	0.00	0.00
<i>Inverted</i>	0.00	0.00	0.00
Total Project Costs	\$39,421,442	\$42,230,410	\$49,552,959
<i>Normalized</i>	0.00	0.28	1.00

\* Inverted for calculations

**MILL CREEK - HARDIN COUNTY  
345 kV Transmission Line  
BUILT ENVIRONMENT  
EMPHASIS  
WEIGHTED MATRIX**

March 20, 2005

**Metrics**

**Numbers Weighted and Summed**

<b>Built Emphasis</b>	<b>72%</b>	<b>WEST ROUTE</b>	<b>CENTRAL ROUTE</b>	<b>EAST ROUTE</b>
<b>Segments</b>				
Feature		Unit	Unit	Unit
Residences with ROW	52.9%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.53
Proximity to Residences (within 300')	15.6%	0.00	0.34	1.00
<i>Weighted</i>		0.00	0.05	0.16
Proposed Developments	6.5%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.07
Proximity Commercial Buildings(within 300')	4.3%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.04
Proximity Industrial Buildings(within 300')	2.2%	0.00	0.13	1.00
<i>Weighted</i>		0.00	0.00	0.02
School, Day Care, Church, Cemetery, and Park Parcels Crossed	0.0%	0.00	0.00	0.00
<i>Weighted</i>		0.00	0.00	0.00
NRHP Listed Structures and Districts (1500' from edge of R/W)	18.5%	1.00	1.00	0.00
		0.19	0.19	0.00
<b>TOTAL</b>	<b>100.0%</b>	<b>0.19</b>	<b>0.24</b>	<b>0.82</b>
<b>WEIGHTED TOTAL</b>		<b>0.13</b>	<b>0.17</b>	<b>0.59</b>
<b>Natural</b>	<b>14%</b>			
Natural Forests (Acres)	9.3%	0.39	0.00	1.00
<i>Weighted</i>		0.04	0.00	0.09
Stream/River Crossings	38.0%	0.00	0.18	1.00
<i>Weighted</i>		0.00	0.07	0.38
Wetland Areas (Acres)	40.3%	0.64	1.00	0.00
<i>Weighted</i>		0.26	0.40	0.00
Floodplain Areas (Acres)	12.4%	0.00	0.05	1.00
<i>Weighted</i>		0.00	0.01	0.12
<b>TOTAL</b>	<b>100.0%</b>	<b>0.29</b>	<b>0.48</b>	<b>0.60</b>
<b>WEIGHTED TOTAL</b>		<b>0.04</b>	<b>0.07</b>	<b>0.08</b>
<b>Engineering</b>	<b>14%</b>			
Miles of Rebuild with Existing T/L*	71.2%	0.00	0.45	1.00
<i>Weighted</i>		0.00	0.32	0.71
Miles of Co-location with Existing Utilities*	20.8%	1.00	1.00	0.00
<i>Weighted</i>		0.21	0.21	0.00
Miles of Co-location with Roads*	0.0%	0.00	0.00	0.00
<i>Weighted</i>		0.00	0.00	0.00
Total Project Costs	8.0%	0.00	0.28	1.00
<i>Weighted</i>		0.00	0.02	0.08
<b>TOTAL</b>	<b>100.0%</b>	<b>0.21</b>	<b>0.55</b>	<b>0.79</b>
<b>WEIGHTED TOTAL</b>		<b>0.03</b>	<b>0.08</b>	<b>0.11</b>
<b>SUM OF WEIGHTED TOTALS</b>		<b>0.20</b>	<b>0.32</b>	<b>0.78</b>

\* Inverted for calculations

Lowest Number is Best

**MILL CREEK - HARDIN COUNTY  
345 kV Transmission Line  
ENGINEERING EMPHASIS  
WEIGHTED MATRIX**

March 20, 2005

**Metrics**

**Numbers Weighted and Summed**

Engineering Emphasis Segments	14%	WEST ROUTE	CENTRAL ROUTE	EAST ROUTE
Feature		Unit	Unit	Unit
Residences with ROW	52.9%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.53
Proximity to Residences (within 300')	15.6%	0.00	0.34	1.00
<i>Weighted</i>		0.00	0.05	0.16
Proposed Developments	6.5%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.07
Proximity Commercial Buildings(within 300')	4.3%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.04
Proximity Industrial Buildings(within 300')	2.2%	0.00	0.13	1.00
<i>Weighted</i>		0.00	0.00	0.02
School, Day Care, Church, Cemetery, and Park Parcels Crossed	0.0%	0.00	0.00	0.00
<i>Weighted</i>		0.00	0.00	0.00
NRHP Listed Structures and Districts (1500' from edge of R/W)	18.5%	1.00	1.00	0.00
		0.19	0.19	0.00
<b>TOTAL</b>	<b>100.0%</b>	<b>0.19</b>	<b>0.24</b>	<b>0.82</b>
<b>WEIGHTED TOTAL</b>		<b>0.03</b>	<b>0.03</b>	<b>0.11</b>
<b>Natural</b>	<b>14%</b>			
Natural Forests (Acres)	9.3%	0.39	0.00	1.00
<i>Weighted</i>		0.04	0.00	0.09
Stream/River Crossings	38.0%	0.00	0.18	1.00
<i>Weighted</i>		0.00	0.07	0.38
Wetland Areas (Acres)	40.3%	0.64	1.00	0.00
<i>Weighted</i>		0.26	0.40	0.00
Floodplain Areas (Acres)	12.4%	0.00	0.05	1.00
<i>Weighted</i>		0.00	0.01	0.12
<b>TOTAL</b>	<b>100.0%</b>	<b>0.29</b>	<b>0.48</b>	<b>0.60</b>
<b>WEIGHTED TOTAL</b>		<b>0.04</b>	<b>0.07</b>	<b>0.08</b>
<b>Engineering</b>	<b>72%</b>			
Miles of Rebuild with Existing T/L*	71.2%	0.00	0.45	1.00
<i>Weighted</i>		0.00	0.32	0.71
Miles of Co-location with Existing Utilities*	20.8%	1.00	1.00	0.00
<i>Weighted</i>		0.21	0.21	0.00
Miles of Co-location with Roads*	0.0%	0.00	0.00	0.00
<i>Weighted</i>		0.00	0.00	0.00
Total Project Costs	8.0%	0.00	0.28	1.00
<i>Weighted</i>		0.00	0.02	0.08
<b>TOTAL</b>	<b>100.0%</b>	<b>0.21</b>	<b>0.55</b>	<b>0.79</b>
<b>WEIGHTED TOTAL</b>		<b>0.15</b>	<b>0.40</b>	<b>0.57</b>
<b>SUM OF WEIGHTED TOTALS</b>		<b>0.22</b>	<b>0.50</b>	<b>0.77</b>

\* Inverted for calculations

Lowest Number is Best

**MILL CREEK - HARDIN COUNTY  
345 kV Transmission Line  
NATURAL ENVIRONMENT  
EMPHASIS  
WEIGHTED MATRIX**

March 20, 2005

**Metrics**

Numbers Weighted and Summed

Natural Emphasis Segments	14%	WEST ROUTE	CENTRAL ROUTE	EAST ROUTE
Feature		Unit	Unit	Unit
Residences with ROW	52.9%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.53
Proximity to Residences (within 300')	15.6%	0.00	0.34	1.00
<i>Weighted</i>		0.00	0.05	0.16
Proposed Developments	6.5%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.07
Proximity Commercial Buildings(within 300')	4.3%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.04
Proximity Industrial Buildings(within 300')	2.2%	0.00	0.13	1.00
<i>Weighted</i>		0.00	0.00	0.02
School, Day Care, Church, Cemetery, and Park Parcels Crossed	0.0%	0.00	0.00	0.00
<i>Weighted</i>		0.00	0.00	0.00
NRHP Listed Structures and Districts (1500' from edge of R/W)	18.5%	1.00	1.00	0.00
		0.19	0.19	0.00
<b>TOTAL</b>	<b>100.0%</b>	<b>0.19</b>	<b>0.24</b>	<b>0.82</b>
<b>WEIGHTED TOTAL</b>		<b>0.03</b>	<b>0.03</b>	<b>0.11</b>
<b>Natural</b>	<b>72%</b>			
Natural Forests (Acres)	9.3%	0.39	0.00	1.00
<i>Weighted</i>		0.04	0.00	0.09
Stream/River Crossings	38.0%	0.00	0.18	1.00
<i>Weighted</i>		0.00	0.07	0.38
Wetland Areas (Acres)	40.3%	0.64	1.00	0.00
<i>Weighted</i>		0.26	0.40	0.00
Floodplain Areas (Acres)	12.4%	0.00	0.05	1.00
<i>Weighted</i>		0.00	0.01	0.12
<b>TOTAL</b>	<b>100.0%</b>	<b>0.29</b>	<b>0.48</b>	<b>0.60</b>
<b>WEIGHTED TOTAL</b>		<b>0.21</b>	<b>0.34</b>	<b>0.43</b>
<b>Engineering</b>	<b>14%</b>			
Miles of Rebuild with Existing T/L*	71.2%	0.00	0.45	1.00
<i>Weighted</i>		0.00	0.32	0.71
Miles of Co-location with Existing Utilities*	20.8%	1.00	1.00	0.00
<i>Weighted</i>		0.21	0.21	0.00
Miles of Co-location with Roads*	0.0%	0.00	0.00	0.00
<i>Weighted</i>		0.00	0.00	0.00
Total Project Costs	8.0%	0.00	0.28	1.00
<i>Weighted</i>		0.00	0.02	0.08
<b>TOTAL</b>	<b>100.0%</b>	<b>0.21</b>	<b>0.55</b>	<b>0.79</b>
<b>WEIGHTED TOTAL</b>		<b>0.03</b>	<b>0.06</b>	<b>0.11</b>
<b>SUM OF WEIGHTED TOTALS</b>		<b>0.27</b>	<b>0.45</b>	<b>0.65</b>

\* Inverted for calculations

Lowest Number is Best

**MILL CREEK - HARDIN COUNTY  
345 kV Transmission Line  
SIMPLE AVERAGE  
WEIGHTED MATRIX**

March 20, 2005

**Metrics**

Numbers Weighted and Summed

Simple Average Segments	33%	WEST ROUTE	CENTRAL ROUTE	EAST ROUTE
Feature		Unit	Unit	Unit
Residences with ROW	52.9%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.53
Proximity to Residences (within 300')	15.6%	0.00	0.34	1.00
<i>Weighted</i>		0.00	0.05	0.16
Proposed Developments	6.5%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.07
Proximity Commercial Buildings(within 300')	4.3%	0.00	0.00	1.00
<i>Weighted</i>		0.00	0.00	0.04
Proximity Industrial Buildings(within 300')	2.2%	0.00	0.13	1.00
<i>Weighted</i>		0.00	0.00	0.02
School, Day Care, Church, Cemetery, and Park Parcels Crossed	0.0%	0.00	0.00	0.00
<i>Weighted</i>		0.00	0.00	0.00
NRHP Listed Structures and Districts (1500' from edge of R/W)	18.5%	1.00	1.00	0.00
		0.19	0.19	0.00
<b>TOTAL</b>	<b>100.0%</b>	<b>0.19</b>	<b>0.24</b>	<b>0.82</b>
<b>WEIGHTED TOTAL</b>		<b>0.05</b>	<b>0.08</b>	<b>0.27</b>
<b>Natural</b>	<b>33%</b>			
Natural Forests (Acres)	9.3%	0.39	0.00	1.00
<i>Weighted</i>		0.04	0.00	0.09
Stream/River Crossings	38.0%	0.00	0.18	1.00
<i>Weighted</i>		0.00	0.07	0.38
Wetland Areas (Acres)	40.3%	0.64	1.00	0.00
<i>Weighted</i>		0.26	0.40	0.00
Floodplain Areas (Acres)	12.4%	0.00	0.05	1.00
<i>Weighted</i>		0.00	0.01	0.12
<b>TOTAL</b>	<b>100.0%</b>	<b>0.29</b>	<b>0.48</b>	<b>0.60</b>
<b>WEIGHTED TOTAL</b>		<b>0.10</b>	<b>0.16</b>	<b>0.20</b>
<b>Engineering</b>	<b>33%</b>			
Miles of Rebuild with Existing T/L*	71.2%	0.00	0.45	1.00
<i>Weighted</i>		0.00	0.32	0.71
Miles of Co-location with Existing Utilities*	20.8%	1.00	1.00	0.00
<i>Weighted</i>		0.21	0.21	0.00
Miles of Co-location with Roads*	0.0%	0.00	0.00	0.00
<i>Weighted</i>		0.00	0.00	0.00
Total Project Costs	8.0%	0.00	0.28	1.00
<i>Weighted</i>		0.00	0.02	0.08
<b>TOTAL</b>	<b>100.0%</b>	<b>0.21</b>	<b>0.55</b>	<b>0.79</b>
<b>WEIGHTED TOTAL</b>		<b>0.07</b>	<b>0.18</b>	<b>0.26</b>
<b>SUM OF WEIGHTED TOTALS</b>		<b>0.23</b>	<b>0.42</b>	<b>0.73</b>

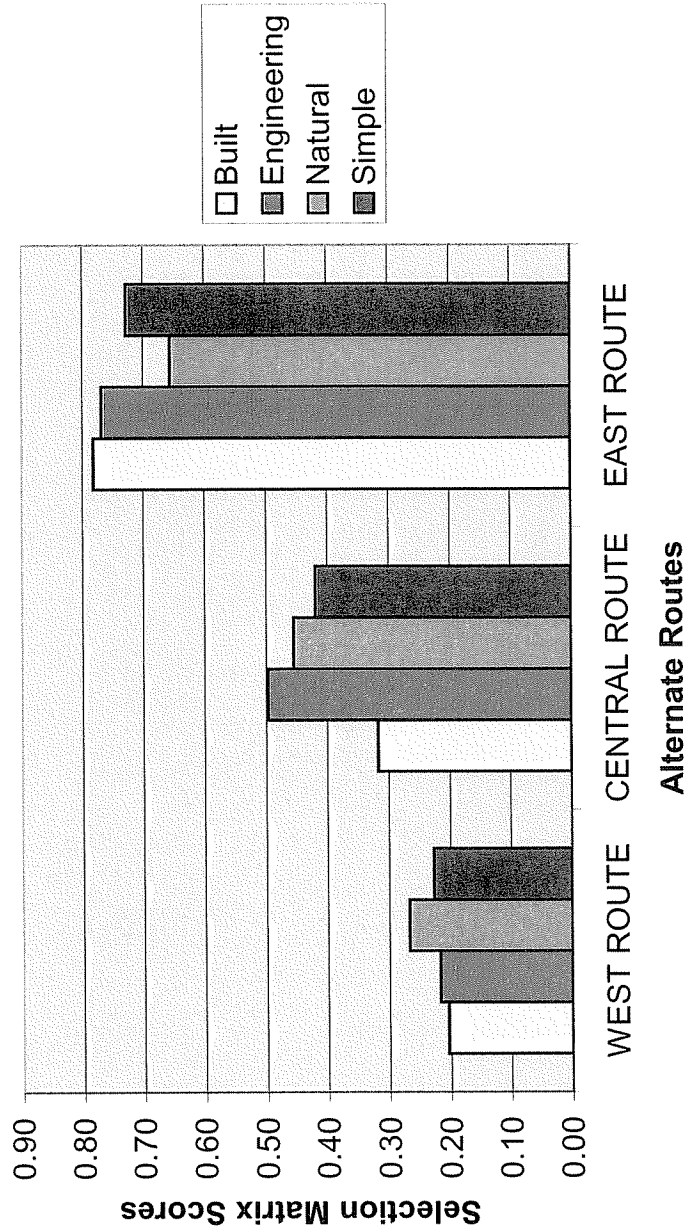
\* Inverted for calculations

Lowest Number is Best

MILL CREEK - HARDIN COUNTY  
 345 kV Transmission Line  
 COMPOSITE OF  
 WEIGHTED MATRICES

	WEST ROUTE	CENTRAL ROUTE	EAST ROUTE
Built	0.20	0.32	0.78
Engineering	0.22	0.50	0.77
Natural	0.27	0.45	0.65
Simple	0.23	0.42	0.73

Composite of Overall Scores





Mill Creek - Hardin County  
 345 kV Transmission Lines  
 Expert Judgement Matrix

1 = Low Impact 2 = Medium Impact 3 = High Impact

**EXPERT JUDGEMENT**

	Per Project	WEST ROUTE	CENTRAL ROUTE	EAST ROUTE
Visual Issues	10%	1	1	2
<i>Weighted</i>		0.1	0.1	0.2
Community Issues	10%	1	2	3
<i>Weighted</i>		0.1	0.2	0.3
Schedule Delay Risk (Parcels)	30%	1	1	3
<i>Weighted</i>		0.3	0.3	0.9
Special Permit Issues	35%	1	1	3
<i>Weighted</i>		0.35	0.35	1.05
Construction/ Maintenance Accessibility	5%	1	2	3
<i>Weighted</i>		0.05	0.1	0.15
Environmental Justice	10%	1	1	1
<i>Weighted</i>		0.1	0.1	0.1
<b>TOTAL</b>	<b>100%</b>	<b>1</b>	<b>1.15</b>	<b>2.7</b>



**LOUISVILLE GAS AND ELECTRIC COMPANY  
KENTUCKY UTILITIES COMPANY**

**CASE NO. 2005-00142**

**Response to Dennis and Cathy Cunningham's First Data Request  
Dated: June 30, 2005**

**Question No. 2**

**Responding Witness: J. Nate Mullins**

- Q-2. Please provide a copy of any studies, including any environmental impact statement or environmental assessment, produced by or on behalf of any federal or state agency or by LG&E or KU, evaluating the environmental impacts of the proposed transmission facilities and alternatives and of the proposed TC2. Please provide all studies and reports, other than the testimony of J. Nate Mullins, already filed, that provide a basis for the claim made in the statement of convenience in the above referenced joint application that the proposed transmission facilities will have "as little negative impact as can be reasonably afforded."
- A-2. See documents referenced in response to Question No. 1. The Companies plan to complete an environmental study once permission to conduct field surveys has been obtained from landowners.



**LOUISVILLE GAS AND ELECTRIC COMPANY  
KENTUCKY UTILITIES COMPANY**

**CASE NO. 2005-00142**

**Response to Dennis and Cathy Cunningham's First Data Request  
Dated: June 30, 2005**

**Question No. 3**

**Responding Witness: J. Nate Mullins / Counsel**

- Q-3. Please provide a copy of any studies that have been undertaken or commissioned by LG&E or KU concerning alternative approaches to vegetation management for the proposed transmission facilities' right-of-way.
- A-3. The Companies object on grounds that this question is ambiguous. Without waiver of that objection, the Companies state that alternative approaches to vegetation management are currently used. Right of way is cleared by a combination of methods, including aerial spraying, ground spraying, mowing, and cutting. Spraying uses herbicides to control re-growth of trees and brush within the right of way, and the use of these herbicides greatly reduces the brush growth and the need for returns to a property. Herbicide use will allow five to six years (sometimes longer) of control before having to return. Mowing alone will generally allow three to four years of control, but rapidly increases the density of the brush. The Companies endeavor to cooperate with property owners regarding the use of herbicides.



**LOUISVILLE GAS AND ELECTRIC COMPANY  
KENTUCKY UTILITIES COMPANY**

**CASE NO. 2005-00142**

**Response to Dennis and Cathy Cunningham's First Data Request  
Dated: June 30, 2005**

**Question No. 4**

**Responding Witness: J. Nate Mullins**

- Q-4. Please identify by product name any herbicides or pesticides that will be used, if any, and the manner of application for the transmission line right-of-way.
- A-4. The particular herbicides and pesticides have not been selected. However, all herbicides used by the Companies are either Federal EPA or State approved and used in small amounts. All herbicide applicators are certified by the Kentucky Division of Pesticides and are required to participate in continuing education classes to stay compliant. These applicator crews are field checked by inspectors of the Division of Pesticides on a regular basis to ensure compliance with all regulations. It is anticipated that herbicide use will be minor on the proposed transmission line, except for portions of the line crossing Fort Knox.





**LOUISVILLE GAS AND ELECTRIC COMPANY  
KENTUCKY UTILITIES COMPANY**

**CASE NO. 2005-00142**

**Response to Dennis and Cathy Cunningham's First Data Request  
Dated: June 30, 2005**

**Question No. 5**

**Responding Witness: J. Nate Mullins / Counsel**

- Q-5. Has LG&E or KU made application to any federal or state agency for any permits, licenses, authorizations or other approvals necessary for these proposed transmission facilities or for the TC2?
- A-5. With regard to the transmission facilities, no applications have been made for any permits except for the CCN which is the subject of this proceeding at this time. As to TC2, the Companies object on grounds that the information sought is not relevant to the subject-matter of this proceeding nor reasonably calculated to lead to the discovery of admissible evidence. Without waiver of that objection, see the record in Case No. 2004-00507.



**LOUISVILLE GAS AND ELECTRIC COMPANY  
KENTUCKY UTILITIES COMPANY**

**CASE NO. 2005-00142**

**Response to Dennis and Cathy Cunningham's First Data Request  
Dated: June 30, 2005**

**Question No. 6**

**Responding Witness: J. Nate Mullins**

- Q-6. If the answer to Question 5 is "yes," please identify each application by date and agency to which application was made, and provide a copy of the application and the response, if any from such agency.
- A-6. Not applicable.



**LOUISVILLE GAS AND ELECTRIC COMPANY  
KENTUCKY UTILITIES COMPANY**

**CASE NO. 2005-00142**

**Response to Dennis and Cathy Cunningham's First Data Request  
Dated: June 30, 2005**

**Question No. 7**

**Responding Witness: Mark S. Johnson**

- Q-7. Does LG&E or KU intend to acquire the necessary rights-of-ways on a voluntary basis or through condemnation?
- A-7. As with any of their transmission projects, the Companies intend to acquire necessary easements and rights-of-way through negotiations with affected landowners. However, if those negotiations are not successful, the Companies have, and intend to use, the right to exercise eminent domain.



**LOUISVILLE GAS AND ELECTRIC COMPANY  
KENTUCKY UTILITIES COMPANY**

**CASE NO. 2005-00142**

**Response to Dennis and Cathy Cunningham's First Data Request  
Dated: June 30, 2005**

**Question No. 8**

**Responding Witness: Kent W. Blake / Counsel**

- Q-8. Please provide a copy of any application that has been made to the Department of Energy or any other federal agencies, for any loan, loan guarantee or other financial assistance for the proposed transmission facilities or for TC2, if there are any such applications.
- A-8. The Companies object to this request on grounds that the information sought is not relevant to the subject-matter of this proceeding nor reasonably calculated to lead to the discovery of admissible evidence. Without waiver of that objection, however, and as to the transmission facilities, the Companies state that no such loan application has been made. Further information regarding expected financing of construction of the transmission facilities is contained in paragraph 10 of the Companies' Joint Application.





**LOUISVILLE GAS AND ELECTRIC COMPANY  
KENTUCKY UTILITIES COMPANY**

**CASE NO. 2005-00142**

**Response to Dennis and Cathy Cunningham's First Data Request  
Dated: June 30, 2005**

**Question No. 9**

**Responding Witness: J. Nate Mullins**

- Q-9. Please provide a copy of any studies conducted of historical and cultural resources that will be impacted by the proposed transmission facilities or by the proposed TC2.
- A-9. Historical and cultural resource studies are currently in progress. They will be completed as survey permission is obtained from landowners.



**LOUISVILLE GAS AND ELECTRIC COMPANY  
KENTUCKY UTILITIES COMPANY**

**CASE NO. 2005-00142**

**Response to Dennis and Cathy Cunningham's First Data Request  
Dated: June 30, 2005**

**Question No. 10**

**Responding Witness: J. Nate Mullins / Counsel**

- Q-10. Per the statement of J. Nate Mullins, page 6, filed with the joint application, the selected route crosses the property of Fort Knox Military Reservation. Please provide all correspondence related to crossing this property, all applications for permission to cross, and all replies from the representatives of Fort Knox concerning crossing this federal property. Please provide all studies and reports prepared by LG&E or KU or by or for Fort Knox Military Reservation and provided to LG&E or KU concerning crossing this property.
- A-10. The Companies object to this request on grounds that the information sought is not relevant to the subject-matter of this proceeding nor reasonably calculated to lead to the discovery of admissible evidence. Without waiver of that objection, see attached documents. All studies relating to Fort Knox are included in the documents submitted in response to Question No. 1. The Companies are involved in ongoing discussions with the Department of Defense regarding the crossing of Fort Knox and expect to be able to reach an agreement regarding that crossing.



A SUBSIDIARY OF  
LGE ENERGY

One Quality Street  
Lexington, Kentucky 40507



February 15, 2005

Directorate of Base Operations Support  
US Army Armor Center and Fort Knox  
ATTN: Bill W. Hickok, Realty Specialist  
Bldg 1110B, 3<sup>rd</sup> Floor, Rm 313, 6<sup>th</sup> Avenue  
Fort Knox, KY 40121-5000

**RE: 345 KV Transmission Line**

Mr. Hickok:

Per our meeting on January 17, 2005, please find attached a map detailing the proposed route of a 345 KV Transmission Line from Mill Creek Plant to Hardin County. We wish to parallel our existing 138 KV Transmission Line (Easement No. W912QRM204001081) and Gas Line (Easement No. DA-15-029-ENG-5895). The proposed centerline of the new line would be approximately 135' from the centerline of the 138 KV line from Mill Creek Plant to Tip Top Substation except where we would parallel an existing gas line past Tip Top Substation to another existing 138 KV – 69 KV double circuit transmission line from Tip Top Substation to Cloverport (Easement No. DA-15-029-ENG-5895). At this point we wish the new centerline to be approximately 125' from the Tip Top to Cloverport line (Easement No. 052-FK-34) except where this line goes to the north side of US Hwy 60. When the existing line crosses the highway we wish to stay on the south side of the highway as shown on the attached map. From this proposed centerline we would like to request to clear 100' each side of centerline in order to maintain clearance to the surrounding vegetation.

If this request is approved, I would like to modify our existing easements to accommodate the construction of the new line per our previous meeting. If there are any environmental requirements or permits required in order to obtain permission to construct the proposed line please let me know and we will begin obtaining any information that is required.

If you have any questions or comments please give me a call.

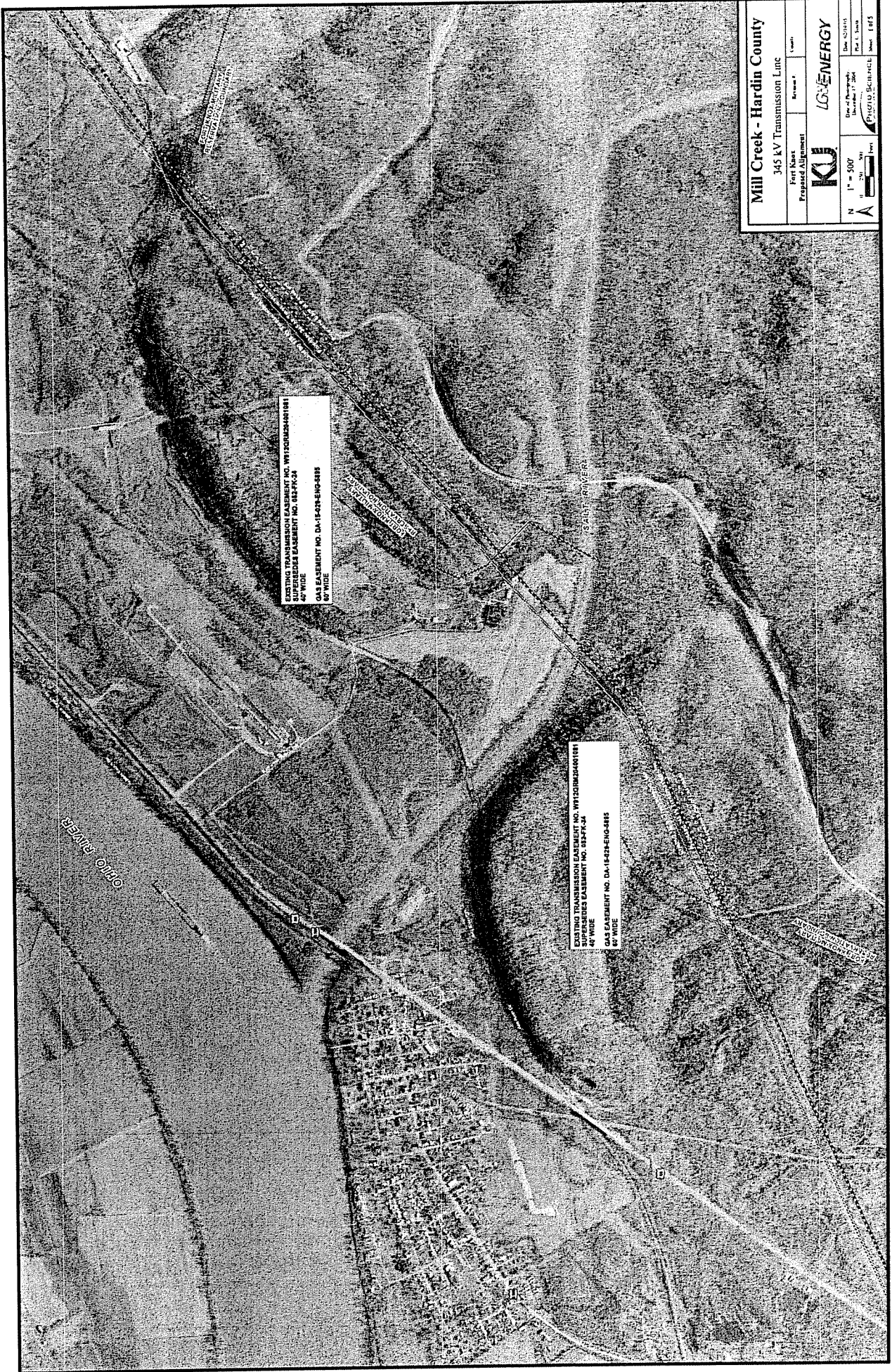
Sincerely,

A handwritten signature in black ink that reads 'B. Grillon'.

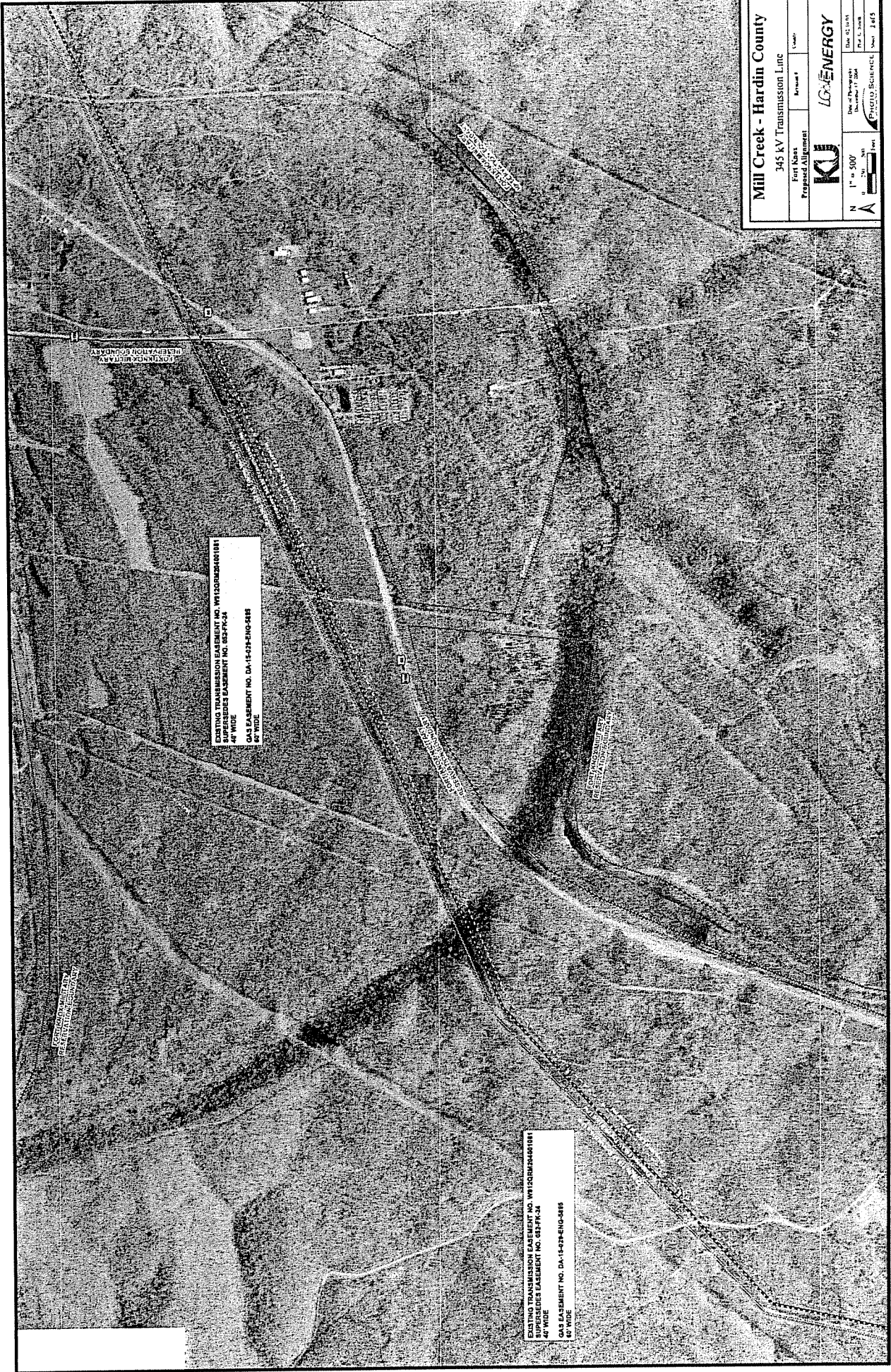
Brandon Grillon  
Transmission Engineer  
(859) 367-5763

Enclosure

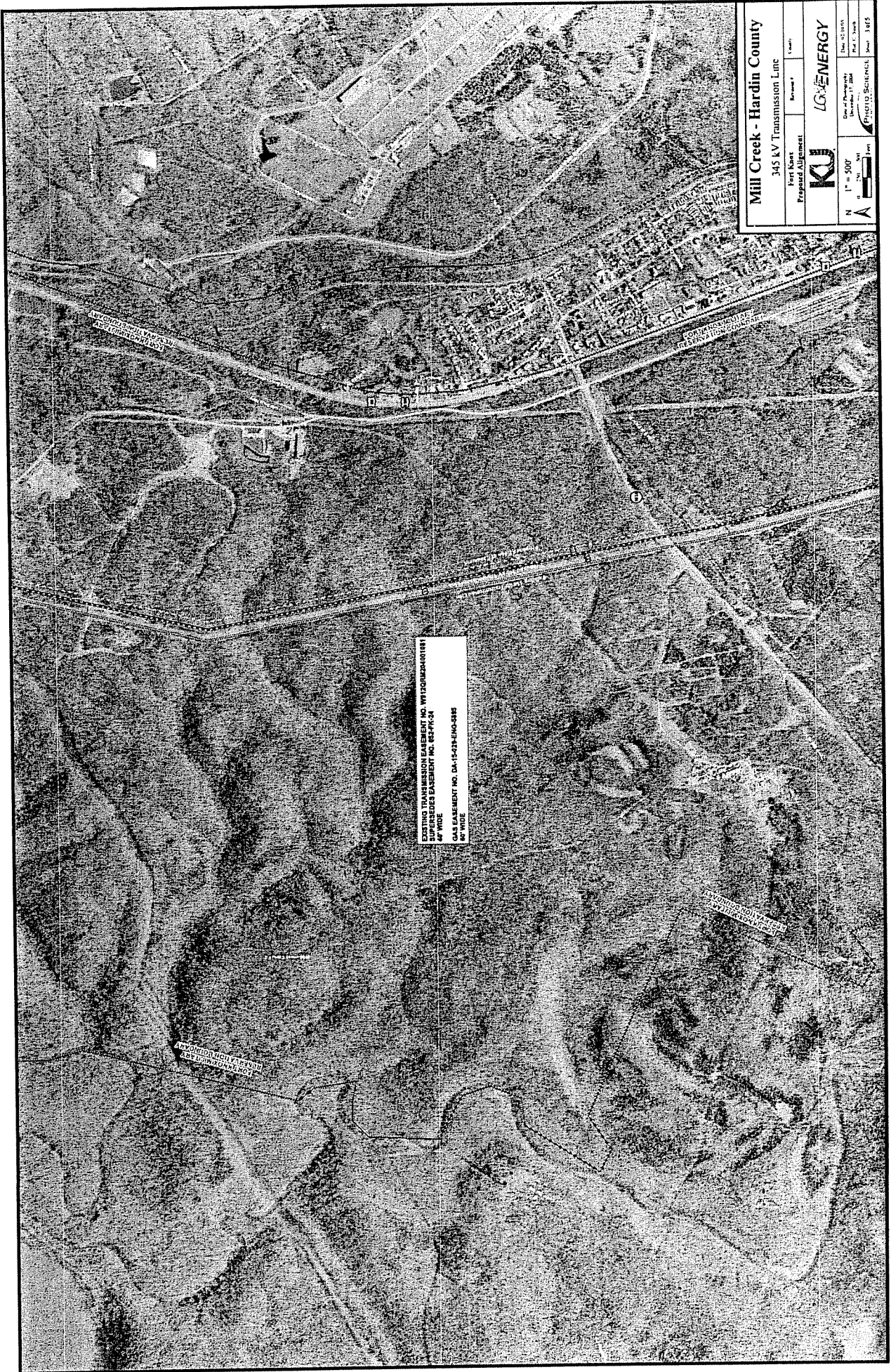
Cc: Jerry Bracket  
Alan Strunk



<b>Mill Creek - Hardin County</b>	
345 kV Transmission Line	
Project Name	Sheet 1 of 3
Project Alignment	Sheet 1 of 3
<b>KU</b>	<b>LOE ENERGY</b>
1" = 300'	Date: 02/20/14
North Arrow	Drawn by: J. Smith
	Checked by: J. Smith
	Scale: 1" = 300'
	Sheet: 1 of 3



<b>Mill Creek - Hardin County</b>	
345 KV Transmission Line	
Fort Name	Number
Proposed Alignment	Number
<b>KUNING ENERGY</b>	
Date: 02/20/2018	Drawn By: J. D. Mullins
Scale: 1" = 300'	Sheet: 1 of 3



EXISTING TRANSMISSION EASEMENT NO. WY1206204010181  
 SUPERBEE EASEMENT NO. 02-77-24  
 GAS EASEMENT NO. DA-15-041-ENG-3885  
 IN PLACE

**Mill Creek - Hardin County**  
 345 kV Transmission Line

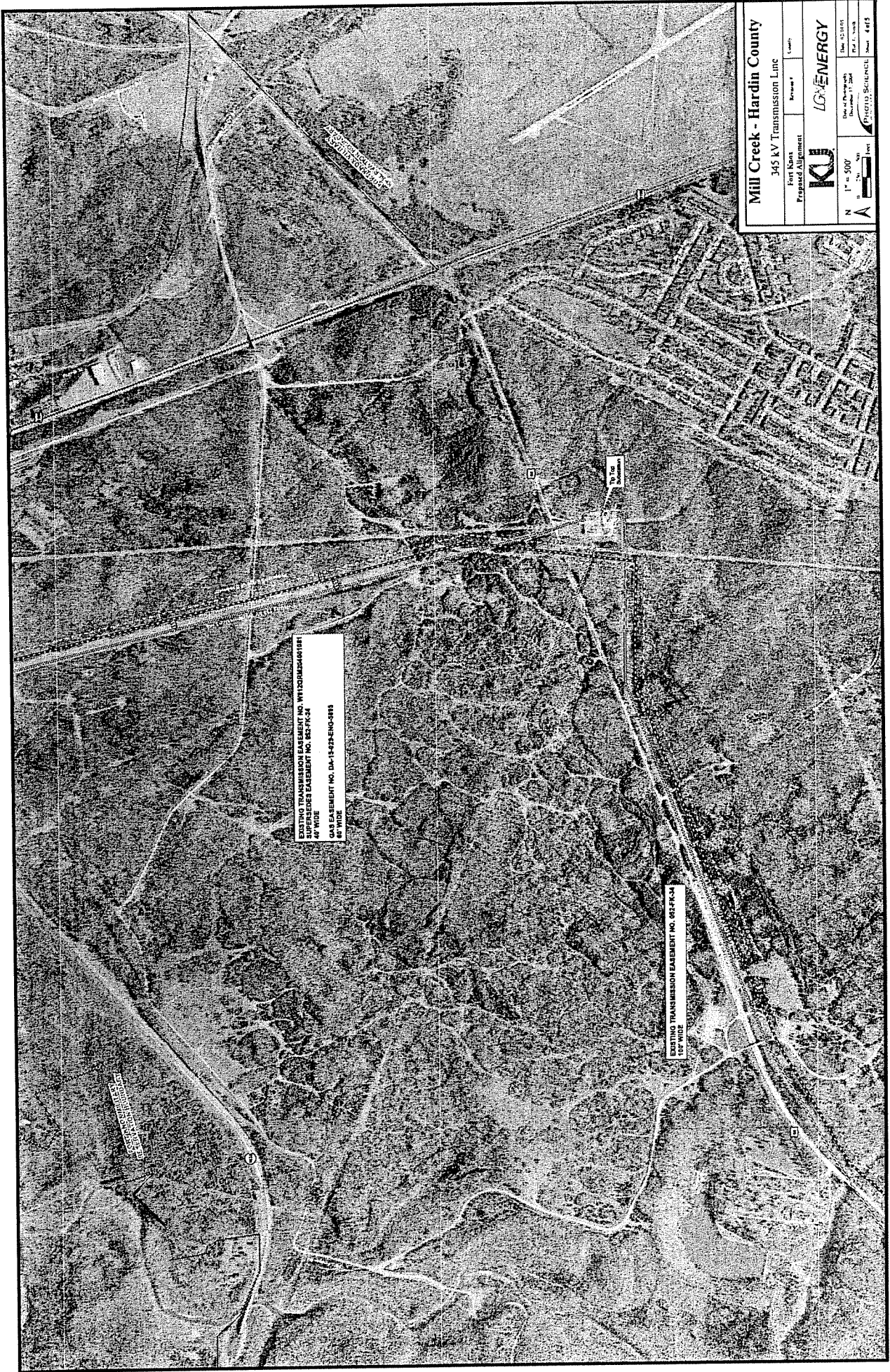
Project Name	Revision 1	Year
Proposed Alignment		

**KU** **LO-ENERGY**

Scale: 1" = 300'

North Arrow

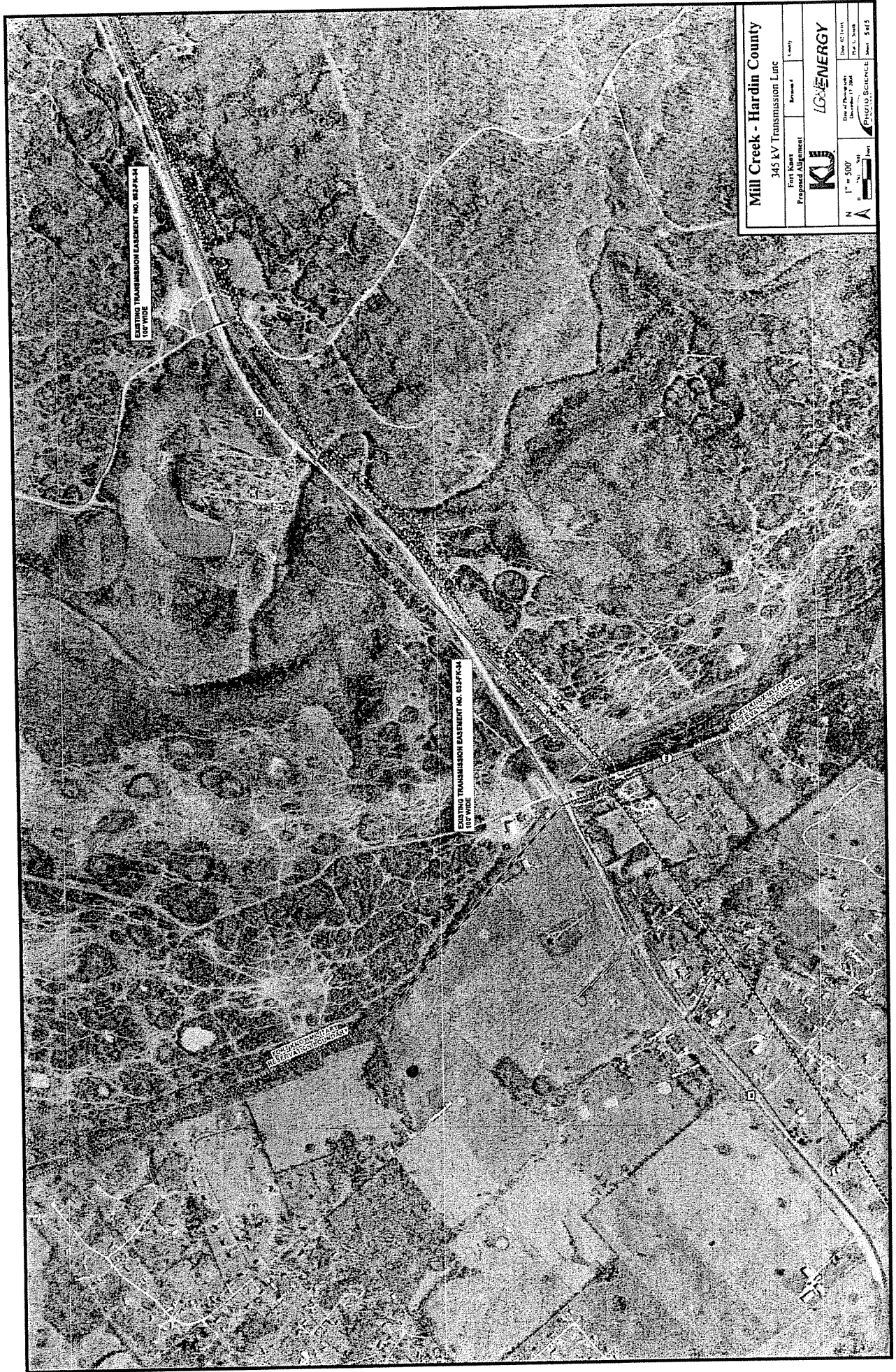
Drawn: 02/20/2015  
 Date of Plot: 02/17/2015  
 Plot C: 2408  
 Project: 1465




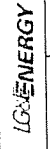
**Mill Creek - Hardin County**  
 345 kV Transmission Line

Project Name	Project Segment	County
<b>KU</b>		
<b>LOX ENERGY</b>		
Scale	North Arrow	Sheet
1" = 300'	N	4 of 8
0 50 100 Feet		





**Mill Creek - Hardin County**  
 345 kV Transmission Line  
 Proposed Alignment

Date of Preparation: December 17, 2024  
 Date of Issue: Rev. C, 2024  
 Project No.: 24010-SC-14-1-1  
 Sheet: 5 of 5

Scale: 1" = 300'  
 North Arrow



A SUBSIDIARY OF  
LGE ENERGY

One Quality Street  
Lexington, Kentucky 40507



A SUBSIDIARY OF  
LGE ENERGY

March 15, 2005

Directorate of Base Operations Support  
US Army Armor Center and Fort Knox  
ATTN: Bill W. Hickok, Realty Specialist  
Bldg 1110B, 3<sup>rd</sup> Floor, Rm 313, 6<sup>th</sup> Avenue  
Fort Knox, KY 40121-5000

**RE: 345 KV Transmission Line**

Mr. Hickok:

Per our meeting on February 22, 2005, please find attached a map detailing our existing easements across Fort Knox and our proposed easement for a new 345 KV transmission line that will parallel an existing 138 KV line from Mill Creek Plant to Tip Top Substation and an existing 138 KV/69 KV double circuit transmission line from Tip Top Substation to Cloverport.

If you have any questions or comments please give me a call.

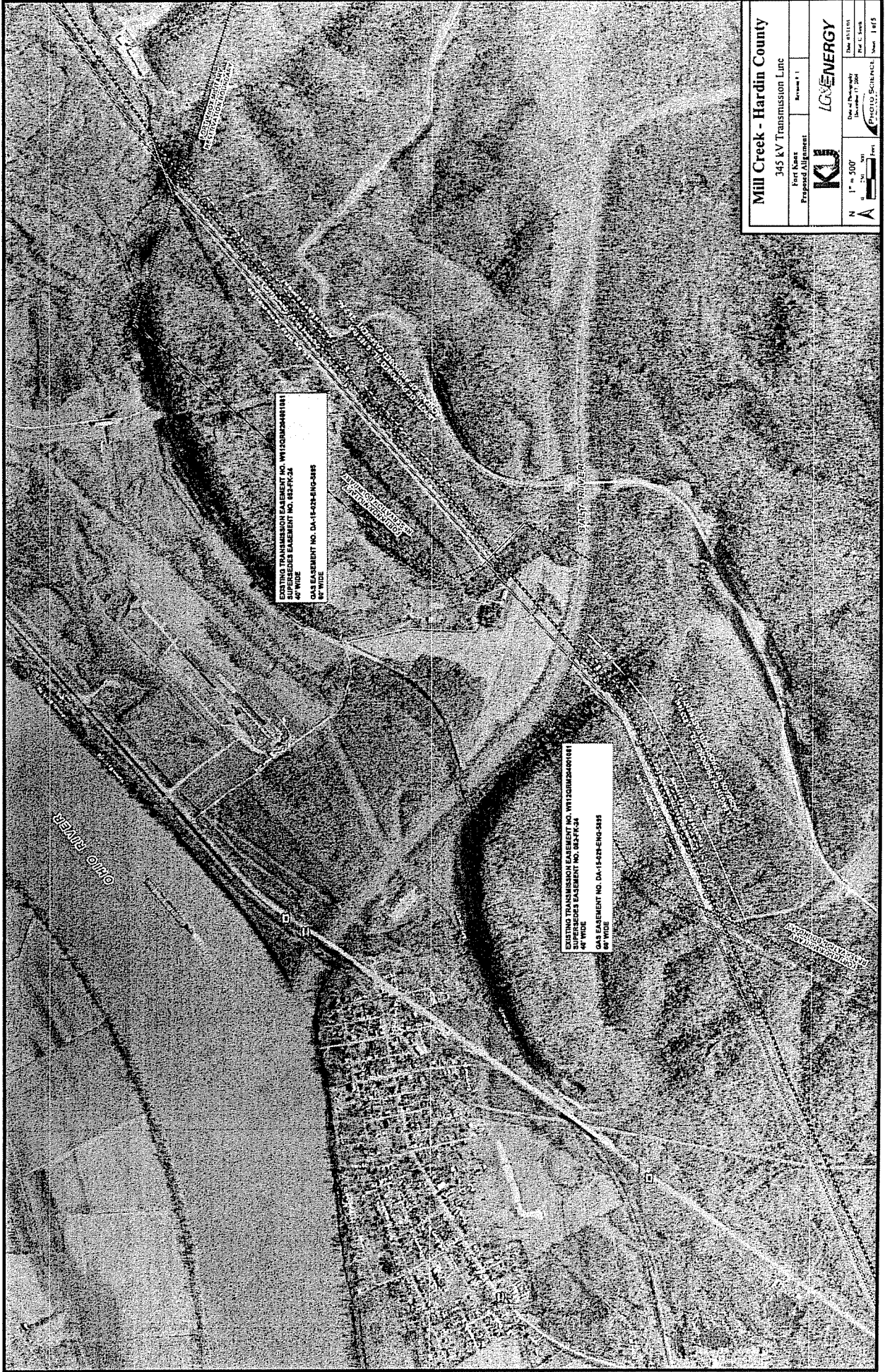
Sincerely,

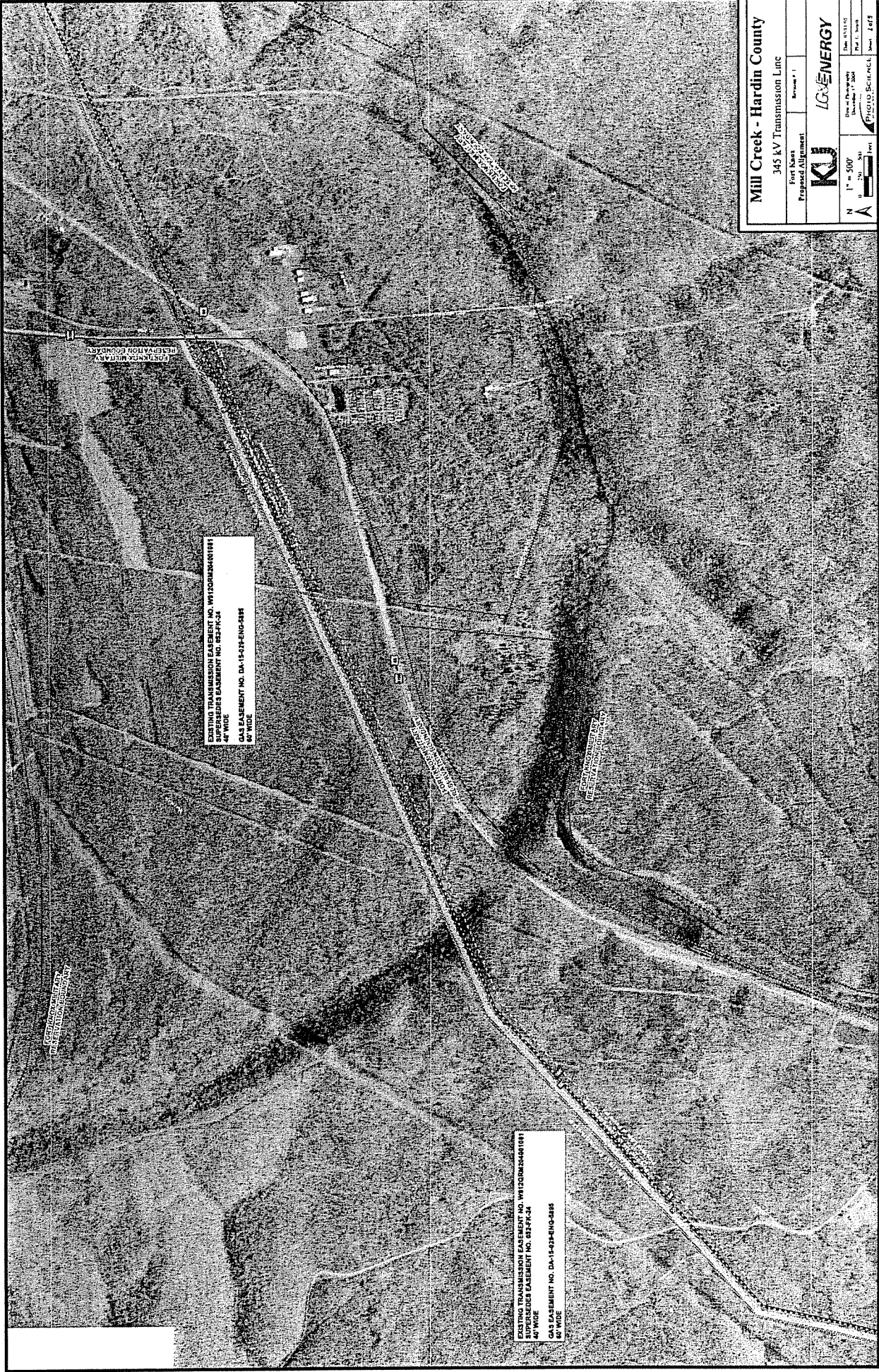
A handwritten signature in black ink that reads 'B Grillon'.

Brandon Grillon  
Transmission Engineer  
(859) 367-5763

Enclosure

Cc: Jerry Bracket  
Alan Strunk

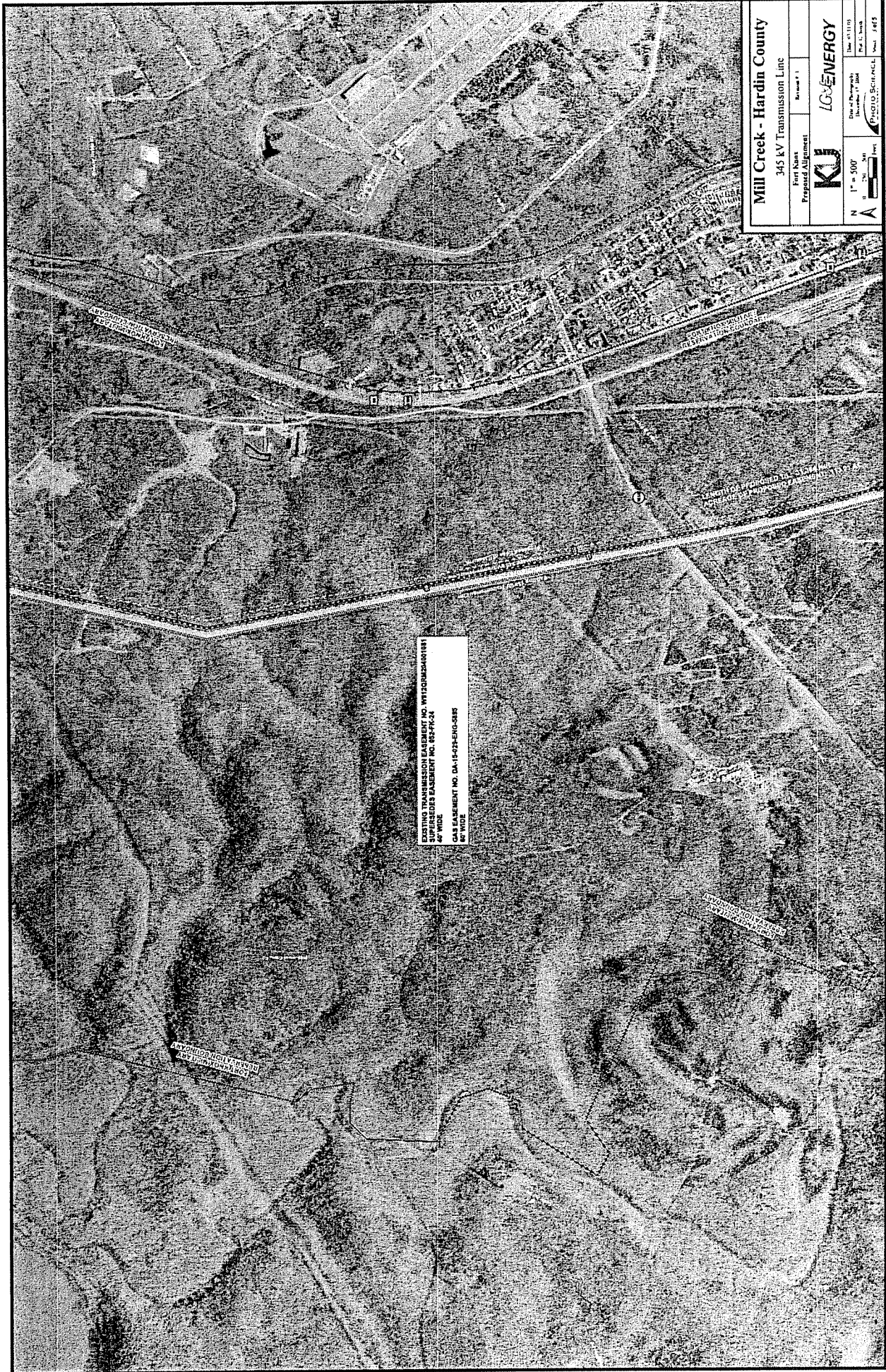


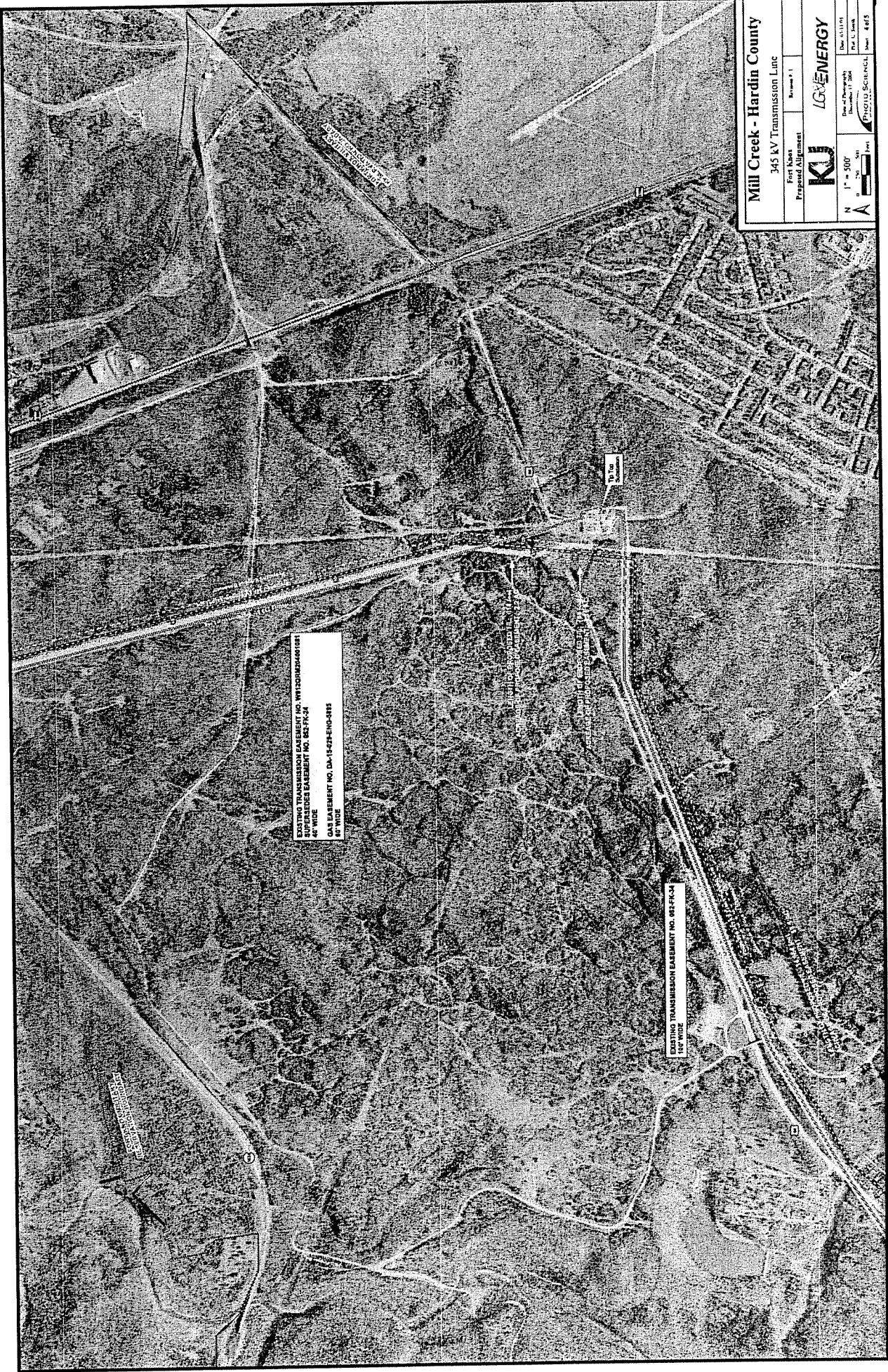



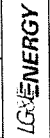
EXISTING TRANSMISSION EASEMENT NO. W1120R244K10181  
 SUPPLEMENTAL EASEMENT NO. 812-FK-2A  
 47' WIDE  
 GAS EASEMENT NO. DA-15-428-ENG-0285  
 80' WIDE

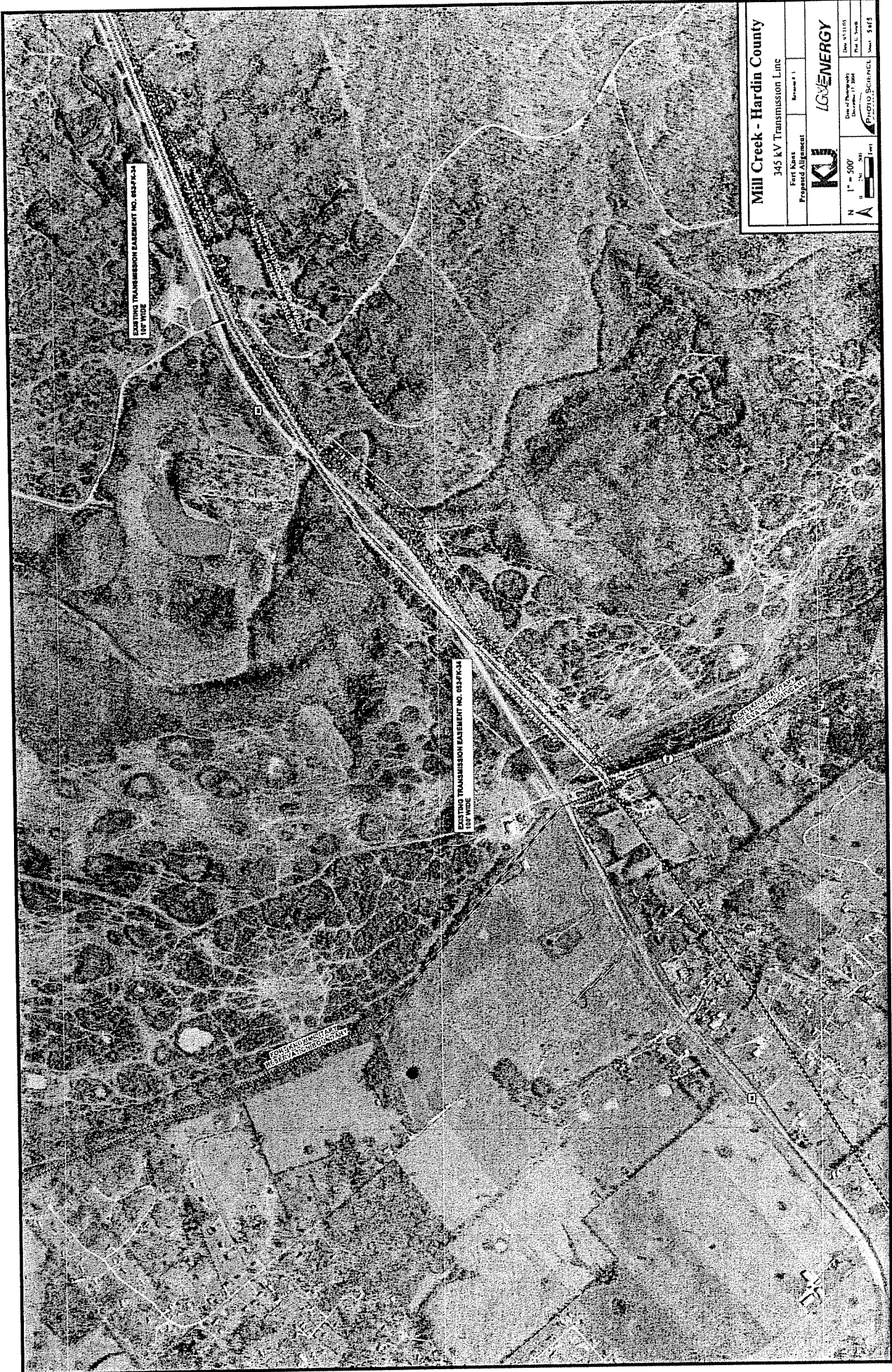
EXISTING TRANSMISSION EASEMENT NO. W1120R244K10181  
 SUPPLEMENTAL EASEMENT NO. 812-FK-2A  
 47' WIDE  
 GAS EASEMENT NO. DA-15-428-ENG-0285  
 80' WIDE

<b>Mill Creek - Hardin County</b>	
345 KV Transmission Line	
Proposed Alignment	Sheet # 1
<b>KD</b>	
<b>LD ENERGY</b>	
Date of Drawing: 08/11/10	
Drawing No: 10000000000000000000	
Part: 1 of 1	
Scale: 1" = 500'	
North Arrow	





<b>Mill Creek - Hardin County</b>		345 kV Transmission Line	
First Draft Proposed Alignment	Revision 0.1	 <b>KJ</b>	 <b>LG ENERGY</b>
Date of Design: December 17, 2014 Date of Issue: February 17, 2015		Date of Issue: February 17, 2015 Project No.: 15-0001	
Scale: 1" = 500' North Arrow: N		Project Engineer: [Name] Job No.: 4463	



**Mill Creek - Hardin County**  
 345 kV Transmission Line

Project Name: 345 kV Transmission Line  
 Proposed Alignment: [unclear]

**KU ENERGY**

Scale: 1" = 500'  
 Date of Preparation: December 17, 2008  
 Date of Issue: [unclear]  
 Project No.: [unclear]  
 Drawing No.: [unclear]

PROJECT SCIENCE, INC.  
 3415 S. 44th St., Suite 200  
 Lincoln, NE 68506  
 Phone: (402) 426-8445



A SUBSIDIARY OF  
LGE ENERGY

One Quality Street  
Lexington, Kentucky 40507



A SUBSIDIARY OF  
LGE ENERGY

March 15, 2005

Directorate of Base Operations Support  
US Army Armor Center and Fort Knox  
ATTN: Jerry Brackett, Project Manager  
Bldg 1110B, 3<sup>rd</sup> Floor, 6<sup>th</sup> Avenue  
Fort Knox, KY 40121-5000

**RE: 345 KV Transmission Line**

Mr. Brackett:

Per our meeting on February 22, 2005, please find attached a map detailing our proposed 345 KV centerline across the Fort Knox Military Reservation. These maps show environmental areas from publicly available information such as wetlands and FEMA 100 year floodplain. I have also attached copies of the driver's licenses for our environmental survey contractors along with a brief description of their proposed work. If you require any further information in order to allow the environmental survey contractors on the reservation property please let me know.

If you have any questions or comments please give me a call.

Sincerely,

A handwritten signature in black ink, appearing to read 'Brandon Grillon', written over a white rectangular area.

Brandon Grillon  
Transmission Engineer  
(859) 367-5763

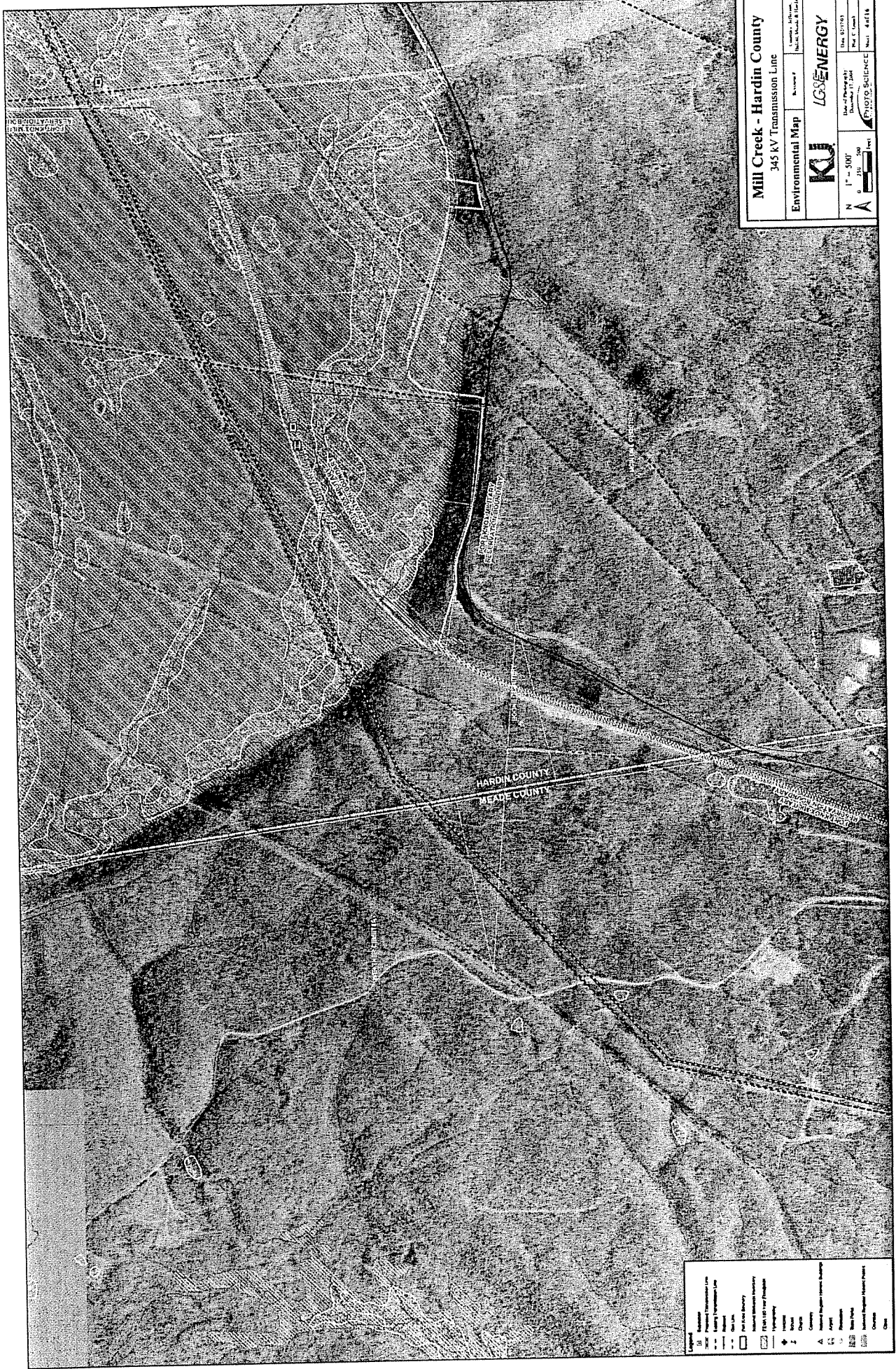
Enclosure

Cc: Gail Pollock  
Alan Strunk

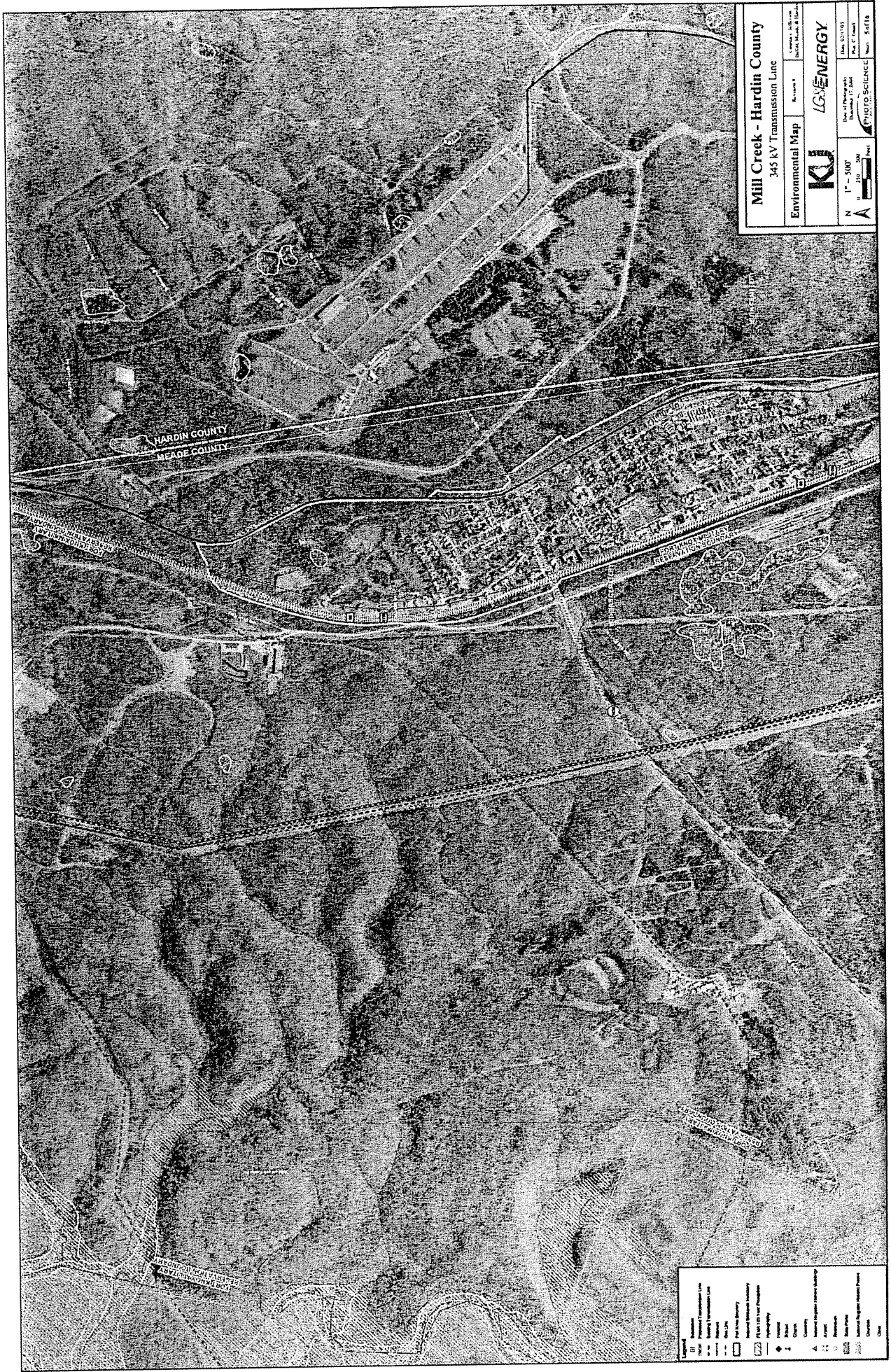


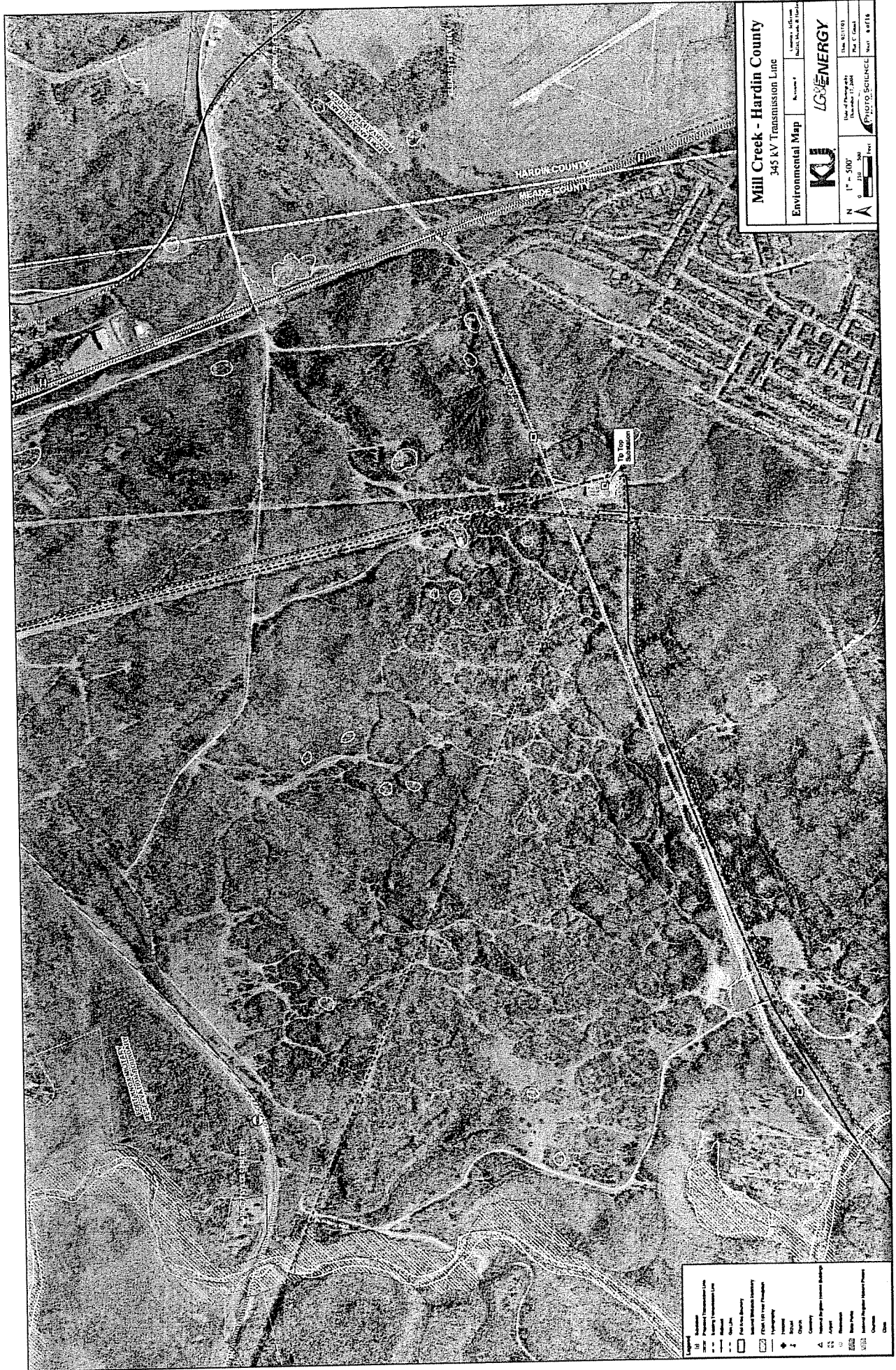





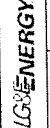


<b>Mill Creek - Hardin County</b>		345 KV Transmission Line		L. Mullins, Jr., P.E.	
Environmental Map		Revised: 2		Project No.: 012193	
		LG ENERGY		Date of Drawing: 04/20/07	
N 1" = 500'		Date of Project Start: December 17, 2004		Project Name:	
0 100 200 Feet		PRIMO SCIENCE		Sheet: A of 18	





**Mill Creek - Hardin County**  
**345 kV Transmission Line**  
 Environmental Map

Date of Project: 12/2004  
 Date of Issue: 12/2004  
 Project: Mill Creek - Hardin County  
 Scale: 1" = 500'  
 North Arrow: N  
 Contour Interval: 10'

- 10' Contour
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- 710' Contour
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- 1000' Contour

