

TIMBER WOOD LIGHTING STANDARDS

FORMULA

$$[1] \times [2] + [3] \times [4] \times [2] + [5] \times [6] + [2] \times [7] \times [4] = \text{TOTAL APPLIED MOMENT}$$

VARIABLES

1	Pole Value from table	Total applied moment equal to or less than	Pole size
2	Wind Pressure from table	3,500 Lb.	5-1/8 x 4-1/2
3	Fixture EPA as specified by manufacturer	6,100 Lb.	5-1/8 x 6
4	Fixture Height: from grade to center of fixture (ft.)	9,300 Lb.	6-3/4 x 6
5	Fixture Weight: as specified by manufacturer		
6	Arm Length: from center line of fixture to center line of pole. For single cross arm only. Skip if double cross arm used.		
7	EPA of cross arm if used A-4 = 1.72 A-3 = 1.29 A-2 = 0.86 B-4 = 3.23 B-3 = 2.37 B-2 = 1.51		

1	Pole Value Cross Section X Mounting Height
	5-1/8 x 4-1/2 x 10'-0" = 28
	5-1/8 x 4-1/2 x 12'-0" = 41
	5-1/8 x 4-1/2 x 15'-0" = 64
	5-1/8 x 4-1/2 x 20'-0" = 114
	5-1/8 x 6 x 20'-0" = 132
	5-1/8 x 6 x 25'-0" = 206
	6 x 6-3/4 x 20'-0" = 151
	6 x 6-3/4 x 25'-0" = 235
	6 x 6-3/4 x 30'-0" = 339

2	Wind Pressure Table			
	Basic Wind Speed	Exposure "A"	Exposure "B"	Exposure "C"
	60 mph	10	10	11
	70 mph	10	12	17
	80 mph	10	15	23
	90 mph	11	20	30
	100 mph	14	24	39
	110 mph	15	30	48
	120 mph	18	35	59
	130 mph	21	41	68

Exposure "A": Centers of large cities and very rough hilly terrain.

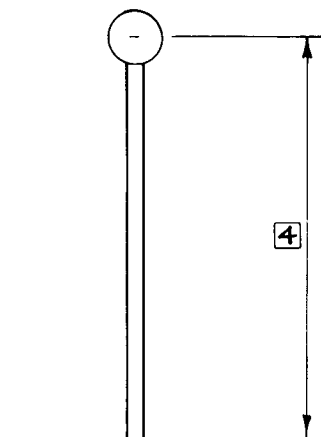
Exposure "B": Suburban areas, city outskirts, wooded areas and rolling terrain.

Exposure "C": Flat, open country, open flat coastal belts, and grassland.



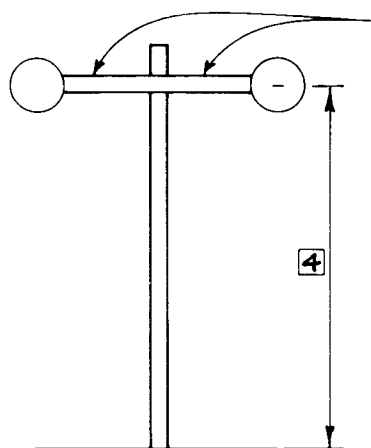
COMPUTATION OF TOTAL APPLIED MOMENT USING FORMULA :

$$[1 \times 2] + [3 \times 4 \times 2] + [5 \times 6] + [2 \times 7 \times 4]$$



IN ABOVE FORMULA, ONLY
VARIABLES 1 THRU 4 ARE USED
VARIABLES 5 THRU 7 ARE NOT APPLICABLE

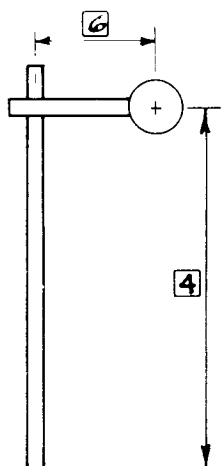
CASE I - TOP - MOUNTED FIXTURE



FIXTURE WEIGHT ON EACH SIDE
IS BALANCED. DO NOT USE
5 x 6

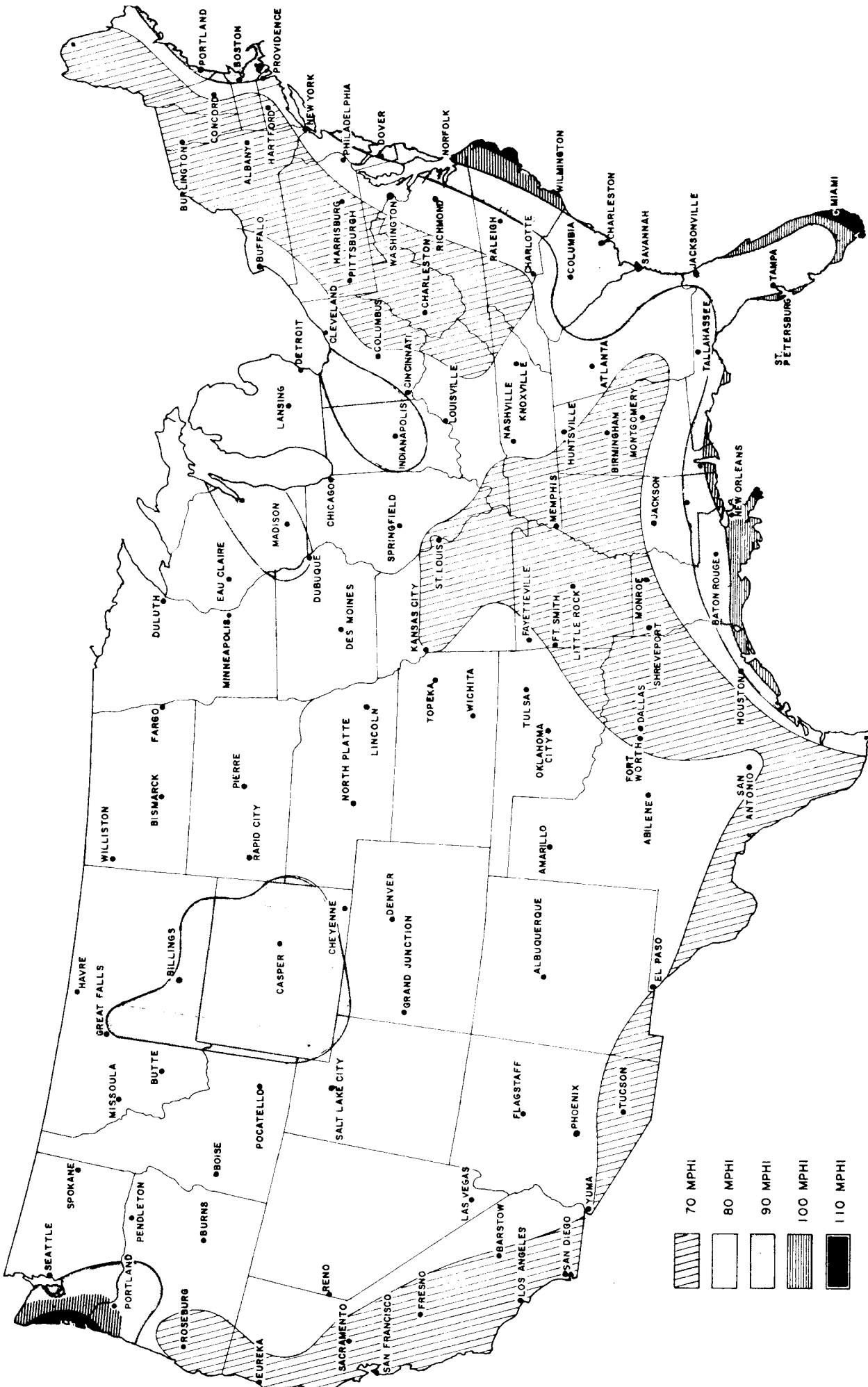
IN ABOVE FORMULA, ONLY
VARIABLES 1 THRU 4 AND 7 ARE USED
VARIABLES 5 AND 6 ARE NOT APPLICABLE

CASE II - DOUBLE CROSS ARM MOUNT



IN ABOVE FORMULA,
ALL VARIABLES ARE USED

CASE III - SINGLE CROSS ARM MOUNT



(MPH values — — 50 year mean recurrence)

MAXIMUM EXPECTED WIND VELOCITIES
IN THE UNITED STATES



<u>Model #</u>	<u>Largest Dimension</u>	<u>Converted to feet</u>	X	<u>Height in feet</u>	X	<u>Surface Area</u>	X	<u>Moment Arm</u>	<u>Pole Value</u>
10P, 10S	5.125	0.4271		10		4.2708333		6.67	28.49
12P, 12PV	5.125	0.4271		12		5.125		8.004	41.02
15P, 15PV	5.125	0.4271		15		6.40625		10.005	64.09
20P, 20PV	5.125	0.4271		20		8.5416667		13.34	113.95
15P4	6	0.5000		15		7.5		10.005	75.04
20P4	6	0.5000		20		10		13.34	133.40
25P, 25PV	6	0.5000		25		12.5		16.675	208.44
25P4	6.75	0.5625		25		14.0625		16.675	234.49
30P	6.75	0.5625		30		16.875		20.01	337.67
35P	7.5	0.6250		35		21.875		23.345	510.67

HEXAGON:

<u>One side of Hexagon, b (in)</u>	<u>B (ft)</u>	<u>height (h) (ft)</u>	<u>Projected Surface Area, 2*B*h</u>	<u>Moment Arm (2h/3)</u>	<u>Pole Value</u>
2.5625	0.2135	10	4.2708333	6.666667	28.47
2.5625	0.2135	12	5.125	8	41.00
2.5625	0.2135	15	6.40625	10	64.06
2.5625	0.2135	20	8.5416667	13.33333	113.89
3.375	0.2813	20	11.25	13.33333	150.00
3.375	0.2813	25	14.0625	16.66667	234.38
3.375	0.2813	30	16.875	20	337.50
3.375	0.2813	35	19.6875	23.33333	459.38