Zoning Resolution

THE CITY OF NEW YORK
Zohran K. Mamdani, Mayor

CITY PLANNING COMMISSION
Sideya Sherman, Chair

81-27 - Alternate Height and Setback Regulations - Daylight Evaluation

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81-27 - Alternate Height and Setback Regulations - Daylight Evaluation

LAST AMENDED
8/9/2017

81-271 - Definitions

LAST AMENDED
8/9/2017

Center line of the street (bounding a #zoning lot#)

A line equidistant from and parallel or nearly parallel to the #street lines# on both sides of the #street#. However, for the purposes of daylight evaluation:

(a) on a #street# 75 feet in width, the #center line of the street# shall be considered to be a line 40 feet from, and parallel to, the #front lot line# of the #zoning lot#; and

(b) on a #street# more than 100 feet in width, the #center line of the street# shall be considered to be a line 50 feet from, and parallel to, the #front lot line# of the #zoning lot#.

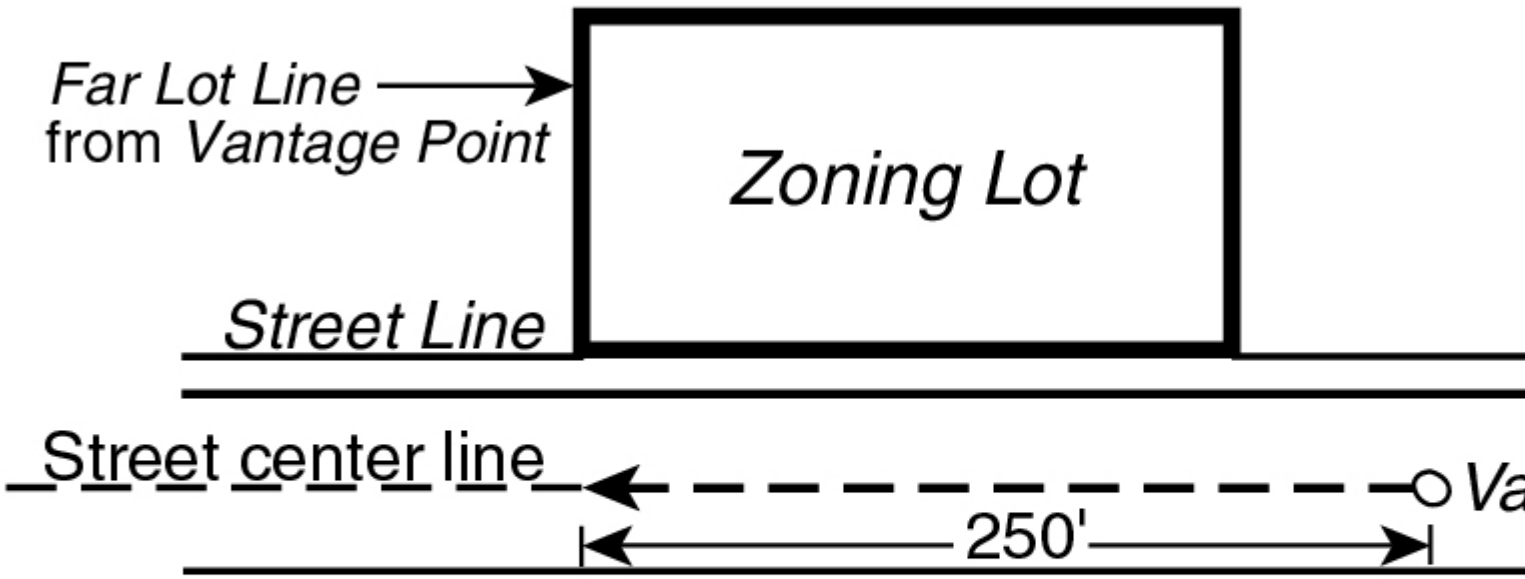
Daylight Evaluation Chart (DEC)

A graphic tool which permits objective measurements of portions of sky blocked by a #building# when it is viewed from a #vantage point#. There are three #daylight evaluation charts# for use with #street# widths of 60 feet, 75 to 80 feet and 100 feet and over, respectively. All #buildings# are drawn on the appropriate #daylight evaluation chart# to evaluate their compliance with the regulations of Section 81-27 (Alternate Height and Setback Regulations—Daylight Evaluation). These three

#daylight evaluation charts# are in Appendix B of this Chapter. A fourth chart in Appendix B is available for use with #qualifying sites# in the East Midtown Subdistrict, as defined in Section 81-613, with frontage along Park Avenue.

Far lot line

A #lot line# intersecting the #street line# of the #vantage street# such that, when viewed from the #vantage point#, the #zoning lot# does not contain any #lot area# that is on the far side of and immediately adjoining the #lot line# at its intersection with the #street line#. (See illustration of #Far Lot Line# and #Vantage Point#)



FAR LOT LINE AND VANTAGE POINT

(81-271.1)

Near lot line

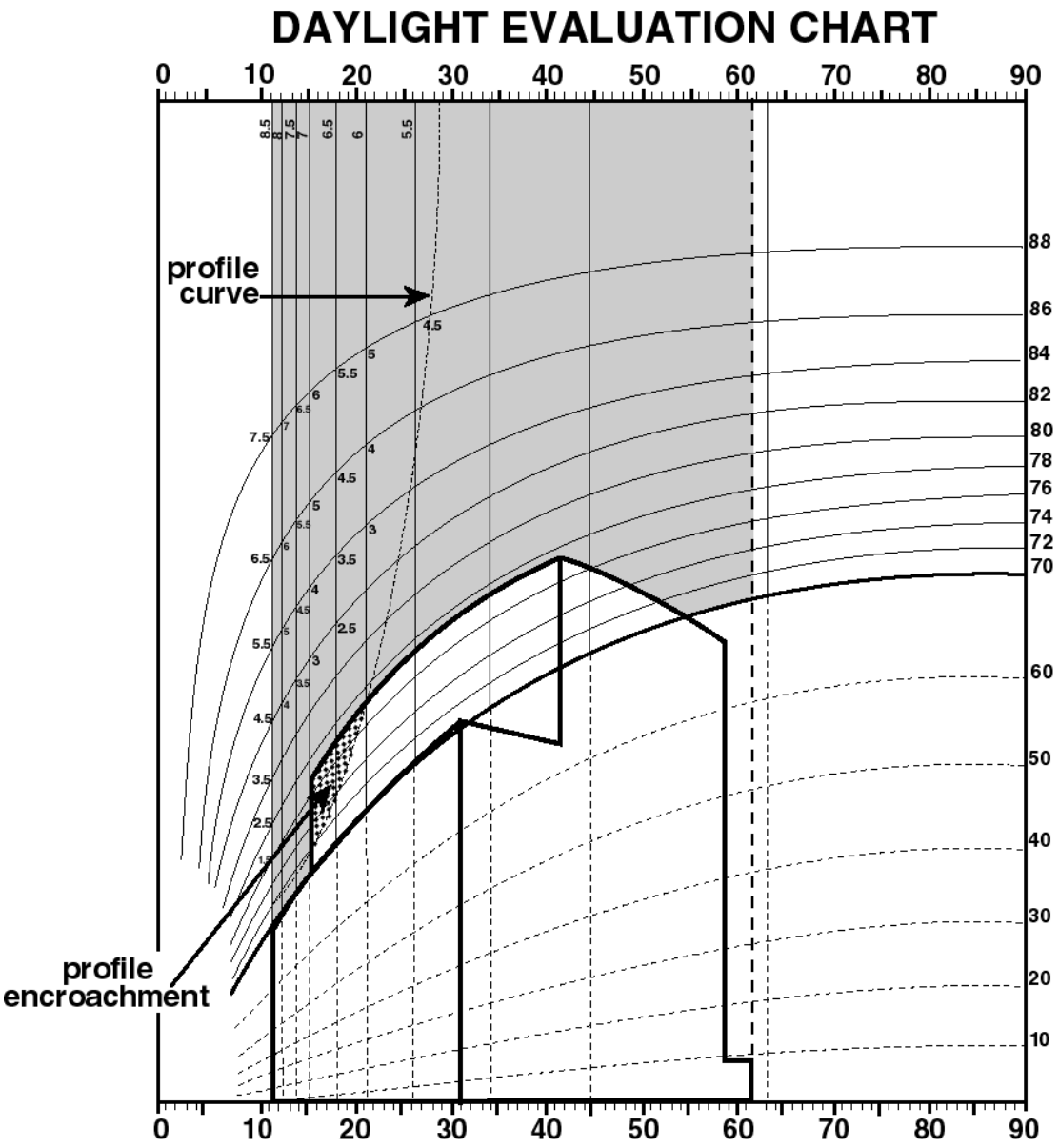
A #lot line#, other than the #far lot line#, which intersects the #street line# of the #vantage street# and which defines the extent of the #zoning lot's# continuous frontage along the #vantage street# from the #far lot line#.

Profile curve

A curved line on the #daylight evaluation chart# rising from the intersection of the curved line representing an elevation angle of 72 degrees with the vertical line at the #far lot line#. The #profile curve# is used to evaluate a #building's# obstruction of the sky as seen in profile from the #vantage point#.

Profile encroachment

The space on the #daylight evaluation chart# which, when viewed from the #vantage point#, is on the far side of the #profile curve# and which is blocked by the projection of the #building# on the #daylight evaluation chart#. (See illustration of #Profile Encroachment#)



PROFILE ENCROACHMENT

(81-271.2)

Vantage point

A point on the #center line of the street# bounding the #zoning lot# and located 250 feet from the intersection of the extension of the #zoning lot's# #far lot line# with the #center line of the street#. (See illustration of #Far Lot Line# and #Vantage Point#)

Vantage street

A #street# bounding the #zoning lot# and on the center line of which a #vantage point# is located.

81-272 - Features of the Daylight Evaluation Chart

LAST AMENDED
2/2/2011

The #daylight evaluation chart (DEC)# is a graphic representation of a pedestrian's field of view as he or she looks down a #street# and sweeps his or her view 90 degrees to the left or to the right.

Under special conditions, this view can be extended to 180 degrees horizontally as specified in Section 81-275 (Special conditions).

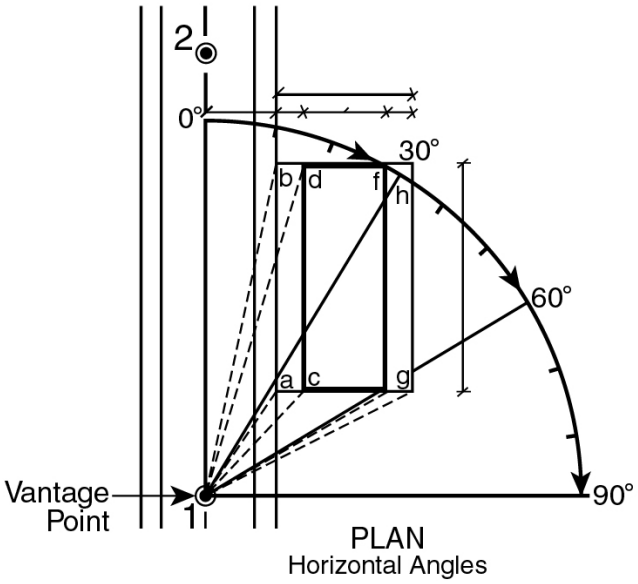
This pedestrian view is based on a #vantage point# located 250 feet from the intersection of the #zoning lot's# #far lot line# with the #center line of the street#.

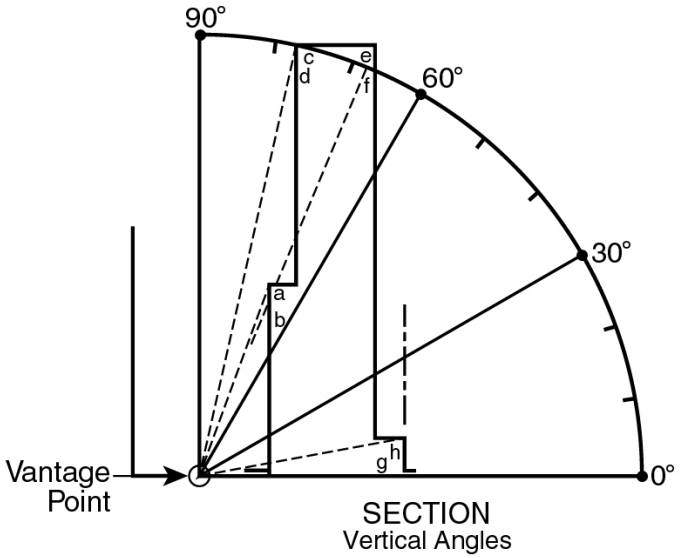
There are three #daylight evaluation charts# for use with different Midtown #street# widths. They include a chart for 60-foot wide #streets# (for most east-west crosstown #streets#) as well as a chart for 75-foot or 80-foot wide #streets# and a chart for #streets# 100 feet or more in width (for avenues and major crosstown #streets#). All of these charts have the following features:

(a) Horizontal and vertical axes

The #daylight evaluation chart# has both a horizontal and vertical component, encompassing views sweeping both 90 degrees horizontally and 90 degrees vertically. (See illustration of Horizontal and Vertical Angles of View)

Under special conditions, this view can be extended to 180 degrees horizontally as specified in Section 81-275.





HORIZONTAL AND VERTICAL ANGLES OF VIEW

(81-272a.1)

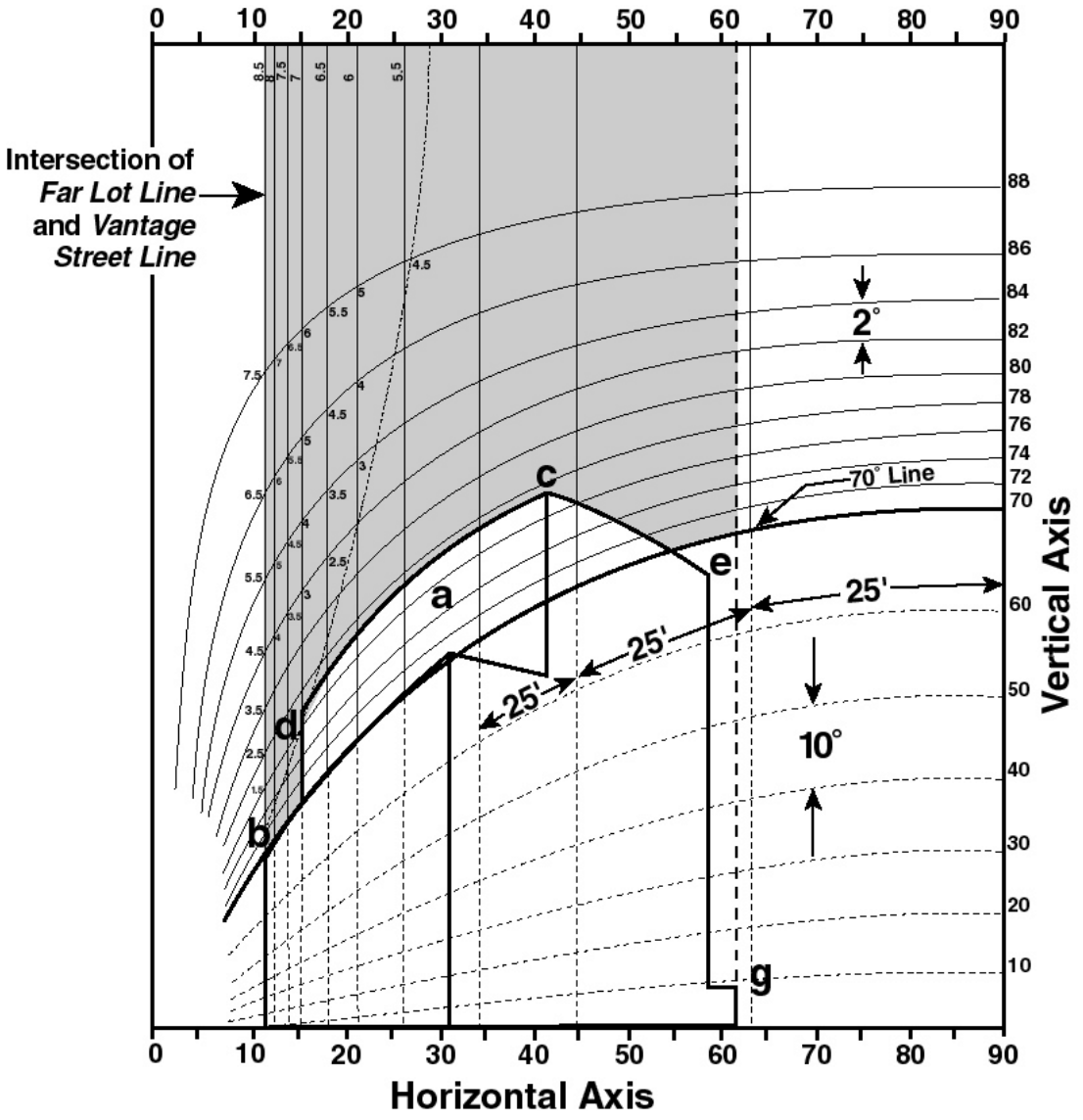
The horizontal axis of the #daylight evaluation chart# is measured in degrees of arc from zero degrees to 90 degrees starting from the #vantage point# along the #center line of the vantage street# and sweeping toward the #building#.

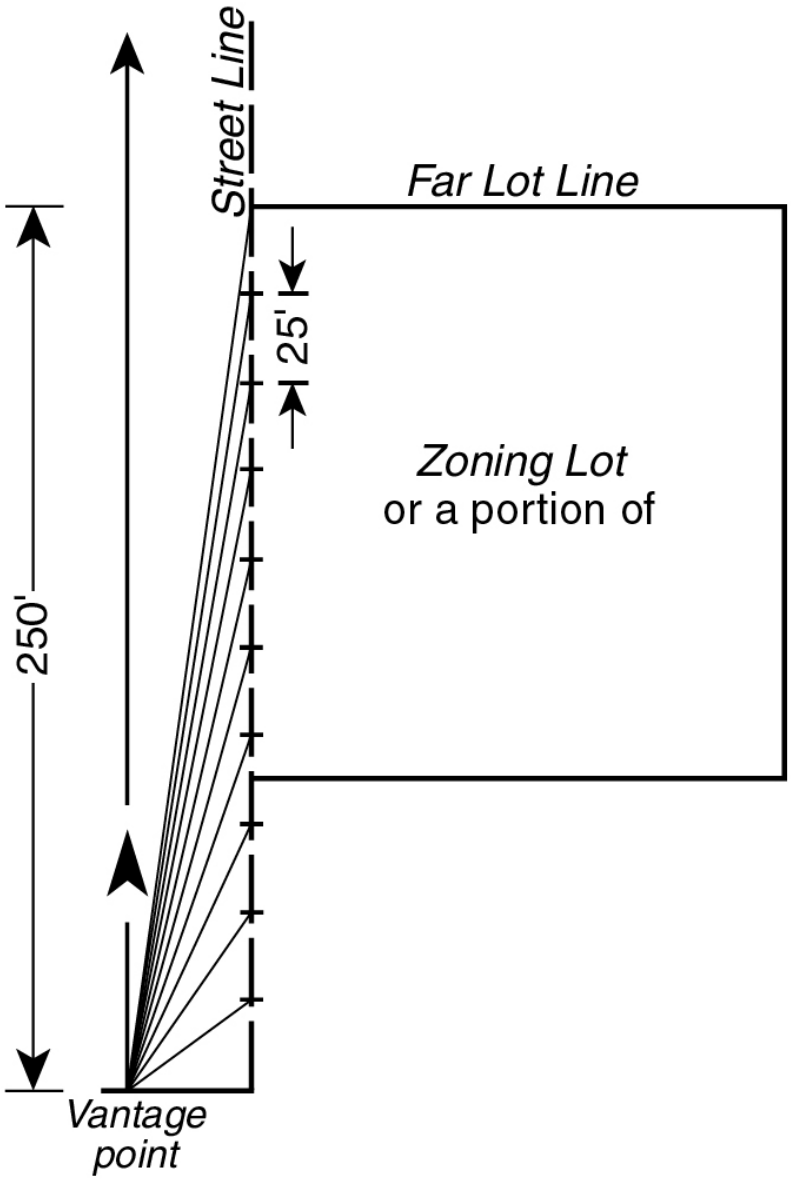
The horizontal axis is intersected by vertical lines corresponding to lines of sight from the #vantage point# to points 25 feet apart on the #front lot line# along the #vantage street# measured from the intersection of the #far lot line# with the #street line# of the #vantage street#.

The vertical axis of the #daylight evaluation chart# is measured in degrees of arc from zero degrees to 90 degrees starting from the #center line of the vantage street# at #curb level# and sweeping upward.

The vertical axis is intersected by curved elevation lines representing elevation angles from the #center line of the street# at 10 degree intervals from zero degrees to 70 degrees and at two degree intervals from 70 degrees to 90 degrees. (See illustration of Horizontal and Vertical Axes)

DAYLIGHT EVALUATION CHART





HORIZONTAL AND VERTICAL AXES

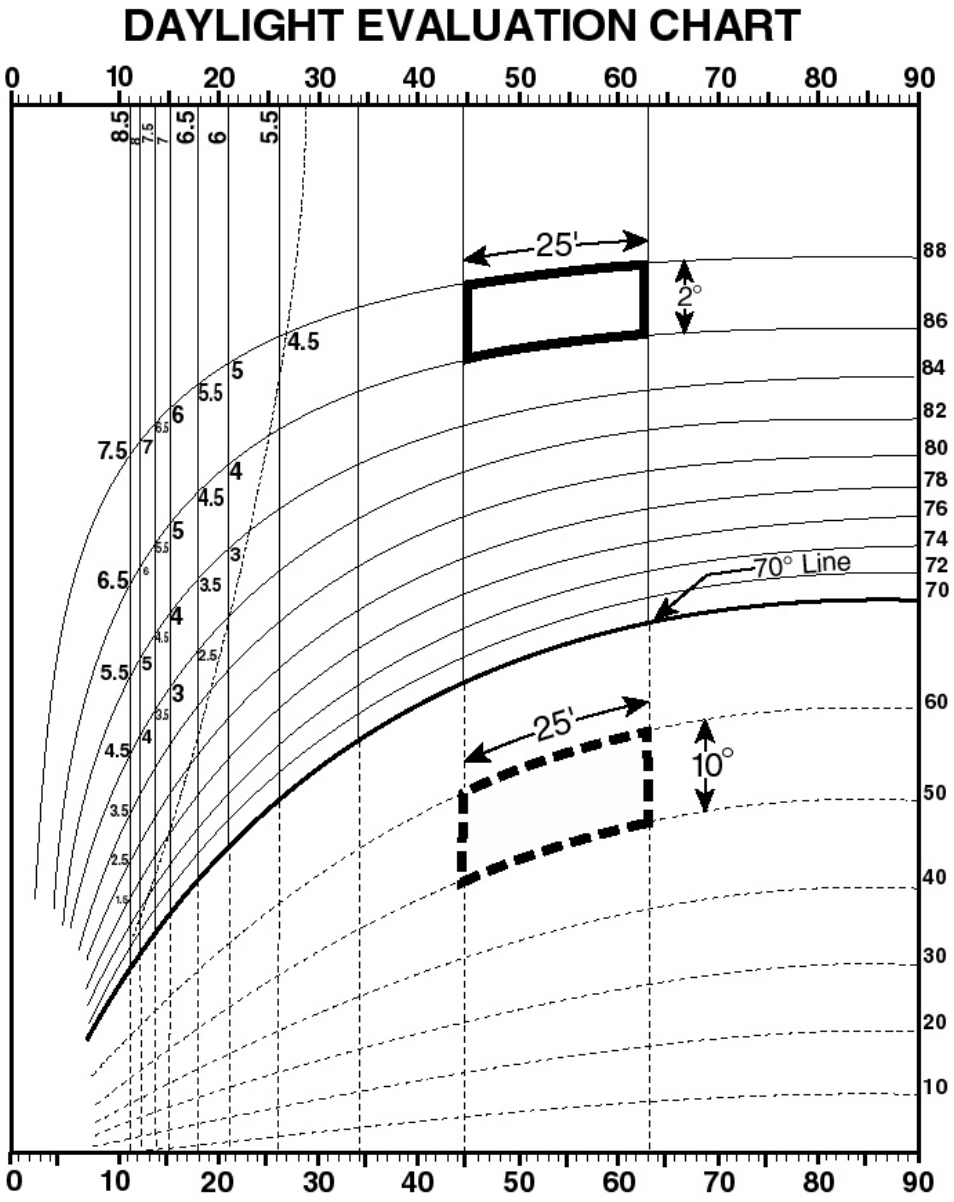
(81-272a.2)

(b) Daylight squares

The horizontal and vertical lines form a curvilinear grid dividing the #daylight evaluation chart# into areas called daylight squares. Above the 70 degree line, the grid is divided into 100 daylight squares starting from the vertical line rising from the intersection of the #far lot line# with the #street line# of the #vantage street# and ending at the vertical line representing 90

degrees along the horizontal axis. Each of these 100 squares represents 25 feet of lot frontage on the #vantage street# and two degrees of elevation angle from the #center line of the vantage street#.

Below 70 degrees, the grid is divided into 70 daylight squares starting from the vertical line rising from the intersection of the #far lot line# with the #street line# of the #vantage street# and ending at the vertical line rising at 90 degrees along the horizontal axis. Each of these 70 squares represents 25 feet of lot frontage on the #vantage street# and 10 degrees of elevation angle from the #center line of the street#. (See illustration of Daylight Squares)

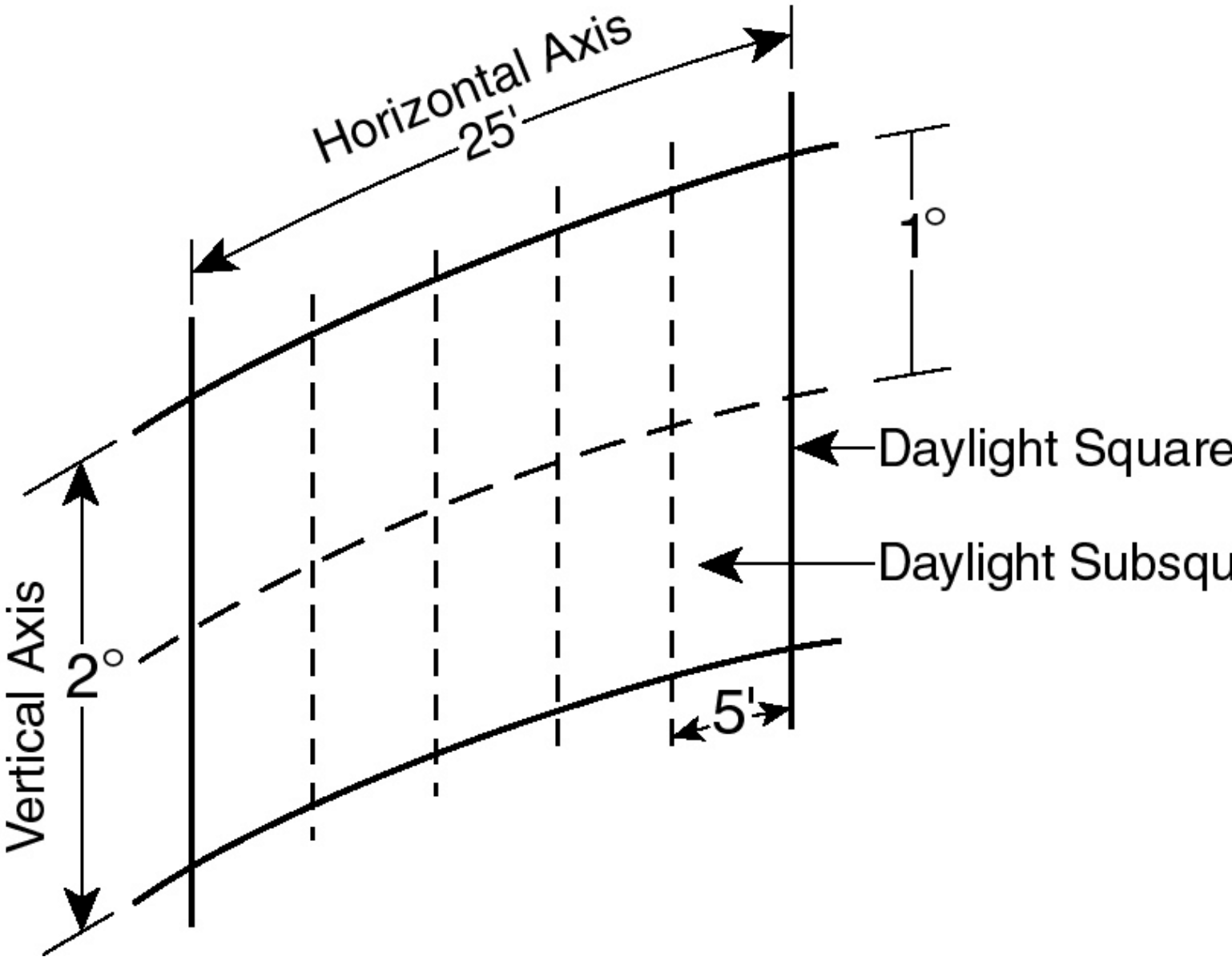


DAYLIGHT SQUARES

(81-272b)

(c) Daylight subsquares

For greater plotting and scoring precision, the horizontal axis of the grid is further subdivided by vertical lines at points five feet apart on the #front lot line# as seen from the #vantage point#. The vertical axis is further subdivided by curved lines representing lines of equal elevation at one degree intervals from 70 degrees to 90 degrees. Therefore, each daylight square is subdivided into 10 subsquares, each representing five feet of lot frontage on the #vantage street# and one degree of elevation angle from the #center line of the vantage street#. (See illustration of Daylight Squares and Subsquares Above 70 Degrees)



DAYLIGHT SQUARES AND SUBSQUARES ABOVE 70 DEGREES

(81-272c)

(d) The seventy degree line

Research shows that, as an average, 70 degrees is the elevation angle at which #buildings# in the #Special Midtown District# are set back from the #street line#. Most of the daylight below 70 degrees is blocked by such #buildings#. Slabs, towers or other setback portions of #buildings# rise to block an average of 25 percent of the available daylight squares above 70

degrees.

In #building# evaluation, the #DEC# measures the blocked sky above 70 degrees. Below 70 degrees, #buildings# are given credit for unblocked daylight.

(e) The #profile curve#

The grid is traversed by the #profile curve#, which rises from the intersection of the curved line representing an elevation angle of 72 degrees with the vertical line at the #far lot line#. The #profile curve# is derived from the predominant built character of developed Midtown #streets# as seen in profile. #Encroachment# across the #profile curve# is penalized to discourage canyon-like Midtown #streets# and to protect neighboring #buildings#.

81-273 - Rules for plotting buildings on the daylight evaluation chart

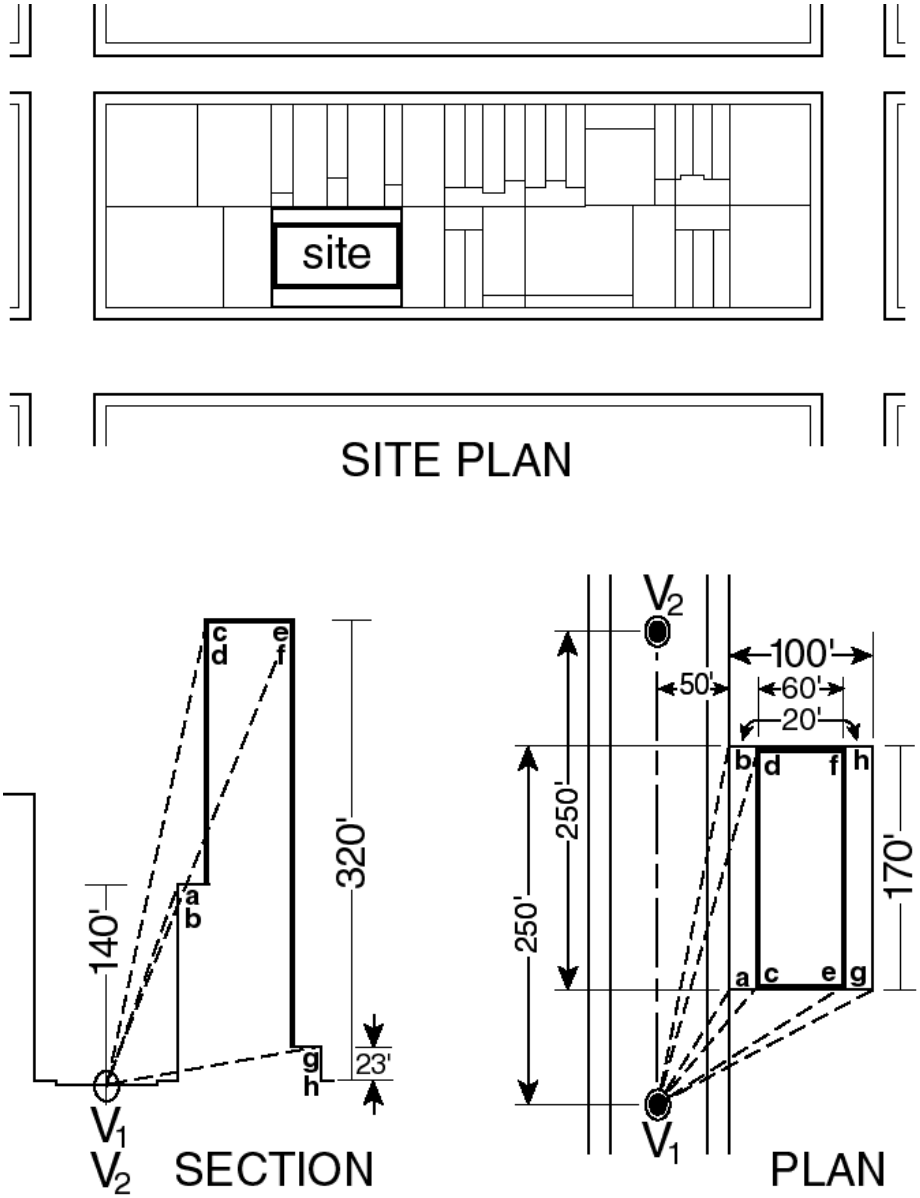
LAST AMENDED
2/2/2011

Evaluation of a #development# or #enlargement# requires drawing the new #buildings#, remaining #buildings# and open areas on the #zoning lot# on the appropriate #daylight evaluation chart (DEC)#, as viewed from each required #vantage point# and then scoring the #zoning lot#. The rules for plotting #buildings# on the #DEC# are set forth in the following paragraphs of this Section and illustrated by an example of a #building# which fronts on a 100-foot wide #street# and occupies a site 170 feet long by 100 feet deep.

(a) Draw the #building#

Draw the #building# in plan showing all #street# frontages of the #zoning lot#. Draw the

#building# in section perpendicular to each #street# on which the #zoning lot# fronts. On both plan and section drawings label all corners of the #building#. In the example they are labeled corners (a) through (h). (See illustrations of Example: Building Drawings)



EXAMPLE: BUILDING DRAWINGS

(81-273a)

(b) Establish #vantage points#

Establish on the plan all the #vantage points# from which views must be taken. #Vantage points# shall be established on the #center line of the vantage street# 250 feet from the intersection of the #zoning lot's# #far lot line# and the #center line of the street#. For each #vantage street# there are at least two #vantage points#. In the example, they are V1 and V2. For each #vantage point# there shall be a separate #daylight evaluation chart#. The example will use #vantage point# one.

(c) Record plan and section dimensions

Record on a coordinate chart for each corner of the #building# the following dimensions:

(1) Dimensions in plan:

The distance (S) between the corner and the #center line of the street# as measured along a line that intersects the #center line of the street# at right angles. In the example, distance (S) of corner (b) + 50 feet.

The distance (D) measured along the #center line of the street# from the #vantage point# to the point where the #street# center line is intersected by the perpendicular line from the corner. In the example, distance (D) of corner (b) + 250 feet.

(2) Dimension in section:

The height (H) of the corner above #curb level#. In the example, height (H) of corner (b) + 140 feet.

(d) Calculate plan and section angles

Determine the plan and section angles for each corner of the #building# as viewed from the #vantage point#.

(1) A plan angle is an angle on the plan formed at the #vantage point# by the line of sight to a corner of the #building# and the #center line of the vantage street#. The plan angle is found by calculating the tangent. The tangent is the quotient found by dividing distance (S) by distance (D). The plan angle for the resulting tangent is found in a tangent table and is then entered on the coordinate chart in the column marked "plan angles."

(2) The section angle is an angle formed by a line representing the distance in section from a corner of the #building# to the #center line of the vantage street# and a line representing the distance in plan (S) between the corner and the #center line of the street#. The section angle is found by calculating its tangent. The tangent is the quotient obtained by dividing the height of the corner (H) by its horizontal distance (S) from the #center line of the street#.

The section angle for the resulting tangent is found in a tangent table and is then entered on the coordinate chart in the column market "section angles."

EXAMPLE OF COORDINATE CHARTS

Plan Angles

Point	Distance (S) from #Street# Center Line (in feet)	Distance (D) from #Vantage Point# 1 (in feet)	Tangent (S÷D) of Angle	Angle
a	50	80	50/80 = 0.63	32.0°
b	50	250	50/250 = 0.20	11.3°

c	70	80	70/80 = 0.87	41.2°
d	70	250	70/250 = 0.28	15.6°
e	130	80	130/80 = 1.63	58.4°
f	130	250	130/250 = 0.52	27.5°
g	150	80	150/80 = 1.88	61.9°
h	150	250	150/250 = 0.60	31.0°

Section Angles

Point	Height (H) Above #Curb Level# (in feet)	Distance (S) from #Street# Center Line (in feet)	Tangent (H÷S) of Angle	Angle
a & b	140	50	140/50 = 2.80	70.3°
c & d	320	70	320/70 = 4.57	77.7°
e & f	320	130	320/130 = 2.46	67.9°

g & h	23	150	23/150 = 0.15	8.7^{o}

(e) Plot corner coordinates

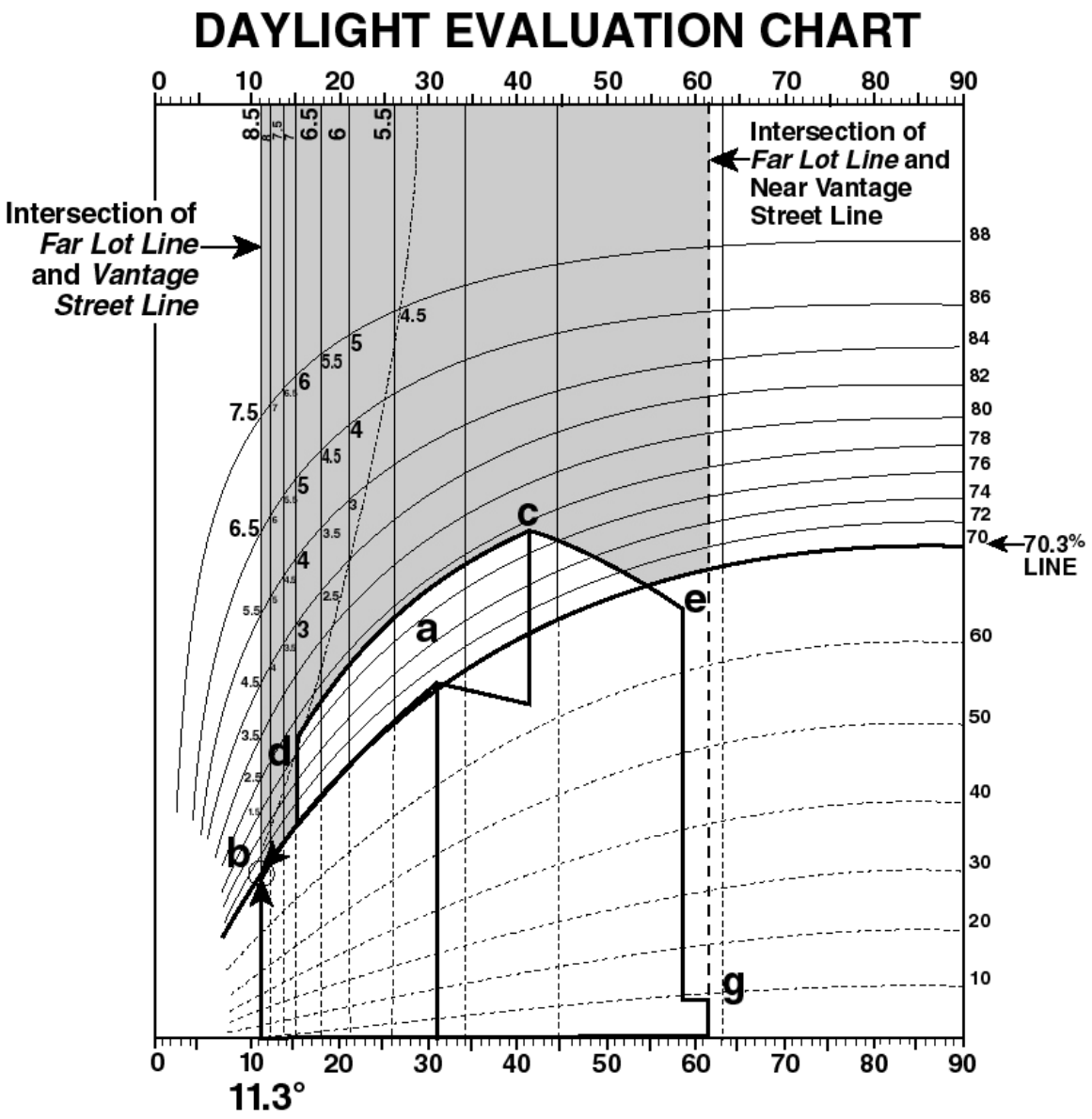
Plot each corner of the #building# onto the #daylight evaluation chart# at the point where the coordinates for that corner intersect. The plan angle coordinates are found on the horizontal axis of the chart and the section angle coordinates are found on the vertical axis. The points plotted are then connected to represent the edges of the #building# as shown on the plan and section drawings. A connecting line parallel to the #street line# of the #vantage street# is drawn as a curve parallel to the closest elevation line. A connecting line perpendicular to the #street line# of the #vantage street# is drawn parallel to the closest dotted elevation line, which is perpendicular to the #street#. A connecting line which is neither parallel nor perpendicular to the #vantage street# is approximated on the chart by:

(1) establishing points along the line in plan at 10-foot intervals;

(2) finding the coordinates of the points and plotting them on the chart; and

(3) connecting the resulting points.

The connecting lines produce a curvilinear perspective drawing of the #building# as seen from the #vantage point# projected onto the #daylight evaluation chart#. Since in the example #vantage point# one is on a 100 foot wide #street#, corner coordinates are plotted on a #daylight evaluation chart# for 100 foot wide #streets#. In the example, corner (b) is at the intersection of plan angle 11.3^{o} and section angle 70.3^{o} (See illustration of Building as Drawn on the Daylight Evaluation Chart)



BUILDING AS DRAWN ON THE DAYLIGHT EVALUATION CHART

(81-273e)

(f) Determine daylight boundaries

Draw a vertical line on the chart rising from the intersection of the #near lot line# of the #zoning lot# with the center line of the #block# or with a line 100 feet distant from and parallel to the #front lot line# on the #vantage street#, whichever line is closer to the #vantage street#. This line and the #far lot line# represent the boundaries of the potential sky area that

the #building# could block. (See illustration of Building as Drawn on the Daylight Evaluation Chart)

81-274 - Rules for determining the daylight evaluation score

LAST AMENDED
2/2/2011

A #zoning lot# is scored by determining the number and the value of the daylight squares the #building# blocks when viewed from the #vantage point#, compared to the total number of daylight squares available within the daylight boundaries as determined in paragraph (f) of Section 81-273 (Rules for plotting buildings on the daylight evaluation chart) and above an elevation angle of 70 degrees.

(a) Assign daylight values

The daylight squares on the #daylight evaluation chart# are each assigned a value.

(1) Except along #vantage streets# designated for #street wall# continuity (see Section 81-43), each unblocked daylight square below the curved line representing an elevation of 70 degrees has a positive value of 0.3 and each unblocked subsquare below the same curved line has a positive value of 0.03.

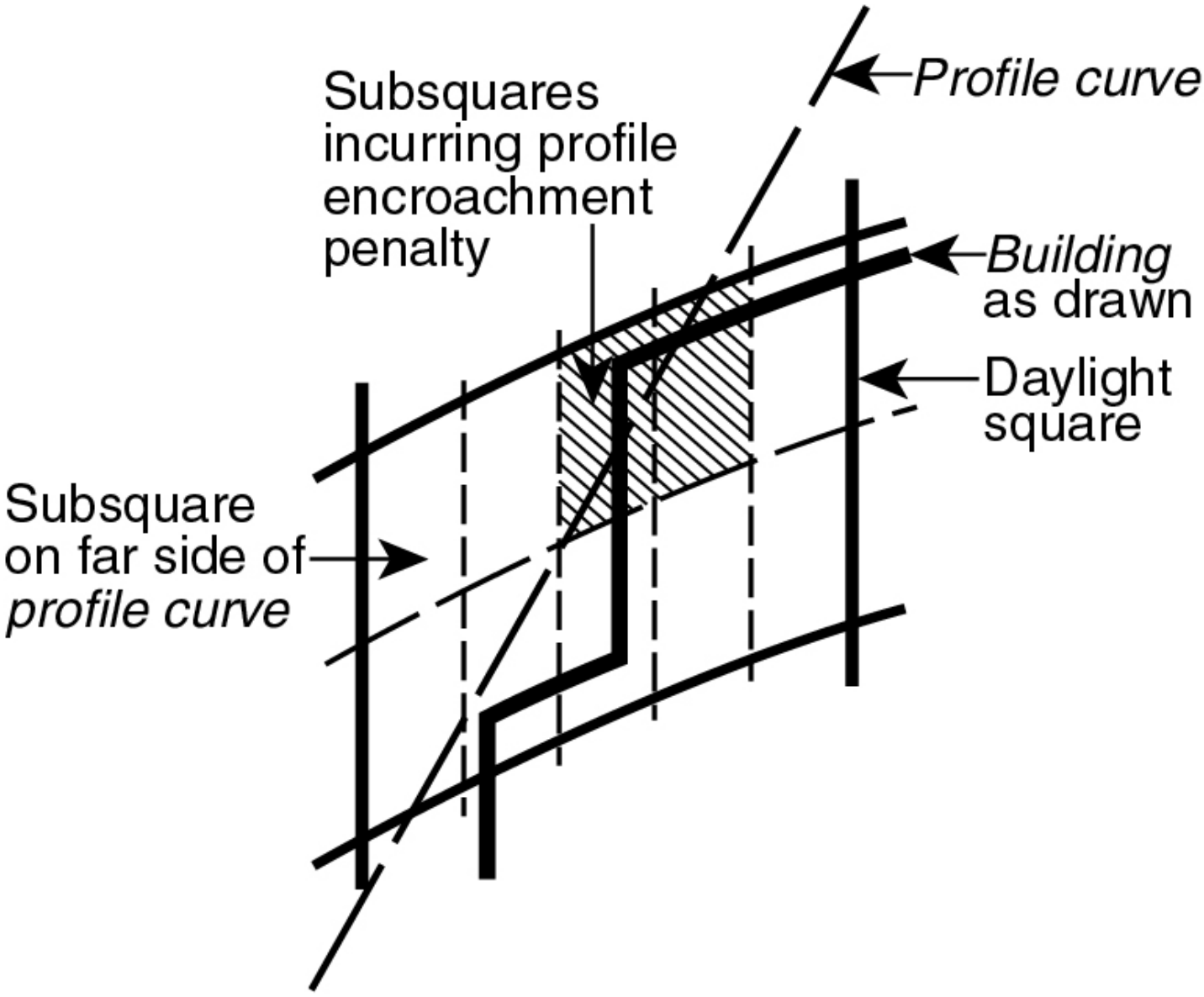
(2) Each blocked daylight square above the curved line representing an elevation of 70 degrees has a negative value of 1.0.

(3) Where a #building# blocks any portion of a subsquare the #building# is charged with blocking the entire subsquare in computing the daylight evaluation score. Each blocked subsquare has a negative value of 1.0/10 or 0.1.

(4) The daylight squares and subsquares which are on the far side of the #profile curve# are assigned additional weighted values set forth on the chart below. (See illustration of #Profile Encroachment# Incurring Profile Penalty)

Degrees of Elevation	Distance from #Far Lot Line#							
	1st 25ft	2nd 25ft	3rd 25ft	4th 25ft	5th 25ft	6th 25ft	7th 25ft	8th 25ft
88 to 90	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0
86 to 88	7.5	7.0	6.5	6.0	5.5	5.0	4.5	4.0
84 to 86	6.5	6.0	5.5	5.0	4.5	4.0	3.5	-
82 to 84	5.5	5.0	4.5	4.0	3.5	3.0	2.5	-
80 to 82	4.5	4.0	3.5	3.0	2.5	2.0	1.5	-
78 to 80	3.5	3.0	2.5	2.0	1.5	1.0	-	-

76 to 78	2.5	2.0	1.5	1.0	.5	-	-	-
74 to 76	1.5	1.0	.5	.5	-	-	-	-
72 to 74	.5	.5	.5	-	-	-	-	-



PROFILE ENCROACHMENT INCURRING PROFILE PENALTY

(81-274a)

(5) If the #building# encroaches beyond the #profile curve#, the entire subsquare in which the #profile encroachment# is located is given an additional weighted value. The total penalty is the additional weighted value of the daylight square multiplied by the negative value of the subsquare. The penalty is applied even if the subsquare does not lie entirely beyond the curve.

(b) Calculate daylight blockage

Count the number of blocked daylight squares and subsquares which are above the curved line representing an elevation of 70 degrees. A negative sign is to be given to this number. Total value of daylight blockage in the example is -20.5.

(c) Calculate unblocked daylight credit

Count the number of unblocked daylight squares which are below the curved line representing an elevation of 70 degrees and within the area defined by the intersection of the #far lot line# with the #street line# of the #vantage street# and the intersection of the #near lot line# with the #street line# of the #vantage street#. The total is given a positive value and multiplied by 0.3, the value of these daylight squares. This provision is not applicable where the #vantage street# is a designated #street# on which #street wall# continuity is required by the provisions of Section 81-43 (Street Wall Continuity Along Designated Streets). In the example, the number and value of squares unblocked below 70 degrees = +0.0.

(d) Calculate profile daylight blockage

Count the number of blocked daylight squares which are entirely on the far side of the #profile curve# when viewed from the #vantage point# and the number of blocked or partially

blocked subsquares which are on the far side of the #profile curve#. All of these daylight squares and subsquares are given a negative sign, multiplied by their respective weighted values in the table in paragraph (a)(4) of this Section and the products added. Subsquares are counted as one tenth of a daylight square. In the example, the total value of profile daylight blockage = -0.45.

(e) Calculate available daylight

Count the number of daylight squares available to the site. This is the total number of daylight squares and subsquares, calculated to the nearest tenth, that are above the curved line representing the boundaries of the potential sky area available to the site, said boundaries being delineated in accordance with the provisions of paragraph (f) of Section 81-273 (Rules for plotting buildings on the daylight evaluation chart). Available daylight in the example is 89.9.

(f) Calculate daylight remaining

Calculate the remaining or unblocked daylight by adding the results of paragraphs (b) through (e) of this Section. Daylight remaining in the example is (-20.5) + (0.0) + (-0.45) + (89.9) = 68.95.

(g) Calculate daylight score

Compute the remaining daylight score from paragraph (f) of this Section, as a percentage of the available daylight from paragraph (e) of this Section. The percentage is the daylight score for the proposed #building# from that #vantage point#. In the example, the daylight score is 68.95/89.9 = 76.70 percent for #vantage point# one (V1).

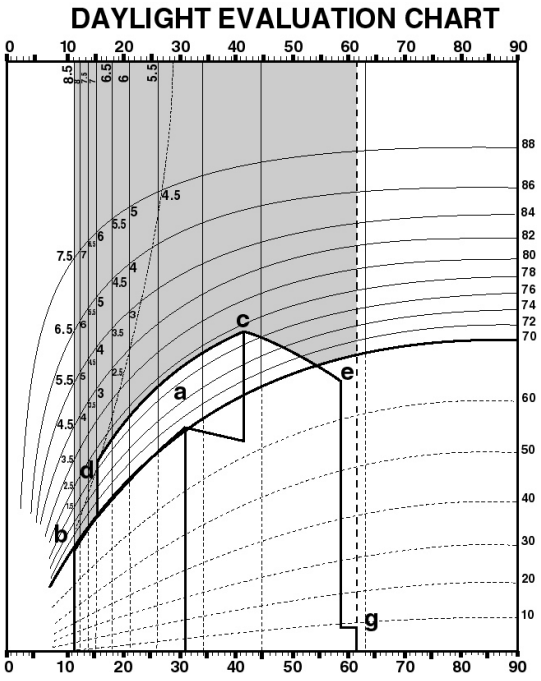
(h) Calculate overall daylight score

(1) The street score is the arithmetic mean of all the scores from all #vantage points# along a #vantage street#. When a #zoning lot# fronts on only one #street#, the street score is also the overall score. Where a #zoning lot# has more than one #street# frontage along any one #vantage street#, the street score is the average of all those individual #street# frontage scores computed pursuant to paragraph (b) of Section 81-275 (Special conditions), weighted by the lengths of all those #street# frontages.

(2) Where a #zoning lot# fronts on more than one #street#, the overall score is the average of the street scores, weighted by the length of their respective #vantage street# frontages.

(i) The passing score

To be in compliance with these regulations, a #zoning lot# must have an overall score of not less than 75 percent, with no single #street# frontage having a street score of less than 66 percent. If a #zoning lot# fronts only on one #street#, a daylight evaluation score of not less than 75 percent is required for that #street# frontage. If a street score is less than 66 percent, or if the overall daylight score is less than the passing score of 75 percent, a modest improvement in either the street score or the overall score may be obtained by scoring the relative reflectivity of the #building's# surface, as specified in Section 81-276 (Modification of score for reflectivity). The passing daylight score of 75 percent is equivalent to the average daylight levels of Midtown #buildings# built as-of-right under the 1916 and 1961 Zoning Resolutions. The minimum requirement of 66 percent on one frontage is equivalent to the daylight level of any #interior lot# #building# built in Midtown under the 1916 Zoning Resolution in a two-times height district. However, if any one frontage is less than 75 percent, other frontages must be greater than 75 percent to reach the passing overall daylight score. This allows flexibility in #building# design while maintaining daylight standards within the levels established by #buildings# built as-of-right under the 1916 and 1961 Zoning Resolutions. (See illustration of Daylight Evaluation Score Results)



SCORING SUMMARY
(Vantage point one)

SECTION		SCORE
81-274 (b)	Squares above 70° blocked	–20.5
81-274 (c)	Squares below 70° open	+ 0.0
81-274 (d)	Profile encroachment penalty	
	.1 x 1.5 = .15	
	.3 x 1 = .45	– 0.45
	Total Blockage	– 20.95
81-274 (e)	Available daylight squares	89.9
81-274 (f)	Remaining daylight	68.95
81-274 (g)	DAYLIGHT SCORE	
	68.95 / 89.9 = 76.70	76.70%

DAYLIGHT EVALUATION SCORE RESULTS

(81-274i)

81-275 - Special conditions

LAST AMENDED

5/13/1982

Notwithstanding the provisions of Sections 81-271 to 81-274, inclusive, relating to Alternate Height and Setback Regulations-Daylight Evaluation, the provisions of this Section shall apply under special conditions, as follows:

(a) For #zoning lots# with #street# frontages exceeding 250 feet

(1) Where the length of the #street# frontage is more than 250 feet but not more than 500 feet, the #building# as viewed from each #vantage point# shall be plotted on a #daylight evaluation chart# that extends in both directions from the 90 degree line on the horizontal axis. In each case, the number of available daylight squares for daylight evaluation shall be the number of squares between the #far lot line# and the #near lot line#.

(2) Where the length of the #street# frontage is more than 500 feet, daylight evaluations shall be made from three #vantage points#, as follows: #vantage points# one and two, each 250 feet distant from a #far lot line# extended to the #center line of the street#, and #vantage point# three, on the #center line of the street#, half-way between the other two #vantage points#. The #daylight evaluation charts# for the first two #vantage points# shall in each case encompass a view extending from the #far lot line# to the 90 degree line on the horizontal axis and the number of available daylight squares shall be the number of squares between the #far lot line# and the 90 degree line and above the curved line representing an elevation angle of 70 degrees. The #daylight evaluation chart# for the third #vantage point# shall extend in both directions from the 90 degree line on the horizontal axis to the vertical lines representing the points on the #front lot line# directly opposite #vantage points# one and two. The number of available daylight squares for daylight evaluation shall be the number of daylight squares between such vertical lines and above the curved line representing an elevation angle of 70 degrees.

(b) For #zoning lots# with interrupted #street# frontages

Where a #zoning lot# has two or more #front lot lines# on the same #street# which are separated by frontage of an intervening #zoning lot#, there shall be two daylight evaluations for each such #front lot line#. Each #lot line# of the #zoning lot# that intersects the #street line# shall be treated as a #far lot line# for the purposes of daylight evaluation from a #vantage point#.

(c) Where #front lot lines# are curved or broken

If the #front lot line# of the #zoning lot# is curved or bent, the extremities of such #front lot line# shall be connected by a straight line, which shall be considered the #front lot line#.

81-276 - Modification of score for reflectivity

LAST AMENDED
2/2/2011

Where #zoning lots# have utilized the #daylight evaluation chart# but a street score along one frontage is less than 66 percent or the overall score is less than 75 percent, a modest improvement in either the street score or the overall score of a #zoning lot# within a #building# which reflects more light than a medium gray or glass #building# may be obtained by scoring the relative reflectivity of the #building's# surface.

The use of reflectivity is optional and not necessary if a passing score can be obtained under Section 81-274 (Rules for determining the daylight evaluation score). Reflectivity scoring permits greater design flexibility for a light-colored #building# than a dark one.

Because the greatest reflectivity comes from the upper portions of #buildings#, the value of reflected light is credited against the amount of daylight blocked by the portions of the #building# above an elevation angle of 70 degrees from the #center line of the street#.

Reflectivity has two components: the reflectance of the surface material and the orientation of the material to the sun.

(a) Reflectance

Reflectance values of materials will be determined by the Department of Buildings after the submission of samples of proposed surface materials by the applicant.

(1) Mixed reflectance

A #building# of several surface materials will have a reflectance value determined by multiplying each material's reflectance value by its percentage of the total wall surface and adding the products. For example, a #building# that is 60 percent limestone and 40 percent clear glass would have a reflectance of .60 x .45 (the reflectance of limestone) plus .40 x .15 (the reflectance of clear glass) or an overall reflectance of .33.

(2) Relative reflectance

In order to be included in the reflectivity score of a #zoning lot#, the material of the #building# must reflect more light than a medium gray or glass #building#. The reflectance value of a medium gray or glass #building# in Midtown is .15 so that the #building# with an overall reflectance of .33, given in the example in paragraph (a)(1) of this Section, would be increasing the expected reflectance by .33 minus .15 which equals .18.

Examples of potential reflectance values for different types of surface finishes are shown on the following chart.

REFLECTANCE VALUES - EXAMPLES OF BUILDING MATERIALS

White plaster or paint or glaze	.80 to .90
Aluminum paint	.55
Green paint	.50
Red paint	.26
Light gray paint	.25
Flat black paint	.06
Polished aluminum, stainless steel	.85
Polished light marble	.40 to .50
Light granite, limestone	.45
Copper, brass lead	.60 to .80

Smooth concrete	.45+
Rough concrete	.40
Asbestos cement	.31
Light buff brick	.48
Dark buff brick	.40
Light red brick	.45
Dark red glazed brick	.30
Dark red brick	.12
Slate	.11
Wood	.22+

Glass: double glazing with reflective coating*	
Solarcool(r) bronze or gray	.35 to .36
Solarban(r) clear	.36 to .44
Solarban(r) bronze	.18
Solarban(r) gray	.14
Glass: tinted double glazing	
Gray	.08
Bronze	.09
Solex(r) (green or blue)	.12
Glass: clear double glazing	.15

Glass: clear single glazing	.08

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* Reflectance varies according to which layer the reflective coating is placed on, but can be precisely determined for each position

Sources:

Anderson, Bruce. Solar Energy: Fundamentals in Building Design. (McGraw Hill, New York 1977).

Callendar, John Hancock. Time Saver Standards: A Handbook of Architectural Design. (McGraw Hill, New York, 4th Edition, 1964).

PPG Industries, Inc., Architectural Glass Products (G702). PPG, Pittsburgh, PA., 1977.

(b) Facade orientation

Orientation of the facade of the #building# is the second component required for measurement of reflectivity. Because reflectivity varies according to the orientation of the facade, the orientation value for a particular surface from the chart below is multiplied by the reflectance of the surface to ascertain the amount of daylight reflectivity.

The orientation values are shown on the following reflectivity chart. Orientation angles shall

be rounded to the nearest 22.5 degrees.

Orientation based on True North		Orientation Value
North:	0^{o}	.09
	22.5^{o}	.15
	45.0^{o}	.22
	67.5^{o}	.40
East:	90.0^{o}	.57
	112.5^{o}	.72
	135.0^{o}	.87
	157.5^{o}	.93

South:	180.0°	1.00
	157.5°	.93
	135.0°	.87
	112.5°	.72
West:	90.0°	.57
	67.5°	.40
	45.0°	.22
	22.5°	.15

(c) Reflectivity Score

In order to obtain the reflectivity score for each view of the #building#, first count the daylight squares and subsquares which are blocked by the #building# on the #daylight evaluation chart# above an elevation angle of 70 degrees. This number shall be calculated separately for every orientation of each facade and multiplied by the relative reflectance of

that portion of the #building# and the orientation value.

Reflectance = (% material A x reflectance material A) + (% material B x reflectance material B)

Relative reflectance (RR) = reflectance minus .15

Reflectivity score = RR x facade orientation value x daylight squares blocked above 70^{o}.

The reflectivity scores for the several orientations are then added together to give the reflectivity score for that view of the #building# as a whole from the #vantage point# represented on the #daylight evaluation chart#.

The reflectivity score is added to the daylight remaining after accounting for daylight blockage as calculated in paragraph (f) of Section 81-274

The sum is then calculated as a percentage of the available daylight squares calculated in paragraph (e) of Section 81-274 to give the adjusted daylight score for the #zoning lot# from the #vantage point# represented on the #daylight evaluation chart#.

The adjusted street score along a particular #vantage street# is obtained by calculating the mean average of the adjusted daylight scores from all #vantage points# along the #vantage street#.

The adjusted overall score for the #zoning lot# is obtained by calculating the average of the adjusted street scores weighted by the lengths of their respective #vantage street# frontages.

(d) Limits on adjusted scores

(1) Adjusted street score

The adjusted street score shall not be more than six percentage points higher than the street score not adjusted for reflectivity.

If reflectivity scoring is used to bring the adjusted overall score for the #zoning lot# above 75 percent (the passing overall score), the street score for each #street# frontage without adjustment for reflectivity shall be not less than 66 percent.

(2) Adjusted overall score

The adjusted overall score shall not be more than six percentage points higher than the overall score not adjusted for reflectivity.

If the reflectivity scores for any single #street# frontage are used to bring the adjusted street score for that frontage above 66 percent (the passing score for a single #street# frontage), the overall score of the #zoning lot# without adjustment for reflectivity shall be not less than 75 percent.

81-277 - Special permit for height and setback modifications

LAST AMENDED
12/5/2024

In C5-3, C6-6 or C6-7 Districts, where a special permit application is made pursuant to Section 74-71 (Landmark Preservation) for modification of #bulk# regulations on a #zoning lot# containing a landmark, such application may include a request for modification of the height and setback

regulations set forth in Sections 81-261 to 81-275, inclusive, relating to Alternate Height and Setback Regulations - Daylight Evaluation. The City Planning Commission may authorize such height and setback modifications subject to the following conditions:

(a) The applicant shall demonstrate to the satisfaction of the Commission that a feasible design for the proposed #development# or #enlargement# which accommodates the permitted #floor area# is not possible under the provisions of Sections 81-271 to 81-276, inclusive, and shall further present for the proposed design a complete daylight evaluation with an explanation of street score or overall daylight score deficiencies.

(b) The Commission shall make the following findings in addition to any required under the applicable provisions of Sections 74-71:

(1) that the requested departure from the alternate height and setback regulations is the minimum amount necessary to achieve a feasible #building# design;

(2) that the disadvantages to the surrounding area resulting from reduced light and air access will be more than offset by the advantages of the landmark's preservation to the local community and the City as a whole; and

(3) that where the landmark is located on the #zoning lot# proposed for #development# or #enlargement# or on a lot contiguous thereto or directly across a #street# therefrom, the modification of the alternate height and setback regulations will adequately protect the setting for the landmark.