

APPENDIX B – LIGHTING STUDY



ENVIRONMENTAL IMPACT LIGHTING TECHNICAL STUDY

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1020 S FIGUEROA ST LIGHTING STUDY

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1. Introduction

1.1. Summary of Study Organization

This Environmental Impact Lighting Study (Study) is prepared by Francis Krahe & Associate Inc. to analyze the project sign illumination within the proposed 1020 South Figueroa Street Project in Los Angeles, California (Project). This study defines the existing lighting conditions within and surrounding the Project Site, reviews the applicable lighting metrics, and models the illuminated signs within the proposed Project to evaluate the potential Project impacts on surrounding properties. The Project Site is comprised of an approximately 2.7 acres site located at 1020 South Figueroa Street in the southwestern portion of the Downtown community of the City of Los Angeles (City) which falls within the South Park district of the Central City Community Plan Area.

The methods of analysis utilized for this evaluation are based upon the recommended practices established by the Illuminating Engineering Society of North America (IESNA) for the practice of illumination engineering design and application as well as measurement of light sources and illuminated surfaces.

1.2. Project Description

The Project is adjacent to two existing sign districts. The Project Site is bordered to the west and south by the Los Angeles Sports and Entertainment District (LASED), and to the north by the Figueroa and Olympic Sign District. (See Land Use, 4.F-15) The City recently approved large scale signage for projects at 1200 S. Figueroa Street, 1100 S. Figueroa Street, LA Live, and the Metropolis project.

The Project includes media and signage that contributes to and complements the energetic, vibrant, pedestrian oriented atmosphere within the LASED at LA Live and the 1100 Figueroa development to the west and south; and at the same time, provides subdued signage facing residential and mixed use buildings to the north and east.

The signage regulations set forth in the Fig & 11th Sign District would establish requirements governing allowable sign types, locations, maximum size or coverage, hours of operation, and type of animation or controlled refresh rates. Project signage would include on and off-site signage in various forms, including wall signs, digital displays and streaming signage, supergraphic signs, open panel roof signs, hotel building identification, residential building identification, retail and restaurant building identification, parking entry identification, loading dock entry identification, and wayfinding signage. No billboard signage is proposed.

(Excerpt from "1020 S. Figueroa Street Project – Signage Description" PCR Services Corporation)

Illuminated Signs

A signage program for the Project has been designed that would emphasize the retail and entertainment-oriented aspects of the Project. Specifically, sign types may include identification signs, temporary event signs, electronic digital displays, changeable message LED boards, static signs, identification signs and retail/tenant identification signs with both on-site and off-site signs allowed. Light resulting from illuminated signs are expected to be emitted from three types of signs: front lit signs, electronic digital displays, change-able message LED boards.

Two alternative sign design programs are analyzed in this study:

Alternative A includes the maximum sign area for the illuminated signs with a maximum luminance at night of 80 cd/m², and will include a control system to reduce sign illuminance to 80 candelas per square meter from one hour prior to sunset until one hour after sunrise, or when ambient sun light is less than 80 foot candles at any time during the day.

Alternative B utilizes a reduced sign area with maximum sign luminance of 350 cd/m² at night, and will include a control system to reduce sign illuminance to 350 candelas per square meter from one hour prior to sunset until one hour after sunrise, or when ambient sun light is less than 80 foot candles at any time during the day.

The illuminated signs will be designed to comply with the requirements of CALGreen, including requiring 65% dimming at night. In order to create the most conservative analysis, both Alternative A and Alternative B include the maximum sign area as noted in Appendix C and Appendix E.

1.3. Summary of Methodology

Light exposure within this Study is evaluated based on the following technical criteria:

- Light Trespass: the light that falls on a property but originates on an adjacent property. Light trespass is expressed in terms of *illuminance*.¹
- Glare/Contrast: for exterior environments at night, glare occurs when the range of luminance in a visual field is too large. The calculated value which describes glare at an observer position for a particular view is referred to as contrast, and is determined by the variation of *luminance*² values within the field of view. "High," "Medium," and "Low" contrast are terms used to describe contrast ratios (the ratio of peak measured luminance to the average within a field of view) of greater than 30:1, between 10:1 and 30:1, and below 10:1, respectively. Contrast ratios above 30:1 are generally uncomfortable for the human eye to perceive.

2. Glossary of Lighting Terminology

Discussions of lighting issues include precise definitions, descriptions or terminology of the specific lighting technical parameters. The following glossary summarizes explanations of the

¹ *Illuminance measures the amount of illumination (i.e., luminous flux) that falls on a given area from a light source. Luminous flux is defined as the mean value of total candelas produced by a light source, and describes the total amount of light emitted by a light source. The unit for measuring luminous flux is a lumen. Illuminance is measured in foot-candles (lumen per square foot, or the light energy within one square foot surface). Illuminance decreases with the square of the distance from the light source.*

² *Luminance describes the brightness of an illuminated surface. Luminance is a measure of reflected light from a specific surface in a specific direction over a standard area. It is measured in footLamberts (candelas per square foot). A candela is defined as a measure of light energy from a source at a specific standard angle and distance. Metric equivalent for Luminance is candelas per square meter, or nits.*

technical lighting terms utilized within the Study and the related practice standards to facilitate discussion of these issues. The following technical terms are presented in this Study.

- Brightness:** The magnitude of sensation that results from viewing surfaces from which light comes to the eye. This sensation is determined partly by the measurable luminance of the source and partly by the conditions of observation (Context), such as the state of adaptation of the eye. For example, very bright lamps at night appear dim during the day, because the eye adapts to the higher brightness of daylight.
- BUG Rating:** A luminaire classification system established in *IES TM-15-07*, BUG Ratings Addendum that provides for uniform assessment of the directional characteristics of illumination for exterior area lighting. BUG is an acronym composed of Backlight, Uplight, and Glare. BUG ratings are based on a zonal lumen calculations for secondary solid angles defined in *IES TM-15-07*.
- Candela:** Measure of light energy from a source at a specific standard angle and distance. Candela (cd) is a convenient measure to evaluate output of light from a lamp or light fixture in terms of both the intensity of light and the direction of travel of the light energy away from the source.
- Contrast:** Calculated evaluation of high, medium and low contrast of visible light sources or surfaces within the Project Site by a ratio of luminance values. Contrast is the ratio of one surface luminance to a second surface luminance or to the field of view. Contrast values exceeding 30 to 1 are usually deemed uncomfortable; 10 to 1 are clearly visible; and less than 3 to 1 appear to be of equal value.
- Fully Shielded:** A lighting fixture constructed in such a manner that all light emitted by the fixture, either directly from the lamp or a diffusing element, or indirectly by reflection or refraction from any part of the Luminaire, is projected below the horizontal as determined by photometric test or certified by the manufacturer. Any structural part of the light fixture providing this shielding must be permanently affixed. In other words, no light shines above the horizontal from any part of the fixture.
- Glare:** Glare is visual discomfort experienced from high contrast. For exterior environments at night, glare occurs when the range of luminance in a visual field is too large. The light energy incident at a point is measured by a scale of footcandles or lux, and is described in the technical term Illuminance. This incident light is not visible to the eye until it is reflected from a surface, such as pavement, wall, dust in the atmosphere or the surface of a light bulb. The visible brightness of a surface is measured in footLamberts (or metric equivalent candelas per square meter) and is described by the term Luminance.

The human eye processes brightness variations across a very broad spectrum of intensities. The ratio of brightness values generated by direct noon sun versus a moonlight evening is over 5000 to 1. Human eyes are capable of accommodating to this range of intensities given adequate time to adjust. However, the eye cannot process brightness ratios of more than 30 to 1 within a view without discomfort.

For the purpose of this analysis, brightness of light sources may be described subjectively by the following criteria:

High Contrast Conditions: View of light fixture emitting surface, such as a lens, reflector, or lamp, where brightness contrast ratio exceeds 30 to 1 (source Luminance to background Luminance ratio in footLamberts).

Medium Contrast Conditions: Brightly lighted surfaces where contrast ratio exceeds 10 to 1, but is less than 30 to 1 (lighted surface Luminance to background Luminance ratio in footLamberts).

Low Contrast Conditions: Illuminated surfaces where contrast ratio exceeds 3 to 1, but less than 10 to 1 (source Luminance to background Luminance ratio in footLamberts).

Illuminance:

Illuminance is the means of evaluating the density of Luminous Flux. Illuminance indicates the amount of Luminous Flux from a light source falling on a given area. Illuminance is measured in footcandle (fc) which is the lumens per square foot, or Lux (lumens per square meter). Illuminance need not necessarily be related to a real surface since it may be measured at any point within a space. Illuminance is determined from the Luminous intensity of the light source. Illuminance decreases with the square of the distance from the light source (Inverse Square Law).

Horizontal Illuminance:

Illuminance incident upon a horizontal plane. The orientation of the illuminance meter or calculation point will be 180° from Nadir.

Vertical Illuminance:

Illuminance incident upon a vertical plane. The orientation of the illuminance meter or calculation point will be 90° from Nadir.

Light Output Direction:

Luminaires for general lighting are classified in accordance with the percentages of total luminaire output emitted above and below horizontal. The light distribution curves may take many forms within the limits of upward and downward distribution, depending upon the type of light and the design of the luminaire.

Lighting Array:

An installation of multiple light sources or lamps where the distance between each lamp or light source within the Lighting

Array is less than 5 feet on center in any direction from any other source.

Light Source: Device which emits light energy from an electric power source.

Light Trespass: Electric light from subject property incident onto adjacent properties, measured in footcandles or lux, usually analyzed by measurement at or near the adjacent property line.

Lighting Zone: Defined by IESNA and summarized in Table 26.4 in the 10th Edition and adopted by the CALGreen

Lighting Zone LZ2: Outdoor areas of human activity where the vision of human residents and users is adapted to moderate light levels. Lighting is not uniform or consistent. Lighting is generally desired for safety, security and/or convenience.

Lighting Zone LZ3: Outdoor areas of human activity where the vision of human residents and users is adapted to moderately high light levels. Lighting is generally desired for safety, security and/or convenience.

Lighting Zone LZ4: Outdoor areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally desired for safety, security and/or convenience.

Luminaire: A complete lighting unit consisting of a lamp or lamps and ballast(s) (when applicable) together with the parts designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply. Also referred to as a Light Fixture.

Luminaire Cutoff: A classification system created by the IESNA to describe light distribution from exterior luminaires.

Full cutoff: A Luminaire light distribution where zero Candela intensity occurs at or above an angle of 90° above Nadir. Additionally, the Candela per 1,000 lamp lumens does not numerically exceed 100 (10 percent) at or above a vertical angle of 80° above Nadir. This applies to all lateral angles around the luminaire.

Cutoff: A luminaire light distribution where the candela per 1,000 lamp lumens does not numerically exceed 25 (2.5 percent) at or above an angle of 90° above Nadir, and 100 (10 percent) at or above vertical angle 80° above Nadir. This applies to all lateral angles around the Luminaire.

Semi-cutoff: A luminaire light distribution where the candela per 1,000 lamp lumens does not numerically exceed 50 (5 percent) at

or above an angle of 90° above Nadir, and 200 (20 percent) at or above vertical angle 80° above Nadir. This applies to all lateral angles around the Luminaire.

Non-cutoff: A luminaire light distribution where there is no Candela limitation in the zone above maximum Candela.

Luminance:

Luminance is a measure of emissive or reflected light from a specific surface in a specific direction over a standard area. Luminance is measured in footLamberts (fL) (Candela per square foot) or cd/m^2 (Candela per square meter). $1\text{fL} = 3.43 \text{ cd/m}^2$.

Whereas Illuminance indicates the amount of Luminous Flux falling on a given surface, Luminance describes the brightness of an illuminated or luminous surface. Luminance is defined as the ratio of luminous intensity of a surface (Candela) to the projected area of this surface (m^2 or ft^2).

Luminous Flux:

Mean value of total Candelas produced by a light source. Luminous Flux describes the total amount of light emitted by a light source. The unit for measuring Luminous Flux is Lumen (lm).

This radiation could basically be measured or expressed in watts. This does not, however, describe the optical effect of a light source adequately, since the varying spectral sensitivity of the eye is not taken into account. To include the spectral sensitivity of the eye the Luminous Flux is measured in lumen. Radiant Flux or 1 W emitted at the peak of the spectral sensitivity (in the photopic range at 555 nanometers produces a Luminous Flux of 683 lumen). The unit of lumen does not define direction.

Skyglow:

Skyglow is the description of luminous atmospheric background and results from both natural and human made conditions. Natural causes of skyglow include sunlight reflected from the surface of the earth and moon, sunlight illuminating the upper atmosphere, and visible illumination from other interplanetary sources. Human made causes of skyglow include electric light that is emitted directly upward into the sky (Uplight), or reflected off of the ground. Such light illuminates the aerosol particles within the atmosphere and results in a luminous background.

Uplight:

Uplight is the primary cause of skyglow and can be differentiated into two zones, (1) Lower Uplight and (2) Upper Uplight. Lower uplight describes light between 90° and 100° above nadir. Most skyglow is caused by Lower Uplight. Upper Uplight results primarily in energy waste.

3. Regulatory Framework

3.1. Los Angeles Municipal Code

The City of Los Angeles regulates lighting with respect to building and safety, transportation, and light trespass (i.e., the spillover of light onto adjacent light-sensitive properties). The City also enforces the building code requirements of the California Building Code 2013, The California Green Building Standards Code 2013 (CALGreen), and the California Electrical Code 2013. Exterior lighting, such as streetlights and are regulated by the Los Angeles Municipal Code (LAMC). Applicable regulations for the Project Site include the following:

- Chapter 1, Article 4.4, Sec. 14.4.4 E. No sign shall be arranged and illuminated in such a manner as to produce a light intensity greater than 3 foot-candles above ambient lighting, as measured at the property line of the nearest residentially zoned property.
- Chapter 9, Article 3, Div. 1, Sec. 93.0117(b). No exterior light may cause more than 2 foot-candles of lighting intensity or generate direct glare onto exterior glazed windows or glass doors on any property containing residential units; elevated habitable porch, deck, or balcony on any property containing residential units; or any ground surface intended for uses such as recreation, barbecue or lawn areas or any other property containing a residential unit or units.
- Chapter 9, Article 9, Division 5, Sec 99.05.106.8. Comply with lighting power requirements in the California Energy Code, California Code of Regulations, Title 24, Part 6. Meet or exceed exterior light levels and uniformity ratios for lighting zone 3 as defined in Chapter 10 of the California Administrative Code, Title 24, Part 1.

3.2. California Code of Regulations, Title 24

Title 24 of the California Code of Regulations (CCR), also known as the California Building Standards Code, consists of regulations to control building standards throughout the State. The following components of Title 24 include standards related to lighting:

California Building Code (Title 24, Part 1) and California Electrical Code (Title 24, Part 3)

The California Building Code (Title 24, Part 1) and the California Electrical Code (Title 24, Part 3) stipulate minimum light intensities for safety and security at pedestrian pathways, circulation ways, and paths of egress. All Project lighting will comply with the requirements of the California Building Code.

California Energy Code (Title 24, Part 6)

The California Energy Code (CEC) stipulates allowances for lighting power and provides lighting control requirements for various lighting systems, with the aim of reducing energy consumption through efficient and effective use of lighting equipment.

Section 130.2 sets forth requirements for Outdoor Lighting Controls and Luminaire Cutoff requirements. All outdoor luminaires rated above 150 watts shall comply with the backlight, up light, and glare "BUG" in accordance with IES TM-15-11, Addendum A, and shall be provided with a minimum of 40% dimming capability activated to full on by motion sensor or other

automatic control. This requirement does not apply to street lights for the public right of way, signs or building façade lighting.

Section 140.7 sets forth outdoor lighting power density allowances in terms of watts per area for lighting sources other than signage. The lighting allowances are provided by Lighting Zone, as defined in Section 10-114 of the CEC. Under Section 10-114, all urban areas within California are designated as Lighting Zone 3. Sports Athletic field lighting is exempt from this energy limit, and additional allowances are provided for Building Entrances or Exits, Outdoor Sales Frontage, Hardscape Ornamental Lighting, Building Façade Lighting, Canopies, Outdoor Dining, and Special Security Lighting for Retail Parking and Pedestrian Hardscape.

Section 130.3 stipulates sign lighting controls with any outdoor sign that is ON both and day and night must include a minimum 65 percent dimming at night. Section 140.8 of the CEC sets forth lighting power density restrictions for signs.

California Green Building Standards Code (Title 24, Part 11)

The California Green Building Standards Code, which is Part 11 of Title 24, is commonly referred to as the CALGreen Code. Paragraph 5.1106.8 Light pollution reduction, defines all non-residential outdoor lighting must comply with the following:

- The minimum requirements in the CEC for Lighting Zones 1–4 as defined in Chapter 10 of the California Administrative Code; and
- Backlight, Uplight and Glare (BUG) ratings as defined in the Illuminating Engineering Society of North America's Technical Memorandum on Luminaire Classification Systems for Outdoor Luminaires (IESNA TM-15-07); and
- Allowable BUG ratings not exceeding those shown in Table A5.106.8 in Section 5.106.8³ of the CALGreen Code (excerpt included in the Appendix); or
- Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.

4. IESNA Recommended Practices

The Illuminating Engineering Society of North America (IESNA) recommends illumination standards for a wide range of building and development types. These recommendations are widely recognized and accepted as best practices and are therefore a consistent predictor of the type and direction of illumination for any given building type. For all areas not stipulated by the regulatory building code, municipal code or specifically defined requirements, the IESNA standards are used as the basis for establishing the amount and direction of light for the Project.

³ Table 5.106.8, Footnote 2 defines the location of the Property Line for the purpose of evaluating compliance with the BUG ratings and provides that: "For property lines that abut public walkways, bikeways, plazas and parking lots, the property line may be considered to be 5 feet beyond the actual property line for purpose of determining compliance with this section. For property lines that abut public roadways and public transit corridors, the property line may be considered to be the centerline of the public roadway or public transit corridor for the purpose of determining compliance with this section." See Appendix A.

The IESNA 10th Edition Lighting Handbook defines Outdoor Lighting Zones relative to a range of human activity versus natural habitat. Table 26.4, Nighttime Outdoor Lighting Zone Definitions, included in the Appendix hereto, establishes the Zone designation for a range of existing lighting conditions, from low or no existing lighting to high light levels in urban areas. Table 26.4 is referenced by the California Energy Code Title 24 in section 10-114 of the CEC and section 140.7 relative to allowable energy use for outdoor lighting. In addition, the IESNA 10th Edition Lighting Handbook defines Recommended Light Trespass Limits in Table 25.5, included in the Appendix hereto, relative to the Outdoor Lighting Zones. The Recommended Light Trespass Illuminance Limits describe the maximum light trespass values in Lux at the location where trespass is under review. As noted above, the CEC stipulates that all urban areas in California are designated as Lighting Zone 3. IESNA Table 25.5, lists a Pre-curfew 8 Lux (0.74 footcandles) maximum at the location where trespass is under review for Zone 3.

5. Significance Threshold

Appendix G of the CEQA Guidelines provides a set of sample questions that address impacts with regard to aesthetics, including light and glare. The question that pertains to light and glare is as follows:

Would the project:

- Create a new source of substantial light and glare which would adversely affect day or nighttime views in the area?

In the context of this question from Appendix G of the CEQA Guidelines, the *City of Los Angeles CEQA Thresholds Guide* states that the determination of significance shall be made on a case-by-case basis, considering the following factors:

- The change in ambient nighttime levels as a result of project sources; and
- The extent to which project lighting would spill off the project site and affect adjacent light-sensitive areas.

Based on these factors and the LAMC requirements identified above, the Project would have a significant impact with regard to artificial light or glare if:

- The Project generates light emissions associated with an illuminated sign that produces a light intensity exceeding 3.0 foot-candles at the property line of a residence or other sensitive receptor.
- The Project creates new high contrast conditions visible from a field of view from a sensitive receptor.

6. Existing Conditions

6.1. Introduction

The existing conditions within and adjacent to the Project Site include existing residential, commercial hotel and retail properties, surface parking lots and the adjacent Staples Center sports and entertainment facility. Existing lighting conditions are summarized at receptor site locations surrounding the Project Site to comprehensively define the range of existing lighting

conditions and views from the surrounding properties to the Project Site. The existing conditions data is analyzed in comparison to the Project's proposed lighted signs as part of the evaluation of the Project's light and glare. The following section provides a detailed description of each receptor site location and elaborates on the conditions within each receptor site.

6.2. Receptor Site Locations

Receptor sites are utilized to evaluate the maximum potential impacts that may result from light or glare onto properties surrounding the Project site to the north, east, south, and west. The Receptor locations are within close proximity of the project illuminated signs, have views of the Project Site, and are a residential use property.

The following criteria are used to evaluate potential Receptor Site locations:

- Future Light Visibility – Potential receptor sites are analyzed that provide direct view of the areas of greatest light intensity.
- Proximity – Potential receptor sites at a minimum distance to the Project are analyzed. These locations are selected because light intensity decreases⁴ exponentially with distance, locations at a greater distance will experience less light intensity than nearby locations.

Figure 1 below illustrates the Project location and the surrounding residential property locations analyzed within this Study. The Project site is shaded green and the residential properties are shaded red. The residential Receptor Site locations are identified with an "R" prefix on the map (i.e. R1-a, R2-a, etc).

Receptor Site R1-a: South of the Project Site, aligned with the axis of the southwest corner of the Project Site at the intersection of West 11th Street and Figueroa Street. Receptor Site R1-a is located to evaluate the signs at the southwest corner of the Project at the nearest residential property line to the south. Receptor Site R1-a is located at the north property line of 650 West 11th Street, north of the 11th Street right of way. Distance to the Project Site is approximately 98 ft. Distance to the Project's southwest exterior façade is approximately 98 ft.

Receptor Site R1-b: South of the Project Site, aligned with the axis of the southeast corner of the Project at the intersection of West 11th Street and South Flower Street. Receptor Site R1-b is located to evaluate the signs at the southeast corner of the Project at the nearest residential property line to the south. Receptor Site R1-b is located at the north property line of 650 West 11th Street, north of the West 11th Street right of way. Distance to the

⁴ The Inverse Square Law shows that the intensity of light diminishes at the square of the distance traveled. See the definition of "Illuminance" in Section 2, Glossary of Lighting Terminology for additional discussion.

Project Site is approximately 98 ft. Distance to the Project's southeast exterior façade is approximately 108 ft.

Receptor Site R2-a:

North of the Project Site, aligned with the axis of the northwest corner of the Project at the intersection of Olympic Boulevard and Figueroa Street. Receptor Site R2-a is located to evaluate the signs at the northwest corner of the Project at the nearest existing residential property line to the north. Receptor Site R2-b is located at the north edge of the Olympic Boulevard right of way at 717 W Olympic Boulevard. Distance to the Project Site is approximately 115 ft. Distance to Project's west exterior façade is approximately 128 ft.

Receptor Site R2-b:

North of the Project Site, Receptor Site R2-b is located midblock between Figueroa and Flower Street at the edge of the residential property line at 717 West Olympic Boulevard. Receptor Site R2-b is located to evaluate the view to the Project north façade at the nearest residential property line. Receptor Site R2-b is located at the existing residential property line at the north edge of the Olympic Boulevard right of way. Distance to the Project Site is approximately 110 ft. Distance to Project's exterior façade is approximately 134 ft.

Receptor Site R2-c:

Northwest of the Project Site, Receptor Site R2-c is located at the northwest corner of the Figueroa and West Olympic Boulevard intersection at the residential property line at 811 West Olympic Boulevard. Receptor Site R2-c is located to evaluate the view to the Project north and west façade at the nearest residential property line. Receptor Site R2-c is located at the existing residential property line at the north edge of the Olympic Boulevard right of way. Distance to the Project Site is approximately 135 ft. Distance to Project's exterior façade is approximately 152 ft.

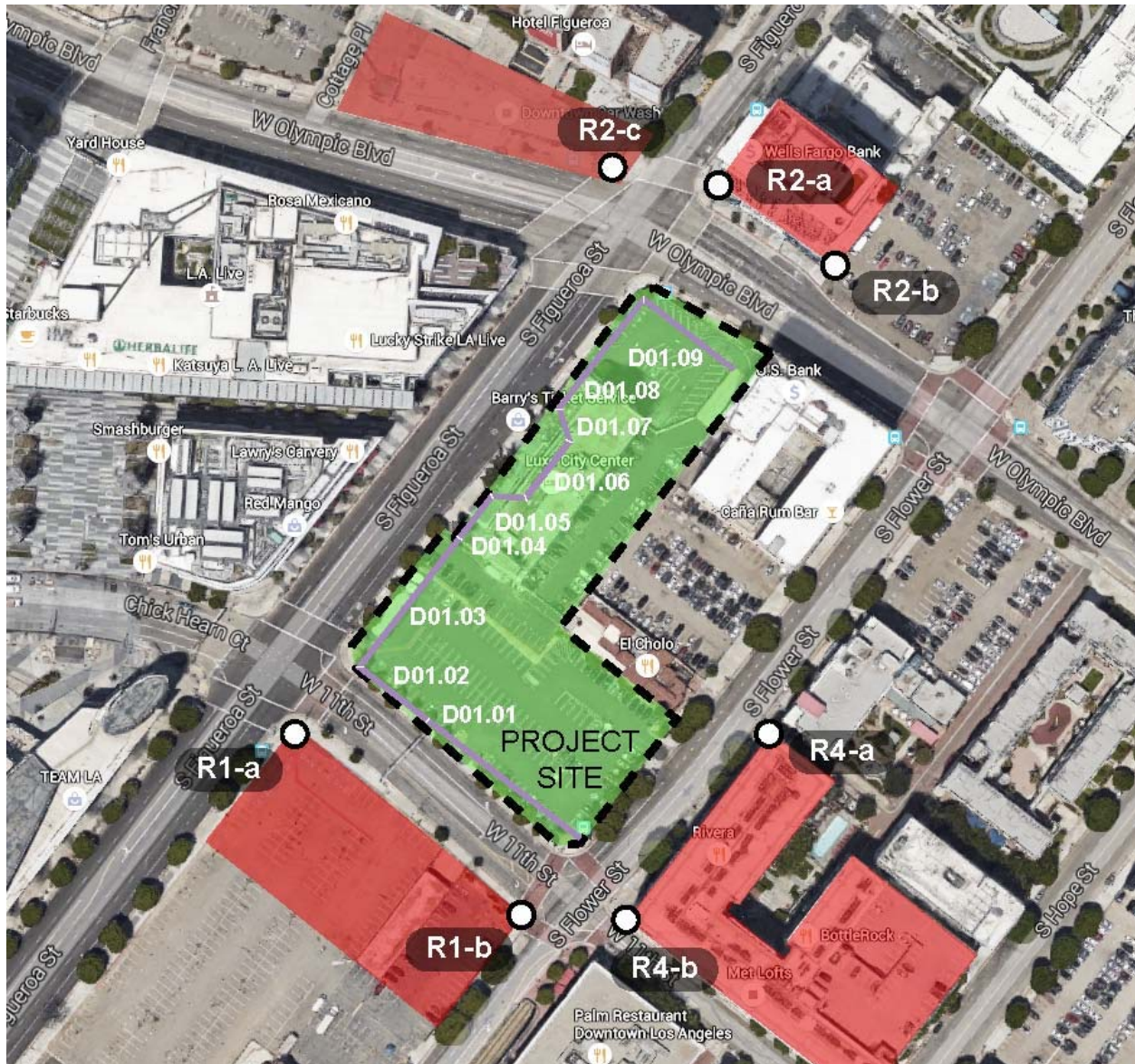


Figure 1: Project site, adjacent residential properties (red), and Receptor site locations.

Receptor Site R4-a:

East of the Project Site, Receptor Site R4-a is located at the east edge of the South Flower Street right of way, midblock between Olympic Boulevard and West 11th Street. Receptor Site R4-a is located to evaluate the Project's illuminated signs impact to the nearest residential property to the east at the Met Loft, 1050 South Flower Street. Distance to the Project Site is 89 ft. Distance to the Project exterior façade is approximately 93 feet.

Receptor Site R4-b:

East of the Project Site, Receptor Site R4-b is located at the east edge of the S Flower Street right of way, south of the West 11th Street intersection at the existing residential property. Receptor Site R4-b is located to evaluate the Project's impact

on the existing residential properties to the east of the Project Site at the Met Loft, 1050 South Flower Street. Distance to the Project Site is 85 ft. Distance to the Project exterior façade is approximately 91 feet.

6.3. Criteria

The existing lighting conditions at the Project site were recorded by way of observations of contrast and glare, and measured illuminance and luminance at each Receptor site. Illuminance values were recorded at numerous points within the immediate vicinity of the Receptor site. Luminance values were recorded for both the most prominent bright surfaces and the ambient, background surfaces within the field of view to the Project site from the Receptor site.

As established in Section 3, the following factors were used to assess the existing conditions at each receptor site:

Table 1. Existing Conditions Lighting Criteria

Criteria	Metric	Procedure
Illuminance/Trespass	Measured illuminance (footcandle/lux) documented at each receptor site	Horizontal and vertical illuminance measurements at each receptor site with Minolta illuminance meter. ⁵
Contrast/Glare	Measured luminance (cd/m ²) Observed existing conditions	Observed and measured conditions with respect to the view to the Project Site from the receptor site in terms of project coverage and context, light sources, lighted surfaces, and illuminated signs.

6.4. Analysis of Survey Data

The existing Project Site conditions and observations are summarized below in relation to the evaluation factors established in Section 5, Significance Threshold.

Illuminance/Trespass: Illuminance values listed in Table 2 below indicate the measured Illuminance at the receptor sites. Values are presented in measured foot-candles and equivalent Lux. Generally the Project site is surrounded by well illuminated streets. The Staples Center and LA Live facilities to the west of the Project site include bright street lights, illuminated signs,

⁵ Horizontal Illuminance measurements are recorded with the light meter held horizontally and the sensor at 180 degrees to the nadir at 3 feet above grade. Vertical illuminance measurements are recorded with the light meter in the vertical position and the sensor located 90 degrees from nadir at 3 feet above grade. For the Project, the vertical illuminance data is presented to identify the sum of all existing illuminance at the receptor sites from the direction of the Project Site. The existing lights at the Project Site and at the surrounding streets vary in height from grade mounted flood lights to medium height light poles at approximately 25 feet above grade. This range of variation in height produces an angle of incidence to the light meter of less than 10 degrees for receptor sites at 100 feet from the Project Site. Because of these conditions, the vertical illuminance measurements are used in this Study to summarize a conservative value for incident illuminance at the receptor sites.

and building façade lighting. The properties to the north include existing residential and commercial buildings with extensive exterior lighting. The properties to the south of the project are currently under construction with construction work lights and security floodlights within the properties. To the west of the Project is the existing Met Lofts residential project, which includes an exterior lighting component. The existing Project site includes parking lot lights, exterior flood lights on the existing hotel, and billboard sign lights.

The measured illuminance values are consistent with an urban lighting condition, with relatively high illuminance at the street and sidewalk within the public right of way, and high illuminance within the private properties for safety and security. Many of the properties include well illuminated entries with additional wall mounted light fixtures to light adjacent walkways.

Table 2. Illuminance – Measured at Receptor Sites

RECEPTOR	ORIENTATION	Illuminance (fc)		ANALYSIS
		fc	Lux	
R1-a	Horizontal	3.7	39.8	Measured at intersection of W 11th St / Figueroa Street, southeast corner, across from Staples Center and LA Live
	Vertical	2.3	24.7	
R1-b	Horizontal	1.5	16.1	Measured at intersection of W 11th St. / S Flower Street southwest corner, across from Met Lofts and Restaurant
	Vertical	1.5	16.1	
R2-a	Horizontal	11.0	118.3	Measured at intersection of S Figueroa Street / Olympic Blvd at Bank across from LA Live
	Vertical	3.7	39.8	
R2-b	Horizontal	5.3	57.0	Measured at midblock, at 717 Olympic apartment building adjacent to parking lot
	Vertical	2.3	24.7	
R2-c	Horizontal	1.8	19.4	Measured at Olympic Blvd north sidewalk, west of the Figueroa Street intersection
	Vertical	2.1	22.1	
R4-a	Horizontal	1.2	12.9	Measured at midblock on S. Flower Street at Met Loft building adjacent to driveway
	Vertical	1.2	12.9	
R4-b	Horizontal	1.3	14.0	Measured at intersection of S. Flower / W 11th Street at entry to Met Loft building
	Vertical	1.4	15.1	

Contrast/Glare: The visual evaluation of High, Medium and Low Contrast describes the perception of how bright a visible object appears to the surrounding objects. High Contrast indicates a potential glare condition.

The qualitative descriptions of existing Contrast conditions in Table 3 state the relative visible perception of intensity of light sources to the surrounding surfaces as viewed from the Receptor sites to the Project Site.

Table 3. Summary of Glare/Contrast

Receptor	Contrast/Glare Description
R1-a	High Contrast/Glare from Staples Center signage and façade lighting and street lighting. Direct view of Project Site with no obstructions. Illuminated digital signage visible.
R1-b	High Contrast/Glare from street and parking lot light poles. Direct view of Project Site with no obstructions. Illuminated digital signage visible.
R2-a	Moderate contrast/Glare from other exterior lighting and signage from nearby buildings. Direct view of Project Site with no obstructions. Illuminated digital signage visible.
R2-b	Moderate contrast/Glare from other exterior lighting and signage from nearby buildings. Direct view of Project Site with no obstructions. Illuminated digital signs visible.
R2-c	Moderate contrast/Glare from other exterior lighting and signage from nearby buildings. Direct view of Project Site with no obstructions. Illuminated digital signs visible.
R4-a	High contrast/Glare from exterior lighting from adjacent buildings and street lights. Direct view of Project Site with moderate obstructions from trees and buildings. Illuminated digital signs visible.
R4-b	Moderate contrast/Glare. Moderate exterior lighting from adjacent buildings and street lights. Direct view of Project Site with minimal obstruction by trees and buildings. Illuminated digital signs are not visible.

Luminance values were recorded for both the most prominent bright surfaces and the ambient, background surfaces within the field of view to the Project site from the Receptor site. The measured Luminance values are summarized in Tables 4 and 5.

A comparison of the maximum measured luminance from the most prominent source at each Receptor site to the measured ambient luminance is calculated in Table 5, bottom row. The greater the difference between prominent and ambient luminance, the higher the contrast. Contrast ratios above 30:1 generally indicate glare. The ratios of existing measured luminance

indicate high contrast conditions for existing street lights and building mounted floodlights within and surrounding the Project.

The prominent sources measured include LED digital signs at various buildings, static channel signs, flood lit billboards, façade lighting, and street lights. The ambient sources measured include the surrounding building façade surfaces, street and sidewalks.

Table 4. Luminance – Measured prominent sources viewed from Receptors

LUMINANCE - PROMINENT LIGHT SOURCE (cd/m ²)	R1-a	R1-b	R2-a	R2-b	R2-c	R4-a	R4-b
	1413.0	34.8	63.7	700.3	725.0	108.4	138.6
	2267.0	13.8	6756.0	3568.0	6432.0	28650.0	1206.0
	12.6	17.0	509.6	1049.0	1025.0	157.1	22.6
	589.0	8112.0	21.4	129.9	27,58	5.2	10.9
	22.0	1136.0	22.8	11.8	16.0	637.5	15.6
	9.1	20340.0	12.4	27.1	256.0	7.2	69.0
	5.3	1506.0		8.5	19.0	5.2	230.7
		16.9		11.5	23.0	5.6	410.5
				13.4	15.0	7.6	
AVERAGE (cd/m ²)	616.9	3897.1	1231.0	613.3	1063.9	3287.1	263.0
MAX (cd/m ²)	2267.0	20340.0	6756.0	3568.0	6432.0	28650.0	1206.0

Table 5. Luminance – Measured ambient surfaces viewed from Receptors

	R1-a	R1-b	R2-a	R2-b	R2-c	R4-a	R4-b
	0.77	1.28	1.23	0.54	1.10	2.60	2.11
	1.02	0.74	2.96	2.23	1.30	0.42	0.40
	0.84	1.17	8.94	0.83	2.00	0.55	1.27
	0.81	1.26	7.01	0.93	4.00	1.25	1.23
	1.59	0.53	1.55	7.75	3.80	1.77	2.16
	1.46	1.45	4.50	1.21	3.30	0.80	1.20
	2.85	0.74	5.86	0.88	2.50	1.90	
	2.14	0.37	3.32	2.70	1.10		
	2.16		0.67		0.80		
	2.00		0.93				
	2.29		8.75				
AVERAGE (cd/m2)	1.63	0.94	4.16	2.13	2.21	1.33	1.40
MAX (cd/m2)	2267	20340	6756	3568	6432	28650	1206
CONTRAST (MAX: AVERAGE)	1391	21581	1625	1673	2909	21588	865

6.5. Observations from Residential Receptor Sites

Receptor Site R1-a:

Southwest of Project Site at the north property line of 650 W 11th Street at the south side of the right of way.

Record of Observations: February 24, 2016, 7 pm.

Weather Conditions: Waning Gibbous



Figure 2: R1-a day view



Figure 3: R1-a night view

Receptor Site R1-a is located at the southeast corner at the intersection of the West 11th and Figueroa Street, south of the Project Site, east of the Staples Center. The adjacent property to the south of Receptor Site R1-a is an approved mixed use high-rise project. The north tower is adjacent to West 11th Street and has a height of 632 feet with residential uses above 241'-5".

Within the City street right-of-way along Figueroa Street and West 11th Street there are existing City light poles. As shown in Figure 2 and 3, Receptor Site R1-a has a clear view of the Project south façade and the adjacent Staples Center and LA Live.

The illuminance measurements were taken under existing City street light poles, therefore vertical illuminance levels are high (24.2 lux/ 2.3 Fc). There are high brightness glare sources visible such as the digital billboard at corner (2267 cd/m²), other smaller digital signs (589 cd/m²), and façade lighting at Tom's Urban (22.02 cd/m²). The ambient surface brightness was also measured at 11 different locations and the average is low (1.6 cd/m²).

Receptor Site R1-b:

Southeast of the Project Site at the north property line of 650 West 11th Street at the south side of the right of way.

Record of Observations: February 24, 2016, 7 pm.

Weather Conditions: Waning Gibbous

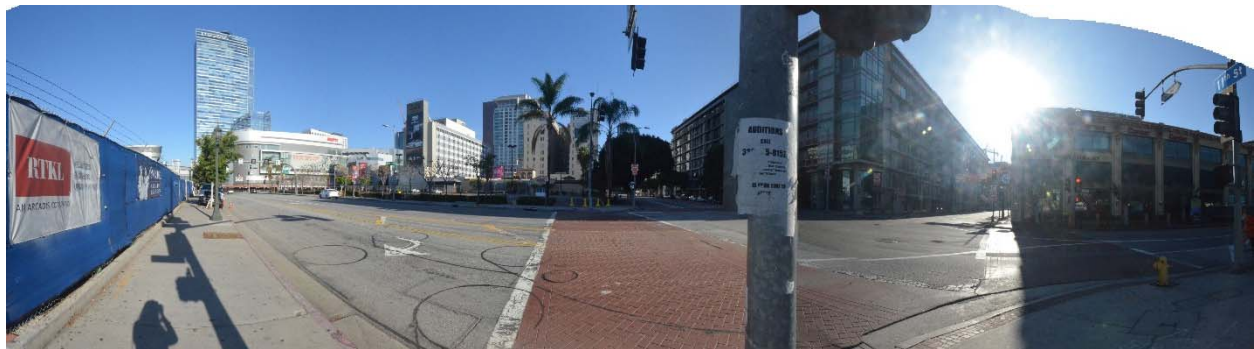


Figure 4: R1-b day view



Figure 5: R1-b night view

Receptor Site R1-b is located to evaluate the signs at the southeast corner of the Project at the nearest residential property line to the south. Distance to the Project Site is approximately 98 ft. Distance to the Project's southeast exterior façade is approximately 108 ft.

As shown in Figure 4, Receptor Site R2-a has direct view of the Project site with no obstructions. This location is within an urban environment with multiple illuminated buildings visible adjacent to the Project site.

The illuminance measurements were taken adjacent to an older City street light poles, therefore vertical illuminance levels are moderate (16.4 lux/ 1.5 Fc). There are high brightness glare sources visible such as the parking lot poles (20,340 cd/m²), distant digital signs (17.04 cd/m²), and façade lighting (16.09 cd/m²). The ambient surface brightness was also measured at 8 different locations and the average is low at 0.9 cd/m².

Receptor Site R2-a:

North of the Project Site, aligned with the axis of the northwest corner of the Project at the intersection of Olympic Boulevard and Figueroa Street.

Record of Observations: February 24, 2016, 7 pm.

Weather Conditions: Clear, full moon



Figure 6: R2-a day view

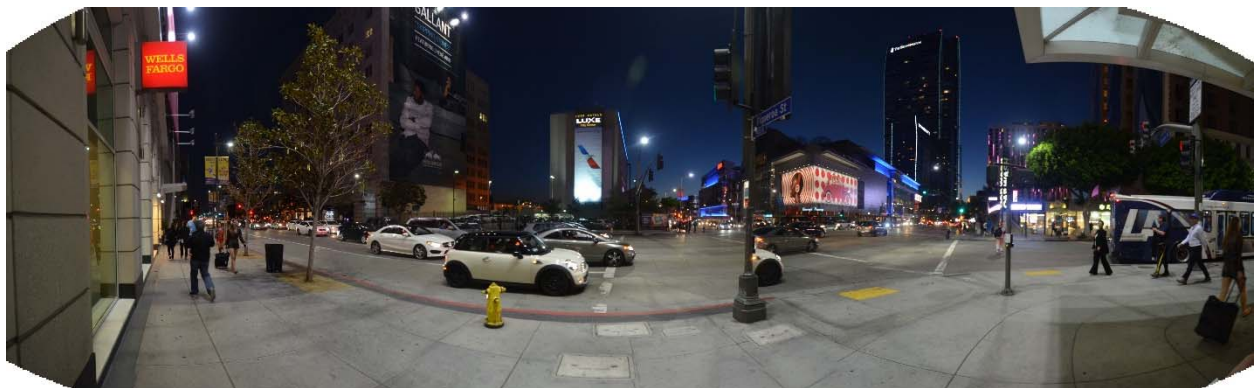


Figure 7: R2-a day view

Receptor Site R2-a is located to evaluate the signs at the northwest corner of the Project at the nearest existing residential property line to the north. Receptor Site R2-b is located at the north edge of the Olympic Boulevard right of way at 717 W Olympic Boulevard. Distance to the Project Site is approximately 115 ft. Distance to Project's west exterior façade is approximately 128 ft.

The illuminance measurements were taken under building mounted flood lights from above, therefore vertical illuminance levels are high (40.3 lux/ 3.7 Fc). There are high brightness glare sources visible such as the City street light poles (6756 cd/m²), large static billboards (63.65 cd/m²), and other static signs further away (22.83 cd/m²). The ambient surface brightness was also measured at 11 different locations and the average is high at 4.2 cd/m².

Receptor Site R2-b:

North of the Project Site, Receptor Site R2-b is located midblock between Figueroa and Flower Street at the edge of the residential property line at 717 West Olympic Boulevard.

Record of Observations: February 24, 2016, 7 pm.

Weather Conditions: Waning Gibbous



Figure 8: R2-b day view



Figure 9: R2-b night view

Receptor Site R2-b is located to evaluate the view to the Project north façade at the nearest residential property line. Receptor Site R2-b is located at the existing residential property line at the north edge of the Olympic Boulevard right of way. Distance to the Project Site is approximately 110 ft. Distance to Project's exterior façade is approximately 134 ft.

The illuminance measurements were taken adjacent to City street lights, therefore vertical illuminance levels are high (24.3 lux/ 2.3 Fc). There are high brightness glare sources visible such as the City street light poles (3568 cd/m²), construction lights from afar (27.09 cd/m²), and exterior building mounted light across the street (700.3 cd/m²). The ambient surface brightness was also measured at 11 different locations and the average is moderate at 2.1 cd/m².

Receptor Site R2-c:

Northwest of the Project Site, Receptor Site R2-c is located west of Figueroa and north of Olympic Boulevard.

Record of Observations: June 30, 2016, 9 pm.

Weather Conditions: Clear



Figure 10: R2-c day



Figure 11: R2-c night view

Receptor Site R2-c is located to evaluate the view to the Project north and west façade at the nearest residential property line. Receptor Site R2-c is located at the existing residential property line at the north edge of the Olympic Boulevard right of way, west of Figueroa Avenue. Distance to the Project Site is approximately 135 ft. Distance to Project's exterior façade is approximately 152 ft.

The existing illuminance was measured adjacent to City street lights, therefore vertical illuminance levels are high (24.3 lux/ 2.3 Fc). There are high brightness glare sources visible such as the City street light poles (3568 cd/m²) and exterior building mounted lights on the adjacent buildings (700.3 cd/m²). The ambient surface brightness was also measured at 10 different locations and the average is moderate at 1.7 cd/m².

Receptor Site R4-a:

East of the Project Site, Receptor Site R4-a is located at the east edge of the South Flower Street right of way, midblock between Olympic Boulevard and West 11th Street.

Record of Observations: February 24, 2016, 7 pm.

Weather Conditions: Waning Gibbous



Figure 12: R4-a day view



Figure 13: R4-a night view

Receptor Site R4-a is located to evaluate the Project's illuminated signs impact to the nearest residential property to the east at the Met Loft, 1050 South Flower Street. Distance to the Project Site is 89 ft. Distance to the Project exterior façade is approximately 93 feet.

The illuminance measurements were taken adjacent to driveway entry and street light, therefore vertical illuminance levels are moderate (12.8 lux/ 1.2 Fc). There are high brightness glare sources visible such as the City street light poles across the street (28,650cd/m²), parking pole lights (637.5 cd/m²), and other adjacent exterior mounted lights (157.1 cd/m²). The ambient surface brightness was also measured at 11 different locations and the average is low at 1.3 cd/m².

Receptor Site R4-b:

East of the Project Site, Receptor Site R4-b is located at the east edge of the S Flower Street right of way, south of the West 11th Street intersection at the existing residential property.

Record of Observations: February 24, 2016, 7 pm.

Weather Conditions: Waning Gibbous



Figure 14: R4-b day view panorama



Figure 15: R4-b daytime direct view



Figure 16: R4-b night view

Receptor Site R4-b is located to evaluate the Project's impact on the existing residential properties to the east of the Project Site at the Met Loft, 1050 South Flower Street. Distance to the Project Site is 85 ft. Distance to the Project exterior façade is approximately 91 feet.

The illuminance measurements were taken at the perimeter of the MetLoft apartment building, therefore vertical illuminance levels are moderate (14.5 lux/ 1.4 Fc). There are high brightness glare sources visible such as the City street light poles (10,930 cd/m²), large billboards (1,206 cd/m²), and other digital signs further away (138.6 cd/m²). The ambient surface brightness was also measured at 11 different locations and the average is low at 1.4 cd/m².

7. Environmental Impacts

7.1. Project Design Review

Project Description

The Project is adjacent to two existing sign districts. The Project Site is bordered to the west and south by the Los Angeles Sports and Entertainment District (LASED), and to the north by the Figueroa and Olympic Sign District. (See Land Use, 4.F-15) The City recently approved large scale signage for projects at 1200 S. Figueroa Street, 1100 S. Figueroa Street, LA Live, and the Metropolis project.

The Project includes media and signage that contributes to and complements the energetic, vibrant, pedestrian oriented atmosphere within the LASED at LA Live and the 1100 Figueroa development to the west and south; and at the same time, provides subdued signage facing residential and mixed use buildings to the north and east.

The signage regulations set forth in the Fig & 11th Sign District would establish requirements governing allowable sign types, locations, maximum size or coverage, hours of operation, and type of animation or controlled refresh rates. Project signage would include on and off-site signage in various forms, including wall signs, digital displays and streaming signage, supergraphic signs, open panel roof signs, hotel building identification, residential building identification, retail and restaurant building identification, parking entry identification, loading dock entry identification, and wayfinding signage. No billboard signage is proposed.

(Excerpt from "1020 S. Figueroa Street Project – Signage Description" PCR Services Corporation)

Illuminated Signs

A signage program for the Project has been designed that would emphasize the retail and entertainment-oriented aspects of the Project. Specifically, sign types may include identification signs, temporary event signs, electronic digital displays, changeable message LED boards, static signs, identification signs and retail/tenant identification signs with both on-site and off-site signs allowed. Light resulting from illuminated signs are expected to be emitted from three types of signs: front lit signs, electronic digital displays, change-able message LED boards.

Two alternative sign design programs are analyzed in this study:

Alternative A includes the maximum sign area for the illuminated signs with a maximum luminance at night of 80 cd/m². The illuminated signs will be designed to comply with the requirements of CALGreen, including requiring 65% dimming at night, and will not exceed 80 candelas per square meter from one hour prior to sunset until one hour after sunrise. The illuminated signs will include a control system to reduce sign illuminance to 80 candelas per square meter when ambient sun light is less than 80 foot candles at any time during the day.

Alternative B utilizes a reduced sign area with maximum sign luminance of 350 cd/m² at night. The illuminated signs will be designed to comply with the requirements of CALGreen, including requiring 65% dimming at night, and will not exceed 350 candelas per square meter from one hour prior to sunset until one hour after sunrise. The illuminated signs will include a control system to reduce sign illuminance to 350 candelas per square meter when ambient sun light is less than 80 foot candles at any time during the day.

In order to create the most conservative analysis, both Alternative A and Alternative B include the maximum sign area as noted in Appendix C and Appendix E.

7.2. Methodology

This Study examines whether the Project illuminated signs would significantly impact areas beyond the Project Site. The analysis includes a comparison of existing conditions surrounding the Project site, which are described through field surveys, to the future lighting conditions. Future conditions are assessed through the use of a computer model to predict the amount and direction of light.

Significance thresholds are defined to establish uniform standards of evaluation to compare the existing and future conditions, and create the analysis of impact. The model calculations are presented to predict lighting at the location where lighting is analyzed to describe the Project performance relative to the standards defined by the IESNA 10th Edition regarding outdoor lighting.

Existing conditions lighting observations were conducted following recommended practice procedures defined by the IESNA in RP-33-00 Lighting for Outdoor Environments, TM-10-00 Addressing Obtrusive Light (Urban Sky Glow and Light Trespass) in Conjunction with Roadway Lighting, and TM-11-00 Light Trespass: Research, Results and Recommendations. Field illuminance measurements were conducted to accurately document all existing incident light at

each receptor site location. Incident light can be understood as a vector of luminous flux moving through space. As the vector (light) is incident upon a surface, the intensity of the resulting illuminance will vary depending upon the relative orientation of the vector to the surface. The greatest illuminance will result when the surface and vector are perpendicular. The least illuminance will result when the surface and vector are parallel. In the field conditions, where there are multiple sources of light originating from varied positions, illuminance measurements are taken horizontally with the photosensor facing up at 3 feet above grade, and vertically with the photosensor facing the Project. These measurements document the total horizontal illuminance received at the receptor site as well as the direction and intensity of light converging on the receptor site from direction of the Project Site. Since the receptor sites are located on the opposite side of the public right of way from the Project Site, the vertical illuminance represents a plane perpendicular to the light sources. Under these conditions, there is little difference between the vertical and perpendicular plane and the vertical plane analysis that is conducted in this Study would be equal to or greater than the values from a precisely perpendicular plane analysis would provide. Therefore, this study utilizes a vertical and horizontal illuminance analysis.

A computer model is used to evaluate the future condition that results from the Project's proposed lighting. The computer model includes the Project components and the surrounding topographical context. As a result, the model represents only the lighting impacts created by the Project.

The computer model software calculates the horizontal and vertical illuminance incident at the location where light trespass is under review. For vertical illuminance the calculation includes a grid 10 feet on center of points located on vertical planes of various heights (refer to Table 6 for exact heights) at the boundary where light trespass is under review. The vertical calculation plane height corresponds to the location height of adjacent residential properties. This vertical plane analyzes the incident light at the minimum distance to the Project light sources to capture the peak illuminance trespass values. Vertical illuminance is documented for areas within the adjacent properties which include residential units, as well as adjacent parking areas or commercial spaces. See Figure 18 below.

The mounting height of the Project lighting is relatively low compared to the distance to this vertical plane, so that the angular difference between a vertical plane and a plane perpendicular to any particular light source is less than 5 degrees. Therefore there is little difference between perpendicular and vertical illuminance values, and the vertical illuminance values are used in this analysis would be greater than or equal to the perpendicular plane analysis.

The methods of analysis utilized in this Study are based upon the City of Los Angeles CEQA Thresholds Guide, as informed by the City of Los Angeles Municipal Code, the City of Los Angeles Building Code, and recommended practices established by the IESNA for the practice of illumination engineering design and application as well as measurement of light sources and illuminated surfaces.

Illuminated Signs

The analysis of illuminated signs includes calculations of future light through the illumination modeling software program AGI32. This software utilizes the 3-dimensional computer model of the Project architecture, including building dimensions and exterior materials, in conjunction with the Project sign plan and specifications to generate an accurate prediction of future

illuminance and luminance. The illuminated sign lighting is evaluated with respect to horizontal and vertical illuminance at the locations where lighting is under review.

For
the



analysis of light trespass, the illuminance is calculated at the review locations with a vertical plane at 10 feet on center and at heights as designated in Table 6 to simulate illumination values (fc) captured by light meters. Figure 15 illustrates the location where the lighting is under review and Figure 17: Vertical illuminance calculation planes where lighting is under review

where the horizontal and vertical illuminances are calculated. The vertical planes with calculation points ten feet on the center at the location where lighting impacts are under review serves as the receptor plane of illuminated sign lighting in the Study.

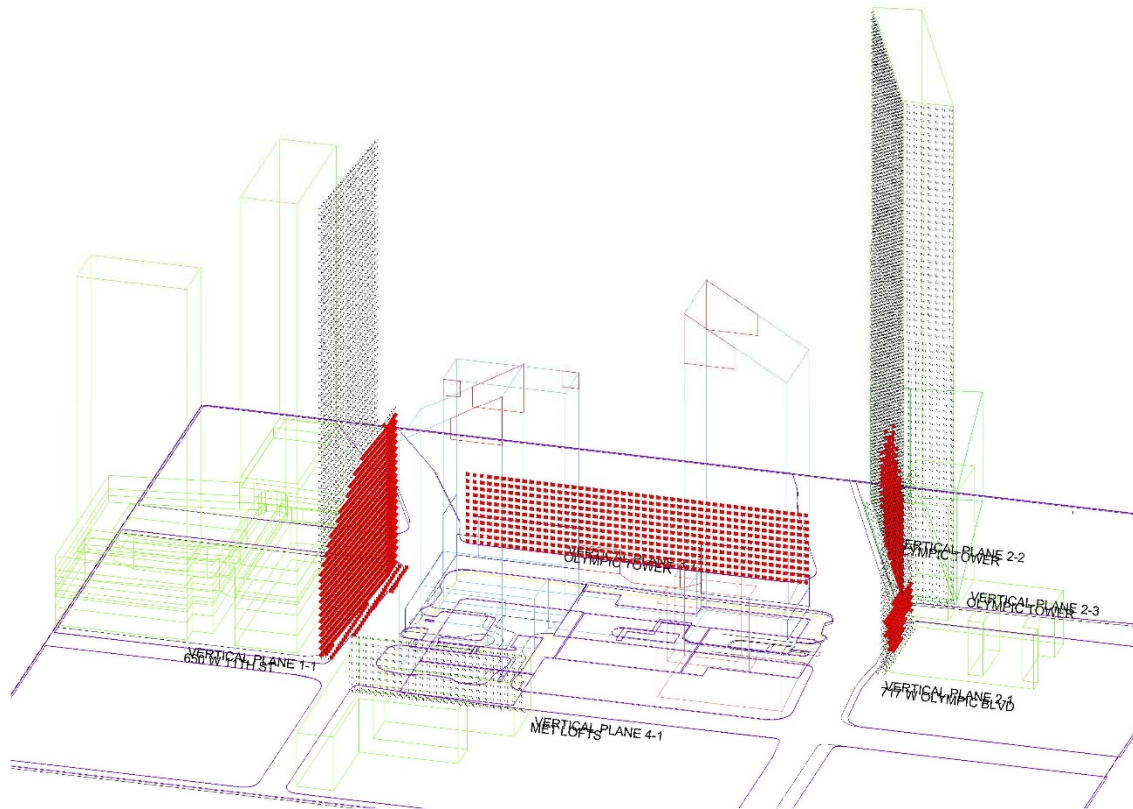


Figure 18: Project Site & Vertical Planes at Residential Properties

Table 6 describes the location and dimensions of the vertical planes used for the calculation data. The vertical planes are located at the property line, where lighting is under review. For the adjacent residential properties to the north, north west, and south of the project site, the vertical calculation planes are divided into 2 sections vertically: the lower section of the vertical calculation plane corresponds to the elevation from grade to the top of the parking levels or commercial floors within the adjacent residential or mixed use projects; the upper section corresponds to the elevation of the residential living units, including outdoor balconies, terraces, and the windows into the residential living units. These two calculation planes isolate the lighting that is incident to the residential areas of the project from the other use areas.

Table 6: Vertical Plane locations and dimensions

VERTICAL PLANE	DESCRIPTION	WIDTH (FT)	HEIGHT (FT)	NOTES
1-1a	650 West 11th Street at Residential balconies and units	230	430	From 245 ft above grade to 675 ft above grade
1-1b	650 West 11th Street from street level to top of parking podium	320	235	From street grade to 235 ft above grade
2-1a	717 West Olympic at Residential balconies and units	150	170	From 85 ft above grade to 255 ft above grade
2-1b	717 West Olympic from street level to top of podium	150	75	From street grade to 75 ft above grade
2-2a	Olympic Tower South Elevation at Residential balconies and units	300	340	From 395 ft above grade to 735 ft above grade
2-2b	Olympic Tower South Elevation from street level to top of parking podium	310	385	From street grade to 385 ft above grade
2-3a	Olympic Tower East Elevation at Residential balconies and units	60	340	From 395 ft above grade to 735 ft above grade
2-3b	Olympic Tower East Elevation from street level to top of parking podium	60	385	From street grade to 385 ft above grade
3-1	Staples Center and LA Live	480	105	From street grade to 105 ft above grade
4-1	Met Lofts at Residential balconies and units	240	85	From street grade to 85 ft above grade

7.3. Illuminance Calculation Results

The analysis of the Project sign lighting includes calculations for illuminance and luminance with respect to adjacent residential properties surrounding the Project. Conservatively the analysis assumed the simultaneous use of all illuminated Project signs at the maximum surface luminance in each design alternative: Alternative A, at 80 cd/m²; Alternative B at 350 cd/m².

Illuminated Signs Illuminance Trespass Calculation Results

Project illuminated sign Illuminance is calculated according to the methodology defined above at the residential property lines.

The vertical Illuminance calculations summarized in Table 7 for Sign Alternative A, indicate there are no residential property locations above 3.0 fc. The values which exceed 3.0 fc in Table 7 are located at adjacent commercial properties. Vertical plane at 1-1b, 650 West 11th Street level to the top of the parking podium Vertical Plane 2-1b, at 717 West Olympic from street level to top of the parking podium, and Vertical Plane 3-1, at the Staples Center and LA Live frontage along Figueroa Street are all commercial properties.

Table 7: Illuminance - Alternative A, Calculated (Vertical fc) at Vertical Planes

VERTICAL PLANE	DESCRIPTION	ILLUMINANCE E_v (fc) at 80 cd/m ²			ANALYSIS
		Avg	Max	Min	
1-1a	650 West 11th Street at Residential balconies and units	0.58	3.00	0.10	UNDER THRESHOLD
1-1b	650 West 11th Street from street level to top of parking podium	3.24	7.50	0.50	OVER THRESHOLD - PARKING LEVEL PODIUM
2-1a	717 West Olympic at Residential balconies and units	1.51	3.00	0.50	UNDER THRESHOLD
2-1b	717 West Olympic from street level to top of podium	2.69	3.20	1.80	OVER THRESHOLD - PARKING LEVEL PODIUM
2-2a	Olympic Tower South Elevation at Residential balconies and units	0.88	1.50	0.30	UNDER THRESHOLD
2-2b	Olympic Tower South Elevation from street level to top of parking podium	1.15	2.40	0.60	OVER THRESHOLD - PARKING LEVEL PODIUM
2-3a	Olympic Tower East Elevation at Residential balconies and units	0.29	0.60	0.10	UNDER THRESHOLD
2-3b	Olympic Tower East Elevation from street level to top of parking podium	0.78	1.80	0.20	UNDER THRESHOLD
3-1	Staples Center and LA Live	4.47	6.00	2.20	OVER THRESHOLD - COMMERCIAL PROPERTY
4-1	Met Lofts at Residential balconies and units	0.30	0.90	0.20	UNDER THRESHOLD

The vertical Illuminance calculations summarized in Table 8 for Sign Alternative B, indicate there are no residential property locations above 3.0 fc. The values which exceed 3.0 fc in Table 8 are located at adjacent commercial properties. Vertical plane at 1-1b, 650 West 11th Street level to the top of the parking podium, Vertical Plane 2-1b, at 717 West Olympic from street level to top of the parking podium, Vertical Plane 2-2b at Olympic Tower South Elevation from street level to top of parking podium, and Vertical Plane 3-1, at the Staples Center and LA Live frontage along Figueroa Street are all commercial property locations.

Table 8. Illuminance – Alternative B, Calculated (Vertical fc) at Vertical Planes

VERTICAL PLANE	DESCRIPTION	ILLUMINANCE E_v (fc) at 350 cd/m ²			ANALYSIS
		Avg	Max	Min	
1-1a	650 West 11th Street at Residential balconies and units	0.79	2.70	0.20	UNDER THRESHOLD
1-1b	650 West 11th Street from street level to top of parking podium	6.83	21.20	0.50	OVER THRESHOLD - PARKING LEVEL PODIUM
2-1a	717 West Olympic at Residential balconies and units	1.41	2.90	0.50	UNDER THRESHOLD
2-1b	717 West Olympic from street level to top of podium	3.15	4.00	2.10	OVER THRESHOLD, AT PARKING LEVEL PODIUM
2-2a	Olympic Tower South Elevation at Residential balconies and units	1.54	2.80	0.60	UNDER THRESHOLD
2-2b	Olympic Tower South Elevation from street level to top of parking podium	2.53	5.20	1.20	OVER THRESHOLD, AT PARKING LEVEL PODIUM
2-3a	Olympic Tower East Elevation at Residential balconies and units	0.45	1.00	0.20	UNDER THRESHOLD
2-3b	Olympic Tower East Elevation from street level to top of parking podium	1.11	2.80	0.30	UNDER THRESHOLD
3-1	Staples Center and LA Live	15.90	21.10	7.60	OVER THRESHOLD - COMMERCIAL PROPERTY
4-1	Met Lofts at Residential balconies and units	0.63	2.10	0.20	UNDER THRESHOLD

The horizontal Illuminance calculations summarized in Table 9 for Sign Alternative A, indicate there are no residential property locations above 3.0 fc. The value which exceeds 3.0 fc in Table 9 is located at grade within horizontal plane at 1-1b, 650 West 11th Street, which is a mixed use

commercial property. The values that exceed the 3.0 fc threshold are within the elevation of the parking podium levels at 650 West 11th Street.

Table 9: Illuminance – Alternative A Calculated (Horizontal fc) at property lines at grade

HORIZONTAL PLANE	DESCRIPTION	ILLUMINANCE E _H (fc) at 80 cd/m ²			ANALYSIS
		Avg	Max	Min	
1-1	650 West 11th Street at grade	2.45	3.60	1.10	OVER THRESHOLD - PARKING LEVEL PODIUM
2-1	717 West Olympic at grade	1.35	1.70	0.90	UNDER THRESHOLD
2-3	Olympic Tower at grade	0.60	0.90	0.30	UNDER THRESHOLD
4-1	Met Lofts at grade	0.32	0.50	0.30	UNDER THRESHOLD

The horizontal Illuminance calculations summarized in Table 10 for Sign Alternative B, indicate there are no residential property locations above 3.0 fc. The value which exceeds 3.0 fc in Table 10 is located at at grade within horizontal plane 1-1b, 650 West 11th Street, which is a commercial property.

Table 10: Illuminance – Alternative B Calculated (Horizontal fc) at property lines at grade

HORIZONTAL PLANE	DESCRIPTION	ILLUMINANCE E _H (fc) at 350 cd/m ²			ANALYSIS
		Avg	Max	Min	
1-1	650 West 11th Street at grade	7.24	11.10	2.40	OVER THRESHOLD ADJACENT TO PARKING LEVEL PODIUM
2-1	717 West Olympic at grade	1.33	1.70	0.80	UNDER THRESHOLD
2-3	Olympic Tower at grade	1.17	1.70	0.60	UNDER THRESHOLD
4-1	Met Lofts at grade	0.52	0.80	0.40	UNDER THRESHOLD

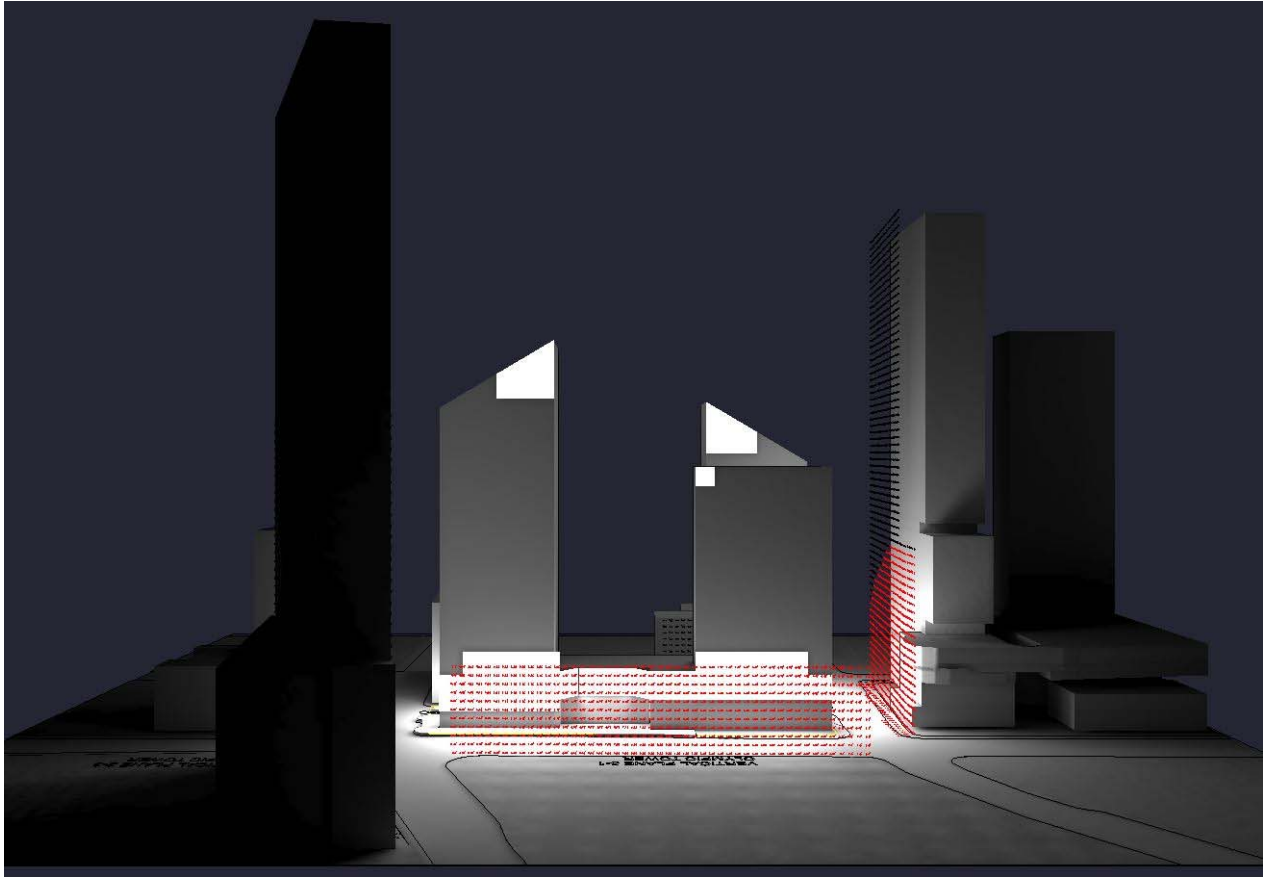


Figure 19: Illuminance calculation rendered view – west elevation

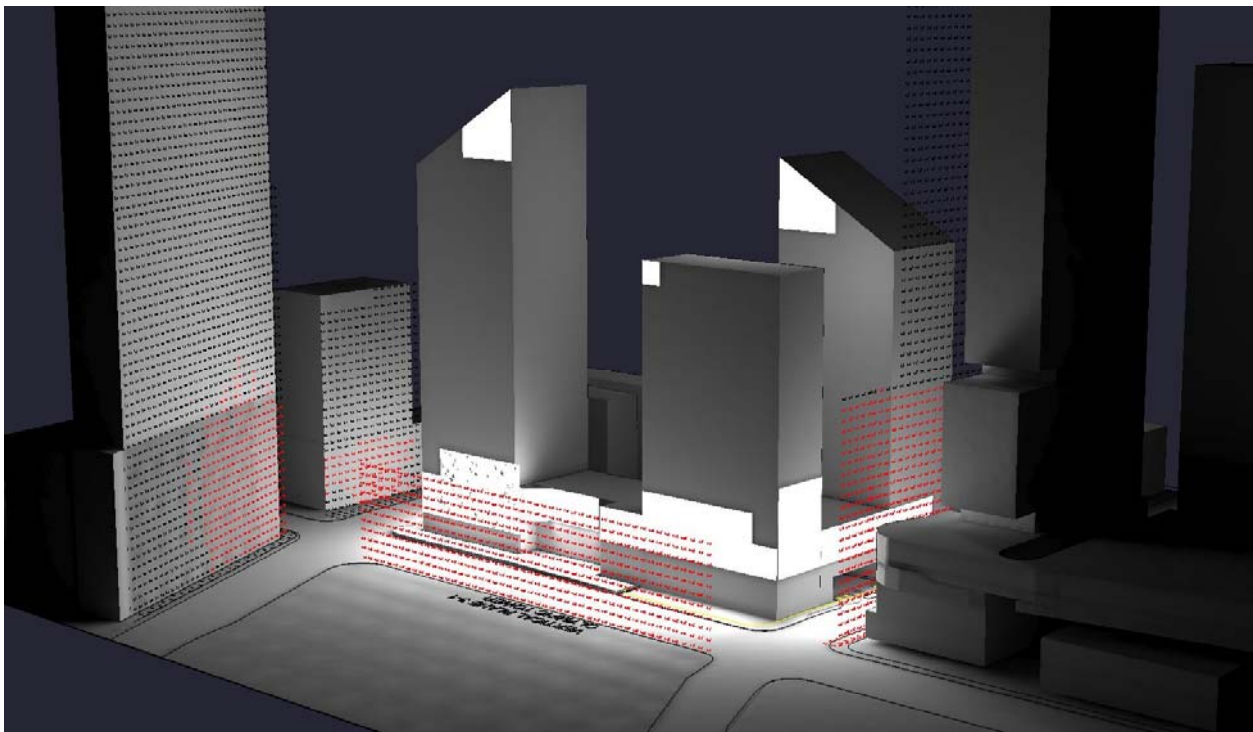


Figure 20: Illuminance calculation rendered view – south and west elevations

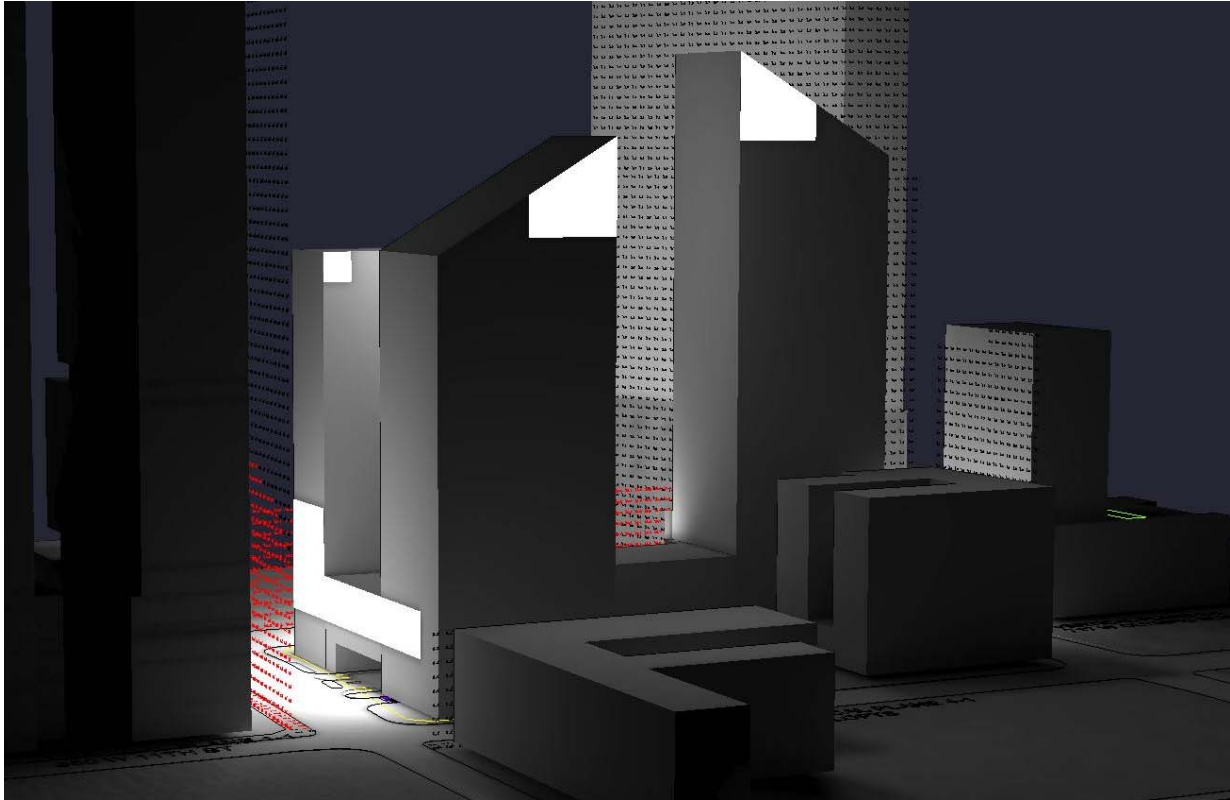


Figure 21: Illuminance calculation rendered view – south elevation

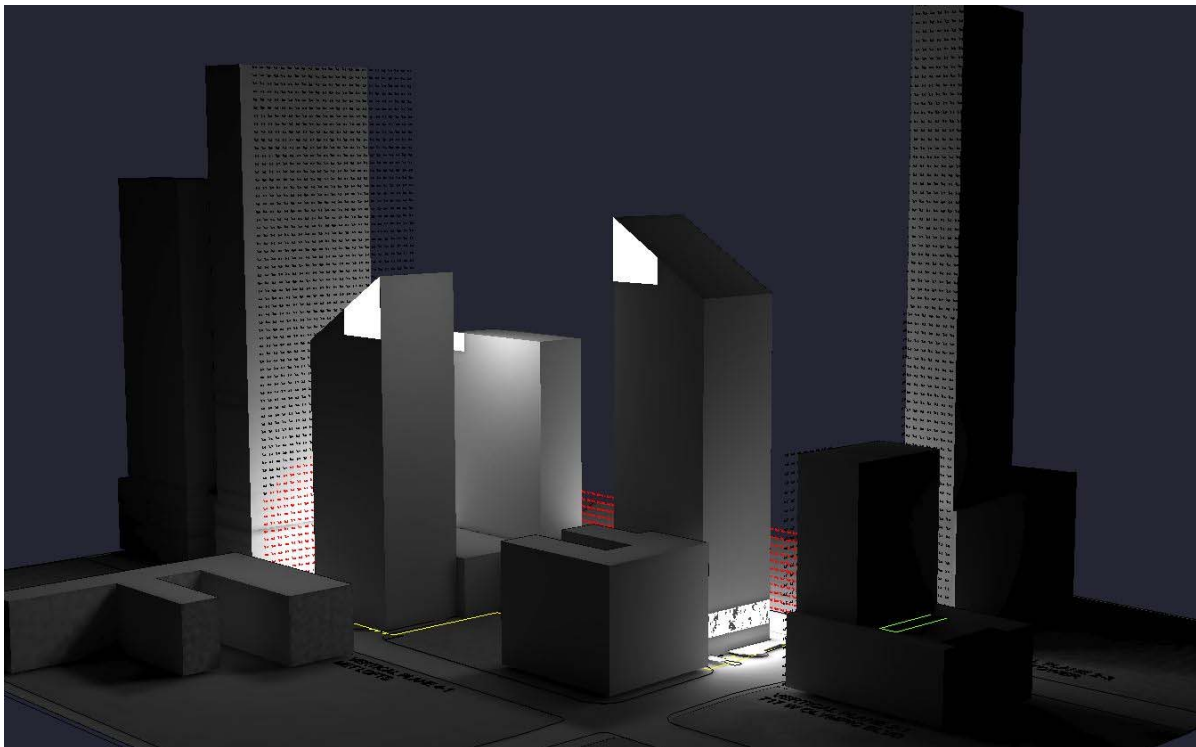


Figure 22: Illuminance calculation rendered view – north and east elevation

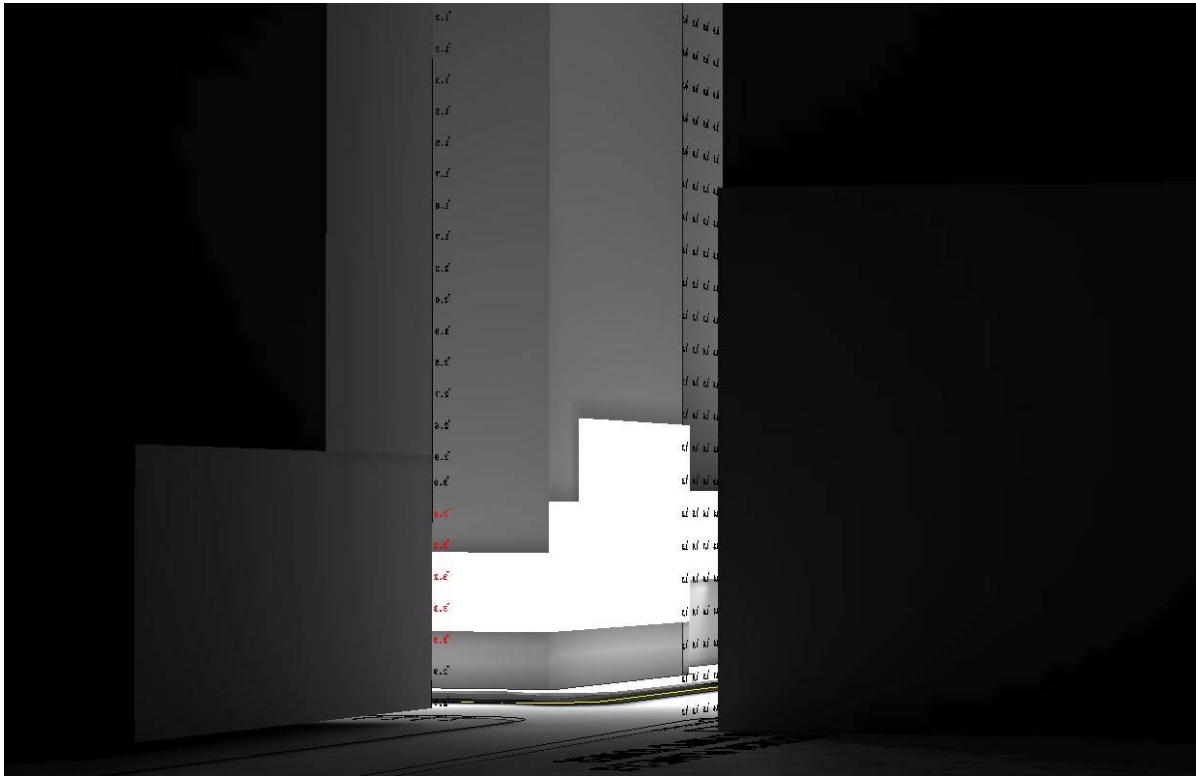


Figure 23: Illuminance calculation rendered view – north and west elevations

7.4 Illuminated Signs Glare Analysis

The Project illuminated signs are visible from the residential sites to the north, north west, and south of the Project site. Based on the CALGreen Code, the illuminated sign displays will be dimmed down 65% at night to reduce the brightness. In addition, sign brightness would not exceed 350 candelas/m² at night. With the incorporation of these design features illuminated signage would present a Medium Contrast value and would not be a source of glare.

7.4. Conclusion

The lighting impacts resulting from the proposed Project illuminated signs evaluated in this Study lighting will not exceed the defined thresholds and will not cause a significant impact on the adjacent residential properties.

The Project exterior sign lighting will be designed based on CalGreen and Title 24 standards that stipulate the use of high performance lights with good color and good glare control.

- All light sources, including illuminated signage, shall comply with CALGreen (Part 11 of Title 24, California Code of Regulations).
- Sign luminance shall not exceed 350 candelas per square meter for one hour prior to and after sunset until one hour after sunrise.

This Study analyzed the illuminated signs with respect to the potential impact to the adjacent surrounding properties. Conservatively the analysis assumed the simultaneous use of all illuminated signs. As summarized in **Error! Reference source not found.**, the result of this calculation demonstrates the light trespass impacts resulting from the proposed Project illuminated signs at the position where light is under review at 3 of the 3 adjacent sites are below the significance threshold of 3.0 foot-candles.

The light added from the Project illuminated signs is similar to the existing illuminance values recorded at the receptor sites as noted in Table 2 above, except for the locations south of the project site, which are currently a construction site for a new mixed use project at West 11th and Figueroa Street. The comparison of the measured existing illuminance and calculated Project illuminance for Alternatives A and B are presented in Table 11 and Table 12 below.

The Alternative A Project will increase the vertical and horizontal illuminance at all Receptor sites, but at values that are below the threshold of 3.0 fc. At Receptors R1-a, R1-b, R2-a, R2-b and R2-c-vertical, there is a moderate increase in the illuminance, with values above 1.0 fc, but less than 3.0 fc. These five locations are near to the Project and have the greatest extent of context within the view of the illuminated signs towards the Project. These sites also have high to moderate levels of contrast and glare as summarized in Table 4 and 5. City street lights and parking lot lights along with illuminated signs at the Staples Center are the highest existing sources of glare in the area. Receptor sites R1-a and R2-a are adjacent to Staples Center, which is well illuminated with high intensity building and sign lighting. Both R1-b and R2-b are located adjacent to commercial structures and busy streets with horizontal light levels above 1.5 footcandles. Given the existing urban conditions and high illuminance from the existing City street lights, the new Project sign illuminance will be similar to the existing conditions at Staples Center and LA Live. At the remaining Receptor sites R2-c-horizontal, R4-a and R4-b, the illuminance from the Project signs adds less than 1.0 fc.

The Alternative B Project will also increase the vertical and horizontal illuminance at all Receptor sites, with several sites increasing above the threshold of 3.0 fc. At Receptor sites R1-a horizontal and vertical and R1-b vertical, the illuminance increase is greater than 3.0 fc. All of these Receptor sites are located at street level, in locations adjacent to existing or future commercial uses. Receptor sites R1-b horizontal, R2-a, R2-b, R2-c, and R4-b vertical there is a moderate increase in illuminance, with values increasing more than 1.0 fc, but less than the 3.0 fc threshold. All of Receptor sites above have a moderate to high level of existing illuminance, and high to moderate levels of contrast and glare as summarized in Table 4 and 5. City street lights and parking lot lights along with illuminated signs at the Staples Center are the highest existing sources of glare in the area. Receptor sites R1-a and R2-a are adjacent to Staples Center, which is well illuminated with high intensity building and sign lighting. Both R1-b and R2-b are located adjacent to commercial structures and busy streets with horizontal light levels above 1.5 footcandles. At the remaining Receptor sites R4-a and R4-b horizontal, the illuminance from the Project signs adds less than 1.0 fc.

Given the existing urban conditions and high illuminance from the existing City street lights, the new Project sign illuminance will be similar to the existing conditions at Staples Center and LA Live.

Table 11: Illuminance (fc) Alternative A Comparison of Measured Existing vs. Calculated

Receptor	Orientation	Illuminance (fc)		Analysis
		Measured Existing	Calculated Project 80 cd/m ²	
R1-a	Horizontal	3.7	1.1	Moderate increase, below threshold, at commercial zone
	Vertical	2.3	2.7	Moderate increase below threshold, at commercial zone
R1-b	Horizontal	1.5	2.0	Moderate increase below threshold
	Vertical	1.5	1.7	Moderate increase below threshold, at commercial zone.
R2-a	Horizontal	11.0	1.2	Moderate increase below threshold
	Vertical	3.7	2.9	Moderate increase below threshold
R2-b	Horizontal	5.3	1.1	Moderate increase below threshold
	Vertical	2.3	1.8	Moderate increase below threshold
R2-c	Horizontal	1.8	0.9	Low increase below threshold
	Vertical	2.1	2.0	Moderate increase below threshold
R4-a	Horizontal	1.2	0.3	Low increase, below threshold.
	Vertical	1.2	0.2	Low increase, below threshold.
R4-b	Horizontal	1.3	0.4	Low increase , below threshold.
	Vertical	1.4	0.7	Low increase , below threshold.

Table 12: Illuminance (fc) Alternative B Comparison of Measured Existing vs. Calculated

Receptor	Orientation	Illuminance (fc)		Analysis
		Measured Existing	Calculated Project 350 cd/m ²	
R1-a	Horizontal	3.7	5.3	High increase, above threshold, at commercial zone
	Vertical	2.3	8.4	High increase above threshold, at commercial zone
R1-b	Horizontal	1.5	2.6	Moderate increase below threshold
	Vertical	1.5	4.0	High increase above threshold, at commercial zone.
R2-a	Horizontal	11.0	1.2	Moderate increase below threshold
	Vertical	3.7	2.7	Moderate increase below threshold
R2-b	Horizontal	5.3	1.0	Moderate increase below threshold
	Vertical	2.3	2.1	Moderate increase below threshold
R2-c	Horizontal	1.8	1.4	Moderate increase below threshold
	Vertical	2.1	2.3	Moderate increase below threshold
R4-a	Horizontal	1.2	0.4	Low increase, below threshold.
	Vertical	1.2	0.3	Low increase, below threshold.
R4-b	Horizontal	1.3	0.8	Low increase , below threshold.
	Vertical	1.4	2.1	Moderate increase , below threshold.

APPENDIX A: IESNA 10th Edition Lighting Handbook, Table 26.4, Nighttime Outdoor Lighting Zone Definitions

Table 26.4 | Nighttime Outdoor Lighting Zone Definitions

Zone	Outdoor Lighting Situation	Definition
LZ4	High Ambient Lighting	Areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally considered necessary for safety, security and/or convenience and it is mostly uniform and/or continuous. After curfew, lighting may be extinguished or reduced in some areas as activity levels decline.
LZ3	Moderately High Ambient Lighting	Areas of human activity where the vision of human residents and users is adapted to moderately high light levels. Lighting is generally desired for safety, security and/or convenience and it is often uniform and/or continuous. After curfew, lighting may be extinguished or reduced in most areas as activity levels decline.
LZ2	Moderate Ambient Lighting	Areas of human activity where the vision of human residents and users is adapted to moderate light levels. Lighting may typically be used for safety and convenience but it is not necessarily uniform or continuous. After curfew, lighting may be extinguished or reduced as activity levels decline.
LZ1	Low Ambient Lighting	Areas where lighting might adversely affect flora and fauna or disturb the character of the area. The vision of human residents and users is adapted to low light levels. Lighting may be used for safety and convenience but it is not necessarily uniform or continuous. After curfew, most lighting should be extinguished or reduced as activity levels decline.
LZ0	No Ambient Lighting	Areas where the natural environment will be seriously and adversely affected by lighting. Impacts include disturbing the biological cycles of flora and fauna and/or detracting from human enjoyment and appreciation of the natural environment. Human activity is subordinate in importance to nature. The vision of human residents and users is adapted to the darkness, and they expect to see little or no lighting. When not needed, lighting should be extinguished.

The IESNA 10th Edition Lighting Handbook, Table 26.5, Recommended Light Trespass Illuminance Limits

Table 26.5 | Recommended Light Trespass Illuminance Limits

Lighting Zone	Limit in lux ^a	
	Pre-curfew	Post-curfew
LZ4	15	6
LZ3	8	3
LZ2	3	1
LZ1	1	0
LZ0	0.1	0

- a. Maximum initial illuminance on a plane perpendicular to the line of sight to the luminaire(s). Plane located at observer position where light trespass is under review. [7]

APPENDIX B: 2013 California Green Building Standards Code Section 5.106.8

NONRESIDENTIAL MANDATORY MEASURES

vides helpful information for local governments, residents and businesses. www.opr.ca.gov/docs/ZEV_Guidebook.pdf.

5.106.8 Light pollution reduction. [N] Outdoor lighting systems shall be designed and installed to comply with the following:

1. The minimum requirements in the *California Energy Code* for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code; and
2. Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and
3. Allowable BUG ratings not exceeding those shown in Table 5.106.8, or

Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.

Exceptions: [N]

1. Luminaires that qualify as exceptions in Section 140.7 of the *California Energy Code*.
2. Emergency lighting.

Note: [N] See also *California Building Code*, Chapter 12, Section 1205.6 for college campus lighting requirements for parking facilities and walkways.

5.106.10 Grading and paving. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:

1. Swales.
2. Water collection and disposal systems.
3. French drains.
4. Water retention gardens.
5. Other water measures which keep surface water away from buildings and aid in groundwater recharge.

Exception: Additions and alterations not altering the drainage path.

**TABLE 5.106.8 [N]
MAXIMUM ALLOWABLE BACKLIGHT, UPLIGHT AND GLARE (BUG) RATINGS^{1,2}**

ALLOWABLE RATING	LIGHTING ZONE 1	LIGHTING ZONE 2	LIGHTING ZONE 3	LIGHTING ZONE 4
Maximum Allowable Backlight Rating³				
Luminaire greater than 2 mounting heights (MH) from property line	No Limit	No Limit	No Limit	No Limit
Luminaire back hemisphere is 1 – 2 MH from property line	B2	B3	B4	B4
Luminaire back hemisphere is 0.5 – 1 MH from property line	B1	B2	B3	B3
Luminaire back hemisphere is less than 0.5 MH from property line	B0	B0	B1	B2
Maximum Allowable Uplight Rating				
For area lighting ⁴	U0	U0	U0	U0
For all other outdoor lighting, including decorative luminaires	U1	U2	U3	U4
Maximum Allowable Glare Rating⁵				
Luminaire greater than 2 MH from property line	G1	G2	G3	G4
Luminaire front hemisphere is 1 – 2 MH from property line	G0	G1	G1	G2
Luminaire front hemisphere is 0.5 – 1 MH from property line	G0	G0	G1	G1
Luminaire back hemisphere is less than 0.5 MH from property line	G0	G0	G0	G1

1. IESNA Lighting Zones 0 and 5 are not applicable; refer to Lighting Zones as defined in the *California Energy Code* and Chapter 10 of the *California Administrative Code*.
2. For property lines that abut public walkways, bikeways, plazas and parking lots, the property line may be considered to be 5 feet beyond the actual property line for purpose of determining compliance with this section. For property lines that abut public roadways and public transit corridors, the property line may be considered to be the centerline of the public roadway or public transit corridor for the purpose of determining compliance with this section.
3. If the nearest property line is less than or equal to two mounting heights from the back hemisphere of the luminaire distribution, the applicable reduced Backlight rating shall be met.
4. General lighting luminaires in areas such as outdoor parking, sales or storage lots shall meet these reduced ratings. Decorative luminaires located in these areas shall meet U-value limits for "all other outdoor lighting."
5. If the nearest property line is less than or equal to two mounting heights from the front hemisphere of the luminaire distribution, the applicable reduced Glare rating shall be met.

APPENDIX C: SIGN DESIGN DATA – ALTERNATIVE A

City Center Entitlement Submittal, Gensler Associates, May 5, 2016

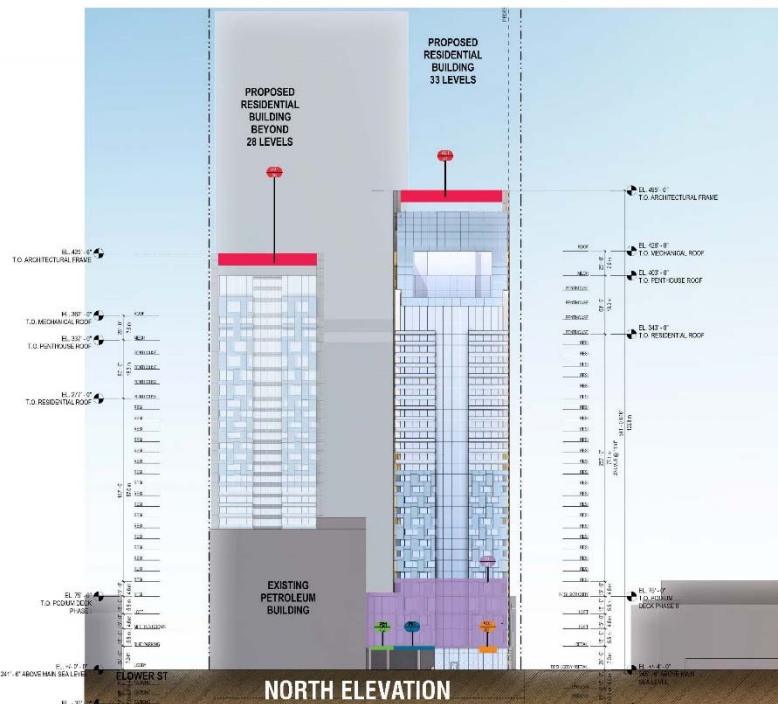


Figure 24: Alternative A Sign Dimensions and Locations - North Elevation

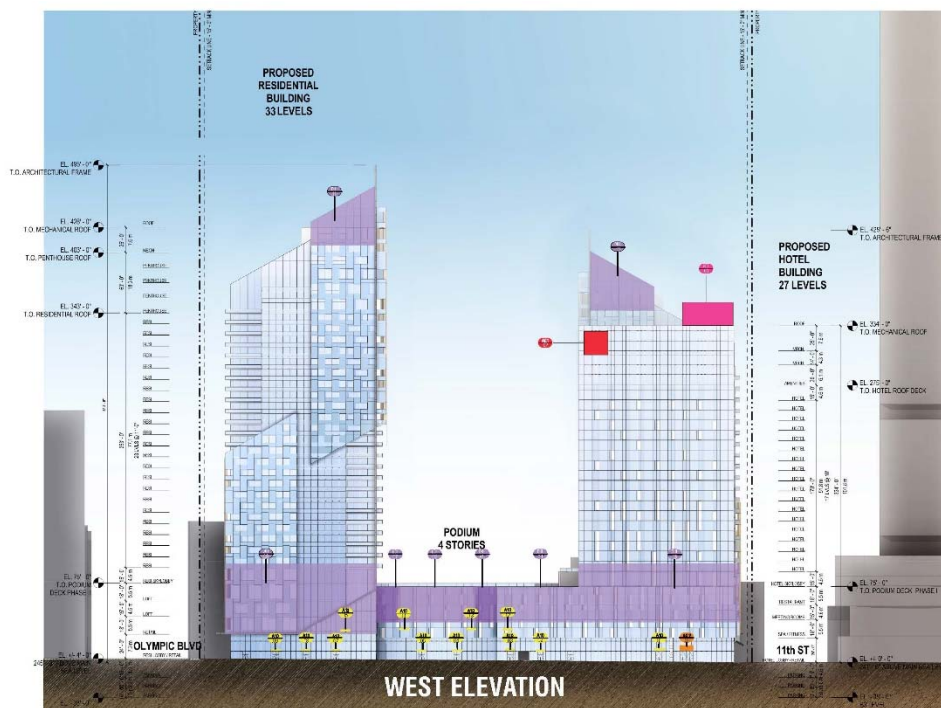


Figure 25: Alternative A Sign Dimensions and Locations – West Elevation

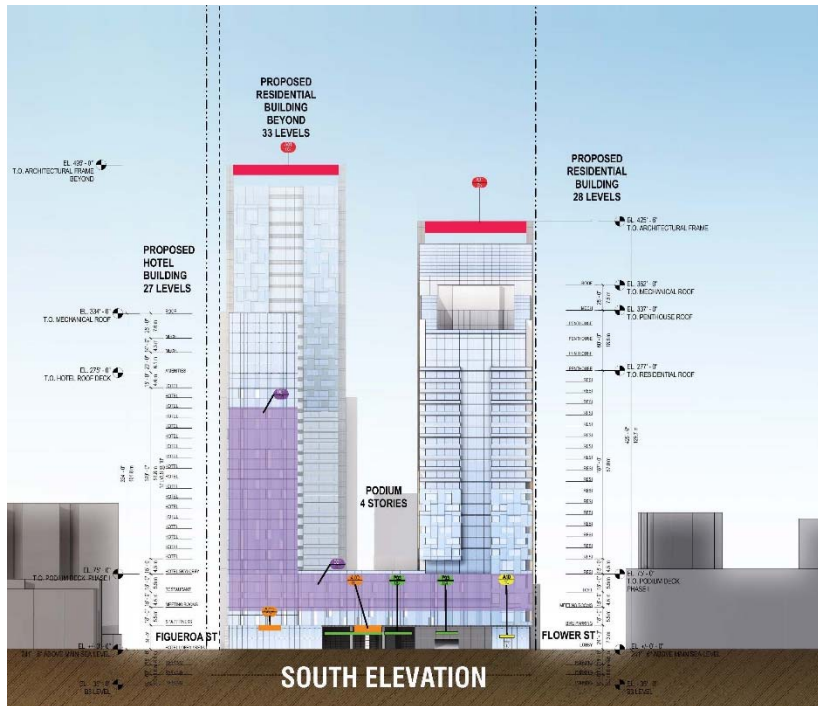


Figure 26: Alternative A Sign Dimensions and Locations – South Elevation

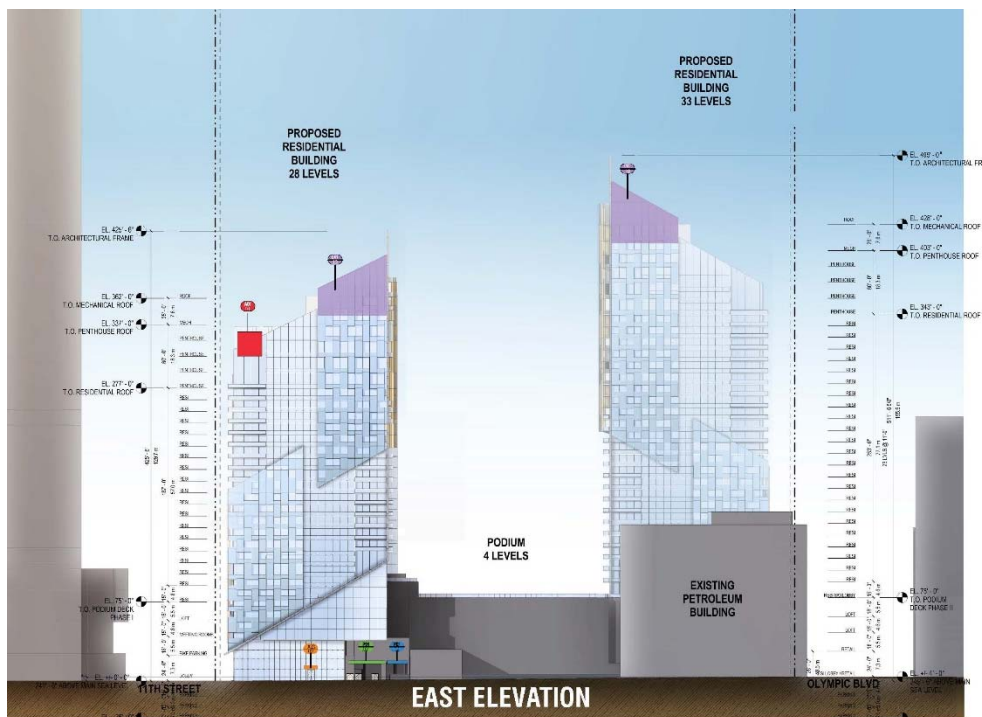


Figure 27: Alternative A Sign Dimensions and Locations – East Elevation



APPENDIX D: CALCULATION DATA – ALTERNATIVE A

Data presented below is derived from the lighting illuminance calculations prepared as per the methods described in Section 7.2 above. Illuminance data is presented in the following tables with location coordinates defined relative to the elevation and horizontal distance from lower left viewing from the Project site to the vertical plane where light trespass is under review. Grid data is displayed at five feet on center, vertical and horizontal.

ALTERNATIVE A 80 cd/m ²									
Vertical Plane 1-1a									
HORIZONTAL (ft)		0	10	20	30	40	50	60	70
VERTICAL (ft)	675	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	665	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	655	0.1	0.2	0.1	0.1	0.2	0.1	0.1	0.1
	645	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1
	635	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.2
	625	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	615	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	605	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	595	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	585	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	575	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	565	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	555	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	545	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	535	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	525	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	515	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
	505	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3
	495	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
	485	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	475	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	465	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	455	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	445	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
	435	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
	425	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
	415	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
	405	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
	395	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5
	385	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5
	375	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5
	365	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5
	355	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.6
	345	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6
	335	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.6
	325	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6
	315	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6
	305	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7
	295	0.4	0.4	0.5	0.5	0.6	0.6	0.6	0.7
	285	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7
	275	0.4	0.5	0.5	0.6	0.6	0.6	0.7	0.8
	265	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8
	255	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8
	245	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9

ALTERNATIVE A 80 cd/m ²									
Vertical Plane 1-1a									
HORIZONTAL (ft)		80	90	100	110	120	130	140	150
VERTICAL (ft)	675	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
	665	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
	655	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
	645	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
	635	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2
	625	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2
	615	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2
	605	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	595	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	585	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
	575	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
	565	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
	555	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
	545	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	535	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4
	525	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.4
	515	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.4
	505	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5
	495	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5
	485	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5
	475	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.6
	465	0.3	0.3	0.3	0.3	0.4	0.5	0.6	0.6
	455	0.3	0.4	0.3	0.4	0.5	0.5	0.6	0.6
	445	0.4	0.4	0.4	0.4	0.5	0.6	0.6	0.7
	435	0.4	0.4	0.4	0.4	0.5	0.6	0.7	0.8
	425	0.4	0.4	0.4	0.5	0.6	0.6	0.7	0.8
	415	0.4	0.4	0.5	0.5	0.6	0.7	0.8	0.9
	405	0.5	0.5	0.5	0.5	0.6	0.7	0.8	0.9
	395	0.5	0.5	0.5	0.6	0.7	0.8	0.9	1.0
	385	0.5	0.5	0.5	0.6	0.7	0.8	0.9	1.0
	375	0.5	0.6	0.6	0.6	0.8	0.9	1.0	1.1
	365	0.6	0.6	0.6	0.7	0.8	0.9	1.1	1.1
	355	0.6	0.6	0.7	0.7	0.9	1.0	1.1	1.2
	345	0.6	0.7	0.7	0.8	0.9	1.0	1.2	1.3
	335	0.7	0.7	0.7	0.8	0.9	1.1	1.2	1.3
	325	0.7	0.7	0.8	0.9	1.0	1.1	1.2	1.4
	315	0.7	0.8	0.8	0.9	1.0	1.2	1.3	1.4
	305	0.7	0.8	0.9	0.9	1.1	1.2	1.3	1.4
	295	0.7	0.8	0.9	1.0	1.1	1.2	1.4	1.5
	285	0.8	0.9	0.9	1.0	1.1	1.3	1.4	1.5
	275	0.8	0.9	1.0	1.1	1.2	1.3	1.5	1.6
	265	0.8	1.0	1.0	1.1	1.2	1.4	1.5	1.6
	255	0.9	1.0	1.1	1.2	1.3	1.4	1.6	1.7
	245	0.9	1.1	1.1	1.2	1.4	1.5	1.6	1.8

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 1-1a								
HORIZONTAL (ft)		160	170	180	190	200	210	220
VERTICAL (ft)	675	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	665	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	655	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	645	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	635	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	625	0.2	0.2	0.2	0.2	0.2	0.3	0.3
	615	0.2	0.2	0.2	0.3	0.3	0.3	0.3
	605	0.2	0.3	0.2	0.3	0.3	0.3	0.3
	595	0.2	0.3	0.3	0.3	0.3	0.3	0.3
	585	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	575	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	565	0.3	0.3	0.3	0.3	0.4	0.4	0.4
	555	0.3	0.3	0.4	0.4	0.4	0.4	0.4
	545	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	535	0.4	0.4	0.4	0.4	0.4	0.4	0.5
	525	0.4	0.4	0.4	0.5	0.5	0.5	0.5
	515	0.4	0.5	0.5	0.5	0.5	0.5	0.5
	505	0.5	0.5	0.5	0.5	0.6	0.6	0.6
	495	0.5	0.5	0.6	0.6	0.6	0.6	0.6
	485	0.6	0.6	0.6	0.6	0.6	0.7	0.7
	475	0.6	0.6	0.6	0.7	0.7	0.7	0.7
	465	0.6	0.7	0.7	0.7	0.7	0.7	0.7
	455	0.7	0.7	0.7	0.8	0.8	0.8	0.8
	445	0.7	0.8	0.8	0.8	0.8	0.8	0.8
	435	0.8	0.8	0.9	0.9	0.9	0.9	0.9
	425	0.9	0.9	0.9	0.9	1.0	0.9	0.9
	415	0.9	1.0	1.0	1.0	1.0	1.0	1.0
	405	1.0	1.0	1.1	1.1	1.1	1.0	1.0
	395	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	385	1.1	1.2	1.2	1.2	1.2	1.2	1.1
	375	1.2	1.2	1.3	1.3	1.2	1.2	1.1
	365	1.2	1.3	1.3	1.3	1.3	1.3	1.2
	355	1.3	1.4	1.4	1.4	1.4	1.3	1.3
	345	1.3	1.4	1.4	1.5	1.4	1.4	1.3
	335	1.4	1.5	1.5	1.5	1.5	1.4	1.3
	325	1.5	1.5	1.6	1.6	1.6	1.5	1.4
	315	1.5	1.6	1.6	1.6	1.6	1.6	1.5
	305	1.5	1.6	1.7	1.7	1.7	1.7	1.6
	295	1.6	1.7	1.8	1.8	1.8	1.8	1.7
	285	1.6	1.8	1.8	1.9	1.9	1.9	1.9
	275	1.7	1.8	1.9	2.0	2.0	2.1	2.1
	265	1.8	1.9	2.0	2.1	2.2	2.3	2.4
	255	1.9	2.0	2.2	2.3	2.4	2.6	2.7
	245	2.0	2.1	2.3	2.5	2.7	2.8	3.0

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 1-1b		Receptor Site R1-b =			1.7	fc		
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	235	0.5	0.6	0.7	0.7	0.8	0.8	0.9
	225	0.6	0.7	0.7	0.8	0.8	0.9	0.9
	215	0.6	0.7	0.8	0.8	0.9	0.9	1.0
	205	0.7	0.8	0.8	0.9	1.0	1.0	1.1
	195	0.7	0.8	0.9	1.0	1.0	1.1	1.2
	185	0.8	0.9	1.0	1.0	1.1	1.2	1.3
	175	0.9	1.0	1.1	1.2	1.2	1.3	1.4
	165	1.0	1.1	1.2	1.3	1.4	1.4	1.5
	155	1.1	1.2	1.3	1.4	1.5	1.6	1.7
	145	1.2	1.3	1.5	1.6	1.7	1.8	1.9
	135	1.3	1.5	1.6	1.7	1.9	2.0	2.1
	125	1.5	1.6	1.8	1.9	2.1	2.2	2.4
	115	1.6	1.8	2.0	2.1	2.3	2.4	2.6
	105	1.7	1.9	2.1	2.3	2.5	2.7	2.8
	95	1.9	2.1	2.3	2.5	2.7	2.9	3.1
	85	2.0	2.2	2.5	2.7	2.9	3.1	3.3
	75	2.1	2.3	2.6	2.8	3.0	3.2	3.4
	65	2.1	2.4	2.6	2.9	3.1	3.3	3.5
	55	2.1	2.4	2.7	2.9	3.1	3.4	3.6
	45	2.1	2.4	2.6	2.9	3.1	3.3	3.5
	35	2.0	2.3	2.6	2.8	3.0	3.2	3.4
	25	2.0	2.2	2.4	2.7	2.9	3.1	3.2
	15	1.8	2.1	2.3	2.5	2.7	2.8	3.0
R1-b	5	1.7	1.9	2.1	2.2	2.4	2.6	2.7

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 1-1b								
HORIZONTAL (ft)		70	80	90	100	110	120	130
VERTICAL (ft)	235	0.9	1.0	1.1	1.2	1.3	1.4	1.6
	225	1.0	1.1	1.2	1.3	1.4	1.5	1.7
	215	1.1	1.1	1.3	1.3	1.5	1.6	1.8
	205	1.2	1.2	1.4	1.4	1.6	1.7	1.9
	195	1.3	1.3	1.5	1.6	1.7	1.8	2.0
	185	1.4	1.5	1.6	1.7	1.8	2.0	2.2
	175	1.5	1.6	1.7	1.8	2.0	2.1	2.3
	165	1.7	1.8	1.9	2.0	2.1	2.3	2.5
	155	1.8	1.9	2.1	2.2	2.3	2.5	2.7
	145	2.0	2.1	2.3	2.4	2.6	2.7	2.9
	135	2.3	2.4	2.5	2.6	2.8	3.0	3.2
	125	2.5	2.6	2.8	2.9	3.1	3.2	3.5
	115	2.7	2.9	3.1	3.2	3.4	3.5	3.7
	105	3.0	3.2	3.3	3.5	3.6	3.8	4.0
	95	3.2	3.4	3.6	3.7	3.9	4.1	4.3
	85	3.5	3.6	3.8	4.0	4.2	4.3	4.5
	75	3.6	3.8	4.0	4.1	4.3	4.5	4.7
	65	3.7	3.9	4.1	4.2	4.4	4.6	4.8
	55	3.8	3.9	4.1	4.3	4.4	4.6	4.7
	45	3.7	3.9	4.0	4.2	4.4	4.5	4.7
	35	3.6	3.8	3.9	4.1	4.2	4.3	4.5
	25	3.4	3.6	3.7	3.8	4.0	4.1	4.2
	15	3.2	3.3	3.5	3.6	3.7	3.8	3.9
	5	2.9	3.0	3.1	3.2	3.4	3.5	3.6

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 1-1b								
HORIZONTAL (ft)		140	150	160	170	180	190	200
VERTICAL (ft)	235	1.7	1.9	2.1	2.3	2.5	2.7	2.9
	225	1.8	2.0	2.2	2.4	2.7	2.9	3.2
	215	2.0	2.1	2.4	2.6	2.9	3.2	3.5
	205	2.1	2.3	2.5	2.7	3.1	3.4	3.7
	195	2.2	2.4	2.7	3.0	3.3	3.6	4.0
	185	2.4	2.6	2.9	3.2	3.5	3.9	4.3
	175	2.5	2.8	3.0	3.4	3.7	4.1	4.6
	165	2.7	3.0	3.3	3.6	4.0	4.4	4.8
	155	2.9	3.2	3.5	3.8	4.2	4.6	5.0
	145	3.2	3.4	3.7	4.0	4.4	4.8	5.3
	135	3.4	3.7	4.0	4.3	4.6	5.0	5.5
	125	3.7	3.9	4.2	4.5	4.9	5.3	5.7
	115	4.0	4.2	4.5	4.8	5.1	5.5	5.9
	105	4.2	4.5	4.7	5.0	5.3	5.7	6.1
	95	4.5	4.7	5.0	5.2	5.5	5.9	6.2
	85	4.7	4.9	5.2	5.4	5.7	6.0	6.3
	75	4.9	5.1	5.3	5.5	5.8	6.0	6.3
	65	4.9	5.1	5.3	5.5	5.8	6.0	6.2
	55	4.9	5.1	5.3	5.4	5.6	5.8	6.0
	45	4.8	5.0	5.1	5.3	5.5	5.6	5.7
	35	4.6	4.8	4.9	5.0	5.2	5.3	5.4
	25	4.4	4.5	4.6	4.7	4.8	4.9	5.0
	15	4.1	4.2	4.3	4.4	4.5	4.5	4.6
	5	3.7	3.7	3.9	3.9	4.0	4.1	4.2

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 1-1b								
HORIZONTAL (ft)		210	220	230	240	250	260	270
VERTICAL (ft)	235	3.1	3.3	3.5	3.7	3.8	3.8	3.8
	225	3.4	3.7	3.9	4.1	4.3	4.3	4.3
	215	3.8	4.1	4.3	4.6	4.7	4.8	4.7
	205	4.1	4.4	4.7	5.0	5.2	5.3	5.2
	195	4.4	4.8	5.1	5.4	5.6	5.7	5.6
	185	4.7	5.1	5.5	5.8	6.0	6.1	6.0
	175	5.0	5.4	5.8	6.2	6.4	6.4	6.4
	165	5.3	5.7	6.1	6.4	6.6	6.7	6.7
	155	5.5	5.9	6.4	6.7	6.9	7.0	6.9
	145	5.7	6.2	6.6	6.9	7.1	7.2	7.1
	135	5.9	6.4	6.8	7.1	7.3	7.3	7.2
	125	6.1	6.6	6.9	7.2	7.4	7.4	7.3
	115	6.3	6.7	7.0	7.3	7.5	7.5	7.3
	105	6.5	6.8	7.1	7.4	7.5	7.4	7.3
	95	6.5	6.9	7.1	7.3	7.4	7.4	7.2
	85	6.6	6.9	7.1	7.2	7.3	7.2	7.0
	75	6.5	6.8	6.9	7.1	7.1	7.0	6.7
	65	6.4	6.6	6.7	6.8	6.8	6.7	6.4
	55	6.2	6.3	6.4	6.5	6.4	6.3	6.0
	45	5.9	6.0	6.0	6.1	6.0	5.8	5.6
	35	5.5	5.6	5.6	5.6	5.5	5.4	5.2
	25	5.1	5.2	5.2	5.1	5.1	4.9	4.7
	15	4.7	4.7	4.7	4.7	4.6	4.4	4.2
	5	4.2	4.2	4.2	4.2	4.1	3.9	3.7

ALTERNATIVE A 80 cd/m ²						
Vertical Plane 1-1b		Receptor Site R1-a =		2.7	fc	
HORIZONTAL (ft)		280	290	300	310	320
VERTICAL (ft)	235	3.6	3.4	3.2	3.0	2.7
	225	4.1	3.9	3.6	3.3	3.0
	215	4.5	4.3	4.0	3.6	3.2
	205	5.0	4.7	4.3	3.9	3.5
	195	5.4	5.0	4.7	4.2	3.8
	185	5.8	5.4	5.0	4.5	4.0
	175	6.1	5.7	5.3	4.8	4.3
	165	6.4	5.9	5.5	5.0	4.5
	155	6.6	6.1	5.7	5.1	4.6
	145	6.7	6.3	5.8	5.3	4.8
	135	6.8	6.4	5.9	5.4	4.9
	125	6.9	6.4	5.9	5.4	4.9
	115	6.9	6.4	5.9	5.4	4.9
	105	6.9	6.3	5.9	5.4	4.9
	95	6.8	6.2	5.8	5.3	4.9
	85	6.6	6.1	5.6	5.2	4.8
	75	6.3	5.8	5.4	5.0	4.6
	65	6.0	5.5	5.2	4.8	4.4
	55	5.6	5.2	4.8	4.5	4.2
	45	5.2	4.8	4.5	4.2	3.9
	35	4.8	4.4	4.2	3.9	3.7
	25	4.4	4.0	3.8	3.6	3.4
	15	3.9	3.6	3.4	3.2	3.0
	5	3.5	3.2	3.0	2.8	2.7
						R1-a

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-1a								
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	255							
	245							
	235	0.7	0.7	0.6	0.6	0.6	0.6	0.6
	225	0.8	0.7	0.6	0.7	0.7	0.7	0.7
	215	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	205	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	195	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	185	1.1	1.1	1.1	1.1	1.2	1.2	1.2
	175	1.2	1.2	1.2	1.2	1.3	1.3	1.3
	165	1.4	1.4	1.4	1.4	1.5	1.5	1.5
	155	1.5	1.5	1.5	1.5	1.6	1.6	1.7
	145	1.7	1.7	1.7	1.7	1.8	1.9	1.9
	135	1.8	1.8	1.8	1.9	2.0	2.1	2.1
	125	1.9	2.0	2.0	2.1	2.1	2.2	2.2
	115	2.1	2.1	2.2	2.3	2.4	2.5	2.5
	105	2.2	2.3	2.3	2.4	2.6	2.6	2.7
	95	2.3	2.4	2.4	2.6	2.7	2.8	2.9
	85	2.4	2.5	2.5	2.7	2.8	2.9	3.0

ALTERNATIVE A 80 cd/m ²										
Vertical Plane 2-1a										
HORIZONTAL (ft)		70	80	90	100	110	120	130	140	150
VERTICAL (ft)	255		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	245		0.6	0.6	0.5	0.6	0.6	0.5	0.6	0.6
	235	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	225	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	215	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7
	205	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8
	195	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9
	185	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.0
	175	1.3	1.3	1.3	1.2	1.3	1.2	1.2	1.1	1.1
	165	1.5	1.5	1.5	1.5	1.5	1.4	1.3	1.3	1.2
	155	1.7	1.7	1.6	1.6	1.6	1.6	1.5	1.4	1.3
	145	1.9	1.9	1.9	1.8	1.8	1.7	1.6	1.5	1.4
	135	2.1	2.1	2.1	2.0	2.0	1.9	1.8	1.7	1.6
	125	2.3	2.3	2.3	2.2	2.2	2.1	1.9	1.8	1.7
	115	2.5	2.5	2.5	2.4	2.4	2.3	2.1	2.0	1.8
	105	2.7	2.7	2.7	2.6	2.6	2.4	2.3	2.1	2.0
95	2.9	2.9	2.8	2.7	2.7	2.5	2.4	2.2	2.0	
85	3.0	3.0	3.0	2.9	2.8	2.7	2.5	2.4	2.1	

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-1b		Receptor Site R2-a = 2.0				fc		
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	75	2.5	2.5	2.6	2.8	2.9	3.0	3.1
	65	2.5	2.6	2.7	2.8	3.0	3.1	3.2
	55	2.5	2.6	2.7	2.8	3.0	3.1	3.2
	45	2.5	2.5	2.6	2.8	2.9	3.1	3.1
	35	2.4	2.5	2.5	2.7	2.9	3.0	3.1
	25	2.3	2.4	2.4	2.6	2.8	2.9	3.0
	15	2.2	2.2	2.3	2.5	2.6	2.7	2.8
R2-a	5	2.0	2.0	2.1	2.3	2.4	2.5	2.6

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-1b		Receptor Site R2-b = 1.8				fc		
HORIZONTAL (ft)		70	80	90	100	110	120	130
VERTICAL (ft)	75	3.1	3.1	3.1	3.0	2.9	2.8	2.6
	65	3.2	3.2	3.1	3.1	3.0	2.8	2.6
	55	3.2	3.2	3.2	3.1	3.0	2.8	2.6
	45	3.2	3.2	3.1	3.1	3.0	2.8	2.6
	35	3.1	3.1	3.1	3.0	2.9	2.8	2.6
	25	3.0	3.0	3.0	2.9	2.8	2.7	2.5
	15	2.8	2.8	2.8	2.7	2.6	2.5	2.3
	5	2.6	2.6	2.6	2.5	2.4	2.3	2.2

ALTERNATIVE A 80 cd/m ²				
Vertical Plane 2-1b				
HORIZONTAL (ft)		140	150	
VERTICAL (ft)	75	2.4	2.2	
	65	2.4	2.2	
	55	2.4	2.2	
	45	2.4	2.2	
	35	2.4	2.1	
	25	2.3	2.1	
	15	2.2	2.0	
	5	2.0	1.8	R2-b

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-2a								
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	735	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	725	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	715	0.4	0.4	0.4	0.4	0.4	0.5	0.5
	705	0.4	0.4	0.5	0.5	0.5	0.5	0.5
	695	0.4	0.5	0.5	0.5	0.5	0.5	0.5
	685	0.4	0.5	0.5	0.5	0.5	0.5	0.5
	675	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	665	0.5	0.5	0.5	0.5	0.5	0.6	0.6
	655	0.5	0.5	0.5	0.5	0.6	0.6	0.6
	645	0.5	0.5	0.6	0.6	0.6	0.6	0.6
	635	0.5	0.6	0.6	0.6	0.6	0.6	0.6
	625	0.5	0.6	0.6	0.6	0.6	0.6	0.7
	615	0.5	0.6	0.6	0.6	0.6	0.7	0.7
	605	0.5	0.6	0.6	0.6	0.7	0.7	0.7
	595	0.6	0.6	0.7	0.7	0.7	0.7	0.7
	585	0.6	0.7	0.7	0.7	0.7	0.7	0.7
	575	0.6	0.7	0.7	0.7	0.7	0.8	0.8
	565	0.6	0.7	0.7	0.7	0.7	0.8	0.8
	555	0.6	0.7	0.7	0.7	0.8	0.8	0.8
	545	0.6	0.7	0.7	0.8	0.8	0.8	0.8
	535	0.7	0.7	0.8	0.8	0.8	0.8	0.8
	525	0.7	0.8	0.8	0.8	0.8	0.9	0.9
	515	0.7	0.8	0.8	0.8	0.8	0.9	0.9
	505	0.7	0.8	0.8	0.8	0.9	0.9	0.9
	495	0.7	0.8	0.8	0.9	0.9	0.9	1.0
	485	0.7	0.8	0.8	0.9	0.9	0.9	1.0
	475	0.7	0.8	0.9	0.9	0.9	1.0	1.0
	465	0.7	0.9	0.9	0.9	0.9	1.0	1.0
	455	0.7	0.9	0.9	0.9	0.9	1.0	1.0
	445	0.7	0.9	0.9	0.9	1.0	1.0	1.0
	435	0.8	0.9	0.9	0.9	1.0	1.0	1.1
	425	0.8	0.9	0.9	1.0	1.0	1.0	1.0
	415	0.8	0.9	0.9	1.0	1.0	1.0	1.1
	405	0.8	0.9	0.9	1.0	1.0	1.0	1.1
	395	0.8	0.9	1.0	1.0	1.0	1.0	1.1

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-2a								
HORIZONTAL (ft)		70	80	90	100	110	120	130
VERTICAL (ft)	735	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	725	0.4	0.5	0.5	0.5	0.5	0.5	0.5
	715	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	705	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	695	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	685	0.5	0.5	0.5	0.6	0.6	0.6	0.6
	675	0.5	0.6	0.6	0.6	0.6	0.6	0.6
	665	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	655	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	645	0.6	0.6	0.6	0.7	0.7	0.7	0.7
	635	0.6	0.7	0.7	0.7	0.7	0.7	0.7
	625	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	615	0.7	0.7	0.7	0.7	0.7	0.8	0.8
	605	0.7	0.7	0.7	0.8	0.8	0.8	0.8
	595	0.7	0.8	0.8	0.8	0.8	0.8	0.8
	585	0.8	0.8	0.8	0.8	0.8	0.9	0.9
	575	0.8	0.8	0.8	0.8	0.9	0.9	0.9
	565	0.8	0.8	0.9	0.9	0.9	0.9	0.9
	555	0.8	0.9	0.9	0.9	0.9	1.0	1.0
	545	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	535	0.9	0.9	0.9	1.0	1.0	1.0	1.1
	525	0.9	0.9	1.0	1.0	1.0	1.0	1.1
	515	0.9	0.9	1.0	1.0	1.0	1.1	1.1
	505	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	495	1.0	1.0	1.0	1.1	1.1	1.1	1.2
	485	1.0	1.0	1.1	1.1	1.1	1.2	1.2
	475	1.0	1.0	1.1	1.1	1.1	1.2	1.2
	465	1.0	1.1	1.1	1.1	1.2	1.2	1.2
	455	1.0	1.1	1.1	1.1	1.2	1.2	1.3
	445	1.1	1.1	1.1	1.2	1.2	1.2	1.3
	435	1.1	1.1	1.1	1.2	1.2	1.2	1.3
	425	1.1	1.1	1.2	1.2	1.2	1.3	1.3
	415	1.1	1.1	1.2	1.2	1.2	1.3	1.3
	405	1.1	1.1	1.2	1.2	1.3	1.3	1.3
	395	1.1	1.1	1.2	1.2	1.3	1.3	1.3

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-2a								
HORIZONTAL (ft)		210	220	230	240	250	260	270
VERTICAL (ft)	735	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	725	0.5	0.4	0.4	0.4	0.4	0.4	0.4
	715	0.5	0.5	0.5	0.5	0.4	0.4	0.4
	705	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	695	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	685	0.6	0.6	0.6	0.5	0.5	0.5	0.5
	675	0.6	0.6	0.6	0.6	0.6	0.6	0.5
	665	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	655	0.7	0.7	0.7	0.6	0.6	0.6	0.6
	645	0.7	0.7	0.7	0.7	0.7	0.7	0.6
	635	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	625	0.8	0.8	0.8	0.8	0.7	0.7	0.7
	615	0.8	0.8	0.8	0.8	0.8	0.7	0.7
	605	0.9	0.9	0.9	0.8	0.8	0.8	0.7
	595	0.9	0.9	0.9	0.9	0.8	0.8	0.8
	585	1.0	1.0	0.9	0.9	0.9	0.8	0.8
	575	1.0	1.0	1.0	1.0	0.9	0.9	0.8
	565	1.1	1.1	1.1	1.0	0.9	0.9	0.9
	555	1.1	1.1	1.1	1.1	1.0	1.0	0.9
	545	1.1	1.2	1.2	1.1	1.1	1.0	1.0
	535	1.2	1.2	1.2	1.2	1.1	1.0	1.0
	525	1.2	1.3	1.2	1.2	1.1	1.1	1.0
	515	1.3	1.3	1.3	1.3	1.2	1.1	1.1
	505	1.3	1.4	1.3	1.3	1.2	1.2	1.1
	495	1.4	1.4	1.4	1.3	1.3	1.2	1.2
	485	1.4	1.4	1.4	1.4	1.3	1.3	1.2
	475	1.4	1.4	1.4	1.4	1.4	1.3	1.2
	465	1.5	1.5	1.5	1.4	1.4	1.3	1.3
	455	1.5	1.5	1.5	1.5	1.4	1.4	1.3
	445	1.5	1.5	1.5	1.5	1.4	1.4	1.3
	435	1.5	1.5	1.5	1.5	1.4	1.4	1.3
	425	1.5	1.5	1.5	1.5	1.4	1.4	1.3
	415	1.5	1.5	1.5	1.5	1.4	1.4	1.3
	405	1.5	1.5	1.5	1.5	1.4	1.4	1.3
	395	1.5	1.5	1.5	1.5	1.4	1.4	1.3

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-2a								
HORIZONTAL (ft)		140	150	160	170	180	190	200
VERTICAL (ft)	735	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	725	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	715	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	705	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	695	0.5	0.5	0.5	0.5	0.6	0.5	0.5
	685	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	675	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	665	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	655	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	645	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	635	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	625	0.7	0.8	0.8	0.8	0.8	0.8	0.8
	615	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	605	0.8	0.8	0.9	0.9	0.9	0.9	0.9
	595	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	585	0.9	0.9	0.9	0.9	0.9	0.9	1.0
	575	0.9	0.9	1.0	1.0	1.0	1.0	1.0
	565	1.0	1.0	1.0	1.0	1.0	1.0	1.1
	555	1.0	1.0	1.0	1.1	1.1	1.1	1.1
	545	1.0	1.1	1.1	1.1	1.1	1.1	1.2
	535	1.1	1.1	1.1	1.1	1.2	1.2	1.2
	525	1.1	1.1	1.2	1.2	1.2	1.2	1.2
	515	1.1	1.2	1.2	1.2	1.2	1.3	1.3
	505	1.2	1.2	1.2	1.2	1.3	1.3	1.3
	495	1.2	1.2	1.3	1.3	1.3	1.3	1.4
	485	1.2	1.3	1.3	1.3	1.3	1.4	1.4
	475	1.2	1.3	1.3	1.4	1.4	1.4	1.4
	465	1.3	1.3	1.3	1.4	1.4	1.4	1.4
	455	1.3	1.3	1.4	1.4	1.4	1.4	1.5
	445	1.3	1.3	1.4	1.4	1.4	1.5	1.5
	435	1.3	1.3	1.4	1.4	1.4	1.5	1.5
	425	1.3	1.4	1.4	1.4	1.5	1.5	1.5
	415	1.3	1.4	1.4	1.4	1.5	1.5	1.5
	405	1.3	1.4	1.4	1.4	1.5	1.5	1.5
	395	1.3	1.4	1.4	1.4	1.5	1.5	1.5

ALTERNATIVE A 80 cd/m ²				
Vertical Plane 2-2a				
HORIZONTAL (ft)		280	290	300
VERTICAL (ft)	735	0.4	0.4	0.3
	725	0.4	0.4	0.4
	715	0.4	0.4	0.4
	705	0.4	0.4	0.4
	695	0.5	0.4	0.4
	685	0.5	0.5	0.5
	675	0.5	0.5	0.5
	665	0.6	0.5	0.5
	655	0.6	0.6	0.5
	645	0.6	0.6	0.6
	635	0.6	0.6	0.6
	625	0.7	0.6	0.6
	615	0.7	0.7	0.6
	605	0.7	0.7	0.6
	595	0.7	0.7	0.7
	585	0.7	0.7	0.7
	575	0.8	0.7	0.7
	565	0.8	0.8	0.8
	555	0.9	0.8	0.8
	545	0.9	0.9	0.9
	535	1.0	0.9	0.9
	525	1.0	1.0	0.9
	515	1.1	1.0	1.0
	505	1.1	1.1	1.0
	495	1.1	1.1	1.1
	485	1.2	1.1	1.1
	475	1.2	1.2	1.1
	465	1.2	1.2	1.1
	455	1.3	1.2	1.2
	445	1.3	1.2	1.2
	435	1.3	1.2	1.2
	425	1.3	1.3	1.2
	415	1.3	1.2	1.2
	405	1.3	1.2	1.2
	395	1.3	1.2	1.2

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-2b								
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	385	0.6	0.6	0.6	0.6	0.7	0.7	0.8
	375	0.6	0.6	0.6	0.6	0.7	0.7	0.8
	365	0.6	0.6	0.6	0.6	0.7	0.7	0.8
	355	0.6	0.6	0.6	0.6	0.7	0.8	0.8
	345	0.6	0.7	0.6	0.6	0.7	0.8	0.8
	335	0.6	0.6	0.6	0.6	0.7	0.8	0.8
	325	0.6	0.6	0.6	0.6	0.7	0.8	0.8
	315	0.6	0.6	0.6	0.6	0.7	0.8	0.8
	305	0.6	0.7	0.6	0.6	0.7	0.8	0.8
	295	0.6	0.7	0.6	0.7	0.7	0.8	0.8
	285	0.6	0.7	0.6	0.7	0.7	0.8	0.8
	275	0.6	0.7	0.7	0.7	0.7	0.8	0.8
	265	0.6	0.7	0.7	0.7	0.7	0.8	0.8
	255	0.6	0.7	0.7	0.7	0.7	0.8	0.8
	245	0.6	0.7	0.7	0.7	0.7	0.8	0.8
	235	0.6	0.7	0.7	0.7	0.7	0.8	0.8
	225	0.6	0.7	0.7	0.7	0.7	0.8	0.8
	215	0.6	0.6	0.7	0.7	0.7	0.8	0.9
	205	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	195	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	185	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	175	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	165	0.7	0.7	0.7	0.7	0.7	0.8	0.9
	155	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	145	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	135	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	125	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	115	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	105	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	95	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	85	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	75	0.6	0.7	0.7	0.7	0.7	0.8	0.9
	65	0.6	0.6	0.7	0.7	0.7	0.8	0.9
	55	0.6	0.6	0.7	0.7	0.7	0.8	0.9
	45	0.6	0.6	0.7	0.7	0.7	0.8	0.9
	35	0.6	0.6	0.7	0.7	0.7	0.8	0.8
	25	0.6	0.6	0.7	0.7	0.7	0.8	0.8
	15	0.6	0.6	0.7	0.7	0.7	0.8	0.8
	5	0.6	0.6	0.6	0.6	0.6	0.7	0.8

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-2b								
HORIZONTAL (ft)		70	80	90	100	110	120	130
VERTICAL (ft)	385	0.8	0.8	0.8	0.8	0.9	0.9	1.0
	375	0.8	0.8	0.8	0.8	0.9	0.9	1.0
	365	0.8	0.8	0.8	0.8	0.9	0.9	1.0
	355	0.8	0.8	0.9	0.8	0.9	0.9	1.0
	345	0.8	0.9	0.8	0.8	0.9	0.9	0.9
	335	0.8	0.9	0.9	0.8	0.9	0.9	1.0
	325	0.8	0.9	0.9	0.8	0.9	1.0	1.0
	315	0.9	0.9	0.9	0.9	0.9	1.0	1.0
	305	0.9	0.9	0.9	0.9	0.9	1.0	1.0
	295	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	285	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	275	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	265	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	255	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	245	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	235	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	225	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	215	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	205	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	195	0.9	0.9	0.9	1.0	1.0	1.1	1.1
	185	0.9	0.9	1.0	1.0	1.1	1.1	1.1
	175	0.9	1.0	1.0	1.0	1.1	1.1	1.1
	165	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	155	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	145	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	135	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	125	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	115	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	105	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	95	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	85	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	75	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	65	1.0	1.0	1.0	1.0	1.1	1.1	1.1
	55	0.9	0.9	1.0	1.0	1.1	1.1	1.1
	45	0.9	0.9	1.0	1.0	1.1	1.1	1.1
	35	0.9	0.9	0.9	0.9	1.0	1.1	1.1
	25	0.9	0.9	0.9	0.9	1.0	1.0	1.1
	15	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	5	0.9	0.9	0.9	0.9	1.0	1.0	1.0

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-2b								
HORIZONTAL (ft)	140	150	160	170	180	190	200	
VERTICAL (ft)	385	1.0	1.1	1.1	1.1	1.2	1.3	1.2
	375	1.1	1.0	1.1	1.1	1.2	1.3	1.2
	365	1.1	1.0	1.1	1.1	1.2	1.2	1.2
	355	1.1	1.1	1.1	1.1	1.2	1.2	1.2
	345	1.1	1.1	1.1	1.1	1.2	1.2	1.2
	335	1.0	1.1	1.1	1.1	1.2	1.2	1.2
	325	1.1	1.1	1.1	1.1	1.2	1.2	1.2
	315	1.1	1.1	1.1	1.1	1.2	1.2	1.2
	305	1.0	1.1	1.1	1.1	1.2	1.2	1.2
	295	1.0	1.1	1.1	1.1	1.2	1.2	1.2
	285	1.0	1.1	1.1	1.1	1.2	1.2	1.2
	275	1.0	1.1	1.1	1.1	1.2	1.2	1.2
	265	1.1	1.1	1.1	1.1	1.2	1.2	1.2
	255	1.1	1.1	1.1	1.1	1.2	1.3	1.2
	245	1.1	1.1	1.1	1.2	1.2	1.3	1.2
	235	1.1	1.1	1.2	1.2	1.3	1.3	1.2
	225	1.1	1.1	1.2	1.2	1.3	1.3	1.2
	215	1.1	1.1	1.2	1.2	1.3	1.3	1.2
	205	1.1	1.1	1.2	1.2	1.3	1.3	1.3
	195	1.1	1.2	1.2	1.2	1.3	1.3	1.3
	185	1.2	1.2	1.2	1.2	1.3	1.4	1.3
	175	1.2	1.2	1.2	1.2	1.3	1.4	1.4
	165	1.2	1.2	1.2	1.3	1.4	1.4	1.4
	155	1.2	1.2	1.3	1.3	1.4	1.4	1.4
	145	1.2	1.2	1.3	1.3	1.5	1.5	1.4
	135	1.2	1.2	1.3	1.4	1.5	1.5	1.5
	125	1.2	1.2	1.3	1.4	1.5	1.5	1.5
	115	1.2	1.2	1.3	1.4	1.5	1.5	1.5
	105	1.2	1.3	1.3	1.4	1.5	1.6	1.5
	95	1.2	1.2	1.3	1.4	1.5	1.6	1.5
	85	1.2	1.2	1.3	1.4	1.5	1.6	1.6
	75	1.2	1.3	1.3	1.4	1.5	1.6	1.6
	65	1.2	1.3	1.3	1.4	1.5	1.6	1.6
	55	1.2	1.2	1.3	1.4	1.5	1.6	1.5
	45	1.2	1.2	1.3	1.4	1.5	1.5	1.5
	35	1.2	1.2	1.3	1.3	1.5	1.5	1.5
	25	1.2	1.2	1.2	1.3	1.4	1.5	1.5
	15	1.1	1.2	1.2	1.3	1.4	1.4	1.4
	5	1.1	1.1	1.2	1.2	1.3	1.4	1.4

ALTERNATIVE A 80 cd/m ²					
Vertical Plane 2-2b					
HORIZONTAL (ft)		210	220	230	240
VERTICAL (ft)	385	1.3	1.3	1.3	1.3
	375	1.3	1.3	1.3	1.3
	365	1.3	1.3	1.3	1.3
	355	1.3	1.3	1.3	1.3
	345	1.2	1.3	1.2	1.2
	335	1.2	1.3	1.2	1.2
	325	1.2	1.3	1.2	1.2
	315	1.2	1.3	1.2	1.2
	305	1.2	1.3	1.2	1.2
	295	1.2	1.2	1.2	1.1
	285	1.2	1.2	1.2	1.1
	275	1.2	1.2	1.2	1.1
	265	1.2	1.2	1.2	1.1
	255	1.2	1.2	1.2	1.2
	245	1.2	1.2	1.2	1.2
	235	1.3	1.3	1.2	1.2
	225	1.3	1.3	1.2	1.2
	215	1.3	1.4	1.3	1.3
	205	1.3	1.4	1.3	1.3
	195	1.3	1.4	1.4	1.4
	185	1.4	1.5	1.4	1.4
	175	1.4	1.5	1.5	1.5
	165	1.5	1.5	1.5	1.6
	155	1.5	1.6	1.6	1.6
	145	1.5	1.6	1.6	1.7
	135	1.6	1.7	1.7	1.7
	125	1.6	1.7	1.7	1.8
	115	1.6	1.7	1.8	1.8
	105	1.7	1.8	1.8	1.9
	95	1.7	1.8	1.8	1.9
	85	1.7	1.8	1.8	1.9
	75	1.7	1.8	1.8	1.9
	65	1.7	1.8	1.8	1.9
	55	1.7	1.8	1.8	1.9
	45	1.7	1.8	1.8	1.9
	35	1.6	1.7	1.8	1.9
	25	1.6	1.7	1.7	1.8
	15	1.5	1.6	1.7	1.8
	5	1.5	1.6	1.6	1.7

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-2b		Receptor Site R2-c =			2.0	fc		
HORIZONTAL (ft)		250	260	270	280	290	300	310
VERTICAL (ft)	385	1.3	1.2	1.2	1.1	1.1	1.0	1.0
	375	1.3	1.2	1.2	1.1	1.1	1.0	1.0
	365	1.2	1.2	1.1	1.1	1.0	1.0	1.0
	355	1.2	1.2	1.1	1.1	1.0	1.0	0.9
	345	1.2	1.1	1.1	1.0	1.0	1.0	0.9
	335	1.2	1.1	1.1	1.0	1.0	1.0	0.9
	325	1.1	1.1	1.0	1.0	1.0	0.9	0.9
	315	1.1	1.1	1.0	1.0	1.0	0.9	0.9
	305	1.1	1.0	1.0	1.0	1.0	0.9	0.9
	295	1.1	1.1	1.0	1.0	1.0	0.9	0.9
	285	1.1	1.0	1.0	1.0	1.0	1.0	0.9
	275	1.1	1.1	1.0	1.0	1.0	0.9	0.9
	265	1.1	1.1	1.0	1.0	1.0	1.0	0.9
	255	1.1	1.1	1.1	1.0	1.0	1.0	0.9
	245	1.1	1.1	1.1	1.0	1.0	1.0	1.0
	235	1.2	1.1	1.1	1.1	1.0	1.1	1.0
	225	1.2	1.2	1.1	1.1	1.1	1.1	1.1
	215	1.3	1.2	1.2	1.1	1.1	1.1	1.1
	205	1.3	1.3	1.2	1.2	1.2	1.2	1.2
	195	1.4	1.3	1.3	1.3	1.3	1.3	1.2
	185	1.4	1.4	1.4	1.4	1.3	1.3	1.3
	175	1.5	1.5	1.4	1.4	1.4	1.4	1.4
	165	1.6	1.5	1.6	1.5	1.5	1.5	1.5
	155	1.6	1.6	1.6	1.6	1.6	1.6	1.6
	145	1.7	1.7	1.7	1.7	1.7	1.7	1.8
	135	1.7	1.7	1.8	1.8	1.8	1.8	1.9
	125	1.8	1.8	1.9	1.9	1.9	1.9	2.0
	115	1.8	1.9	1.9	2.0	2.0	2.1	2.1
	105	1.9	1.9	2.0	2.0	2.1	2.2	2.2
	95	1.9	2.0	2.0	2.1	2.2	2.2	2.3
	85	2.0	2.0	2.1	2.1	2.2	2.3	2.3
	75	2.0	2.0	2.1	2.2	2.3	2.3	2.4
	65	2.0	2.1	2.1	2.2	2.3	2.3	2.4
	55	2.0	2.0	2.1	2.2	2.3	2.3	2.4
	45	2.0	2.0	2.1	2.2	2.2	2.3	2.4
	35	1.9	2.0	2.1	2.1	2.2	2.3	2.4
	25	1.9	2.0	2.0	2.1	2.2	2.2	2.3
	15	1.8	1.9	1.9	2.0	2.0	2.1	2.2
	5	1.7	1.8	1.8	1.9	1.9	2.0	2.0
								R2-c

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-3a								
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	735	0.2	0.2	0.1	0.1	0.1	0.1	0.1
	725	0.2	0.2	0.2	0.1	0.1	0.1	0.1
	715	0.2	0.2	0.2	0.2	0.1	0.1	0.1
	705	0.2	0.2	0.2	0.2	0.2	0.1	0.1
	695	0.2	0.2	0.2	0.2	0.2	0.2	0.1
	685	0.2	0.2	0.2	0.2	0.2	0.2	0.1
	675	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	665	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	655	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	645	0.3	0.2	0.2	0.2	0.2	0.2	0.2
	635	0.3	0.2	0.2	0.2	0.2	0.2	0.2
	625	0.3	0.3	0.2	0.2	0.2	0.2	0.2
	615	0.3	0.3	0.2	0.2	0.2	0.2	0.2
	605	0.3	0.3	0.2	0.2	0.2	0.2	0.2
	595	0.3	0.3	0.2	0.2	0.2	0.2	0.2
	585	0.3	0.3	0.3	0.2	0.2	0.2	0.2
	575	0.3	0.3	0.3	0.2	0.2	0.2	0.2
	565	0.3	0.3	0.3	0.3	0.2	0.2	0.2
	555	0.4	0.3	0.3	0.3	0.3	0.2	0.2
	545	0.4	0.3	0.3	0.3	0.3	0.2	0.2
	535	0.4	0.4	0.3	0.3	0.3	0.3	0.2
	525	0.4	0.4	0.3	0.3	0.3	0.3	0.2
	515	0.4	0.4	0.4	0.3	0.3	0.3	0.2
	505	0.5	0.4	0.4	0.3	0.3	0.3	0.3
	495	0.5	0.4	0.4	0.4	0.3	0.3	0.3
	485	0.5	0.4	0.4	0.4	0.3	0.3	0.3
	475	0.5	0.5	0.4	0.4	0.3	0.3	0.3
	465	0.5	0.5	0.4	0.4	0.3	0.3	0.3
	455	0.5	0.5	0.4	0.4	0.4	0.3	0.3
	445	0.5	0.5	0.4	0.4	0.4	0.3	0.3
	435	0.5	0.5	0.4	0.4	0.4	0.3	0.3
	425	0.6	0.5	0.5	0.4	0.4	0.4	0.3
	415	0.6	0.5	0.5	0.4	0.4	0.4	0.3
	405	0.6	0.5	0.5	0.4	0.4	0.4	0.3
	395	0.6	0.5	0.5	0.4	0.4	0.4	0.3

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 2-3b		Receptor Site R2-c =			1.5	fc		
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	385	0.4	0.4	0.3	0.3	0.3	0.3	0.2
	375	0.4	0.4	0.3	0.3	0.3	0.3	0.2
	365	0.4	0.4	0.4	0.3	0.3	0.3	0.2
	355	0.4	0.4	0.3	0.3	0.3	0.3	0.3
	345	0.4	0.4	0.3	0.3	0.3	0.3	0.3
	335	0.4	0.4	0.4	0.3	0.3	0.3	0.3
	325	0.4	0.4	0.4	0.3	0.3	0.3	0.3
	315	0.4	0.4	0.4	0.4	0.3	0.3	0.3
	305	0.5	0.4	0.4	0.4	0.3	0.3	0.3
	295	0.5	0.4	0.4	0.4	0.4	0.3	0.3
	285	0.5	0.5	0.4	0.4	0.4	0.4	0.3
	275	0.5	0.5	0.4	0.4	0.4	0.4	0.4
	265	0.5	0.5	0.5	0.4	0.4	0.4	0.4
	255	0.6	0.5	0.5	0.5	0.5	0.4	0.4
	245	0.6	0.6	0.5	0.5	0.5	0.5	0.4
	235	0.6	0.6	0.6	0.5	0.5	0.5	0.5
	225	0.7	0.7	0.6	0.6	0.5	0.5	0.5
	215	0.8	0.7	0.7	0.6	0.6	0.5	0.5
	205	0.8	0.8	0.7	0.7	0.6	0.6	0.6
	195	0.9	0.8	0.8	0.7	0.7	0.6	0.6
	185	0.9	0.9	0.8	0.8	0.7	0.7	0.6
	175	1.0	1.0	0.9	0.8	0.8	0.7	0.7
	165	1.1	1.0	0.9	0.9	0.8	0.7	0.7
	155	1.2	1.1	1.0	0.9	0.9	0.8	0.7
	145	1.3	1.2	1.1	1.0	0.9	0.8	0.8
	135	1.4	1.2	1.2	1.0	1.0	0.9	0.8
	125	1.4	1.3	1.2	1.1	1.0	0.9	0.8
	115	1.5	1.4	1.3	1.1	1.0	1.0	0.9
	105	1.6	1.5	1.3	1.2	1.1	1.0	0.9
	95	1.7	1.5	1.4	1.2	1.1	1.0	0.9
	85	1.7	1.6	1.4	1.3	1.1	1.0	0.9
	75	1.7	1.6	1.4	1.3	1.1	1.0	0.9
	65	1.8	1.6	1.4	1.3	1.1	1.0	0.9
	55	1.8	1.6	1.4	1.3	1.1	1.0	0.9
	45	1.7	1.6	1.4	1.3	1.1	1.0	0.9
	35	1.7	1.5	1.4	1.2	1.1	1.0	0.9
	25	1.6	1.5	1.3	1.2	1.1	1.0	0.9
	15	1.6	1.4	1.3	1.2	1.0	0.9	0.9
R2-c	5	1.5	1.3	1.2	1.1	1.0	0.9	0.8

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 3-1								
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	105	2.8	2.8	2.8	3.1	3.3	3.5	3.7
	95	2.9	2.9	3.0	3.2	3.5	3.7	4.0
	85	2.9	3.0	3.1	3.4	3.6	3.9	4.1
	75	3.0	3.1	3.1	3.4	3.7	4.0	4.2
	65	3.0	3.1	3.2	3.4	3.7	4.0	4.2
	55	2.9	3.0	3.1	3.4	3.7	3.9	4.2
	45	2.9	3.0	3.1	3.3	3.6	3.8	4.1
	35	2.7	2.8	2.9	3.2	3.4	3.7	3.9
	25	2.6	2.7	2.8	3.0	3.2	3.5	3.7
	15	2.4	2.5	2.6	2.8	3.0	3.2	3.4
	5	2.2	2.3	2.3	2.5	2.7	2.9	3.1

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 3-1								
HORIZONTAL (ft)		70	80	90	100	110	120	130
VERTICAL (ft)	105	3.9	4.1	4.2	4.3	4.4	4.4	4.4
	95	4.1	4.3	4.4	4.5	4.6	4.7	4.7
	85	4.3	4.5	4.6	4.7	4.8	4.9	4.9
	75	4.4	4.6	4.7	4.8	4.9	5.0	5.0
	65	4.4	4.6	4.8	4.9	5.0	5.0	5.1
	55	4.4	4.6	4.7	4.8	4.9	5.0	5.0
	45	4.3	4.5	4.6	4.7	4.8	4.9	4.9
	35	4.1	4.3	4.4	4.5	4.6	4.7	4.7
	25	3.9	4.0	4.1	4.3	4.3	4.4	4.4
	15	3.6	3.7	3.8	3.9	4.0	4.1	4.1
	5	3.3	3.4	3.5	3.6	3.7	3.7	3.8

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 3-1								
HORIZONTAL (ft)		140	150	160	170	180	190	200
VERTICAL (ft)	105	4.5	4.4	4.4	4.3	4.3	4.2	4.1
	95	4.7	4.7	4.6	4.6	4.5	4.4	4.3
	85	4.9	4.9	4.8	4.8	4.7	4.6	4.5
	75	5.0	5.0	5.0	4.9	4.8	4.8	4.7
	65	5.1	5.1	5.0	5.0	4.9	4.8	4.7
	55	5.0	5.0	5.0	4.9	4.9	4.8	4.7
	45	4.9	4.9	4.9	4.8	4.8	4.7	4.7
	35	4.7	4.7	4.7	4.7	4.6	4.6	4.5
	25	4.5	4.5	4.5	4.4	4.4	4.3	4.3
	15	4.2	4.2	4.1	4.1	4.1	4.1	4.0
	5	3.8	3.8	3.8	3.8	3.7	3.7	3.7

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 3-1								
HORIZONTAL (ft)		210	220	230	240	250	260	270
VERTICAL (ft)	105	4.0	3.9	3.9	3.8	3.8	3.8	3.8
	95	4.3	4.2	4.1	4.1	4.1	4.0	4.0
	85	4.4	4.4	4.3	4.2	4.2	4.2	4.2
	75	4.6	4.5	4.4	4.4	4.4	4.3	4.4
	65	4.6	4.6	4.5	4.5	4.5	4.4	4.5
	55	4.6	4.6	4.5	4.5	4.5	4.4	4.5
	45	4.6	4.5	4.4	4.4	4.4	4.4	4.4
	35	4.4	4.4	4.3	4.3	4.3	4.3	4.3
	25	4.2	4.2	4.1	4.1	4.1	4.1	4.1
	15	4.0	3.9	3.9	3.9	3.9	3.9	3.9
	5	3.6	3.6	3.6	3.6	3.6	3.6	3.6

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 3-1								
HORIZONTAL (ft)		280	290	300	310	320	330	340
VERTICAL (ft)	105	3.8	3.9	3.9	4.0	4.1	4.2	4.3
	95	4.1	4.1	4.2	4.2	4.3	4.5	4.6
	85	4.2	4.3	4.4	4.4	4.5	4.7	4.8
	75	4.4	4.4	4.5	4.6	4.7	4.8	5.0
	65	4.5	4.5	4.6	4.7	4.8	4.9	5.0
	55	4.5	4.6	4.6	4.7	4.8	4.9	5.1
	45	4.4	4.5	4.6	4.6	4.7	4.9	5.0
	35	4.4	4.4	4.5	4.5	4.6	4.7	4.9
	25	4.2	4.2	4.3	4.4	4.4	4.6	4.7
	15	4.0	4.0	4.1	4.1	4.2	4.3	4.4
	5	3.6	3.7	3.8	3.8	3.9	4.0	4.1

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 3-1								
HORIZONTAL (ft)		350	360	370	380	390	400	410
VERTICAL (ft)	105	4.4	4.6	4.7	4.8	4.9	4.9	5.0
	95	4.7	4.8	4.9	5.1	5.2	5.3	5.3
	85	4.9	5.1	5.2	5.4	5.5	5.6	5.6
	75	5.1	5.2	5.4	5.5	5.7	5.8	5.8
	65	5.2	5.3	5.5	5.6	5.8	5.9	6.0
	55	5.2	5.4	5.5	5.7	5.8	5.9	6.0
	45	5.1	5.3	5.4	5.6	5.7	5.8	5.9
	35	5.0	5.2	5.3	5.5	5.6	5.7	5.7
	25	4.8	5.0	5.1	5.2	5.3	5.4	5.4
	15	4.5	4.7	4.8	4.9	5.0	5.1	5.1
	5	4.2	4.3	4.4	4.5	4.6	4.6	4.7

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 3-1								
HORIZONTAL (ft)		420	430	440	450	460	470	480
VERTICAL (ft)	105	5.0	5.0	5.0	4.9	4.8	4.6	4.4
	95	5.4	5.4	5.3	5.2	5.1	5.0	4.7
	85	5.7	5.7	5.6	5.5	5.4	5.2	5.0
	75	5.9	5.9	5.8	5.7	5.6	5.4	5.2
	65	6.0	6.0	6.0	5.9	5.7	5.5	5.3
	55	6.0	6.0	6.0	5.9	5.7	5.5	5.3
	45	5.9	5.9	5.9	5.8	5.6	5.4	5.2
	35	5.8	5.7	5.7	5.6	5.5	5.3	5.0
	25	5.5	5.5	5.4	5.3	5.2	5.0	4.8
	15	5.1	5.1	5.1	5.0	4.9	4.7	4.5
	5	4.7	4.7	4.6	4.6	4.4	4.3	4.1

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 4-1								
HORIZONTAL (ft)		Receptor Site R4-a =			0.2	fc		
		0	10	20	30	40	50	60
VERTICAL (ft)	85	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	75	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	65	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	55	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	45	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	35	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	25	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	15	0.2	0.2	0.2	0.2	0.2	0.2	0.2
R4-a	5	0.2	0.2	0.2	0.2	0.2	0.2	0.2

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 4-1								
HORIZONTAL (ft)		70	80	90	100	110	120	130
VERTICAL (ft)	85	0.2	0.2	0.2	0.2	0.2	0.3	0.3
	75	0.2	0.2	0.2	0.2	0.2	0.3	0.3
	65	0.2	0.2	0.2	0.2	0.2	0.2	0.3
	55	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	45	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	35	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	25	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	15	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	5	0.2	0.2	0.2	0.2	0.2	0.2	0.2

ALTERNATIVE A 80 cd/m ²								
Vertical Plane 4-1								
HORIZONTAL (ft)		140	150	160	170	180	190	200
VERTICAL (ft)	85	0.3	0.3	0.3	0.3	0.3	0.4	0.4
	75	0.3	0.3	0.3	0.3	0.3	0.4	0.4
	65	0.3	0.3	0.3	0.3	0.3	0.3	0.4
	55	0.3	0.3	0.3	0.3	0.3	0.3	0.4
	45	0.2	0.3	0.3	0.3	0.3	0.3	0.3
	35	0.2	0.2	0.3	0.3	0.3	0.3	0.3
	25	0.2	0.2	0.3	0.3	0.3	0.3	0.3
	15	0.2	0.2	0.2	0.2	0.2	0.3	0.3
	5	0.2	0.2	0.2	0.2	0.2	0.2	0.2

ALTERNATIVE A 80 cd/m ²					
Vertical Plane 4-1					
HORIZONTAL (ft)		Receptor Site R4-b =		0.7	fc
		210	220	230	240
VERTICAL (ft)	85	0.5	0.7	0.8	0.9
	75	0.5	0.7	0.8	0.9
	65	0.5	0.7	0.8	0.9
	55	0.5	0.7	0.8	0.9
	45	0.5	0.7	0.8	0.9
	35	0.5	0.6	0.8	0.9
	25	0.5	0.6	0.7	0.8
	15	0.4	0.5	0.7	0.8
	5	0.4	0.5	0.6	0.7
					R4-b

ALTERNATIVE A 80 cd/m²

Horizontal Plane 1-1				Horizontal Plane 2-1				
	(ft)	0	10		0	10	20	30
R1-b	0	2.0	1.8	R2-a	0	1.2	1.1	0.9
PARALLEL TO PROPERTY LINE (ft)	10	2.2	2	PARALLEL TO PROPERTY LINE (ft)	10	1.3	1.2	1.1
	20	2.4	2.2		20	1.4	1.3	1.2
	30	2.6	2.4		30	1.5	1.4	1.3
	40	2.9	2.8		40	1.6	1.5	1.3
	50	3.2	3.1		50	1.7	1.5	1.4
	60	3.4	3.2		60	1.6	1.4	
	70	3.5	3.4		70	1.6	1.4	
	80	3.6	3.4		80	1.6	1.4	
	90	3.5			90	1.6	1.4	
	100	3.5			100	1.6	1.4	
	110	3.4			110	1.5	1.4	
	120	3.4			120	1.4	1.3	
	130	3.3	2.7		130	1.3	1.2	
	140	3.2	2.6		140	1.2	1.1	
	150	3	2.6	R2-b	150	1.1	1	
	160	2.9	2.6					
	170	2.8	2.5					
	180	2.7	2.5					
	190	2.6	2.4					
	200	2.6	2.4					
	210	2.5	2.3					
	220	2.4	2.2					
	230	2.3	2.2					
	240	2.1						
	250	2						
	260	1.9						
	270	1.8	1.7					
	280	1.7	1.6					
	290	1.6	1.5					
	300	1.4	1.3					
	310	1.3	1.2					
R1-a	320	1.1	1.2					

ALTERNATIVE A 80 cd/m ²									
Horizontal Plane 2-2				Horizontal Plane 2-3					
		(ft)	0	10			(ft)	0	10
PARALLEL TO PROPERTY LINE (ft)		0	0.3	0.3	R2-c PARALLEL TO PROPERTY LINE (ft)		0	0.8	0.8
		10	0.4	0.4			10	0.7	0.8
		20	0.4	0.4			20	0.7	0.7
		30	0.4	0.4			30	0.6	0.7
		40	0.4	0.5			40	0.6	0.6
		50	0.5	0.6			50	0.5	0.5
		60	0.5	0.6			60	0.5	0.5
		70	0.5	0.7			70	0.4	0.4
		80	0.6	0.7					
		90	0.6	0.7					
		100	0.7	0.7					
		110	0.7	0.7					
		120	0.8	0.8					
		130	0.8	0.8					
R2-c	140	0.9	0.9						

ALTERNATIVE A 80 cd/m ²			
Horizontal Plane 4-1			
	(ft)	0	10
R4-a	0	0.3	
PARALLEL TO PROPERTY LINE (ft)	10	0.3	
	20	0.3	
	30	0.3	
	40	0.3	
	50	0.3	
	60	0.3	
	70	0.3	
	80	0.3	
	90	0.3	
	100	0.3	
	110	0.3	0.3
	120	0.3	0.3
	130	0.3	0.3
	140	0.3	0.3
	150	0.3	0.3
	160	0.3	0.3
	170	0.3	0.3
	180	0.3	0.3
	190	0.3	0.3
	200	0.3	0.3
	210	0.3	0.4
	220	0.4	0.4
	230	0.4	0.5
R4-b	240	0.4	0.5

APPENDIX E: SIGN DESIGN DATA – ALTERNATIVE B

City Center Entitlement Submittal, Gensler Associates

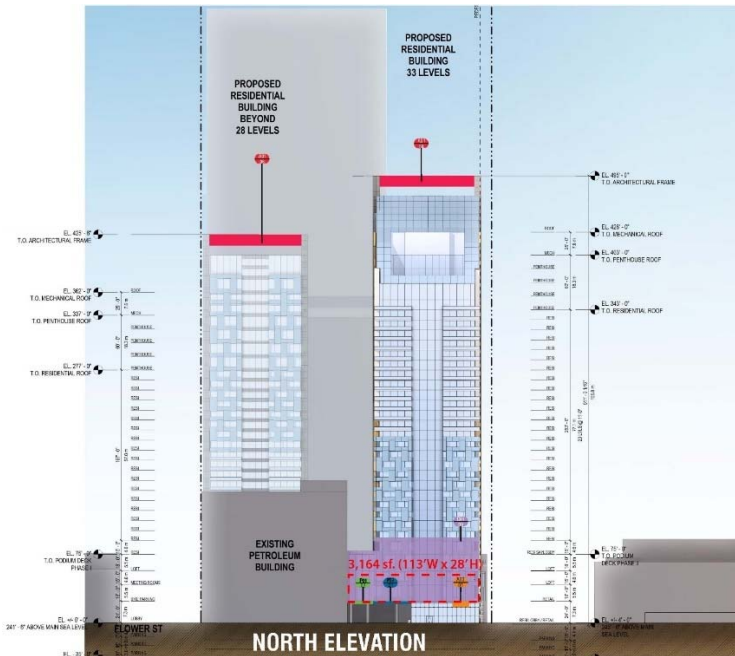


Figure 28: Alternative B Sign Dimensions and Locations - North Elevation

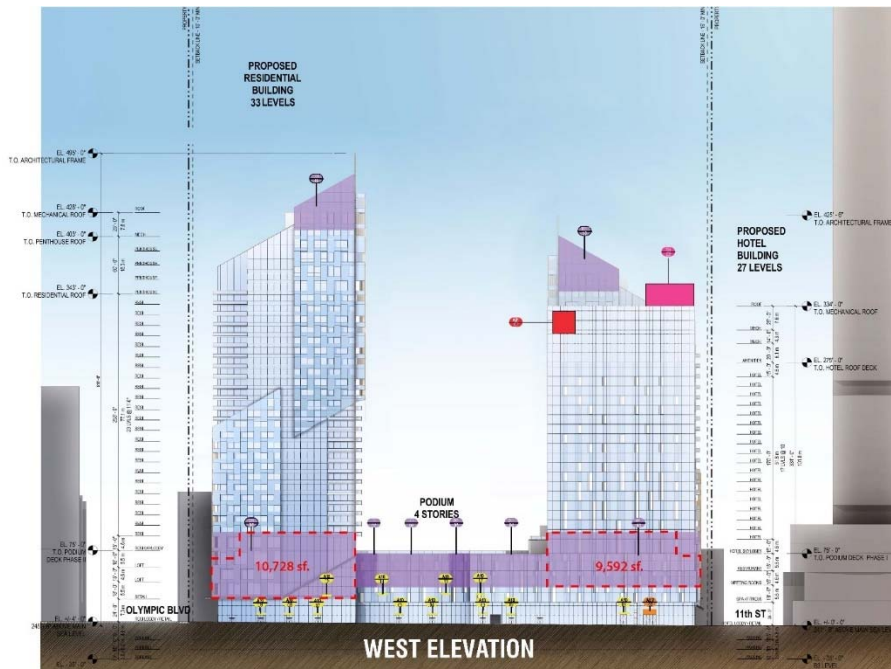


Figure 29: Alternative B Sign Dimensions and Locations – West Elevation

Figure 30: Alternative B Sign Dimensions and Locations – South Elevation

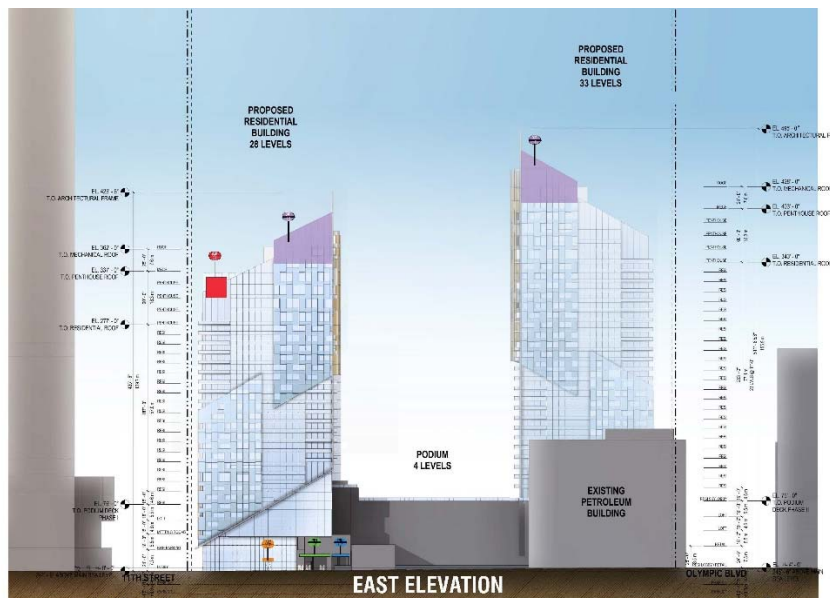


Figure 31: Alternative B Sign Dimensions and Locations – East Elevation

APPENDIX F: CALCULATION DATA – ALTERNATIVE B

Data presented below is derived from the lighting illuminance calculations prepared as per the methods described in Section 7.2 above. Illuminance data is presented in the following tables with location coordinates defined relative to the elevation and horizontal distance from lower left viewing from the Project site to the vertical plane where light trespass is under review. Grid data is displayed at five feet on center, vertical and horizontal.

ALTERNATIVE B									
Vertical Plane 1-1a									
HORIZONTAL (ft)		0	10	20	30	40	50	60	70
VERTICAL (ft)	675	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	665	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	655	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	645	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	635	0.2	0.3	0.3	0.3	0.2	0.3	0.3	0.2
	625	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2
	615	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3
	605	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	595	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	585	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	575	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	565	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	555	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	545	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	535	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
	525	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
	515	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
	505	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
	495	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
	485	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	475	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
	465	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.5
	455	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
	445	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
	435	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6
	425	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6
	415	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6
	405	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.6
	395	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.7
	385	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7
	375	0.4	0.5	0.5	0.5	0.6	0.7	0.7	0.8
	365	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.8
	355	0.5	0.5	0.6	0.6	0.6	0.7	0.8	0.9
	345	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.9
	335	0.5	0.6	0.6	0.7	0.7	0.8	0.9	0.9
	325	0.6	0.6	0.7	0.7	0.8	0.8	0.9	0.9
	315	0.6	0.7	0.7	0.8	0.8	0.9	0.9	1.0
	305	0.7	0.7	0.8	0.8	0.8	0.9	1.0	1.1
	295	0.7	0.8	0.8	0.9	0.9	1.0	1.1	1.1
	285	0.7	0.8	0.9	0.9	1.0	1.1	1.1	1.2
	275	0.8	0.9	0.9	1.0	1.1	1.1	1.2	1.3
	265	0.9	0.9	1.0	1.1	1.1	1.2	1.3	1.4
	255	0.9	1.0	1.1	1.2	1.3	1.3	1.4	1.5
	245	1.0	1.1	1.2	1.3	1.4	1.5	1.5	1.6

ALTERNATIVE B									
Vertical Plane 1-1a									
HORIZONTAL (ft)		80	90	100	110	120	130	140	150
VERTICAL (ft)	675	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	665	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	655	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
	645	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3
	635	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.3
	625	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3
	615	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3
	605	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	595	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
	585	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
	575	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
	565	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
	555	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
	545	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5
	535	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5
	525	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5
	515	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6
	505	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.6
	495	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.7
	485	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7
	475	0.5	0.5	0.5	0.5	0.6	0.6	0.7	0.7
	465	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.8
	455	0.5	0.5	0.5	0.6	0.6	0.7	0.8	0.8
	445	0.5	0.5	0.5	0.6	0.7	0.8	0.8	0.9
	435	0.6	0.6	0.6	0.6	0.7	0.8	0.9	1.0
	425	0.6	0.6	0.6	0.6	0.8	0.9	1.0	1.0
	415	0.6	0.6	0.7	0.7	0.8	0.9	1.0	1.1
	405	0.7	0.7	0.7	0.7	0.9	1.0	1.1	1.2
	395	0.7	0.7	0.7	0.8	0.9	1.0	1.1	1.2
	385	0.7	0.8	0.8	0.8	1.0	1.1	1.2	1.3
	375	0.8	0.8	0.9	0.9	1.0	1.1	1.3	1.4
	365	0.8	0.9	0.9	1.0	1.1	1.2	1.3	1.4
	355	0.9	0.9	1.0	1.0	1.2	1.3	1.4	1.5
	345	0.9	1.0	1.0	1.1	1.2	1.3	1.5	1.6
	335	1.0	1.0	1.1	1.1	1.3	1.4	1.5	1.6
	325	1.0	1.1	1.1	1.2	1.4	1.5	1.6	1.7
	315	1.1	1.2	1.2	1.3	1.4	1.5	1.6	1.7
	305	1.1	1.2	1.3	1.3	1.5	1.6	1.7	1.8
	295	1.2	1.3	1.3	1.4	1.5	1.6	1.7	1.8
	285	1.3	1.4	1.4	1.5	1.6	1.7	1.8	1.9
	275	1.4	1.5	1.5	1.6	1.7	1.8	1.9	2.0
	265	1.5	1.6	1.6	1.7	1.8	1.9	2.0	2.0
	255	1.5	1.7	1.8	1.8	1.9	2.0	2.2	2.2
	245	1.7	1.8	1.9	1.9	2.1	2.2	2.4	2.3

ALTERNATIVE B									
Vertical Plane 1-1a									
HORIZONTAL (ft)		160	170	180	190	200	210	220	230
VERTICAL (ft)	675	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	665	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	655	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	645	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4
	635	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
	625	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4
	615	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	605	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5
	595	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5
	585	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
	575	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5
	565	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
	555	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6
	545	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
	535	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
	525	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
	515	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7
	505	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.8
	495	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8
	485	0.7	0.8	0.8	0.8	0.9	0.9	0.9	0.9
	475	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9
	465	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	455	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0
	445	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1
	435	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	425	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2
	415	1.2	1.2	1.2	1.3	1.3	1.3	1.2	1.2
	405	1.2	1.3	1.3	1.4	1.3	1.3	1.3	1.3
	395	1.3	1.4	1.4	1.4	1.4	1.4	1.3	1.3
	385	1.4	1.4	1.5	1.5	1.5	1.4	1.4	1.4
	375	1.4	1.5	1.5	1.6	1.5	1.5	1.4	1.4
	365	1.5	1.6	1.6	1.6	1.6	1.5	1.4	1.4
	355	1.6	1.7	1.7	1.7	1.6	1.6	1.5	1.5
	345	1.7	1.7	1.7	1.8	1.7	1.6	1.5	1.5
	335	1.7	1.8	1.8	1.8	1.8	1.7	1.6	1.5
	325	1.8	1.8	1.9	1.8	1.8	1.7	1.6	1.5
	315	1.9	1.9	1.9	1.9	1.8	1.7	1.6	1.6
	305	1.9	1.9	1.9	1.9	1.9	1.8	1.7	1.7
	295	1.9	2.0	2.0	2.0	1.9	1.9	1.7	1.8
	285	2.0	2.0	2.1	2.1	2.0	2.0	1.9	1.9
	275	2.1	2.2	2.2	2.2	2.1	2.1	2.0	2.0
	265	2.2	2.3	2.3	2.3	2.3	2.2	2.2	2.2
	255	2.3	2.4	2.5	2.4	2.5	2.4	2.4	2.4
	245	2.4	2.5	2.6	2.7	2.7	2.6	2.6	2.7

ALTERNATIVE B								
Vertical Plane 1-1b		Receptor Site R1-b =			4.0	fc		
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	235	1.1	1.2	1.3	1.4	1.5	1.6	1.7
	225	1.2	1.3	1.4	1.5	1.6	1.7	1.8
	215	1.3	1.4	1.5	1.7	1.7	1.8	2.0
	205	1.4	1.6	1.7	1.9	2.0	2.0	2.2
	195	1.6	1.7	1.8	2.1	2.2	2.3	2.4
	185	1.8	2.0	2.0	2.3	2.4	2.6	2.7
	175	2.0	2.2	2.2	2.5	2.8	2.9	3.0
	165	2.2	2.3	2.4	2.8	3.2	3.1	3.4
	155	2.5	2.6	2.7	3.1	3.5	3.6	3.9
	145	2.8	2.9	3.2	3.6	3.9	4.1	4.5
	135	3.0	3.3	3.6	4.0	4.4	5.0	5.2
	125	3.3	3.7	4.0	4.4	4.9	5.6	5.7
	115	3.6	4.1	4.2	5.1	5.4	6.2	6.6
	105	4.0	4.4	4.5	5.5	6.2	6.9	7.3
	95	4.2	4.7	4.9	5.8	6.9	7.8	8.2
	85	4.4	5.1	5.0	6.3	7.3	8.3	8.9
	75	4.6	5.4	5.4	6.4	7.7	8.9	9.2
	65	4.8	5.4	5.6	6.6	7.8	9.3	9.8
	55	4.9	5.6	5.6	6.7	8.0	9.3	10.0
	45	4.7	5.4	5.6	6.5	8.1	9.3	9.7
	35	4.8	5.4	5.6	6.5	7.7	8.8	9.6
	25	4.5	5.3	5.2	6.4	7.3	8.3	9.0
	15	4.3	4.8	5.0	6.1	6.8	7.6	8.3
R1-b	5	4.0	4.4	4.5	5.5	6.1	7.0	7.6

ALTERNATIVE B								
Vertical Plane 1-1b								
HORIZONTAL (ft)		70	80	90	100	110	120	130
VERTICAL (ft)	235	1.7	1.7	2.0	2.0	2.1	2.2	2.3
	225	1.8	1.9	2.2	2.2	2.3	2.4	2.6
	215	2.1	2.1	2.3	2.4	2.5	2.7	2.8
	205	2.3	2.4	2.6	2.7	2.9	3.1	3.1
	195	2.6	2.6	2.9	3.0	3.2	3.4	3.5
	185	2.9	3.1	3.3	3.3	3.6	3.8	3.9
	175	3.2	3.3	3.7	3.8	4.0	4.3	4.4
	165	3.6	4.0	4.3	4.3	4.7	5.0	5.1
	155	4.4	4.7	5.0	5.2	5.6	5.7	5.9
	145	5.2	5.5	5.6	5.9	6.1	6.8	7.0
	135	5.9	6.2	6.6	6.6	7.4	7.8	7.7
	125	6.6	7.1	7.5	7.8	8.4	8.7	8.8
	115	7.2	8.1	8.7	9.0	9.4	10.0	9.7
	105	8.3	8.9	9.8	10.4	10.9	11.2	11.4
	95	9.0	9.9	11.2	11.3	11.6	12.3	12.6
	85	9.9	10.6	12.3	12.2	12.5	13.6	13.8
	75	10.5	11.2	12.6	12.7	13.2	14.6	14.8
	65	11.0	11.6	13.2	12.9	14.0	15.5	15.7
	55	11.0	11.9	13.6	13.3	14.0	15.5	16.0
	45	10.8	11.9	13.3	13.1	14.0	15.4	15.6
	35	10.4	11.5	12.8	12.7	13.5	14.7	14.6
	25	9.8	10.7	11.7	12.2	12.4	13.9	13.8
	15	8.6	9.8	10.8	10.9	11.2	12.6	12.8
	5	8.2	9.0	9.8	10.0	10.4	11.1	11.3

ALTERNATIVE B								
Vertical Plane 1-1b								
HORIZONTAL (ft)		140	150	160	170	180	190	200
VERTICAL (ft)	235	2.5	2.6	2.7	2.8	2.8	2.9	3.0
	225	2.8	2.8	3.0	3.1	3.1	3.3	3.2
	215	3.1	3.2	3.4	3.4	3.5	3.7	3.7
	205	3.3	3.4	3.7	3.8	3.9	4.1	4.3
	195	3.7	3.9	4.1	4.2	4.6	4.9	4.8
	185	4.4	4.5	4.7	4.9	5.2	5.4	5.5
	175	4.9	5.1	5.3	5.6	6.0	6.3	6.3
	165	5.5	5.7	6.1	6.6	6.8	7.2	7.5
	155	6.1	6.6	7.0	7.2	7.8	8.3	8.6
	145	7.1	7.5	8.0	8.5	9.0	9.4	9.9
	135	8.0	8.5	9.2	9.3	10.1	10.9	11.1
	125	9.3	10.0	10.4	10.7	11.3	12.3	12.6
	115	10.6	10.7	11.5	12.3	12.7	14.0	14.0
	105	12.1	12.0	13.2	13.5	14.4	15.7	15.4
	95	13.4	13.3	14.3	15.0	15.5	16.6	16.6
	85	14.5	14.5	15.6	16.1	16.5	18.1	17.7
	75	15.3	15.0	17.1	16.8	17.6	18.6	18.0
	65	15.8	16.0	17.7	17.4	18.1	18.4	18.9
	55	16.0	15.6	17.6	17.2	18.0	18.6	18.2
	45	15.6	15.7	17.3	17.1	17.9	18.2	18.0
	35	15.1	14.9	16.6	16.4	17.0	17.5	16.5
	25	14.2	14.1	15.7	15.2	15.4	16.4	16.0
	15	12.9	13.3	14.4	14.2	14.0	14.5	14.5
	5	11.6	11.9	12.5	12.0	12.2	13.2	13.2

ALTERNATIVE B								
Vertical Plane 1-1b								
HORIZONTAL (ft)		210	220	230	240	250	260	270
VERTICAL (ft)	235	3.0	3.0	2.9	3.0	3.0	3.1	3.0
	225	3.3	3.4	3.3	3.4	3.4	3.5	3.4
	215	3.7	3.8	3.8	3.9	3.9	3.9	3.9
	205	4.4	4.4	4.6	4.5	4.6	4.5	4.6
	195	5.0	5.1	5.2	5.3	5.4	5.3	5.4
	185	5.8	5.8	6.0	6.3	6.2	6.3	6.1
	175	6.7	7.0	7.2	7.2	7.3	7.4	7.3
	165	7.7	8.1	8.6	8.5	8.6	8.6	8.5
	155	9.1	9.6	9.8	10.0	10.2	10.2	9.8
	145	10.5	11.1	11.5	11.5	11.8	11.9	11.3
	135	12.0	12.6	13.3	13.4	13.6	13.5	13.3
	125	13.3	14.0	14.9	15.4	15.3	15.1	14.8
	115	15.2	15.7	16.5	17.1	16.8	17.0	16.5
	105	16.3	17.1	18.1	18.7	18.5	18.2	17.9
	95	18.1	18.7	19.4	19.7	19.7	19.6	18.5
	85	19.0	20.0	20.4	20.6	20.5	20.4	19.2
	75	19.5	20.5	20.5	21.2	20.6	20.4	19.4
	65	19.9	20.5	20.8	21.0	20.6	20.7	19.3
	55	20.0	20.2	20.3	20.5	20.1	19.7	18.9
	45	18.8	19.6	19.4	19.5	19.1	18.8	17.6
	35	18.0	17.9	18.1	18.3	17.9	17.4	16.7
	25	16.5	16.8	16.7	16.5	16.6	15.7	15.0
	15	15.1	15.3	15.2	15.3	14.7	14.2	13.3
	5	13.3	13.4	13.2	13.1	13.0	12.3	11.8

ALTERNATIVE B						
Vertical Plane 1-1b		Receptor Site R1-a =		8.4	fc	
HORIZONTAL (ft)		280	290	300	310	320
VERTICAL (ft)	235	3.0	2.9	3.0	3.0	2.9
	225	3.3	3.3	3.3	3.4	3.3
	215	3.9	3.7	3.7	3.8	3.7
	205	4.5	4.4	4.3	4.3	4.2
	195	5.1	5.0	5.0	4.9	4.7
	185	6.0	5.8	5.7	5.6	5.4
	175	7.1	6.7	6.4	6.5	6.1
	165	8.3	8.1	7.6	7.3	7.0
	155	9.5	9.0	8.6	8.2	7.7
	145	11.2	10.3	9.8	9.3	8.7
	135	12.5	11.8	11.1	10.4	9.5
	125	14.2	13.1	12.4	11.5	10.7
	115	15.7	14.6	13.4	12.5	11.4
	105	17.0	15.7	14.4	13.4	12.4
	95	18.1	16.6	15.3	14.0	12.8
	85	19.0	17.3	15.7	14.4	13.4
	75	18.8	17.3	15.9	14.4	13.3
	65	18.7	16.9	15.5	14.4	13.3
	55	17.9	16.3	14.9	14.0	12.9
	45	17.1	15.4	14.1	13.4	12.5
	35	15.8	14.1	13.3	12.5	11.5
	25	14.2	12.9	12.0	11.5	10.7
	15	12.7	11.5	10.7	10.3	9.6
	5	11.1	10.1	9.2	8.9	8.4
						R1-a

ALTERNATIVE B									
Vertical Plane 2-1a									
HORIZONTAL (ft)		0	10	20	30	40	50	60	70
VERTICAL (ft)	255								
	245								
	235	1	0.9	0.8	0.7	0.7	0.7	0.6	0.6
	225	1.2	1.1	0.9	0.9	0.9	0.8	0.8	0.8
	215	1.3	1.2	1	1	0.9	0.9	0.9	0.8
	205	1.3	1.2	1.1	1.1	1	1	0.9	0.9
	195	1.3	1.2	1	1	1	0.9	0.9	0.9
	185	1.5	1.4	1.2	1.2	1.2	1.1	1.1	1
	175	1.7	1.6	1.4	1.4	1.4	1.3	1.3	1.3
	165	1.8	1.7	1.5	1.5	1.5	1.5	1.4	1.4
	155	1.7	1.5	1.3	1.3	1.3	1.3	1.3	1.2
	145	2.2	2.1	2	2	2	2	2	2
	135	2	1.9	1.6	1.7	1.7	1.7	1.7	1.6
	125	1.9	1.8	1.6	1.6	1.6	1.5	1.6	1.5
	115	2.5	2.4	2.3	2.3	2.4	2.4	2.4	2.4
	105	2.7	2.5	2.4	2.4	2.4	2.4	2.5	2.4
	95	2.6	2.5	2.2	2.2	2.3	2.3	2.4	2.3
	85	2.9	2.7	2.5	2.5	2.7	2.8	2.8	2.8

ALTERNATIVE B									
Vertical Plane 2-1a									
HORIZONTAL (ft)		80	90	100	110	120	130	140	150
VERTICAL (ft)	255	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	245	0.6	0.6	0.5	0.6	0.5	0.5	0.6	0.6
	235	0.6	0.5	0.5	0.6	0.6	0.5	0.6	0.6
	225	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	215	0.8	0.8	0.7	0.8	0.8	0.7	0.7	0.7
	205	0.9	0.9	0.8	0.9	0.8	0.8	0.8	0.8
	195	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7
	185	1	1	1	1	0.9	0.9	0.9	0.9
	175	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1
	165	1.4	1.3	1.3	1.3	1.3	1.2	1.2	1.1
	155	1.2	1.1	1.1	1.1	1	1	0.9	0.9
	145	1.9	1.9	1.8	1.8	1.7	1.7	1.6	1.5
	135	1.5	1.5	1.5	1.4	1.4	1.3	1.3	1.2
	125	1.5	1.4	1.4	1.4	1.3	1.2	1.2	1.1
	115	2.3	2.3	2.2	2.1	2.1	2	1.8	1.7
	105	2.4	2.4	2.3	2.2	2.1	2	1.9	1.8
	95	2.4	2.3	2.1	2.1	2	1.9	1.8	1.6
	85	2.8	2.7	2.6	2.5	2.4	2.3	2.1	2

ALTERNATIVE B										
Vertical Plane 2-1b			Receptor Site R2-a =		2.7	fc				
HORIZONTAL (ft)			0	10	20	30	40	50	60	70
VERTICAL (ft)	75	3	2.9	2.8	3	3	3.1	3.1	3.1	
	65	3.4	3.3	3.4	3.5	3.8	3.9	3.9	4	
	55	3.2	3.1	3.1	3.4	3.4	3.5	3.7	3.5	
	45	3.2	3.4	3.2	3.3	3.5	3.5	3.6	3.7	
	35	3.3	3.2	3.2	3.2	3.4	3.4	3.4	3.6	
	25	3.3	3	2.9	3.3	3.3	3.3	3.5	3.6	
	15	2.9	2.9	2.8	2.8	3.2	3.4	3.5	3.5	
R2-a	5	2.7	2.6	2.5	2.7	2.9	3.1	3.3	3.1	

ALTERNATIVE B									
Vertical Plane 2-1b		Receptor Site R2-b =			2.1	fc			
HORIZONTAL (ft)		80	90	100	110	120	130	140	150
VERTICAL (ft)	75	3.1	3.1	3.0	2.8	2.7	2.5	2.5	2.2
	65	4.0	4.0	3.8	3.6	3.3	3.1	2.8	2.6
	55	3.6	3.6	3.5	3.3	3.2	2.9	2.6	2.3
	45	3.7	3.7	3.5	3.6	3.3	3.1	2.7	2.5
	35	3.6	3.4	3.5	3.3	3.0	2.9	2.6	2.4
	25	3.4	3.5	3.3	3.3	3.0	2.9	2.5	2.2
	15	3.5	3.2	3.1	3.1	3.0	2.7	2.5	2.3
	5	3.3	3.1	2.9	2.9	2.8	2.7	2.4	2.1

ALTERNATIVE B									
Vertical Plane 2-2a									
HORIZONTAL (ft)		0	10	20	30	40	50	60	70
VERTICAL (ft)	735	1.9	2.1	2.1	2.2	2.2	2.3	2.3	2.3
	725	1.8	2.0	2.1	2.1	2.2	2.2	2.3	2.3
	715	1.7	2.0	2.0	2.1	2.1	2.2	2.2	2.2
	705	1.7	1.9	2.0	2.0	2.1	2.1	2.2	2.2
	695	1.7	1.9	1.9	2.0	2.0	2.0	2.1	2.2
	685	1.6	1.8	1.9	1.9	2.0	2.0	2.1	2.1
	675	1.6	1.8	1.8	1.9	1.9	2.0	2.0	2.0
	665	1.5	1.8	1.8	1.8	1.8	1.9	2.0	2.0
	655	1.5	1.7	1.7	1.7	1.8	1.8	1.9	1.9
	645	1.5	1.7	1.7	1.7	1.8	1.8	1.9	1.9
	635	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.8
	625	1.4	1.6	1.6	1.6	1.7	1.7	1.7	1.7
	615	1.4	1.5	1.5	1.6	1.6	1.6	1.7	1.7
	605	1.3	1.5	1.5	1.6	1.6	1.6	1.7	1.6
	595	1.3	1.4	1.5	1.5	1.5	1.6	1.6	1.6
	585	1.3	1.4	1.4	1.4	1.5	1.5	1.6	1.6
	575	1.2	1.4	1.4	1.4	1.4	1.5	1.5	1.5
	565	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.5
	555	1.2	1.3	1.3	1.3	1.3	1.4	1.4	1.4
	545	1.1	1.3	1.2	1.3	1.3	1.3	1.3	1.4
	535	1.1	1.2	1.2	1.2	1.2	1.3	1.3	1.3
	525	1.1	1.1	1.2	1.2	1.2	1.2	1.3	1.3
	515	1.0	1.1	1.1	1.2	1.2	1.2	1.2	1.2
	505	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.2
	495	0.9	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	485	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1
	475	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1
	465	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0
	455	0.8	0.9	0.9	0.9	0.9	1.0	1.0	1.0
	445	0.8	0.9	0.9	0.9	0.9	0.9	0.9	1.0
	435	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	425	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.9
	415	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	405	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	395	0.7	0.7	0.8	0.7	0.7	0.8	0.7	0.8

ALTERNATIVE B									
Vertical Plane 2-2a									
HORIZONTAL (ft)		80	90	100	110	120	130	140	150
VERTICAL (ft)	735	2.4	2.5	2.5	2.5	2.6	2.6	2.7	2.7
	725	2.4	2.4	2.4	2.5	2.5	2.6	2.6	2.6
	715	2.3	2.3	2.3	2.4	2.5	2.5	2.5	2.6
	705	2.3	2.3	2.3	2.4	2.4	2.4	2.5	2.5
	695	2.2	2.2	2.3	2.3	2.3	2.4	2.4	2.4
	685	2.1	2.1	2.2	2.3	2.3	2.3	2.4	2.4
	675	2.1	2.1	2.2	2.2	2.2	2.3	2.3	2.3
	665	2.0	2.1	2.1	2.1	2.2	2.2	2.2	2.3
	655	1.9	2.0	2.0	2.1	2.1	2.1	2.1	2.2
	645	1.9	2.0	2.0	2.0	2.1	2.1	2.1	2.2
	635	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1
	625	1.8	1.8	1.9	1.9	2.0	2.0	2.0	2.0
	615	1.8	1.8	1.8	1.8	1.9	1.9	2.0	2.0
	605	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9
	595	1.6	1.7	1.7	1.7	1.7	1.8	1.8	1.8
	585	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.8
	575	1.6	1.5	1.6	1.6	1.6	1.7	1.7	1.7
	565	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.6
	555	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.6
	545	1.4	1.4	1.4	1.4	1.4	1.5	1.5	1.5
	535	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.5
	525	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4
	515	1.2	1.2	1.3	1.3	1.3	1.3	1.3	1.3
	505	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3
	495	1.2	1.1	1.2	1.2	1.2	1.2	1.2	1.2
	485	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.2
	475	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	465	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1
	455	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	445	1.0	1.0	0.9	1.0	1.0	1.0	1.0	1.0
	435	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	425	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	415	0.8	0.8	0.8	0.8	0.8	0.9	0.8	0.8
	405	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	395	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7

ALTERNATIVE B									
Vertical Plane 2-2a									
HORIZONTAL (ft)		160	170	180	190	200	210	220	230
VERTICAL (ft)	735	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.7
	725	2.6	2.7	2.7	2.7	2.7	2.7	2.8	2.7
	715	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7
	705	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
	695	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6
	685	2.5	2.4	2.5	2.5	2.5	2.5	2.5	2.5
	675	2.4	2.4	2.4	2.5	2.4	2.5	2.5	2.4
	665	2.3	2.3	2.4	2.4	2.4	2.4	2.4	2.4
	655	2.2	2.2	2.3	2.3	2.3	2.4	2.3	2.3
	645	2.2	2.2	2.2	2.2	2.3	2.2	2.3	2.2
	635	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2
	625	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	615	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	605	1.9	1.9	2.0	2.0	2.0	2.0	2.0	1.9
	595	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.8
	585	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	575	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
	565	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.6
	555	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
	545	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
	535	1.5	1.5	1.4	1.4	1.4	1.5	1.4	1.5
	525	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.3
	515	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	505	1.3	1.3	1.2	1.3	1.3	1.3	1.3	1.2
	495	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	485	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1
	475	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.0
	465	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0
	455	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.9
	445	1.0	0.9	1.0	0.9	0.9	0.9	0.9	0.9
	435	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8
	425	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8
	415	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	405	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7
	395	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

ALTERNATIVE B								
Vertical Plane 2-2a								
HORIZONTAL (ft)		240	250	260	270	280	290	300
VERTICAL (ft)	735	2.7	2.6	2.5	2.4	2.3	2.2	2.2
	725	2.6	2.5	2.5	2.4	2.3	2.2	2.1
	715	2.6	2.5	2.4	2.3	2.3	2.1	2.1
	705	2.5	2.4	2.4	2.3	2.2	2.1	2.1
	695	2.5	2.4	2.3	2.2	2.2	2.1	2.0
	685	2.5	2.4	2.3	2.2	2.1	2.0	2.0
	675	2.4	2.3	2.2	2.1	2.1	2.0	1.9
	665	2.3	2.2	2.2	2.1	2.0	1.9	1.9
	655	2.2	2.2	2.1	2.0	1.9	1.9	1.8
	645	2.2	2.1	2.0	1.9	1.9	1.8	1.7
	635	2.1	2.0	1.9	1.9	1.8	1.8	1.7
	625	2.0	2.0	1.9	1.8	1.7	1.7	1.6
	615	2.0	1.9	1.8	1.7	1.7	1.6	1.6
	605	1.9	1.8	1.7	1.7	1.6	1.6	1.5
	595	1.8	1.7	1.6	1.6	1.5	1.5	1.4
	585	1.7	1.7	1.6	1.5	1.5	1.4	1.4
	575	1.7	1.6	1.5	1.4	1.4	1.3	1.3
	565	1.6	1.5	1.4	1.4	1.3	1.3	1.2
	555	1.5	1.4	1.4	1.3	1.3	1.2	1.2
	545	1.4	1.4	1.3	1.2	1.2	1.2	1.1
	535	1.4	1.3	1.3	1.2	1.2	1.1	1.0
	525	1.3	1.3	1.2	1.2	1.1	1.1	1.0
	515	1.2	1.2	1.2	1.1	1.1	1.0	1.0
	505	1.2	1.2	1.1	1.1	1.0	1.0	1.0
	495	1.1	1.1	1.1	1.1	1.0	1.0	0.9
	485	1.1	1.1	1.1	1.0	1.0	0.9	0.9
	475	1.0	1.0	1.0	1.0	0.9	0.9	0.8
	465	1.0	0.9	0.9	0.9	0.9	0.8	0.8
	455	0.9	0.9	0.9	0.9	0.8	0.8	0.8
	445	0.9	0.9	0.8	0.8	0.8	0.8	0.7
	435	0.8	0.8	0.8	0.8	0.7	0.7	0.7
	425	0.8	0.8	0.8	0.7	0.7	0.7	0.7
	415	0.8	0.7	0.7	0.7	0.7	0.7	0.6
	405	0.7	0.7	0.7	0.7	0.7	0.6	0.6
	395	0.7	0.7	0.6	0.6	0.6	0.6	0.6

ALTERNATIVE B								
Vertical Plane 2-2b								
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	385	1.7	1.8	1.8	1.9	2.1	1.9	2.2
	375	1.7	1.8	1.8	1.9	2.1	1.9	2.2
	365	1.7	1.8	1.8	2.0	2.2	2.0	2.3
	355	1.8	1.8	1.8	2.0	2.2	2.0	2.3
	345	1.8	1.9	1.9	2.0	2.2	2.0	2.3
	335	1.8	1.9	1.9	2.0	2.2	2.0	2.4
	325	1.8	1.9	1.9	2.0	2.2	2.1	2.4
	315	1.8	1.9	1.9	2.0	2.2	2.1	2.4
	305	1.8	1.9	1.9	2.0	2.2	2.1	2.4
	295	1.8	1.9	1.9	2.1	2.3	2.1	2.4
	285	1.8	1.9	1.9	2.0	2.2	2.1	2.4
	275	1.8	1.9	1.9	2.0	2.2	2.1	2.4
	265	1.8	1.9	1.9	2.0	2.2	2.1	2.4
	255	1.8	1.9	1.9	2.0	2.2	2.1	2.3
	245	1.8	1.9	1.9	2.0	2.2	2.1	2.3
	235	1.8	1.9	1.9	2.0	2.2	2.1	2.3
	225	1.8	1.8	1.8	1.9	2.2	2.0	2.3
	215	1.7	1.8	1.8	1.9	2.1	2.0	2.2
	205	1.7	1.8	1.8	1.9	2.1	2.0	2.2
	195	1.7	1.8	1.8	1.9	2.0	1.9	2.2
	185	1.7	1.8	1.7	1.9	2.0	1.9	2.1
	175	1.6	1.7	1.7	1.8	2.0	1.9	2.1
	165	1.6	1.7	1.7	1.8	1.9	1.8	2.1
	155	1.6	1.7	1.7	1.8	1.9	1.8	2.0
	145	1.6	1.7	1.7	1.7	1.9	1.8	2.0
	135	1.6	1.6	1.6	1.7	1.9	1.8	2.0
	125	1.5	1.6	1.6	1.7	1.8	1.7	1.9
	115	1.5	1.6	1.6	1.6	1.8	1.7	1.9
	105	1.5	1.5	1.5	1.6	1.8	1.7	1.8
	95	1.5	1.5	1.5	1.6	1.7	1.7	1.8
	85	1.4	1.5	1.5	1.5	1.7	1.6	1.8
	75	1.4	1.5	1.5	1.5	1.7	1.6	1.7
	65	1.4	1.4	1.4	1.5	1.6	1.6	1.7
	55	1.4	1.4	1.4	1.4	1.6	1.5	1.6
	45	1.3	1.4	1.4	1.4	1.5	1.5	1.6
	35	1.3	1.4	1.4	1.4	1.5	1.5	1.6
	25	1.3	1.3	1.3	1.3	1.5	1.4	1.5
	15	1.3	1.3	1.3	1.3	1.4	1.4	1.5
	5	1.2	1.3	1.3	1.3	1.4	1.4	1.5

ALTERNATIVE B								
Vertical Plane 2-2b								
HORIZONTAL (ft)		70	80	90	100	110	120	130
VERTICAL (ft)	385	2.4	2.6	2.4	2.3	2.8	2.7	2.6
	375	2.4	2.6	2.4	2.4	2.9	2.8	2.7
	365	2.5	2.7	2.5	2.4	3.0	2.9	2.8
	355	2.5	2.7	2.5	2.5	3.0	2.9	2.8
	345	2.6	2.7	2.6	2.5	3.1	2.9	2.9
	335	2.6	2.8	2.6	2.5	3.1	3.0	2.9
	325	2.6	2.8	2.6	2.6	3.1	3.0	3.0
	315	2.6	2.8	2.6	2.6	3.1	3.0	3.0
	305	2.6	2.8	2.6	2.5	3.1	3.1	3.0
	295	2.6	2.8	2.6	2.5	3.1	3.1	3.0
	285	2.6	2.8	2.6	2.6	3.1	3.1	3.0
	275	2.6	2.8	2.6	2.6	3.1	3.0	2.9
	265	2.6	2.8	2.6	2.6	3.1	3.0	2.9
	255	2.5	2.7	2.6	2.5	3.0	3.0	2.9
	245	2.5	2.7	2.5	2.5	3.0	2.9	2.9
	235	2.5	2.7	2.5	2.5	2.9	2.8	2.8
	225	2.5	2.6	2.5	2.4	2.9	2.8	2.7
	215	2.4	2.6	2.4	2.4	2.8	2.7	2.7
	205	2.4	2.5	2.4	2.3	2.8	2.7	2.6
	195	2.4	2.5	2.3	2.3	2.7	2.6	2.5
	185	2.3	2.4	2.3	2.3	2.6	2.5	2.5
	175	2.3	2.4	2.2	2.2	2.6	2.4	2.4
	165	2.2	2.4	2.2	2.2	2.5	2.4	2.4
	155	2.2	2.3	2.2	2.1	2.4	2.3	2.3
	145	2.1	2.2	2.1	2.0	2.3	2.3	2.3
	135	2.1	2.2	2.1	2.0	2.3	2.2	2.2
	125	2.1	2.1	2.0	2.0	2.2	2.2	2.1
	115	2.0	2.1	2.0	1.9	2.2	2.1	2.1
	105	2.0	2.1	1.9	1.9	2.1	2.1	2.0
	95	1.9	2.0	1.9	1.8	2.1	2.0	2.0
	85	1.9	1.9	1.8	1.7	2.0	2.0	2.0
	75	1.8	1.9	1.8	1.7	2.0	2.0	1.9
	65	1.8	1.8	1.7	1.7	1.9	1.9	1.9
	55	1.7	1.8	1.7	1.6	1.9	1.8	1.8
	45	1.7	1.8	1.7	1.6	1.8	1.8	1.8
	35	1.7	1.7	1.6	1.6	1.8	1.8	1.7
	25	1.6	1.7	1.6	1.5	1.7	1.7	1.7
	15	1.6	1.6	1.6	1.5	1.7	1.7	1.7
	5	1.6	1.6	1.5	1.5	1.7	1.7	1.7

ALTERNATIVE B								
Vertical Plane 2-2b								
HORIZONTAL (ft)		140	150	160	170	180	190	200
VERTICAL (ft)	385	2.8	3.2	3.0	3.0	3.3	3.3	3.0
	375	3.0	3.4	3.1	3.2	3.4	3.5	3.2
	365	3.0	3.4	3.2	3.2	3.5	3.6	3.3
	355	3.1	3.5	3.3	3.3	3.6	3.6	3.4
	345	3.1	3.6	3.3	3.4	3.7	3.7	3.4
	335	3.2	3.6	3.4	3.4	3.7	3.8	3.5
	325	3.2	3.7	3.4	3.4	3.7	3.8	3.5
	315	3.2	3.6	3.4	3.4	3.7	3.7	3.4
	305	3.2	3.7	3.4	3.4	3.7	3.8	3.4
	295	3.1	3.6	3.4	3.4	3.7	3.8	3.4
	285	3.1	3.6	3.3	3.4	3.7	3.7	3.4
	275	3.1	3.5	3.3	3.3	3.6	3.6	3.3
	265	3.1	3.5	3.3	3.2	3.5	3.5	3.2
	255	3.0	3.5	3.2	3.2	3.5	3.5	3.1
	245	3.0	3.4	3.2	3.1	3.4	3.4	3.0
	235	2.9	3.3	3.1	3.1	3.3	3.3	3.0
	225	2.9	3.2	3.0	3.0	3.1	3.2	2.9
	215	2.8	3.1	2.9	2.9	3.1	3.1	2.8
	205	2.8	3.0	2.8	2.8	3.0	3.1	2.7
	195	2.7	3.0	2.8	2.7	2.9	3.0	2.7
	185	2.6	2.9	2.7	2.7	2.9	2.9	2.6
	175	2.5	2.8	2.6	2.6	2.7	2.8	2.5
	165	2.5	2.7	2.6	2.5	2.7	2.8	2.4
	155	2.4	2.6	2.5	2.5	2.6	2.7	2.4
	145	2.3	2.6	2.5	2.4	2.5	2.6	2.3
	135	2.3	2.5	2.4	2.3	2.5	2.5	2.3
	125	2.2	2.4	2.4	2.3	2.4	2.4	2.3
	115	2.2	2.4	2.3	2.2	2.3	2.4	2.2
	105	2.1	2.3	2.2	2.2	2.3	2.3	2.2
	95	2.1	2.3	2.2	2.1	2.2	2.2	2.1
	85	2.0	2.2	2.1	2.1	2.2	2.2	2.1
	75	2.0	2.1	2.1	2.1	2.1	2.1	2.1
	65	2.0	2.1	2.0	2.0	2.1	2.1	2.1
	55	1.9	2.0	2.0	2.0	2.0	2.1	2.0
	45	1.9	2.0	1.9	1.9	2.0	2.0	2.0
	35	1.9	1.9	1.9	1.9	2.0	2.0	2.0
	25	1.8	1.9	1.9	1.9	2.0	2.0	2.0
	15	1.8	1.8	1.8	1.9	1.9	2.0	2.0
	5	1.8	1.8	1.8	1.8	1.9	2.0	1.9

ALTERNATIVE B								
Vertical Plane 2-2b								
HORIZONTAL (ft)		210	220	230	240	250	260	270
VERTICAL (ft)	385	3.9	4.0	3.3	3.3	4.4	3.5	3.6
	375	4.1	4.3	3.5	3.5	4.6	3.6	3.8
	365	4.2	4.4	3.6	3.7	4.8	3.7	4.0
	355	4.2	4.5	3.8	3.8	4.9	3.8	4.1
	345	4.4	4.5	3.8	3.8	5.0	3.8	4.1
	335	4.4	4.6	3.8	3.9	5.0	3.9	4.2
	325	4.4	4.5	3.8	3.9	5.0	3.9	4.1
	315	4.4	4.6	3.8	3.9	5.0	3.8	4.1
	305	4.3	4.5	3.7	3.8	4.9	3.9	4.0
	295	4.2	4.4	3.7	3.7	4.8	3.8	4.0
	285	4.2	4.4	3.6	3.7	4.7	3.7	3.8
	275	4.0	4.3	3.6	3.6	4.6	3.6	3.7
	265	4.0	4.2	3.5	3.5	4.4	3.4	3.5
	255	3.9	4.1	3.4	3.4	4.3	3.2	3.4
	245	3.7	3.9	3.3	3.3	4.1	3.1	3.3
	235	3.7	3.9	3.2	3.2	3.9	3.0	3.1
	225	3.5	3.7	3.1	3.1	3.7	2.9	3.0
	215	3.4	3.6	3.0	2.9	3.6	2.8	2.8
	205	3.3	3.4	2.9	2.8	3.3	2.6	2.8
	195	3.2	3.3	2.8	2.7	3.2	2.6	2.7
	185	3.0	3.2	2.7	2.6	2.9	2.5	2.5
	175	2.9	3.1	2.6	2.5	2.7	2.5	2.4
	165	2.8	2.9	2.5	2.4	2.6	2.3	2.3
	155	2.7	2.7	2.4	2.4	2.4	2.2	2.2
	145	2.7	2.6	2.4	2.3	2.3	2.2	2.1
	135	2.5	2.5	2.3	2.3	2.2	2.2	2.1
	125	2.4	2.4	2.3	2.2	2.1	2.1	2.0
	115	2.4	2.4	2.2	2.1	2.0	2.0	2.0
	105	2.3	2.3	2.1	2.1	2.0	2.0	1.9
	95	2.3	2.2	2.1	2.1	2.0	2.0	1.9
	85	2.2	2.2	2.1	2.1	2.0	1.9	1.8
	75	2.2	2.2	2.1	2.0	2.0	1.9	1.8
	65	2.1	2.1	2.1	2.0	1.9	1.9	1.8
	55	2.1	2.1	2.0	2.0	1.9	1.9	1.8
	45	2.1	2.1	2.0	2.0	1.9	1.9	1.8
	35	2.1	2.1	2.0	2.0	1.9	1.9	1.8
	25	2.0	2.1	2.0	2.0	1.9	1.9	1.8
	15	2.0	2.1	2.0	2.0	1.9	1.9	1.8
	5	2.0	2.0	2.0	2.0	1.9	1.9	1.8

ALTERNATIVE B					
Vertical Plane 2-2b		Receptor Site R2-c =		1.6	fc
HORIZONTAL (ft)		280	290	300	310
VERTICAL (ft)	385	4.1	4.2	3.5	4.0
	375	4.3	4.6	3.8	4.2
	365	4.5	4.9	3.9	4.5
	355	4.6	5.0	4.0	4.7
	345	4.6	5.0	4.1	4.7
	335	4.7	5.2	4.1	4.8
	325	4.7	5.2	4.1	4.7
	315	4.6	5.1	4.0	4.6
	305	4.5	5.0	3.9	4.5
	295	4.4	4.8	3.9	4.4
	285	4.3	4.6	3.8	4.1
	275	4.1	4.4	3.5	3.9
	265	4.0	4.3	3.4	3.7
	255	3.8	4.0	3.3	3.4
	245	3.6	3.7	3.1	3.2
	235	3.4	3.4	2.9	3.0
	225	3.3	3.2	2.7	2.8
	215	3.1	3.0	2.7	2.6
	205	2.9	2.8	2.6	2.5
	195	2.7	2.6	2.4	2.4
	185	2.6	2.4	2.3	2.3
	175	2.4	2.3	2.2	2.2
	165	2.2	2.2	2.1	2.1
	155	2.2	2.1	2.0	2.0
	145	2.1	2.1	1.9	1.9
	135	2.0	1.9	1.9	1.8
	125	2.0	1.9	1.8	1.8
	115	1.9	1.9	1.8	1.7
	105	1.9	1.8	1.7	1.6
	95	1.8	1.7	1.7	1.6
	85	1.8	1.7	1.7	1.6
	75	1.8	1.7	1.7	1.6
	65	1.7	1.7	1.6	1.6
	55	1.7	1.7	1.6	1.6
	45	1.7	1.7	1.6	1.5
	35	1.8	1.6	1.6	1.5
	25	1.7	1.7	1.6	1.6
	15	1.8	1.7	1.6	1.6
	5	1.8	1.7	1.6	1.6
					R2-c

ALTERNATIVE B								
Vertical Plane 2-3a								
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	735	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	725	0.3	0.2	0.2	0.2	0.2	0.2	0.2
	715	0.3	0.3	0.2	0.2	0.2	0.2	0.2
	705	0.3	0.3	0.3	0.2	0.2	0.2	0.2
	695	0.3	0.3	0.3	0.3	0.3	0.2	0.2
	685	0.3	0.3	0.3	0.3	0.3	0.2	0.2
	675	0.3	0.3	0.3	0.3	0.3	0.2	0.2
	665	0.4	0.3	0.3	0.3	0.3	0.3	0.2
	655	0.4	0.3	0.3	0.3	0.3	0.3	0.2
	645	0.4	0.4	0.3	0.3	0.3	0.3	0.3
	635	0.4	0.4	0.3	0.3	0.3	0.3	0.2
	625	0.4	0.4	0.3	0.3	0.3	0.3	0.3
	615	0.4	0.4	0.4	0.3	0.3	0.3	0.3
	605	0.4	0.4	0.4	0.3	0.3	0.3	0.3
	595	0.5	0.4	0.4	0.3	0.3	0.3	0.3
	585	0.5	0.4	0.4	0.4	0.3	0.3	0.3
	575	0.5	0.4	0.4	0.4	0.4	0.3	0.3
	565	0.5	0.5	0.4	0.4	0.4	0.4	0.3
	555	0.5	0.5	0.5	0.4	0.4	0.4	0.3
	545	0.6	0.5	0.5	0.4	0.4	0.4	0.4
	535	0.6	0.6	0.5	0.5	0.4	0.4	0.4
	525	0.6	0.6	0.5	0.5	0.5	0.4	0.4
	515	0.7	0.6	0.5	0.5	0.5	0.4	0.4
	505	0.7	0.6	0.6	0.5	0.5	0.5	0.4
	495	0.7	0.7	0.6	0.6	0.5	0.5	0.4
	485	0.8	0.7	0.6	0.6	0.5	0.5	0.5
	475	0.8	0.7	0.6	0.6	0.6	0.5	0.5
	465	0.8	0.7	0.7	0.6	0.6	0.5	0.5
	455	0.8	0.8	0.7	0.6	0.6	0.5	0.5
	445	0.9	0.8	0.7	0.7	0.6	0.6	0.5
	435	0.9	0.8	0.7	0.7	0.6	0.6	0.5
	425	0.9	0.8	0.8	0.7	0.7	0.6	0.6
	415	0.9	0.8	0.8	0.7	0.7	0.6	0.6
	405	0.9	0.9	0.8	0.7	0.7	0.7	0.6
	395	1.0	0.9	0.8	0.8	0.7	0.7	0.6

ALTERNATIVE B								
Vertical Plane 2-3b			Receptor Site R2-c =		2.3	fc		
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	385	0.6	0.5	0.5	0.5	0.4	0.4	0.3
	375	0.6	0.5	0.5	0.4	0.4	0.4	0.4
	365	0.6	0.6	0.5	0.5	0.4	0.4	0.4
	355	0.6	0.5	0.5	0.5	0.4	0.4	0.3
	345	0.6	0.5	0.5	0.5	0.4	0.4	0.4
	335	0.6	0.6	0.5	0.5	0.5	0.4	0.4
	325	0.6	0.6	0.5	0.5	0.4	0.4	0.4
	315	0.7	0.6	0.6	0.5	0.5	0.4	0.4
	305	0.7	0.6	0.6	0.5	0.5	0.5	0.4
	295	0.7	0.6	0.6	0.5	0.5	0.5	0.4
	285	0.7	0.7	0.6	0.6	0.5	0.5	0.5
	275	0.7	0.7	0.6	0.6	0.5	0.5	0.5
	265	0.8	0.8	0.7	0.7	0.6	0.6	0.5
	255	0.9	0.8	0.7	0.7	0.6	0.6	0.6
	245	0.9	0.8	0.7	0.7	0.7	0.6	0.6
	235	0.8	0.8	0.7	0.7	0.6	0.6	0.6
	225	1.1	0.9	0.9	0.8	0.8	0.7	0.7
	215	1.2	1.1	1.0	0.9	0.8	0.7	0.7
	205	1.2	1.1	1.0	1.0	0.9	0.8	0.8
	195	1.1	1.0	1.0	0.9	0.8	0.8	0.7
	185	1.2	1.2	1.1	1.0	0.9	0.9	0.8
	175	1.5	1.4	1.3	1.1	1.0	1.0	0.9
	165	1.6	1.5	1.4	1.3	1.1	1.0	1.0
	155	1.7	1.6	1.4	1.3	1.2	1.1	1.0
	145	1.6	1.5	1.4	1.3	1.2	1.1	1.0
	135	1.9	1.7	1.5	1.4	1.2	1.2	1.1
	125	2.1	1.9	1.7	1.5	1.3	1.2	1.2
	115	2.1	2.0	1.8	1.6	1.4	1.3	1.2
	105	2.3	2.0	1.9	1.6	1.5	1.4	1.3
	95	2.5	2.2	2.0	1.8	1.6	1.4	1.3
	85	2.6	2.2	2.0	1.8	1.6	1.4	1.3
	75	2.6	2.4	2.1	1.9	1.6	1.4	1.3
	65	2.7	2.4	2.1	1.8	1.6	1.5	1.3
	55	2.8	2.4	2.1	1.8	1.7	1.4	1.3
	45	2.7	2.4	2.1	1.8	1.6	1.4	1.3
	35	2.6	2.4	2.1	1.8	1.6	1.4	1.3
	25	2.6	2.4	2.0	1.8	1.6	1.4	1.2
	15	2.5	2.2	1.9	1.7	1.5	1.4	1.2
R2-c	5	2.3	2.2	1.9	1.6	1.5	1.3	1.2

ALTERNATIVE B									
Vertical Plane 3-1									
HORIZONTAL (ft)		0	10	20	30	40	50	60	70
VERTICAL (ft)	105	7.6	8.2	8.7	9.5	10.4	11.3	12.1	12.8
	95	8.2	8.9	9.5	10.5	11.5	12.5	13.2	14.1
	85	8.8	9.5	10.2	11.2	12.3	13.3	14.2	15.2
	75	9.3	10	10.8	11.8	12.9	14.1	15	16
	65	9.6	10.5	11.1	12.3	13.5	14.7	15.6	16.6
	55	9.7	10.5	11.4	12.5	13.7	15	16	17.1
	45	9.9	10.6	11.4	12.6	13.8	15	16.1	17.2
	35	9.8	10.5	11.2	12.5	13.6	14.9	15.8	17
	25	9.5	10.2	10.9	12	13.2	14.4	15.4	16.5
	15	9.2	9.8	10.5	11.5	12.7	13.8	14.7	15.7
	5	8.7	9.3	9.8	10.9	12	13	13.8	14.7

ALTERNATIVE B									
Vertical Plane 3-1									
HORIZONTAL (ft)		80	90	100	110	120	130	140	150
VERTICAL (ft)	105	13.4	14	14.5	14.8	15.2	15.3	15.5	15.5
	95	14.8	15.4	15.8	16.3	16.7	16.9	17.1	17.1
	85	15.9	16.7	17.2	17.6	18	18.3	18.5	18.5
	75	16.9	17.7	18.2	18.7	19.1	19.4	19.6	19.6
	65	17.5	18.4	18.9	19.5	19.9	20.2	20.4	20.4
	55	18	18.8	19.3	20	20.5	20.7	20.9	20.9
	45	18.1	19	19.6	20.1	20.5	20.9	21	21.1
	35	17.8	18.8	19.4	19.9	20.3	20.6	20.8	20.8
	25	17.4	18.2	18.8	19.3	19.7	20	20.2	20.1
	15	16.5	17.4	17.9	18.4	18.9	19	19.3	19.2
	5	15.5	16.3	16.8	17.3	17.7	18	18.1	18.1

ALTERNATIVE B									
Vertical Plane 3-1									
HORIZONTAL (ft)		160	170	180	190	200	210	220	230
VERTICAL (ft)	105	15.6	15.6	15.5	15.6	15.4	15.1	15.1	15
	95	17.2	17.1	17.1	17	16.9	16.6	16.4	16.5
	85	18.5	18.4	18.3	18.3	18	17.7	17.6	17.4
	75	19.6	19.5	19.5	19.2	19	18.6	18.4	18.3
	65	20.4	20.2	20.1	19.9	19.6	19.2	19	18.8
	55	20.8	20.7	20.5	20.3	20	19.6	19.2	19.1
	45	20.9	20.7	20.6	20.4	20	19.6	19.2	19
	35	20.6	20.5	20.4	20.1	19.7	19.2	18.9	18.7
	25	20	19.9	19.7	19.4	19.1	18.6	18.3	18
	15	19.2	19	18.8	18.5	18.1	17.7	17.4	17.1
	5	18	17.9	17.7	17.4	17	16.6	16.2	16

ALTERNATIVE B									
Vertical Plane 3-1									
HORIZONTAL (ft)		240	250	260	270	280	290	300	310
VERTICAL (ft)	105	14.8	14.8	14.6	14.6	14.6	14.6	14.4	14.4
	95	16.2	16	16	15.8	16	15.7	15.7	15.7
	85	17.2	17	17	16.9	16.9	16.8	16.4	16.6
	75	18	17.8	17.7	17.4	17.7	17.5	17.3	17.1
	65	18.5	18.2	18.2	17.9	18	17.8	17.7	17.5
	55	18.8	18.5	18.3	18.2	18.2	18.1	17.8	17.7
	45	18.6	18.5	18.2	18.1	18.1	17.8	17.5	17.6
	35	18.2	18	17.7	17.6	17.7	17.5	17.1	17.1
	25	17.6	17.4	17.1	17	17.1	16.7	16.4	16.5
	15	16.8	16.5	16.3	16	16.2	16	15.6	15.7
	5	15.7	15.5	15.3	15.1	15.2	15	14.6	14.6

ALTERNATIVE B									
Vertical Plane 3-1									
HORIZONTAL (ft)		320	330	340	350	360	370	380	390
VERTICAL (ft)	105	14.7	14.4	14.3	14.3	14.2	13.7	13.7	13.5
	95	16	15.6	15.3	15.4	15.5	15.2	15	15.1
	85	17	16.7	16.4	16.3	16.3	16.2	15.8	16.4
	75	17.7	17.3	17	17.1	16.9	16.5	16.6	16.9
	65	18	17.7	17.4	17.3	17	17	16.8	17.1
	55	18.1	17.7	17.5	17.6	17.1	16.9	17.3	17.4
	45	18.1	17.7	17.4	17.5	16.9	16.8	17.1	17
	35	17.6	17.4	17	17	16.4	16.7	16.5	16.7
	25	16.9	16.8	16.3	16.5	16	15.4	15.9	16.1
	15	16.2	15.7	15.5	15.4	15.2	14.8	14.8	15
	5	14.9	14.7	14.3	14.4	14.2	14	13.9	13.8

ALTERNATIVE B										
Vertical Plane 3-1										
HORIZONTAL (ft)		400	410	420	430	440	450	460	470	480
VERTICAL (ft)	105	13.4	12.6	12.5	12.2	11.7	11.2	10.9	10.5	9.8
	95	15	14.2	13.5	13.7	13.3	12.8	12.4	11.5	11
	85	15.2	14.8	14.5	14.8	14.4	13.3	12.9	12.4	11.6
	75	16.6	15.8	15.2	15.4	14.5	13.9	14	13	12.5
	65	17	16.1	16	16.2	15.3	14.7	14.1	13.5	12.8
	55	16.9	15.9	16	15.6	15.4	14.6	14.2	13.4	12.4
	45	16.3	16	15.7	15.9	15.2	14.7	13.6	13.2	12.6
	35	16.2	15.6	15.1	15.1	15	13.9	13.6	12.8	12
	25	15.3	15.1	14.6	14.7	14.7	13.5	12.8	12	11.6
	15	14.4	13.8	13.4	13.8	13	12.6	12	11.3	10.7
	5	13.8	13.2	12.5	13	12.2	11.5	11.1	10.5	9.9

ALTERNATIVE B								
Vertical Plane 4-1		Receptor Site R4-a =				0.3	fc	
HORIZONTAL (ft)		0	10	20	30	40	50	60
VERTICAL (ft)	85	0.2	0.2	0.2	0.2	0.2	0.2	0.3
	75	0.2	0.2	0.2	0.2	0.3	0.3	0.3
	65	0.2	0.2	0.3	0.2	0.3	0.3	0.3
	55	0.2	0.2	0.3	0.2	0.3	0.3	0.3
	45	0.3	0.2	0.3	0.3	0.3	0.3	0.3
	35	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	25	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	15	0.3	0.3	0.3	0.3	0.3	0.3	0.3
R4-a	5	0.3	0.3	0.3	0.3	0.3	0.3	0.3

ALTERNATIVE B								
Vertical Plane 4-1								
HORIZONTAL (ft)		70	80	90	100	110	120	130
VERTICAL (ft)	85	0.3	0.3	0.3	0.3	0.4	0.4	0.4
	75	0.3	0.3	0.3	0.3	0.4	0.4	0.4
	65	0.3	0.3	0.3	0.4	0.4	0.4	0.4
	55	0.3	0.3	0.3	0.4	0.4	0.4	0.5
	45	0.3	0.3	0.3	0.4	0.4	0.4	0.5
	35	0.3	0.3	0.4	0.4	0.4	0.5	0.5
	25	0.3	0.4	0.4	0.4	0.4	0.5	0.5
	15	0.3	0.4	0.4	0.4	0.5	0.5	0.5
	5	0.4	0.4	0.4	0.4	0.5	0.5	0.6

ALTERNATIVE B								
Vertical Plane 4-1								
HORIZONTAL (ft)		140	150	160	170	180	190	200
VERTICAL (ft)	85	0.4	0.5	0.5	0.6	0.6	0.6	0.6
	75	0.5	0.5	0.6	0.6	0.6	0.7	0.7
	65	0.5	0.5	0.6	0.7	0.7	0.7	0.8
	55	0.5	0.6	0.7	0.7	0.7	0.8	0.8
	45	0.5	0.6	0.7	0.7	0.8	0.8	0.9
	35	0.6	0.6	0.7	0.8	0.8	0.9	0.9
	25	0.6	0.6	0.7	0.8	0.8	0.9	1.0
	15	0.6	0.7	0.8	0.8	0.9	0.9	1.0
	5	0.6	0.7	0.8	0.8	0.9	0.9	1.0

ALTERNATIVE B					
Vertical Plane 4-1		Receptor Site R4-b =		2.1	fc
HORIZONTAL (ft)		210	220	230	240
VERTICAL (ft)	85	0.8	1.1	1.2	1.4
	75	1.0	1.2	1.5	1.7
	65	1.0	1.3	1.6	1.7
	55	1.1	1.4	1.7	1.9
	45	1.2	1.5	1.7	2.0
	35	1.2	1.6	1.8	2.0
	25	1.3	1.6	1.8	2.1
	15	1.3	1.6	1.9	2.1
	5	1.3	1.6	1.9	2.1
					R4-b

ALTERNATIVE B 350 cd/m²

Horizontal Plane 1-1				Horizontal Plane 2-1				
	(ft)	0	10		(ft)	0	10	20
R1-b	0	2.6	2.4	R2-a	0	1.2	0.9	0.9
PARALLEL TO PROPERTY LINE (ft)	10	3.1	2.9	PARALLEL TO PROPERTY LINE (ft)	10	1.3	1.0	1.2
	20	3.7	3.4		20	1.4	1.1	1.3
	30	4.2	3.9		30	1.5	1.2	1.4
	40	4.6	4.3		40	1.6	1.3	1.5
	50	5.2	4.7		50	1.7	1.4	1.6
	60		5.6		60	1.4	1.6	
	70		6.1		70	1.4	1.6	
	80		6.4		80	1.4	1.6	
	90	7.4	6.7		90	1.4	1.6	
	100	7.8	6.9		100	1.4	1.6	
	110	7.8	7.2		110	1.3	1.5	
	120	8.1	7.6		120	1.3	1.5	
	130	8.5	7.6		130	1.2	1.3	
	140	8.8	7.8		140	1.0	1.2	
	150	8.9	7.7	R2-b	150	1.0	0.8	
	160	9.3	7.9					
	170	9.8	8.1					
	180	10.2	7.9					
	190	10.6	8					
	200		10.6					
	210		10.6					
	220		10.6					
	230		10.6					
	240	11.1	10.3					
	250	10.6	9.8					
	260	10.1	9.2					
	270	9	8.5					
	280	8.3	7.8					
	290	7.1	6.4					
	300	6.4	5.6					
	310	5.8	5					
R1-a	320	5.3	4.6					

ALTERNATIVE B 350 cd/m²

Horizontal Plane 2-2				Horizontal Plane 2-3			
		(ft)				(ft)	
PARALLEL TO PROPERTY LINE (ft)		0	10	R2-c	0	1.3	1.2
	0	0.8	0.8	PARALLEL TO PROPERTY LINE (ft)	10	1.2	1.3
	10	0.9	0.9		20	1.1	1.2
	20	0.9	0.9		30	1.1	1.1
	30	1.1	1		40	0.9	1
	40	1.1	1.1		50	0.7	0.8
	50	1.2	1.2		60	0.6	0.6
	60	1.3	1.2		70	0.6	0.6
	70	1.4	1.4				
	80	1.4	1.4				
	90	1.5	1.4				
	100	1.6	1.5				
	110	1.7	1.6				
	120	1.7	1.7				
	130	1.7	1.7				
R2-c	140	1.4	1.6				

ALTERNATIVE B 350 cd/m ²			
Horizontal Plane 4-1			
	(ft)	0	10
R4-a	0	0.4	
PARALLEL TO PROPERTY LINE (ft)	10	0.4	
	20	0.4	
	30	0.4	
	40	0.4	
	50	0.4	
	60	0.4	
	70	0.4	
	80	0.4	
	90	0.4	
	100	0.5	
	110	0.5	0.5
	120	0.5	0.5
	130	0.5	0.5
	140	0.5	0.5
	150	0.5	0.5
	160	0.5	0.5
	170	0.5	0.5
	180	0.5	0.5
	190	0.5	0.5
	200	0.5	0.5
	210	0.7	0.6
	220	0.7	0.7
	230	0.8	0.7
R4-b	240	0.8	0.7

