CALCULATION BY D.M.D. METHOD TO DETERMINE AREA OF A PARCEL OF LAND

OHIO EDISON COMPANY

FORM X-290 (12-58)

STA.	BEARING	COSINE	SINE	DISTANCE	LATITUDE N+	LATITUDE S-	DEPARTURE E+	DEPARTURE W-	BALANCE LAT	BALANCE DEP	D.M.D.	DOUBLE AREA POS.	DOUBLE AREA NEG.
A-B	N 17° 23' E	.12842	.92586	862.5	1838		895.47		+1838	+846.102	+845.102	159,307.31	
B-C	N 27° 38' E	.47102	.47682	129.9	27.80		28.41		+27.80	+129.188	+1821.26	50,629.91	
C-D	S 81° 32' E	.14203	.98907	117.52		5.05	120.41		-5.05	+116.020	+2071.151		10,461.72
D-E	S 87° 24' E	.05233	.99863	313.13		310.75	138.02		-310.75	+12.020	+2154.341		669.411
E-F	S 0° 51' 56" W	.01454	.99989	18.00		5.51	18.49		-5.51	+8.149	+2154.341		714,367.60
F-G	N 89° 51' 56" W	.01454	.99989	2.58.06	59.32	2.32.47		1.24	-232.47	-2.471	+2475.10		574.811
G-H	N 89° 51' 56" W	.01454	.99989	2.58.06				6.49.47	-649.47	-5.49.47	+1922.99		624,068.03
H-I	N 78° 24' 00" W	.19781	.98023	1354.96	268.32	1354.96	12.31		+1354.96	+12.31	+1385.83	1114,756.36	
I-J	N 78° 24' 00" W	.19781	.98023	694.25	137.43			686.43	+1354.96	-12.31	+1385.83		1872,216.46
J-K	N 0° 51' 56" E	.99995	.00761	1356.0	1356.38			10.61	+1692.39	-686.43	+709.71	28,129.47	
					1948.47	1943.47	1249.78	1249.78	+1692.38	-10.61	+709.71	12,000.44	
												364,923.46	3,282,714.21
													364,923.46
													2,917,791.15
													2
													1,458,895.57

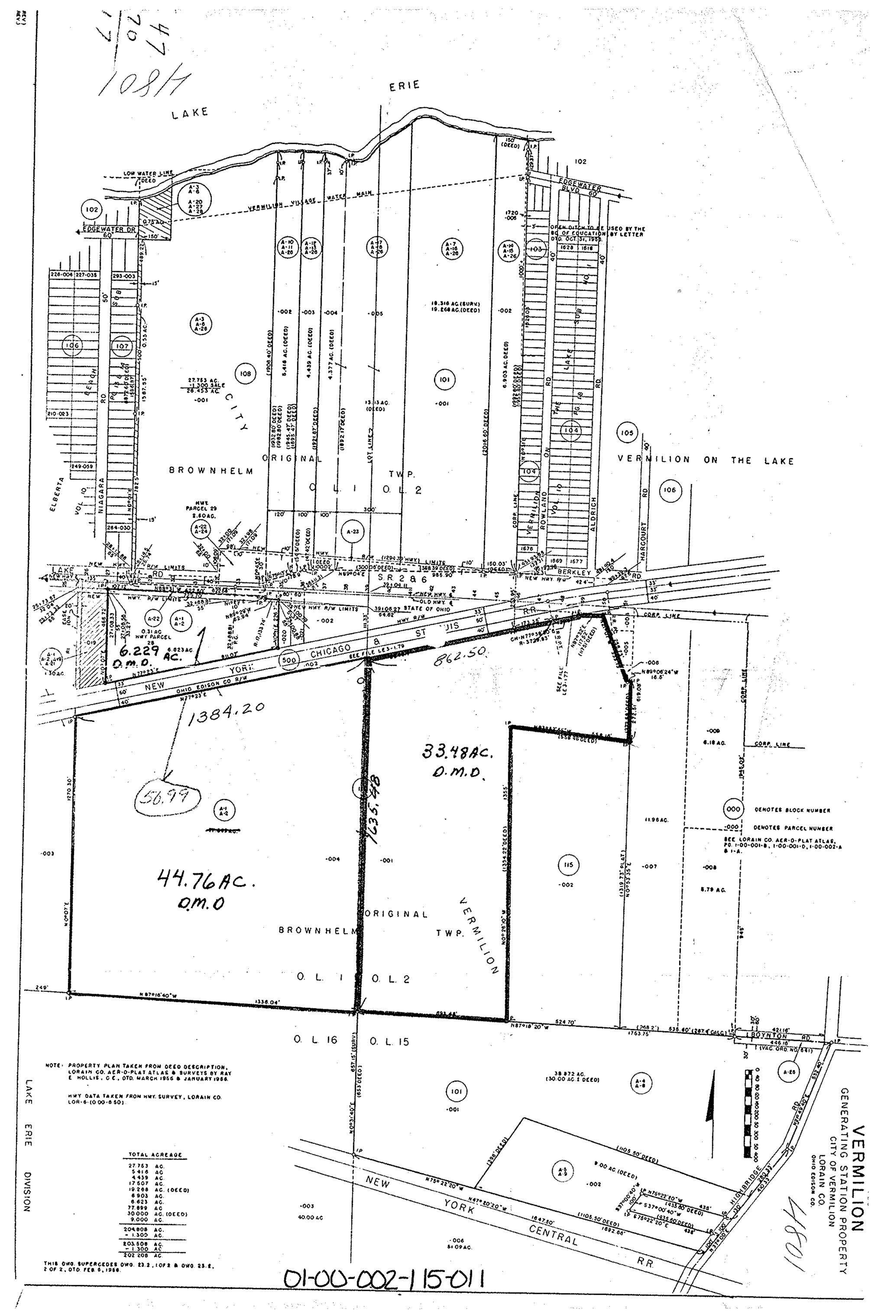
33.48 AC

RULES:

1. LIST BEARINGS OF TRAVERSE STARTING AT THE MOST WESTERLY STATION OF THE PARCEL AND THE POINT WHERE THE BEARINGS CHANGE FROM WEST TO EAST.)
2. LIST DISTANCES OF COURSES ON THE LINE CORRESPONDING TO BEARINGS.
3. LIST SINE AND COSINE OF ALL BEARINGS.
4. LAT. + DIST. X COS BEARING.
5. DEP. + DIST. X SIN BEARING.
6. ERROR OF CLOSURE: CALCULATE THE ALGEBRAIC SUM OF THE LATITUDES AND DEPARTURES (THE DIFFERENCE BETWEEN THE SUM OF N. LAT. & S. LAT. AND BETWEEN THE SUM OF E. LAT. & W. LAT.) SQUARE THESE SUMS, ADD THEM TOGETHER, TAKE THE SQUARE ROOT OF THE RESULT. DIVIDE BY THE SUM OF THE DISTANCES. MAXIMUM ERROR OF CLOSURE SHOULD BE: .0005 (RURAL AREAS), .0003 (SUBURBAN AREAS) AND .0002 (URBAN AREAS).
7. BALANCE LATS. & DEPS.: THE ALGEBRAIC SUM OF LATS. AND DEPS. SHOULD EQUAL ZERO. THE CORRECTION TO BE APPLIED TO EACH COURSE IS FOUND BY THE TOTAL DISTANCE MULTIPLIED BY THE RATIO OF CORRECTION FOR LAT. OR DEP. TO THE SUM OF THE DISTANCES. TO BALANCE LATS., ADD OR SUBTRACT THIS CORRECTION TO LAT. OF EACH COURSE: ADD IF SUM OF N. LAT. IS LARGER THAN SUM OF S. LAT.; SUBTRACT CORRECTION FROM S. LAT. IS LARGER THAN SUM OF N. LAT. TO BALANCE DEPS., FOLLOW SAME PROCEDURE FOR DEP. THE ALGEBRAIC SUM OF THE BALANCED LATS. & DEPS. SHOULD NOW EQUAL ZERO.
8. D.M.D. (USE BALANCED FIGURES): D.M.D. OF 1ST COURSE = DEP. OF THAT COURSE. D.M.D. OF ANY SUCCEEDING COURSE = D.M.D. OF PRECEDING COURSE + DEP. OF PRECEDING COURSE + DEP. OF THE COURSE. D.M.D. OF LAST COURSE = DEP. OF THAT COURSE BUT OPPOSITE IN SIGN. LAST COURSE SHOULD NUMERICALLY EQUAL DEP. OF THAT COURSE. (ALGEBRAIC SUM = ZERO).
9. DOUBLE AREA = D.M.D. X CORRECTED LAT. OF EACH COURSE.
10. AREA: SUBTRACT THE SMALLER OF THE (DOUBLE AREA) TOTALS FROM THE LARGER; DIVIDE THE RESULT BY (2) TO OBTAIN THE AREA IN SQUARE FEET.) TO OBTAIN ACRES, DIVIDE BY 43,560.

OHIO EDISON CO.
NAME: VERMILION
O.L. 2
DWG NO.: 23.2 ½
SURVEYOR:
CALC. BY: DAB
DATE: 3-23-71

4/801



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