

NC  
FILE

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PUCO

**CONSTRUCTION NOTICE FOR**  
**RED BANK 138 KV ELECTRIC**  
**TRANSMISSION LINE RELOCATION**

**PUCO Case Number 10-3100-EL-BNR**

**Submitted pursuant to OAC 4906-11-01**

**Duke Energy Ohio**

**December 20, 2010**

This is to certify that the images appearing are an  
accurate and complete reproduction of a case file  
document delivered in the regular course of business  
Technician SM Date Processed DEC 21 2010

**(1) Project Name**

This proposed project is the Red Bank Substation 138,000 (138 kV) Electric Transmission Line Relocation.

**(2) Project Description**

This project qualifies as a Construction Notice (CN) because it fits the criteria of OAC 4906-1-01, Appendix A (1) (D), "Line(s) one hundred twenty-five kV and above, but less than three hundred kV, and not greater than 0.2 miles in length." The proposed 138 kV transmission line relocation is approximately 490 feet or 0.09 miles in length and will relocate a portion of Duke Energy's 138kV Line F1883 from the east edge to the west edge of the substation.

A project vicinity map and an engineering line drawing for the project are included.

**(3) Project Need**

This project is required to provide continued reliable electricity output through Red Bank Substation. The proposed project will accommodate the future expansion of Red Bank Substation (to be submitted under a separate PUCO filing) to the east, where the 138 kV transmission line is presently. A substation expansion is required for the construction of a more reliable air insulated ring bus to replace the existing 4 breaker sulfur hexafluoride (SF6) insulated ring bus which is at the end of its useful life.

**(4) Schedule**

Work on the project is planned to begin early March 2010. The overall project has an in-service date of May 15, 2011.

**(5) Estimated Costs**

The project is expected to cost approximately \$336,000.

**(6) Operating Characteristics**

The proposed transmission line will continue to operate at 138 kV and require approximately 490 feet or 0.09 miles of relocated 1113ACSR45x7 conductor, 3 new steel poles, and the associated appurtenances. The locations of the new poles are identified on the included engineering line drawing. The pole heights will be 115, 110 and 95 feet, as shown on the structure specification drawings. Additional specifications for these structures are also included on the engineering line drawing.

**(7) Area Maps and Directions to Project Area**

A street line map of the project vicinity is attached to this CN; the smaller scale engineering line drawing also shows the project route relative to Red Bank and Brotherton Roads and the existing substation and other transmission lines.

One way to reach the project location from Columbus is to take I-71 south for about 96 miles then take exit #9 south onto Red Bank Expressway. Continue on Red Bank for approximately 2 miles then turn right onto Brotherton Road, Red Bank Substation is immediately on the right (north).

**(8) Property Agreements and Easements**

The entirety of this project is on Duke Energy property and no additional easements are required.

**(9) Notification of Officials**

A copy of the letter transmitting this Construction Notice to the Mayor of The City of Cincinnati is included in Appendix A. No public information program, materials, or meetings were conducted for the siting of this proposed facility.

**(10) Additional Information**

**(i) Electric and Magnetic Fields:** Electric and magnetic fields are not expected to be significantly increased in the project vicinity due to the presence, and interference effects, of the existing 345 kV and 138 kV transmission lines and Red Bank Substation. The nearest residential structures are an apartment building/condo complex located approximately 750 feet east of Red Bank Substation on the opposite side of Red Bank Road.

**(ii) Land use:** Land use in project vicinity is a combination of light industrial and commercial properties. Land use under the project centerline is comprised of existing substation stone yard, maintained grass, or scrub/shrub vegetation with a few trees.

**(iii) Ecology:** No critical habitat for species of concern or individuals of such species was identified during a field survey conducted on December 3, 2010. No wetlands or surface drainage features are located under the proposed relocation, although a fully concrete-lined portion of Duck Creek is to the west of the relocation. Structure number 103C will require some clearing immediately around the pole location in an area dominated by Amur honeysuckle (*Lonicera maackii*) and a few hackberry (*Celtis occidentalis*) trees.

**APPENDIX A**  
**LETTER TO OFFICIAL**

December 20, 2010

Mayor Mark Mallory  
City of Cincinnati – Office of the Mayor  
801 Plum St. Room 150  
Cincinnati, OH 45202-1979

Dear Mayor Mallory:

RE: Red Bank Substation 138kV Electric Transmission Line Relocation

Please find enclosed a copy of a Construction Notice that Duke Energy Ohio sent to the Ohio Power Siting Board regarding the planned relocation of about 490 feet of 138 kV transmission line. This project is required in preparation for an upcoming expansion to Red Bank Substation, for which you will receive an additional notification.

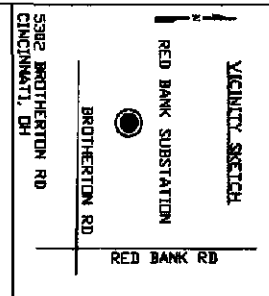
In accordance with Ohio Administrative Code (OAC) 4906-1-01 Appendix A, we are required to prepare this Construction Notice for the Ohio Power Siting Board and in compliance with OAC 4906-11-02(C); we are hereby providing you with a copy. Please feel free to call me at (317) 838-2428 if you have any questions about this project.

Sincerely,

Glenn E. Hauser  
Duke Energy Engineering

Enclosure

Cc Public Utilities Commission of Ohio



NEW HL 103B-103C, TAKE-OFF:  
E-(3) 1113 45x7 ACSR 138kV (3x228)  
NESC HEAVY 1500# FINAL 110R.S.  
E-(1) 1/0 ACSR STATIC (1x327)  
NESC HEAVY 1100# FINAL 103RS  
(SEE STRINGING CHARTS FOR TENSIONS)

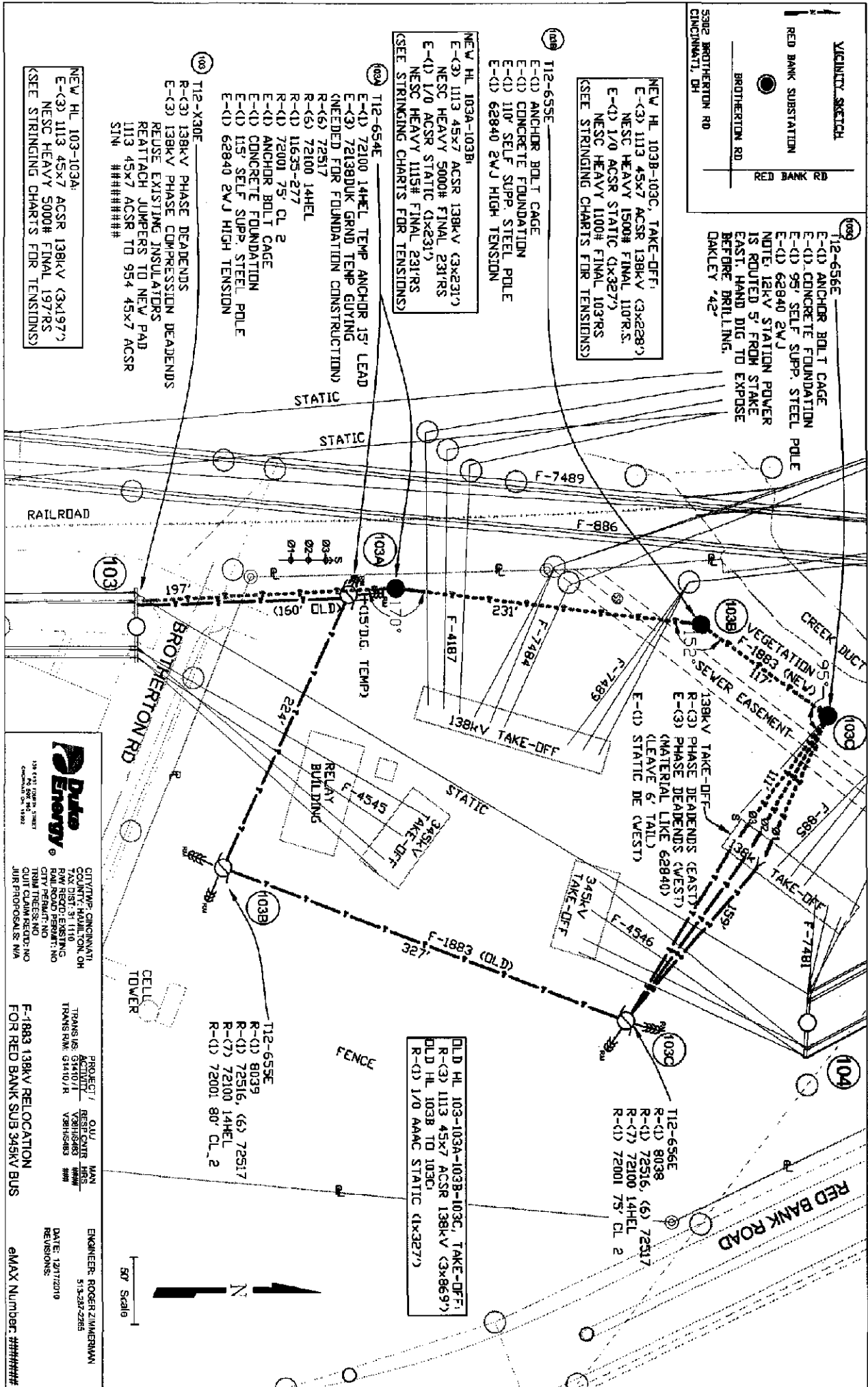
112-655E  
E-(1) ANCHOR BOLT CAGE  
E-(1) CONCRETE FOUNDATION  
E-(1) 110' SUPP. STEEL POLE  
E-(1) 62840 2WJ HIGH TENSION

NEW HL 103A-103B:  
E-(3) 1113 45x7 ACSR 138kV (3x231)  
NESC HEAVY 5000# FINAL 231RS  
E-(1) 1/0 ACSR STATIC (1x231)  
NESC HEAVY 1115# FINAL 231RS  
(SEE STRINGING CHARTS FOR TENSIONS)

112-654E  
E-(1) 72100 14HEL TEMP ANCHOR 15' LEAD  
E-(3) 72130DUK GRND TEMP GUYING  
(NEEDED FOR FOUNDATION CONSTRUCTION)  
R-(6) 72517  
R-(6) 72100 14HEL  
R-(1) 11635-277  
R-(1) 72001 75' CL 2  
E-(1) ANCHOR BOLT CAGE  
E-(1) CONCRETE FOUNDATION  
E-(1) 115' SUPP. STEEL POLE  
E-(1) 62840 2WJ HIGH TENSION

112-X30F  
R-(3) 138kV PHASE DEADENDS  
E-(3) 138kV PHASE COMPRESSION DEADENDS  
REUSE EXISTING INSULATORS  
REATTACH JUMPERS TO NEW PAD  
1113 45x7 ACSR TO 954 45x7 ACSR  
STW #####

NEW HL 103-103A:  
E-(3) 1113 45x7 ACSR 138kV (3x197)  
NESC HEAVY 5000# FINAL 197RS  
(SEE STRINGING CHARTS FOR TENSIONS)



138 kV RELAY BUILDING  
CINCINNATI, OH 45202

CITY/TP: CINCINNATI  
COUNTY: HAMILTON, OH  
TAX DIST: 81-1110  
RAW RECD: 12/15/10  
CITY PERMIT: NO  
TBM TREES: NO  
JUR PROPOSALS: N/A

PROJECT / ACTIVITY: RELAY BUILDING  
DESIGN: 12/17/2019  
TRANSM: 12/17/2019  
TRANS: 12/17/2019

ENGINEER: ROGER ZIMMERMAN  
513-282-2265

DATE: 12/17/2019  
REVISIONS:

F-1883 138kV REL. LOCATION  
FOR RED BANK SUB 345kV BUS

eMax Number: #####

1/2" STAINLESS STEEL  
NUT ON FLAT 12

LOAD TABLE (lbs.)				
CASE	X	Y	Z	
1.	8280	537	-982	
2.	1885	79	-245	
3.	4287	181	-725	
4.	5062	307	-695	

LOAD TABLE (lbs.)				
CASE	X	Y	Z	
1.	8305	211	-441	
2.	1887	6	-93	
3.	4290	13	-378	
4.	5075	108	-287	

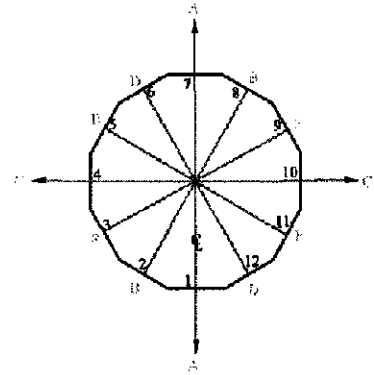
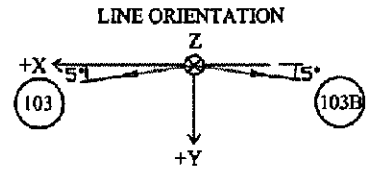
LOAD TABLE (lbs.)				
CASE	X	Y	Z	
1.	8298	479	107	
2.	1885	67	60	
3.	4288	152	-28	
4.	5072	272	126	

LOAD TABLE (lbs.)				
CASE	X	Y	Z	
1.	-1925	402	182	
2.	-176	23	33	
3.	-253	34	36	
4.	-1307	253	197	

LOAD TABLE (lbs.)				
CASE	X	Y	Z	
1.	-8333	1326	653	
2.	-1981	263	221	
3.	-3836	509	285	
4.	-5230	804	551	

LOAD TABLE (lbs.)				
CASE	X	Y	Z	
1.	-8333	1326	653	
2.	-1981	263	221	
3.	-3836	509	285	
4.	-5230	804	551	

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4.	-5230	804	551	

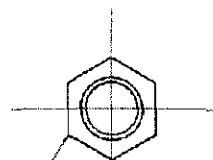


#### LOAD CASES:

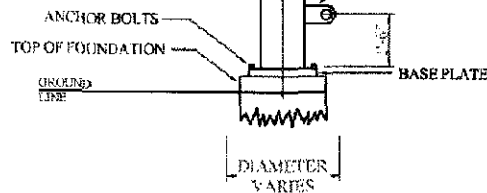
1. NESC HEAVY (250B)
2. 60°F
3. -20°F
4. NESC 250D

#### NOTES:

1. ALL HOLES  $\frac{1}{8}$ " DIA. UNLESS NOTED.
2. SEE SPECIFICATION FOR LIGHT DUTY STEEL POLE.
3. N.T.S.



DRILL  $\frac{5}{8}$ "  $\phi$  HOLE, CENTER  
 $\frac{1}{2}$ " - 13 UNC STAINLESS STEEL  
NUT OVER HOLE. PLASTIC  
PLUG TO BE INSERTED.



1/2" THK. GND. FLANGE  
1/16" DIA. HOLE, & 3/4"  
EDGE DISTANCE

DATE: 11-12-2010

115' POLE FOR RED BANK SUB 345KV BUS STEEL POLES  
115' POLE JIL 103A T12-654E



139 EAST FOURTH STREET  
PO BOX 960  
CINCINNATI OH 45201-0960  
TELEPHONE NO. (513) 287-2265

LOAD TABLE (lbs.)			
CASE	X	Y	Z
1.	1866	623	92
2.	172	44	21
3.	247	63	18
4.	1269	404	105

LOAD TABLE (lbs.)			
CASE	X	Y	Z
1.	8121	2289	183
2.	1937	492	83
3.	3750	953	19
4.	5100	1409	187

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4.	5100	1409	187

1/2" STAINLESS STEEL  
NUT ON FLAT 12

HOLES  
(TYP.)

ANCHORS

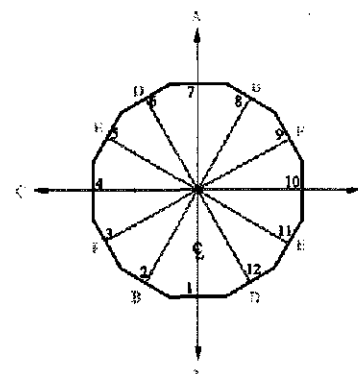
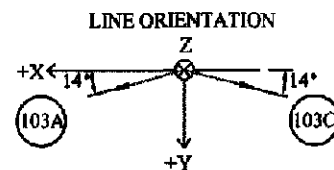
ANCHORS

LOAD TABLE (lbs.)			
CASE	X	Y	Z
1.	-1766	529	161
2.	-243	62	36
3.	-785	199	74
4.	-1114	326	161

LOAD TABLE (lbs.)			
CASE	X	Y	Z
1.	-2336	708	353
2.	-556	144	121
3.	-753	186	133
4.	-1590	461	304

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CASE	X	Y	Z
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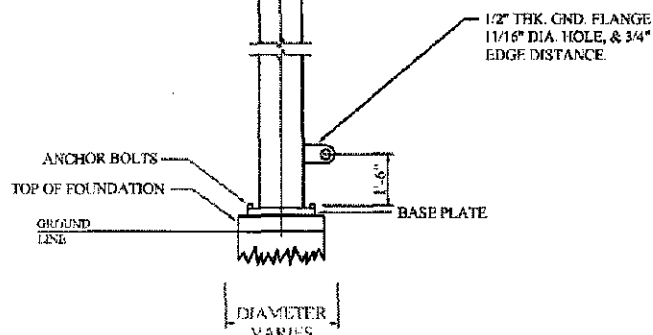
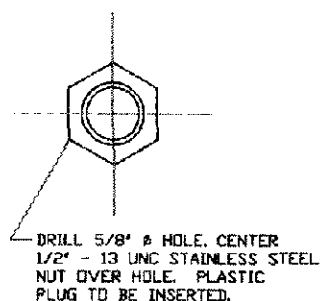


#### LOAD CASES:

1. NESC HEAVY (250B)
2. 60°F
3. -20°F
4. NESC 250D

#### NOTES:

1. ALL HOLES 3/4" DIA. UNLESS NOTED.
2. SEE SPECIFICATION FOR LIGHT DUTY STEEL POLE.
3. N.T.S.



DATE: 11-12-2010

T-1883 138KV RELOCATION FOR RED BANK SUB 345KV BUS STEEL POLES  
110' POLE HL 103B T12-655E



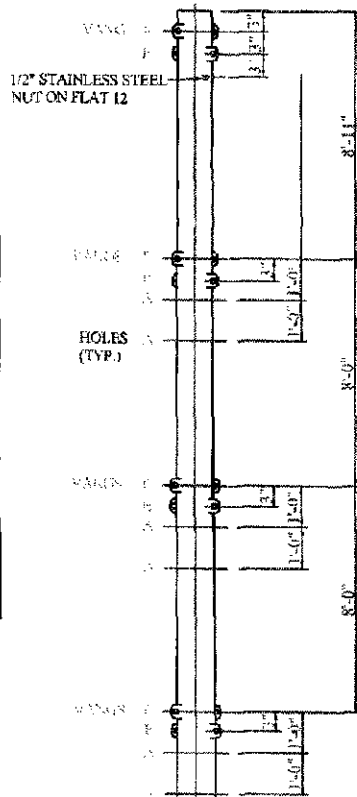
139 EAST FOURTH STREET  
PO BOX 960  
CINCINNATI OH 45201-0960  
TELEPHONE NO. (513) 287-2265

LOAD TABLE (lbs.)			
CASE	X	Y	Z
1.	1308	1305	-8
2.	184	169	1
3.	596	548	-37
4.	828	816	2

LOAD TABLE (lbs.)			
CASE	X	Y	Z
1.	1721	1731	82
2.	430	395	41
3.	557	512	29
4.	1181	1160	77

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2.	430	395	41
3.	557	512	29
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CASE	X	Y	Z
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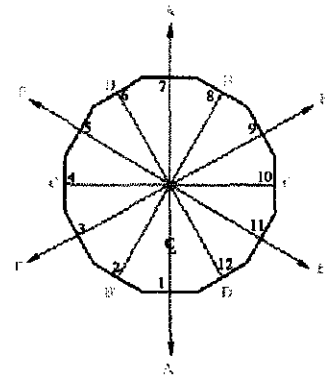
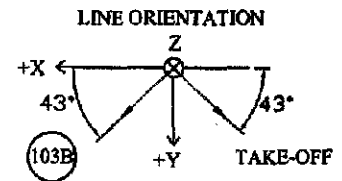


LOAD TABLE (lbs.)			
CASE	X	Y	Z
1.	-1090	1430	503
2.	-180	217	119
3.	-570	687	335
4.	-683	887	477

LOAD TABLE (lbs.)			
CASE	X	Y	Z
1.	-1760	1446	921
2.	-446	330	293
3.	-562	416	347
4.	-1215	971	784

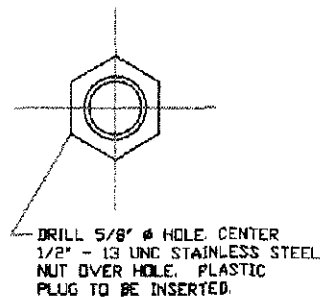
LOAD TABLE (lbs.)			
CASE	X	Y	Z
1.	-1603	1624	793
2.	-408	375	254
3.	-514	473	298
4.	-1109	1094	676

LOAD TABLE (lbs.)			
CASE	X	Y	Z
1.	-1423	1789	658
2.	-365	417	213
3.	-460	526	247
4.	-987	1209	562



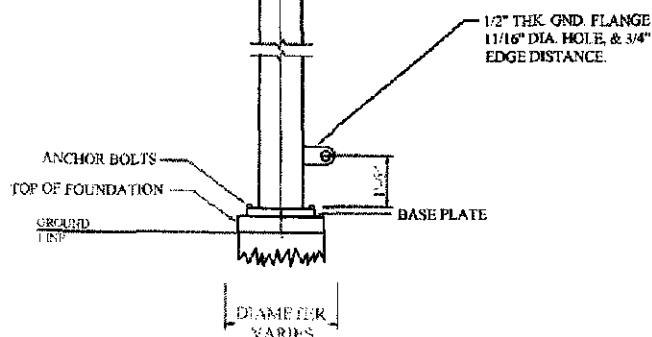
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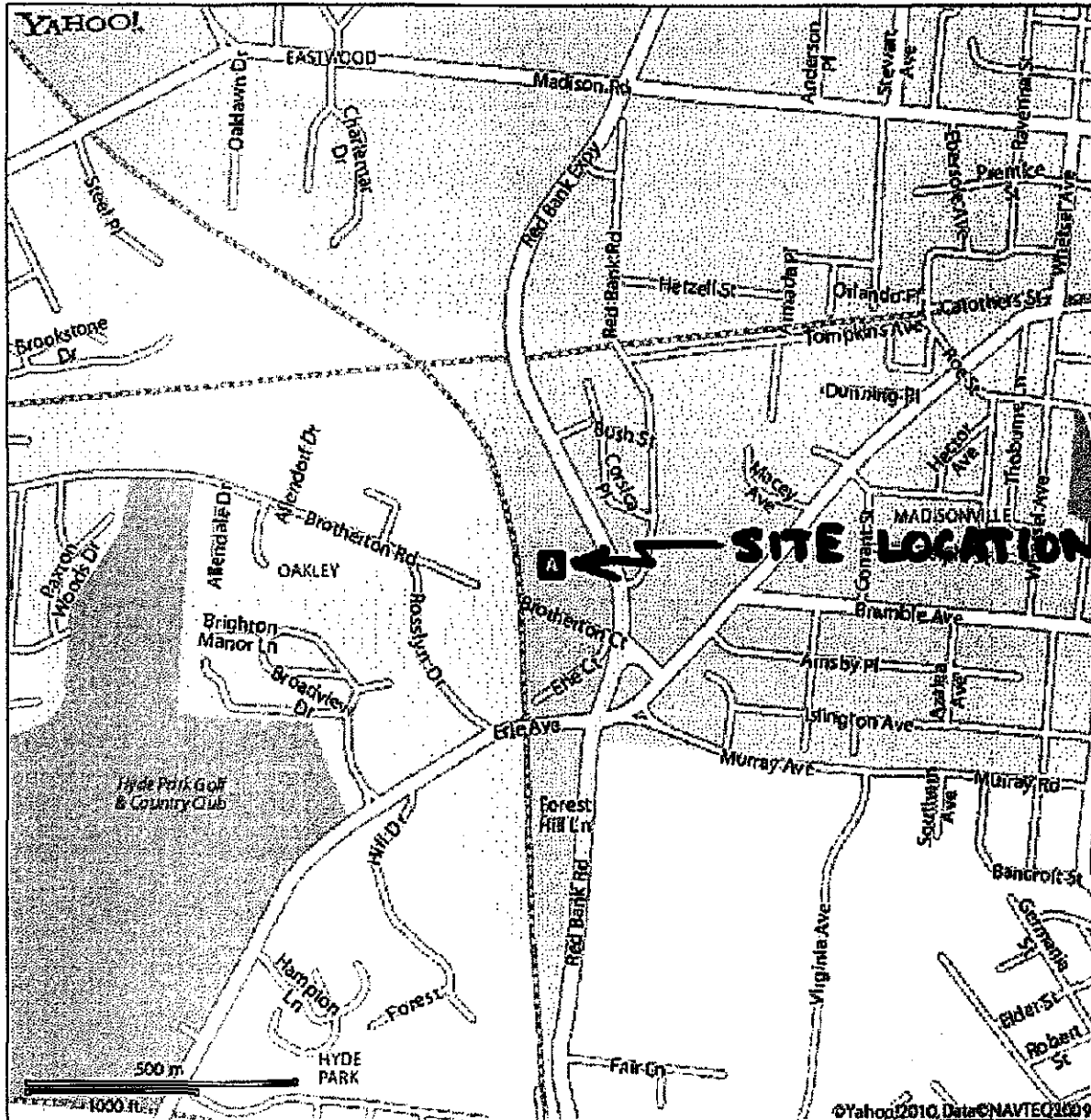
U-1883 138KV REF ORIENTATION FOR RED BANK SUB 345KV BUS STEEL POLES  
95' POLE HL 103C T12-656E



139 EAST FOURTH STREET  
PO BOX 960  
CINCINNATI OH 45201-0960  
TELEPHONE NO. (513) 287-2265

Map of 39.152872,-84.405356

YAHOO!



When using any driving directions or map, it's a good idea to do a reality check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning.