

Appendix C

Lighting Analysis Report

Inglewood Basketball and Entertainment Center Lighting Analysis

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1 - EXECUTIVE SUMMARY

This report considers the potential impacts of the façade lighting, exterior plaza lighting, parking garage lighting, large scale integrated electronic display signs, etc., for the proposed Inglewood Basketball and Entertainment Center (IBEC) project (Proposed Project). The Proposed Project consists of main arena site, exterior events plaza, hotel, retail, and restaurant uses, and is located in Inglewood, California. This analysis describes the visual setting of the Proposed Project, analyzes and evaluates the potential for impacts relating to lighting and signage, and recommends mitigation measures, as necessary, to ensure that potential impacts related to lighting are minimized or avoided. Potential impacts related to lighting would include items such as light trespass onto nearby properties, glare contributors, sensitivity zones, etc. The goal is to show that the proposed lighting solution will meet code required impacts levels.

2 - PROJECT DESCRIPTION

2.1 Introduction

This chapter presents information regarding the components and characteristics of the proposed Inglewood Basketball and Entertainment Center (IBEC, or Proposed Project). This section describes the site where the Proposed Project will be located (Project Site), which consists of the following elements:

Arena Site: The central part of the Project Site. The features located on the Arena Site include the arena, a privately-owned outdoor plaza, community space, practice facility, sports medicine clinic, team offices, retail/restaurants, a parking structure, and related development;

West Parking Garage Site: The part of the Project Site west of the Arena Site. The features located on the West Parking Garage Site include a multi-level parking structure to serve patrons of the Arena Site;

East Transportation and Hotel Site: The portion of the Project Site east of the Arena Site, across South Doty Avenue. The East Transportation and Hotel Site includes a three-story parking garage located on a portion of the site fronting West Century Boulevard, along with a paved surface lot area on a portion of the site fronting West 102nd Street. The ground floor of the parking garage and the surface lot area will serve as a transportation hub. The transportation hub includes a staging and parking area for coach buses and microtransit vehicles, a passenger loading area, and a staging/queuing area for transportation network company (TNC) vehicles such as Uber and Lyft vehicles, and taxis serving the Arena Site.¹ The second and third floors of the garage would provide parking for patrons of the Arena Site. The east side of the East Transportation and Hotel Site would include a limited service hotel and associated parking facilities; and

Well Relocation Site: The portion of the Project Site immediately east of the Arena Site. The Well Location Site would contain a City-owned and -operated potable water well.

The Project Site is located in the southwestern portion of the City of Inglewood within Los Angeles County, approximately 10 miles south/southwest of downtown Los Angeles. The Project Site is located immediately to the south of the Hollywood Park Specific Plan (HPSP) area, within which a new National

¹ The East Transportation and Hotel Site could accommodate pick-ups and drop-offs of employees and attendees using private buses, charter buses, microtransit, TNCs, taxis, or other private vehicles. It would not be used as a connection point for public transportation options such as Metro buses.

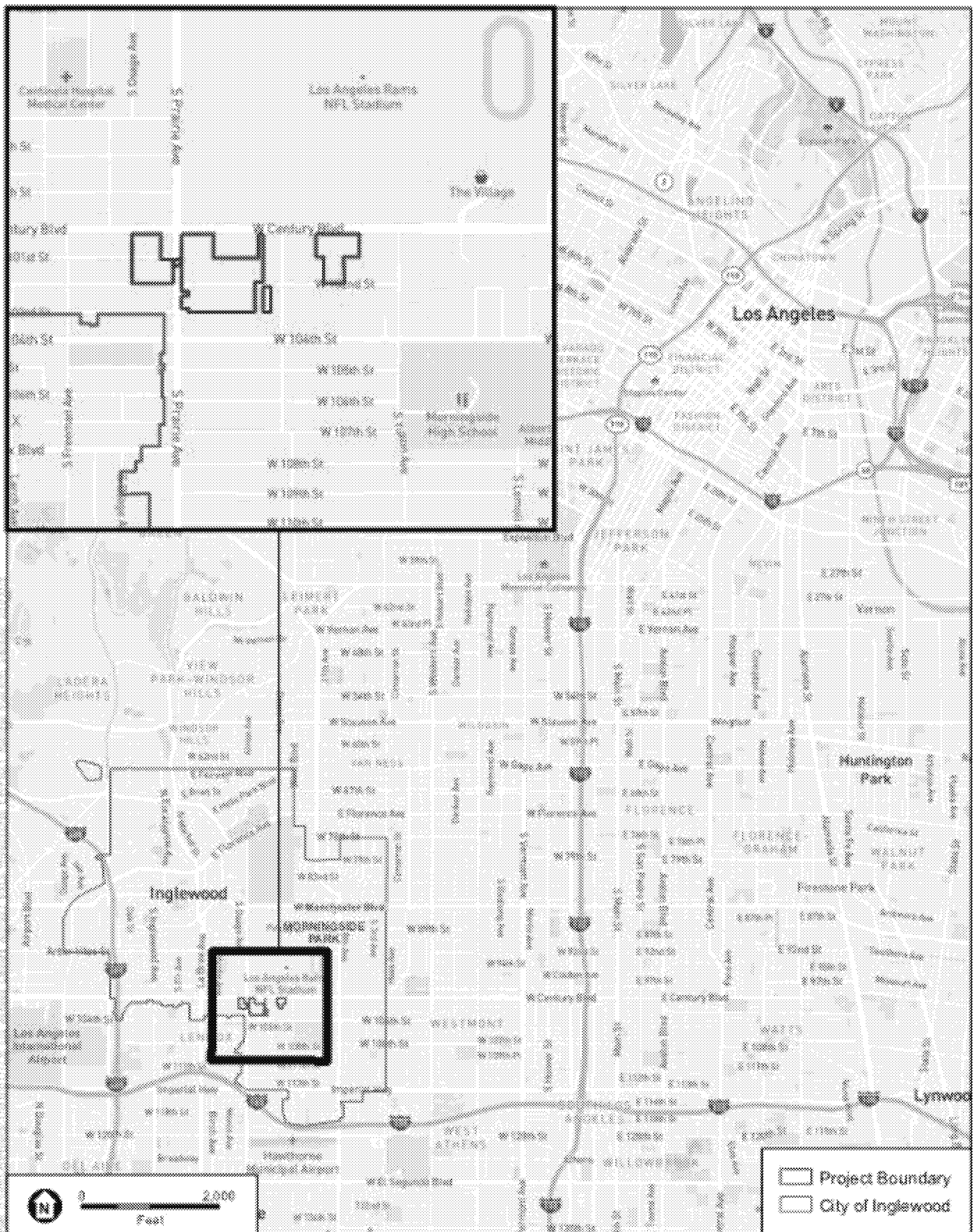
Football League (NFL) stadium, the future home of the Los Angeles Rams and Los Angeles Chargers teams, is under construction. The HPSP also authorizes development of retail, office, residential, and parking development. The Forum, an approximately 18,000-seat entertainment venue, is located approximately three-quarters of a mile north of the Project Site, near the intersection of South Prairie Avenue and Manchester Boulevard.

Local access is provided by West Century Boulevard that borders the Project Site on the north and is a commercial corridor that runs east-west through the City of Inglewood. South Prairie Avenue is also major commercial corridor which passes through the Project Site between the Arena Site to the east and the West Parking Garage Site to the west and provides north-south access through the City of Inglewood and beyond. The Project Site is located approximately 1.5 miles east of the Los Angeles International Airport (LAX) and approximately 1.5 miles north of the Hawthorne Municipal Airport.

2.2 Project Site Existing Conditions

The entire Project Site is comprised of approximately 28 acres of land, as shown in **Figure 2-1**. The main portion of the Project Site is bounded by West Century Boulevard on the north, South Prairie Avenue on the west, South Doty Avenue on the east, and a straight line extending east from West 103rd Street to South Doty Avenue to the south. This approximately 17-acre area is described as the Arena Site. The Project Site includes three additional components: the West Parking Garage Site is an approximately 5-acre site bounded by West Century Boulevard to the north, hotel and residential uses to the west, South Prairie Avenue to the east, and West 102nd Street to the south; the East Transportation and Hotel Site is an approximately 5-acre site bounded by West Century Boulevard to the north, industrial and commercial uses to the east and west, and West 102nd Street to the south; and the Well Relocation Site is an approximately 0.7-acre parcel located at 3812 West 102nd Street, surrounded by vacant land to the west and south and bounded by residential uses to the east.

Figure 2-1 – Reference Regional Map

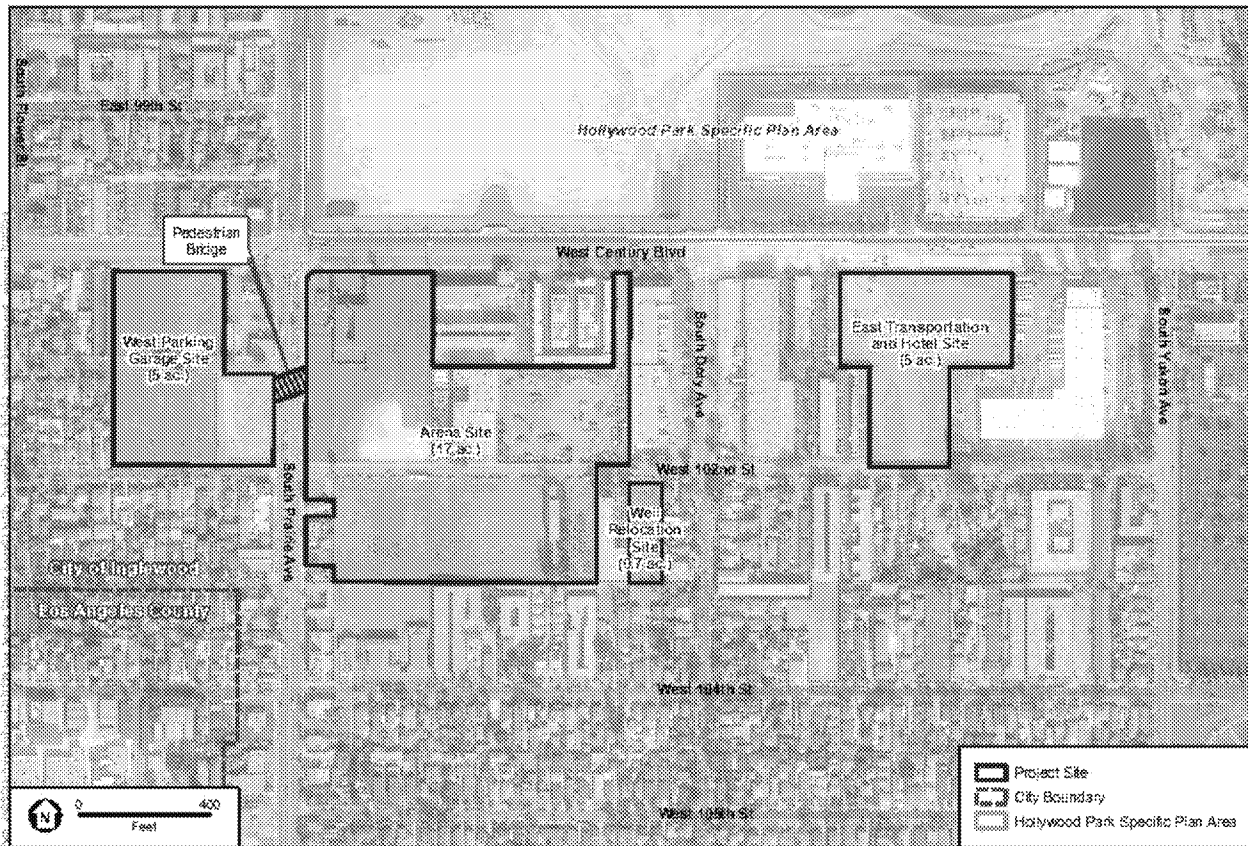


SOURCE: Open Streetmap, 2018; ESA, 2019.

Inglewood Basketball and Entertainment Center

As shown in **Figure 2-2**, most of the Project Site, approximately 84 percent, consists of parcels owned by the City of Inglewood or the City of Inglewood as Successor Agency to the Inglewood Redevelopment Agency.

Figure 2-2 – Reference Project Site



SOURCE: TerraServer, 2018; ESA, 2019.

Inglewood Basketball and Entertainment Center

2.3 Existing Uses on the Project Site

All but six of the parcels that make up the Project Site are currently vacant or undeveloped. The vacant parcels within the Project Site total approximately 23 acres, or more than 85 percent of the Project Site. The six developed parcels include a fast-food restaurant, a motel, a light manufacturing/warehouse facility, a warehouse, a commercial catering business, and a groundwater well and related facilities as shown in **Table 1**.

**TABLE 1
PROJECT SITE AND EXISTING DEVELOPMENT**

Use	Name	Site Area (acres)	Existing Development SF
Arena Site		16.71	54,098
Commercial (Fast-Food Restaurant)	Church's Chicken Restaurant	0.33	1,118
Commercial (Motel)	Rodeway Inn & Suites	0.66	16,806
Light Manufacturing/Warehouse	3915 West 102 nd Street	1.03	28,809
Warehouse	3838 West 102 nd Street	0.35	6,231
Commercial (Catering)	Let's Have a Cart Party	0.19	1,134
Water Infrastructure	Groundwater Well #6	0.34	0
Vacant	All vacant parcels Four outdoor advertising displays Street right-of-way	13.81	0
West Parking Garage Site		5.55	0
Vacant	Vacant parcels Street right-of-way	5.55	
East Transportation and Hotel Site		5.16	0
Vacant		5.16	
Well Relocation Site		0.70	0
Vacant		0.70	
Total Project Site		28.12 acres	54,098 sf

SOURCES: Los Angeles County Assessor Portal, 2018. Available: <https://portal.assessor.lacounty.gov/>. Accessed June 25, 2018. TerraServer, 2018.

2.4 Project Elements

The Proposed Project would include demolition of the existing on-site development and the subsequent construction of the proposed IBEC. **Table 2-2** summarizes the existing and proposed development for the Proposed Project.

Project components would include an approximately 915,000-square foot (sf) multi-purpose arena designed to host the LA Clippers basketball team with up to 18,000 fixed seats for National Basketball Association (NBA) games. The arena could also be configured with up to 500 additional temporary seats for events such as family shows, concerts, conventions and corporate events, and non-LA Clippers sporting events. The LA Clippers currently play their games at the Staples Center in downtown Los Angeles, and the LA Clippers' team offices are currently located on Flower Street within two blocks of Staples Center. Upon completion of the Proposed Project, all LA Clippers home basketball games would be played at the proposed arena, and LA Clippers' team offices would be relocated there. The LA Clippers' existing practice and athletic training facilities are located in the Playa Vista neighborhood within Los Angeles. The LA Clippers practice and athletic training facility would be relocated to the Project Site upon completion of the Proposed Project.

**TABLE 2-2
IBEC PROPOSED USES**

Project Component	Example Uses	Size
Arena Site		
Arena	Premium and general seating	18,000 fixed seats with 500 temporary floor seats (approximately 915,000 sf)
LA Clippers Office Space	Offices, conference areas, kitchens, maintenance, and janitorial storage	71,000 square feet
LA Clippers Team Practice and Training Facility	Team locker room, showers, and support spaces; video room; training and treatment; auxiliary locker rooms, basketball support and security, administrative offices	85,000 sf
Sports Medicine Clinic	Medical offices, medical treatment and rehabilitation areas, waiting areas, maintenance, and janitorial storage for team and potential general public use	25,000 sf
Community Space	Exhibition, educational, and event space for community and youth-oriented uses	up to 15,000 sf
Commercial Uses	Retail shops, full service and quick service restaurants, kitchens, bars, and food service offices	
	<i>Full-Service Restaurant/Bar¹</i>	<i>15,000 sf</i>
	<i>Coffee Shop</i>	<i>5,000 sf</i>
	<i>Quick Service Restaurant</i>	<i>4,000 sf</i>
	<i>LA Clippers Team Store</i>	<i>7,000 sf</i>
	<i>Other LA Clippers Experience/General Retail</i>	<i>17,000 sf</i>
	Total Commercial Uses	48,000 sf
Outdoor Plaza	Outdoor community gathering space and landscaping	80,000 sf (surface area)
Parking Garage	Parking for premium ticket holders, VIPs, and certain team personnel	650 spaces
West Parking Garage Site		
Parking Garage	Parking for arena and retail visitors and employees	2,940 spaces
Bus Staging and Transportation Network Company Drop-Off	Private and charter bus staging, taxi queuing, and rideshare pick-up/drop off	166 car (TNC) spaces 23 coach/bus spaces 20 mini bus spaces
East Transportation and Hotel Site		
Surface parking	Parking for Project visitors	420 spaces
Hotel	Hotel rooms, lobby area, administration offices, support areas, and parking	Up to 150 guest rooms
Well Relocation Site		
Water Well	City of Inglewood Groundwater Well #8	n/a

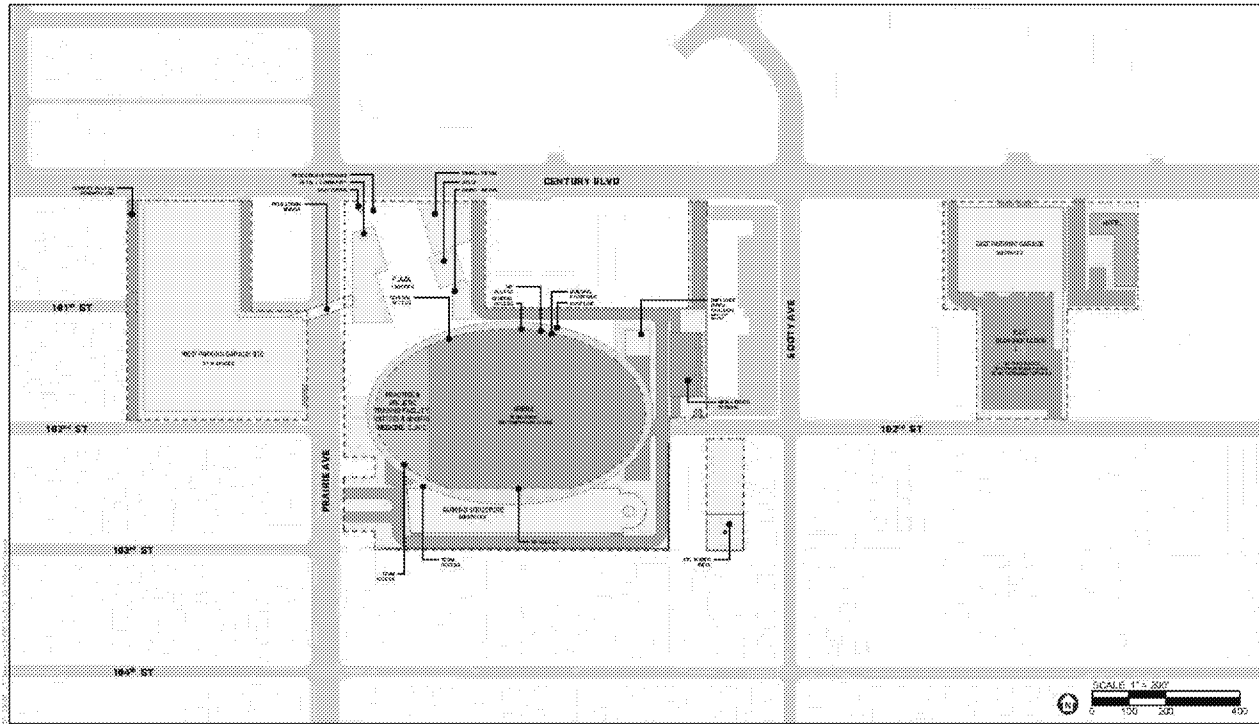
NOTE:

1 This use may be developed as two or more spaces on the Arena Site. Uses could include indoor, outdoor, patio, and/or rooftop restaurant, bar, or lounge space, totaling not more than 15,000 sf total.

SOURCE: Murphy's Bowl, LLC, September 27, 2018.

Figure 2-3 is an overlay of each of the project sites in relation to the existing commercial and residential sites. This shows project boundaries and estimated acreage, seating capacity, and parking space quantity per applicable area.

Figure 2-3– Reference Project Site



2.5 Signage and Lighting

Signage

The Proposed Project would include extensive, varied signage that would promote the LA Clippers, building activities and events, building and team sponsors, civic activities, restaurants and bars, and other products and services. Project signage may include wall signs, digital displays and streaming signage, super graphic signs, hotel building identification, retail and restaurant building identification, parking entry identification, loading dock entry identification, and wayfinding signage.

Signs could be stationary, lit signs adhered to buildings, or projections onto glass or solid surfaces. Signs could be digital using LEDs (light emitting diodes) to convey changing messages and images, or they could utilize other technologies that may emerge in the future. Because people would approach the venue from different locations around the Project Site, signage would be provided on different sides of the Project Site to provide wayfinding and advertising. Signs could be internal within the arena, or external, adhered to the Arena Structure, free-standing in the plaza, adhered to the hotel, parking structures, pedestrian bridges, or free-standing within parking structures, sidewalks, and street fronts.

A marquee tower sign would be provided at the southeast corner of West Century Boulevard and South Prairie Avenue, at the northwest corner of the plaza.

Rooftop signage would be present on top of the Arena Structure.

Lighting

The type of lighting and its intensity on the Project Site would vary, depending on how the venue is being used at any given time. It is anticipated that most intense lighting on the Project Site would be within the Arena Site which would be brightly lit for visibility during events and at other times of the day and night. Interior lighting may be seen through transparent facets (glass or perforated materials) on the Arena Structure façade. Exterior lighting for the Arena Site would be provided to illuminate different areas of the Arena Structure and adjacent plaza. Within the plaza, high-intensity (bright and colorful) lighting, signage, digital displays, and projection lights would be used. Lighting could also include the use of pyrotechnics, such as fire and low-level fireworks (such as large sparklers).

The vertical surfaces of the arena and its adjacent commercial, office, and community facility buildings would be illuminated in a manner that highlights its architecture and creates welcoming street edges. The parking areas, the pedestrian bridge, and the hotel site would be illuminated to highlight circulation paths, landscape features, and to create a safe pedestrian experience. Additional way-finding lights would be provided to help orient people around the Project Site. All lighting would be directed into the interior of the Project Site, and away from offsite areas, including residences and open space areas.

2.6 Project Variants

The Proposed Project includes two variants to circulation infrastructure. These variants are briefly described in this chapter and are fully described in Chapter 5, Project Variants. These variants are not proposed as part of the Project because there is some uncertainty about the feasibility of the variants. They are being identified and analyzed, however, to provide the flexibility to allow the City to approve them as part of the Proposed Project, if desired, and if the uncertainty around the implementation of one or both of the variants can be overcome. Therefore, analysis of the project variants is included in Chapter 5.

Each project variant would include the same parking/loading, mechanical equipment, vehicular circulation, TDM program, streetscape improvements, and sustainability features as the Proposed Project. The variants are not mutually exclusive – the City potentially could approve either or both.

West Century Boulevard Pedestrian Bridge Variant

The West Century Boulevard Pedestrian Bridge Variant would result in the construction of a second pedestrian bridge across West Century Boulevard (the Century Pedestrian Bridge), connecting a retail portion of the Arena Site to the Hollywood Park Specific Plan area to the north (see **Figure 2-22**). The pedestrian bridge would provide a vertical clearance of approximately 14.5 to 15 feet over West Century Boulevard. The pedestrian bridge would connect with similar retail uses on the north side of West Century Boulevard. The pedestrian bridge would be constructed of materials similar to the Proposed Project's retail building in the plaza or the Arena Structure. The West Century Boulevard Pedestrian Bridge Variant could be incorporated into the development of either the Proposed Project or the Alternate South Prairie Avenue Access Variant.

This variant is being included because it is unknown whether the property owner north of the Project Site would agree to connect a pedestrian bridge to their property on the north side of West Century Boulevard. The pedestrian bridge connection north of West Century Boulevard could tie into future retail or other

uses planned on that site. Because there is uncertainty about whether a pedestrian bridge could tie into the property to the north, this element is being evaluated as a project variant.

Alternate Prairie Access Variant

This variant would expand the boundary of the Arena Site portion of the Project Site by adding two additional properties to the Proposed Project: 10204 South Prairie Avenue and 10226 South Prairie Avenue. These two properties currently contain a single-family home and a triplex. Under this variant, the properties would be acquired through voluntary sales by the property owners to the project applicant. The residential uses on these two properties would be acquired and demolished as part of the Proposed Project. The acquisition and demolition of these two structures would allow the Arena Structure to be shifted slightly. As part of the Alternate Prairie Access Variant, the drop-off area for employees, team members, and visitors to the Arena Site would also shift slightly south, and site access to South Prairie Avenue would be slightly shifted south to more closely align with West 103rd Street. However, the overall circulation plan for the Project Site would not change.

This variant is being included because whether the owners of these residential properties will agree to sell them to the applicant is unknown at this time. For this reason, there is uncertainty about whether these parcels will be acquired.

3 – PROJECT ANALYSIS SCOPE

3.1 Analysis Methodology

The purpose of this lighting analysis report is to examine the various components of the Proposed Project – the Arena Site, West Parking Garage Site, East Transportation and Hotel Site, Well Relocation Site, and the Project Variants – and evaluate the lighting impacts the Proposed Project may have on surrounding uses.

This analysis will describe the pedestrian survey performed to evaluate the existing conditions surrounding the project site, noting the locations, intensity, and directionality of light sources in the area and those sources' proximity to residential receptors.

The lighting analysis will discuss the existing lighting codes and regulations per the City of Inglewood, the California Environmental Quality Act (CEQA), recommended lighting levels and practices per the Illuminating Engineering Society (IESNA), Title 24 limitations on signage energy consumption, Backlight Uplight and Glare (BUG) ratings, and Federal Aviation Administration (FAA) regulations on lighting which could affect plane travel.

We will use the existing lighting codes and regulations as the guidance tool for determining the impact of the project lighting for the analysis. The analysis will evaluate the type, positioning, intensity, and brightness of light fixtures anticipated to be used for the Proposed Project's façade lighting, interior lighting visible through glass walls, plaza lighting, stage lighting, rooftop lighting, garage lighting, street lighting, bridge lighting, and signage/billboard lighting. The analysis will then provide guidance, as needed, on ways to reduce lighting and spillover lighting effects resulting from the Proposed Project.

3.2 Lighting Regulations and Codes

The following regulations govern the intensity of allowable light on the Project Site:

- City of Inglewood – Design and Development Standards and Guidelines
- City of Inglewood Municipal Code
- The California Environmental Quality Act (CEQA)
- Illuminating Engineering Society (IESNA) recommended practices
- Title 24 limitations on signage energy consumption
- Backlight, Uplight, Glare (BUG) ratings
- Federal Aviation Administration (FAA) regulations

City of Inglewood – Design and Development Standards and Guidelines

The following documents pertaining to the City of Inglewood were received from Angel Leon-Martell – Planning Technician of the City of Inglewood. The documents do not provide any technical standards or requirements regarding lighting levels and amounts of contributed light. They are more loose and vague recommendations for better practices.

The City of Inglewood Community Development and Housing Department.

Adopted January 30, 1979.

Ordinance No. 2328.

The purpose of this document is to present design standards and guidelines for the improvement or development of property in the City of Inglewood. It is intended that these guidelines will assist the property owner and the developer by providing a consistent and understandable point of reference. These guidelines will serve as the basis from which development proposals will be evaluated by city staff and the Planning Commission. With these guidelines and standards as a basis, the property owner or developer will be aware from the predesign stage of what the opportunities and constraints are for their particular project.

Guidelines included in this document are not intended to inhibit innovative design solutions or unique alternatives. Flexibility for economic and aesthetic choice has been incorporated whenever possible. The standards are intended to be somewhat flexible in the recognition that, in some instances, certain basic principles may not be workable for in individual project.

Parking:

To reduce intrusion into residential neighborhoods, parking lots should take access from other than residential streets, except when a lot is serving a residential use.

All artificial illumination shall be installed, directed, and shielded to confine all direct rays within the parking facility. (Page 25)

Landscaping:

Exterior lighting, signs, walls and walkways should also be incorporated as an integral part of the landscape design. (Page 32)

Lighting:

The provision of exterior lighting should be directed at two basic objectives: (1) Provide security and safety for vehicles and pedestrians; and (2) provide a system that helps to integrate design elements of the building and landscaping.

Guidelines-

1. Luminaires and lighting fixtures should be coordinated on a basis of function and appearance.
2. Energy conservation should be considered in determining a desirable lighting system.
3. Decorative lighting can attract attention to a site and should be treated as a subtle, dignified, and effective method of enhancing a development.
4. Vehicle entrances and driveways, parking and service areas, and pedestrian entrances, walkways, and activity areas should be lighted to provide security and safety.

Standards-

1. Luminaires and lighting fixtures shall be selected on the basis of appropriate appearance and performance.
2. Steps and other potentially hazardous grade breaks along circulation paths shall be lighted for safety.
3. Lighting shall not appear to be animated.
4. Exterior lighting shall be installed, directed and shielded to confine all direct rays of artificial light within the boundaries of the development.
5. Electrical service for lighting shall be placed underground or within buildings unless determined to be physically unfeasible by the Superintendent of Building and Safety. (Page 44)

Signage:

Lighted signs should be designed so that they are not unnecessarily bright. (Page 49)

Flashing or moving signs, none are permitted except for time and temperature recording devices or other public service messages. (Page 51)

City of Inglewood Municipal Code

The following documents pertaining to the City of Inglewood were received from Angel Leon-Martell – Planning Technician of the City of Inglewood. The documents do not provide any technical standards or requirements regarding lighting levels and amounts of contributed light. They are more loose and vague recommendations for better practices.

The City of Inglewood requires compliance with the following codes and regulations:

- California Building Code
- California Electrical Code - 2016
- California Energy Commission

Section 12-55.5. Parking Lot Site Improvements

(A) Perimeter Walls. Except at driveways and pedestrian walkways, all parking lots abutting a public street or sidewalk shall be bounded by a decorative masonry wall parallel to the street and set back not less than three feet from the property line. Such walls shall be not less than three feet nor more than three and one-half feet high, as measured from the parking lot side. The space between the wall and the abutting sidewalk or street shall be landscaped. Such facilities abutting any residential property shall be bounded by a continuous decorative masonry wall not less than five feet nor more than eight feet high, measured on the parking lot side; provided, however, that any portion of such wall immediately adjacent to the required front yard of abutting property shall be not less than three feet nor more than three and one-half feet high, measured from the parking lot's side.

(B) Landscaping. Parking lots and the exterior of parking structures shall be provided with landscaped and irrigated areas including, but not limited to, property edges, perimeter walls, tree wells within parking lots, driveway edges and pedestrian walkways. All such areas shall be planted pursuant to the Design and Development Standards and Guidelines per Section 12-39.53 of this Chapter. All landscaped areas shall be protected from vehicular traffic with raised concrete curbs.

(C) Lighting. Any lights provided to illuminate parking areas shall be installed, directed and shielded to confine all direct rays of artificial light within the boundaries of the subject development.

Section 12-76. General Sign Regulations

The following regulations and standards shall apply to all zones and areas in the City unless otherwise specified:

(A) Sign Area Calculations. The surface area of a wall sign shall comprise the smallest area that can be enclosed by no more than eight connected straight lines, drawn so as to include all lettering, words, figures, lights, special painted surfaces, borders, or fringes within said lines. The surface area of a free-standing, projecting or roof sign shall be calculated by including all the surface of all sign faces of a sign. The area of signs listed in Section 12-74 as not requiring a permit shall not be included in the calculation of the total sign area of a lot or parcel of land.

(B) Multiple Tenants. It shall be the responsibility of the property owner or his authorized agent to allocate sign area to each tenant when more than one business is located within the same building or upon the same lot or parcel of land or in the same shopping center. The total sign area of all individual tenant

signs and any other signs on the property, when summed together, shall not exceed the maximum sign area or types of signs permitted by the specific sign standards for a single property for the respective zone in which said property is located.

(C) **Projecting Signs. Clearance.** A minimum eight feet vertical clearance is required from the bottom of a projecting sign, marquee or awning to the sidewalk or grade immediately below the sign, etc. For projecting or pole signs only, one inch of horizontal projection is permitted for each additional inch of vertical clearance over eight feet, provided that no such horizontal projection into the public right-of-way shall exceed two and one-half feet.

Exception: Awnings designed primarily to provide protection or shade to pedestrians may project further over a public sidewalk, subject to City approval. Signs may be located only upon the vertical face of an awning or canopy and no sign shall be attached above or below an awning or canopy.

(D) **Moving or Animated Signs.** Signs that rotate, flash, or otherwise change appearance are only permitted as follows:

- (1) A revolving pole sign if the revolution is symmetrical around the vertical axis and if the diameter of the revolution does not exceed eight feet.
- (2) Any electronic sign that changes its message utilizing a grid of lights to display time, temperature, or other public service messages.
- (3) Any sign or graphic which displays its message through a sequence of at least three distinct and different changes in color or light intensity of sign letters or characters to create the image of motion or animation.
- (4) Any billboard sign that is subject to Planning Commission review and approval of a Special Use Permit.

(E) **Sign Design.** The colors, design and materials of a sign and of its supporting structure shall complement the colors, design and materials of the subject building. The location of signs shall respect and compliment any architectural design or symmetry. Structural bracing for signs or for their supporting structures shall not be visible. When site conditions permit, pole signs shall be symmetrical.

(F) **Sign Location.** Upon buildings having three or more stories, signs may be located only below the second-story windows or above the uppermost story windows. (Exception: Billboard signs that are subject to Planning Commission review and approval of a Special Use Permit.)

(G) **Sign Illumination.** If illuminated, pole signs and projecting signs shall be internally lighted only. Monument signs, wall signs and billboards may be externally illuminated but such spotlight devices shall be minimally noticeable and shall not shine directly upon any public right-of-way or upon neighboring property.

(H) **Wall Signs.** All permitted wall signs shall be made of individually cut, molded, or embossed lettering or recessed into the façade. Neon wall signs are excepted. A business logo or symbol is allowed as long as it does not have a sign area in excess of four-square feet and does not project more than nine inches from the building face. Painted wall signs are only allowed if a sign adjustment has been approved pursuant to Article 26.1 of this Chapter.

(I) **Marquee Signs.** The height of letters located on a marquee shall be affixed flat to the surface and shall not have a vertical height of more than two feet and shall not extend vertically or horizontally beyond the marquee. Marquee signs are permitted for theaters, ticket outlets, sports and live entertainment uses, and the signs may be utilized only for publicizing upcoming live events and live entertainment events. A marquee sign shall have a minimum vertical clearance of eight feet above grade.

(J) Mural Wall Signs. A mural may cover a building or fascia wall a maximum of seventy-five percent. A mural may cover a maximum of one exterior building wall, or one side of a freestanding wall. Mural signs cannot have exposed illumination such as neon and fiber optics. Murals are subject to design review approval by the Planning Commission.

Section 12-80. Billboards and Off-Site Signs

The following standards shall apply to all billboards and other types of off-site advertising:

(A) Prohibited Zones. Billboards and other types of off-site advertising are prohibited (except as provided for in subsections (F) and (I) of this Section) in all residential zones, in the R-M (Residential and Medical), P (Parking), P-1 (Parking), C-1 (Limited Commercial), C-R (Commercial and Recreation), CC (Civic Center), O-S (Open Space), S-1 (Special Cemetery), S-2 (Special Cemetery Restricted) and M-1L (Limited Manufacturing) zones, and in any public, flood control or railroad right-of-way.

(B) Billboard Sign Standards. A billboard sign may be installed only if the following conditions will exist.

(1) A Special Use Permit shall be required for the installation of any new, relocated, or enlarged billboard sign or to allow a second face addition to an existing billboard sign that also complies with subsection (2) of this Section.

(2) The location of any billboard sign installed after the effective date of the ordinance codified in this Chapter shall be limited to a major arterial street as identified in the Inglewood General Plan Circulation Element and no new sign shall be located within one thousand feet of any existing billboard sign. The modification or replacement of any existing billboard frame, poles, posts or similar supporting apparatus on a property that does not face a major arterial street shall be prohibited.

(3) The owner of any new, relocated or enlarged billboard advertising sign shall agree in writing approved as to form and content by the Planning and Building Director, and determined acceptable by the City of Inglewood City Attorney's office to permanently remove, exchange or convey four square feet of illuminated or non-illuminated existing billboard face(s) in the City of Inglewood for each one square foot of sign area being created. The removal, exchange or conveyance of existing billboard sign area will not be required in order to install a super graphic wall sign that is temporary in nature and is subject to a separate negotiated agreement approved by the City Council.

(4) Prior to the issuance of a building permit to allow the installation of a new, relocated, or enlarged sign area of existing sign face(s), a billboard applicant shall agree in writing to remove the existing billboard face(s) including the sign or display surface and all appurtenances of the sign structure within a period specified by the Planning Commission or Planning and Building Director.

(5) Prior to the installation of the new, relocated or enlarged sign area, a billboard applicant shall agree in writing that the City of Inglewood may remove any existing billboard face(s) including the sign or display surface and all appurtenances of the sign structure that are not removed in compliance with this Code Section and the applicant further agrees to pay to the City, the actual cost of sign removal including labor, equipment, materials and any related legal or administrative costs.

(6) The new, relocated or enlarged billboard sign will not be located within a one thousand-foot radius of any other existing outdoor advertising billboards, unless a variance under Section 12-97 of this Chapter has been granted. This separation requirement shall not apply to a super graphic

wall sign that is temporary in nature and is subject to a separate negotiated agreement approved by the City Council.

(7) The new, relocated or enlarged billboard sign will be set back from any street public right-of-way a distance not less than the lesser of the following:

(a) One-third the total height of the sign; or

(b) The largest setback distance of any building on an abutting parcel on the same street as the subject parcel.

(8) The sign will not be located upon the roof of a building.

(9) The sign structure will not cantilever the sign over a building.

(10) The sign and supports shall be symmetrical, wherever site conditions permit.

(11) A new, relocated, or enlarged ground or wall mounted billboard sign intended as a permanent sign display shall not exceed an area of six hundred seventy-two square feet per sign face and shall not exceed thirty-five feet in height. Exception: A super graphic wall sign that is temporary in nature and that is subject to a separate negotiated agreement approved by the City Council shall also be subject to subsection (G) of this Section.

(12) A new, relocated, or enlarged fixed billboard sign shall not be located within two hundred feet of any residentially zoned land or upon any residentially used land, and shall be designed and located so that it does not substantially impact the visual environment of a residential neighborhood.

(13) A new, relocated, or enlarged fixed billboard sign shall not require the removal of trees or other on-site landscaping or the reduction of any required on-site parking spaces.

(14) The installation and use of any new, relocated or enlarged permanently affixed billboard sign approved after the effective date of the ordinance codified in this Chapter shall be limited to twenty years from the date that a building permit is issued to allow installation of the sign, however in no case shall a billboard sign be used on or after January 1, 2050. The sign area including the sign face(s) or display surface, frame and all appurtenances of the sign structure shall be removed no later than thirty calendar days after the signed agreement has expired. Failure of an applicant, or any person or entity that is legally responsible for billboard ownership to remove the billboard sign including the sign or display surface and all appurtenances of the sign structure within the specified thirty calendar days is unlawful. This requirement shall not apply to a super graphic wall sign that is temporary in nature and is subject to a separate negotiated agreement approved by the City Council.

(15) The installation of and use of any new, relocated or enlarged billboard sign shall be subject to payment of a billboard sign cost recovery fee specified in subsection (H) of this Section.

(C) **Special Use Permit Required.** A Special Use Permit shall be required prior to the installation of any off-site sign, (except as otherwise provided for billboards) and such off-site sign shall not exceed the requirements for an on-site sign for the respective zone in which it would be located.

(D) **Modification upon Existing Billboard Structure.** Notwithstanding the provisions of subsection (B) of this Section, a second sign face may be installed, without Special Use Permit approval, upon the rear side of an existing billboard sign, subject to the following provisions:

(1) The size of the second sign face shall not exceed the size of the existing billboard sign face;

(2) There shall be no increase in the size or number of existing sign supports and/or sign poles;

(3) The second sign face shall be attached directly upon and shall be parallel with the rear of the existing sign face;

(4) The top and bottom of the second sign face shall not project above or below the top and bottom, respectively, of the existing sign face, and neither side of the second sign face shall project beyond the corresponding side of the existing sign face;

(5) No second sign face shall be installed upon a billboard structure for which a Special Use Permit has been approved, by the Inglewood Planning Commission or the City Council, with the specific prohibition of a second sign face;

(6) No second sign face shall be installed upon an existing billboard located in a zone or location specified in subsection (A) of this Section or in an adopted plan area approved by the City Council in which billboards are specifically prohibited.

(E) The applicant for any illuminated digital wall sign, tri-vision wall sign or other billboard sign (excluding a super graphic wall sign that is subject to a negotiated agreement) on which artificial light is not maintained stationary and constant in intensity or color at all times when such sign is in use, including, but not limited to, moving, rotating, flashing, oscillating, shuttered or similar signs must submit written documentation to the satisfaction of the City of Inglewood Planning and Building Department that shows that artificial light from within, behind or upon such sign shall not interfere with normal use of adjacent roadways and properties.

(F) Prohibited Billboard Advertising. It is unlawful for any person or entity to place, display, establish, keep, maintain or locate any advertisement for any tobacco product or any alcoholic beverage on any billboard within one thousand feet of, or so oriented that the message portion of the sign is visible from, any property zoned for residential use, school, child care facility, nursery school, hospital, place of worship, park or recreational facility in the City of Inglewood. Exceptions to subsection (F):

(1) These provisions shall not apply to advertising or promotions for tobacco products and/or alcoholic beverages located inside commercial establishments, such as stores and restaurants where tobacco products and/or alcoholic beverages are sold, as long as such advertising or promotions are not visible to the public from the outdoors.

(2) These provisions shall not apply within commercial establishments where access to the premises by persons under eighteen years of age is prohibited by law.

(3) These provisions shall not apply to adult or trade schools that do not educate or train persons under eighteen years of age.

(4) These provisions shall not apply to commercial vehicles used to transport tobacco products and/or alcoholic beverages.

(5) These provisions shall not apply to any advertising or public service message sponsored by a federal, state or local government entity or by a nonprofit entity, designed to communicate the hazards of smoking or to encourage minors to refrain from smoking or buying cigarettes or other tobacco products, and/or designed to communicate the hazards of the consumption of alcoholic beverages or to encourage minors to refrain from the consumption or purchase of alcoholic beverages.

(G) Super Graphic Wall Sign Standards. Refer to Section 12-80.5.

(H) **Billboard Sign Cost Recovery Fee.** The following fee(s) shall become due and payable to the City of Inglewood prior to the issuance of any building permit for installation of any new, relocated or enlarged fixed billboard ground or wall sign:

1. **New, Relocated or Enlarged Permanent Ground Mounted or Wall Mounted Billboard Signs.** A one-time fee based on the real cost of service for a billboard as specified in the Master Fee Schedule less any site plan review or plan check fees paid by an applicant. Building permit fees shall not be deducted from the real cost of service fee. In no event shall the fee equal a number that is less than zero (negative). This Section of the Code is not intended to apply to super graphic wall signs that are temporary in nature and subject to City Council approval of a negotiated sign agreement. The cost of service fee shall be collected by the Building Division at the time that a building permit is issued and such fee shall be deposited into a City of Inglewood General Fund Account.

(I) **Exempted Billboards.** A billboard that is allowed as part of development of any island, triangular or irregular shaped corner residentially-zoned property as set forth in Section 12-18.8(b) (or subject to a negotiated agreement as approved by the City) shall be exempt from the requirements set forth in subsections (B) through (H) of this Section but shall comply with the following:

(1) **Billboard Sign Standards.** A billboard sign may be installed only if all the following conditions are met:

(a) The location shall be limited to a major arterial street as identified in the Inglewood General Plan Circulation Element and no advertising shall be directed towards any City of Inglewood residential use or school site.

(b) An agreement shall be entered with the City that establishes provisions for the City to receive a percentage of the billboard revenues and sets forth other standards as deemed appropriate and necessary to mitigate any impact to any adjacent property zoned for residential use, school, child care facility, nursery school, hospital, place of worship, park or recreational facility in the City of Inglewood. In negotiating an agreement pursuant to this Section, the City Manager shall consider standards established under subsections (B) through (F) of this Section to mitigate the impact of any proposed billboard. The agreement shall be negotiated by the City Manager and/or designee and thereafter placed on a regular City Council agenda by the City Manager and/or designee.

Section 12-80.5. Super Graphic Wall Signs

A super graphic wall sign may be installed only if the following conditions are met:

(A) **Sign Dimensions.** The height and length of a super graphic wall sign shall be determined and established in a negotiated agreement between the City Manager and/or designee and the applicable outdoor advertising company sign applicant (the "Applicant"); however, in no instance shall the entire area of a super graphic wall sign cover more than seventy-five percent of a wall surface.

(B) **Installation.** Super graphic wall signs shall be affixed parallel to a permanent part of the exterior of a building and shall project no more than eighteen inches from that wall.

(C) **Sign Height.** No portion of a super graphic wall sign shall extend in height above the roofline of the building wall or fascia to which it is attached.

(D) **Sign Lighting.** No super graphic wall sign shall be so illuminated that it interferes with the safety of aircraft flights in the vicinity of the super graphic wall sign location. No super graphic wall sign shall employ direct, indirect, internal, flashing, or other illumination with light sources or reflectivity such that the brightness of the illumination shall constitute a hazard to air traffic or a nuisance, interferes with the

safety of motorized vehicles in the vicinity of the super graphic wall sign location, confuses or obstructs the view of any authorized traffic sign or signal, obstructs the sight distance triangle at any street or freeway intersection, extends into the public right-of-way, or interferes with the use and enjoyment of property of any adjacent property owners.

Ordinance 2459 12-13-83, Ordinance 95-23 11-7-95

It shall be unlawful for any person to erect, install, place, move, or enlarge any sign on any premises or upon the exterior of any structure without having obtained sign approval permits issued by the Planning Division and the Building and Safety Division unless otherwise specified in this Article. A separate permit shall be required for each sign or set of signs to be installed or altered. The provisions of Chapter 11 and 12 of this Code governing the procedure in making application for permits and the payment of fees therefore shall be applicable.

Section 12-74 - Exempted Signs

The following signs and/or sign structures are permitted and are exempt from the permit requirement of Section 12-72; provided, however, that such signs shall comply in all respects to all other applicable requirements of this Article:

(F) Temporary Decorations - Temporary graphics and decorations for a holiday season, which do not advertise, merchandise or services, provided that such graphics and decorations are removed not later than two weeks after the holiday or a holiday season.

(K) String Pennants - String pennants may be displayed only over automobile sales lots, plant nurseries, and other businesses that are permitted to obtain merchandise outdoors, and only when the string pennants are displayed in an orderly and well-maintained condition.

Section 12-75 - Prohibited Signs

The following signs and/or sign-structures are prohibited:

(A) Signs Not Specified. Any sign, sign structure, or advertising device not specifically permitted in this Article.

(F) Incompatible Signs. Any sign or sign structure that interrupts or covers a major architectural element upon a building or that disrespects such architectural considerations as symmetry, design, materials, or color.

(G) Nondurable Material. Any sign constructed of a nondurable material including but not limited to, cloth or other fabric (except when used as a political or other temporary sign), cardboard, paper, and unfinished wood.

(H) Wind-activated Sign. Any wind-activated sign, including but not limited to flags, pinwheels or string pennants (except as specifically permitted in this Chapter).

(I) Painted Wall Signs, unless a Sign Adjustment pursuant to Article 26.1 of this Chapter has been approved, and Can/Cabinet Wall Signs. Neon wall signs are exempted.

CEQA Guidelines

CEQA, or the California Environmental Quality Act, is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

The following guidelines are being taken from the City of Los Angeles CEQA Thresholds Guide – 2006. These guidelines are not part of the City of Inglewood’s detailed lighting requirements and guidelines, but

more used as recommended best practices for implementing lighting that will be less intrusive to the residential areas that are located in proximity to the arena site.

A.4. NIGHTTIME ILLUMINATION

This section involves the extent to which a proposed project's artificial lighting affects the visual environment. Nighttime illumination of varying intensities is characteristic of most urban and suburban land uses including those in the City of Los Angeles. Artificial lighting has become more widely utilized in recent years to address security concerns and aesthetics.

New light sources introduced by a project may increase ambient nighttime illumination levels. Additionally, nighttime spillover of light onto adjacent properties has the potential to interfere with certain functions, including vision, sleep, privacy, and general enjoyment of the natural nighttime condition. The significance of the impact depends on the type of use affected, proximity to the affected use, the intensity of the light source, and the existing ambient light environment. Uses considered sensitive to nighttime light include, but are not limited to, residential, some commercial and institutional uses, and natural areas.

Review the description of the proposed project for the types of lighting included.

Review surrounding land use information to determine the location of light-sensitive land uses. Light-sensitive land uses may include, but are not limited to, residences, including board and care facilities; commercial or institutional uses that require minimal nighttime illumination for proper function, physical comfort, or commerce; and natural areas. Determine the potential for routine spillover of light or an increase in ambient light levels by considering the project's proximity to light-sensitive uses, the intensity of project light sources, and the existing ambient light environment.

Exhibit A.4-1 SELECTED CITY MUNICIPAL CODE LIGHTING REGULATIONS

Chapter 1, Article 2, Sec. 12.21 A 5(k). All lights used to illuminate a parking area shall be designed, located and arranged so as to reflect the light away from any streets and adjacent premises.

Chapter 1, Article 2, Sec. 12.12.1 A 3(b). All signs permitted in the "P" Zone may be illuminated, but shall comply with the requirements set forth in Section 62.200 of this Code, and shall not contain any flashing, moving or animated parts or features.

Chapter 1, Article 2, Sec. 12.12.1.5 A 2(a). Parking buildings in the "PB" Zone shall be constructed with a continuous, enclosing wall at least three and one-half feet in height at each floor level. Said wall need not be solid but shall be constructed of materials so as to block light emitted from the building.

Division 62, Sec. 91.6205 M. No sign shall be illuminated in such a manner as to produce a light intensity of greater than three foot-candles above ambient lighting, as measured at the property line of the nearest residentially zoned property.

Chapter 9, Article 3, Section 93.0117. No exterior light source may cause more than two foot-candles of lighting intensity or generate direct glare onto exterior glazed windows or glass doors; elevated habitable porch, deck, or balcony; or any ground surface intended for uses such as recreation, barbecue or lawn areas or any other property containing a residential unit or units.

Time control public area lighting, both interior and exterior.

CEQA mitigation measures that involve lighting include the following:

Provides that no person shall construct, establish, create, or maintain any stationary exterior light source that may cause the following locations to either be illuminated by more than 2 footcandles (fc) of lighting intensity or receive direct glare from the light source:

- 1) Any exterior glazed window or sliding glass door on any other property containing a residential unit or units.
- 2) Any elevated habitable porch, deck, or balcony on any other property containing a residential unit or units.
- 3) Any ground surface intended for uses such as recreation, barbecue, or lawn areas on any other property containing a residential unit or units.

Brightness and glare is dependent on the brightness of the surrounding environment. The project is located in a dense urban environment, with a high ambient electric light level.

IESNA Recommended Practices

The IES is an accredited Standards Development Organization (SDO) under American National Standards Institute (ANSI) approved procedures. The Society publishes nearly 100 varied publications including recommended practices on a variety of applications, design guides, technical memoranda, and publications on energy management and lighting measurement, many of which follow the ANSI standards development process.

IES RP-6-15 Sports and Recreational Area Lighting

3.1 Arenas

Typically, large multipurpose facilities and arena floors often include playing areas for basketball, hockey, and indoor soccer. Lighting installations should be designed with flexibility to provide multiple lighting levels for the variety of uses and events.

The size, height, and use of general purpose sports facilities vary widely. Direct and reflected glare control, direction of light, and modeling should be considered. Electric lighting systems are often capable of a wide area of coverage and usually controlled to provide for illuminance requirements of different sports and activities.

Luminaire placement is a key consideration as speakers, scoreboards, video boards, advertising banners, board and glass, and netting can block lights and therefore should be considered.

4.8.1 Interior Design Considerations

Indoor lighting is typically designed as part of the building electrical system. To be most effective lighting systems should be designed in conjunction with building architectural, structural and mechanical elements. Lighting designs shall adhere to local building and electrical codes and safety regulations. Light sources, luminaire locations, wattages, beam types are key considerations.

4.8.2 Outdoor Design Considerations

Outdoor luminaires are typically an aimable type mounted on poles positioned around the area being lighted. Fixed (non-aimable) luminaires may be used effectively for small areas. To be most effective, lighting systems should be designed in conjunction with the facility. Lighting designs should adhere to local building and electrical codes and safety regulations. Light sources, luminaire locations, wattages, beam types are critical variables.

-Luminaire Locations – Luminaire locations should be designed to accommodate luminaire cleaning, aiming, and lamp replacement. The poles and lights should be accessible for maintenance equipment for lamp replacement and general service. Large boom trucks will typically be required for re-lamping, therefore access to the poles will need to be planned for. Often crossing a playing surface will not be allowed so vehicle access should be carefully considered.

IES RP-33-14 Lighting for Exterior Environments

2.5 Lighting Zones

LZ4 - Areas of high levels of human activity at night including significant interaction among pedestrians and/or vehicles. The vision of humans when outside is typically adapted to moderate light levels. Lighting is continuous and is required for safety and convenience. Expectations for man-made lighting are high, both in terms of light levels and uniformity along pathways or streets.

Lighting zone 4 pertains to areas of very high ambient lighting levels. LZ-4 should only be used for special cases and is not appropriate for most cities. LZ-4 may be used for extremely unusual installations such as high density entertainment districts, and heavy industrial uses.

7.0 Walkway and Bikeway Lighting

Proper lighting of walkway and bikeway areas is essential to the safe and comfortable use by pedestrians. Many walkways and bikeways are adjacent to lighted roadways and no separate lighting system is required. If the roadway lighting does not adequately serve the walkway because of distance, landscape obstructions, or elevation changes, additional lighting may be required. Communities may choose not to light at all, or to light walkways and bikeways only in conflict areas.

Crosswalks traversing roadways in the middle of long blocks and at street intersections should have specific illumination if pedestrians are present at night and if traffic volume and speeds warrant lighting. Average vertical illuminance levels for special pedestrian security should be maintained. In areas of special security concerns; with areas such as below-grade entrances to building basements, gaps between building fronts, or dense shrubbery, it is recommended that the area bordering these walkways for a width to 6.5 to 16.5 ft. on each side be lighted to at least one-third the level suggested for the walkway.

Walkways not adjoining roadways and having minimal non-pedestrian traffic need not be lighted continuously. Only hazards along the walkways such as stairs, abrupt changes in elevation, bridges, and curves may be lighted. Alternatively, lighting the walkway surroundings is an acceptable method. Lighting on the termination or resting points along the walkway is another useful technique. This approach gives pedestrians a visual clue about where important destinations are located.

Walkways located in the middle of a park or large landscaped area require a unique blend of lighting that covers key landscape features, selected buildings or shelters, resting points, and any walkway hazards (stairs, abrupt changes in elevation, bridges, curves).

8.0 Pedestrian Mall and Plaza Lighting

Pedestrian malls have often been described as outdoor living rooms. The first step in creating this illusion is to provide soft vertical and horizontal surface brightness. This fill light provides boundary definition for the mall. Cornerstone building features, like a clock tower or steeple, will add depth to the mall when illuminated.

Next, provide luminaires that put light on people's faces, using pedestrian-scale poles. The glow from these luminaires should add visual variations and contextual detail rather than substantial additional

brightness to the overall visual scene. Finally, add subtle highlights by softly lighting statues and key landscape features.

The success of the three-step layered design process ultimately depends on careful coordination of all lighting in the plaza area to create a cohesive design. Awareness of lighting zones and correct luminaire selection will provide the desired effect without adding nuisance light (glare – the sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted causing annoyance, discomfort, or loss in visual performance and visibility).

Dynamic lighting systems that blink, flash, or frequently change can sometimes be effective in creating an active environment. But bright sources and blinking lights may also destroy a peaceful setting and create visual hazards for motorists. These systems are only successful when coordinated with adjacent property owners and the street lighting authorities.

MODEL LIGHTING ORDINANCE (MLO)

IDA and the Illuminating Engineering Society of North America have developed a Model Lighting Ordinance to address the need for strong, consistent outdoor lighting regulation in North America.

Developed jointly over a period of seven years, the MLO encourages communities to adopt comprehensive outdoor lighting ordinances without devoting extensive staff time and resources to their development.

The MLO outdoor lighting template is designed to help municipalities develop outdoor lighting standards that reduce glare, light trespass and skyglow. The MLO offers several innovations to outdoor lighting regulation, including

The purpose of this Ordinance is to provide regulations for outdoor lighting that will:

- a. Permit the use of outdoor lighting that does not exceed the minimum levels specified in IES recommended practices for night-time safety, utility, security, productivity, enjoyment, and commerce.
- b. Minimize adverse offsite impacts of lighting such as light trespass, and obtrusive light.
- c. Curtail light pollution, reduce skyglow and improve the nighttime environment for astronomy.
- d. Help protect the natural environment from the adverse effects of night lighting from gas or electric sources.
- e. Conserve energy and resources to the greatest extent possible.

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.

Title 24 Regulations

Title 24 regulates the wattage that any internally illuminated sign can produce. Section 148 of Title 24 2008 requires that all exterior light emitting diode signs have an efficiency of 80% or greater and have a maximum allowed lighting power of less than 12 watts per square foot.

Title 24 limits energy use for exterior signage in California. Title-24 2008 limits exterior, internally illuminated signs, and integral electronic displays to 12 watts/sq. ft.

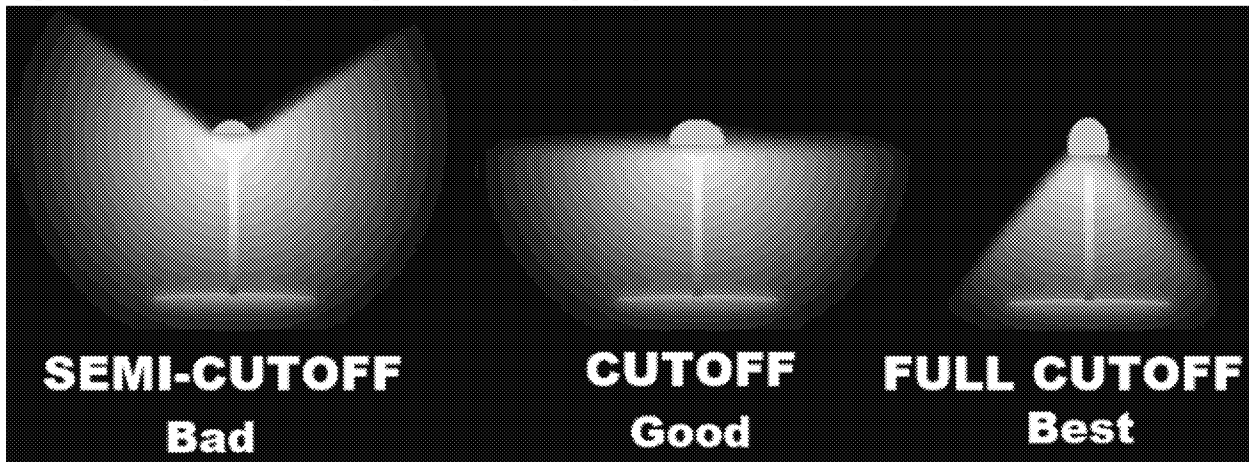
Title 24 Wattage limits affecting exterior internally illuminated signs and integral electronic displays				
	Watt/sq. ft at full white	Brightness at Full White (candelas/sq. meters)	Hours on per day	Total watt-hours per day per sq. ft. of sign
Daytime Usage (7am to 7pm)	12	3500*	12	144
Nighttime Usage (7pm to 2am)	5	1500*	7	35
Total watt-hours per day per sq. ft. of sign				179

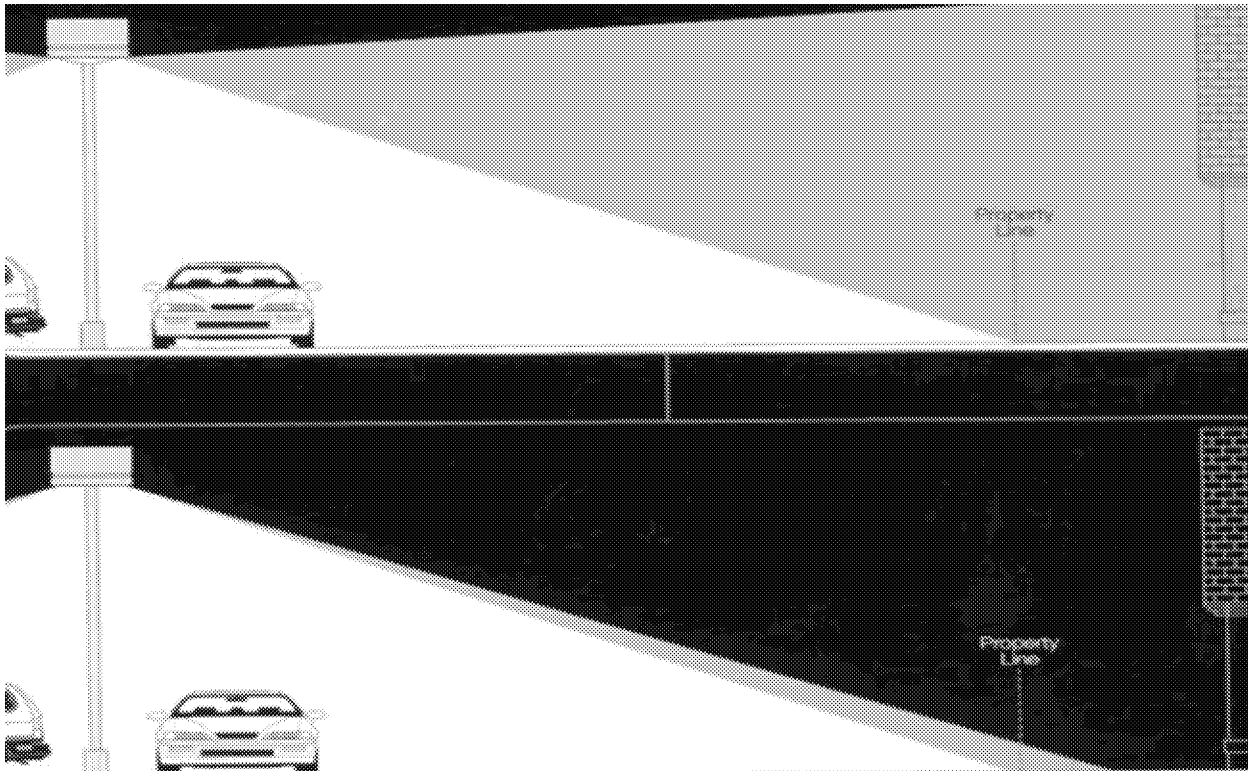
*Title 24 only restricts energy usage and does not restrict brightness

Backlight, Uplight, Glare Ratings

BUG ratings are created by the Illuminating Engineering Society (IES) and the International Dark Sky Association to better explain how light trespass can be measured. The BUG rating of a luminaire determines how much light trespass that a light fixture produces. The BUG rating replaced the old measuring system known as the “cutoff system” and is more comprehensive, taking Backlight, Uplight, and Glare into account (the B, U, and G, of BUG).

Figure 3-1– Diagramming Examples of Cutoff Lighting





- **Backlight** – This category takes into account the light that is spilled from *behind* the fixture into areas where it is unwanted. This is the opposite area to the area where light is intended to be. Backlight is mostly a problem regarding light trespass on adjacent sites and areas.
- **Uplight** – Uplight is the resulting light spill above the top of the fixture. Uplight contributes greatly to light pollution, sky glow, and is generally not “dark-sky friendly.” Minimizing uplight in commercial lighting fixtures can make the stars more visible at night.
- **Glare** – Have you ever driven past a really bright streetlight that almost seemed to blind you for a moment? That’s glare. Light glare is the amount of front light in the forward zones but happens when the light is too strong or concentrated. Glare is a safety issue as well as a light trespass issue near adjacent properties.

BUG rating is a system that allows luminaires with photometric data to be measured. It works in tandem with the International Dark Sky Association’s light zones, which are accepted levels of light, or light limitations, in certain outdoor areas. The following light zones represent all the possible degrees of ambient light in an outdoor area, ranging from complete darkness (LZ0) to very bright municipal areas (LZ4).

- **LZ0: No Ambient Lighting** – Underdeveloped areas of open space, wilderness park, areas near observatories or areas where protection of a dark environment is critical.
- **LZ1: Low Ambient Lighting** – Areas that desire low ambient light levels. Single and two family residential. Rural town centers, commercial areas, business parks with limited nighttime activity.
- **LZ2: Moderate Ambient Lighting** – Areas with moderate ambient lighting levels. Multifamily residential, hotels, neighborhood business districts, churches, schools, hospitals.

- **LZ3: Moderately High Ambient Lighting** – Areas with moderately high lighting levels. Commercial corridors, town centers, mixed use, industrial. Shipping and rail yards. Car dealers, gas stations. High nighttime activity.
- **LZ4: High Ambient Lighting** – Very high ambient light levels. Special cases. Extremely unusual installations. High density entertainment districts and heavy use industrial.

1. Conformance with All Applicable Codes

All outdoor lighting shall be installed in conformance with the provisions of this Ordinance, applicable Electrical and Energy Codes, and applicable sections of the Building Code.

2. Applicability

Except as described below, all outdoor lighting installed after the date of effect of this Ordinance shall comply with these requirements. This includes, but is not limited to, new lighting, replacement lighting, or any other lighting whether attached to structures, poles, the earth, or any other location, including lighting installed by any third party.

Exemptions from III. (B.) The following are not regulated by this Ordinance

- a. Lighting within public right-of-way or easement for the principal purpose of illuminating streets or roads. No exemption shall apply to any lighting within the public right of way or easement when the purpose of the luminaire is to illuminate areas outside the public right of way or easement when the purpose of the luminaire is to illuminate areas outside the public right of way or easement, unless regulated with a streetlighting ordinance.

Note to adopting agency: if using the street lighting ordinance (Section XI), this exemption should read as follows: Lighting within the public right-of-way or easement for the principal purpose of illuminating roads and highways. No exemption shall apply to any street lighting and to any lighting within the public right of way or easement when the purpose of the luminaire is to illuminate areas outside of the public right of way or easement.

- b. Lighting for public monuments and statuary.
- c. Lighting solely for signs (lighting for signs is regulated by the Sign Ordinance).
- d. Repairs to existing luminaires not exceeding 25% of total installed luminaires. easement, unless regulated with a streetlighting ordinance.
- e. Temporary lighting for theatrical, television, performance areas and construction sites;
- f. Underwater lighting in swimming pools and other water features
- g. Temporary lighting and seasonal lighting provided that individual lamps are less than 10 watts and 70 lumens.
- h. Lighting that is only used under emergency conditions.
- i. In lighting zones 2, 3 and 4, low voltage landscape lighting controlled by an automatic device that is set to turn the lights off at one hour after the site is closed to the public or at a time established by the authority.

Exceptions to III. (B.) All lighting shall follow provisions in this ordinance; however, any special requirements for lighting listed in a) and b) below shall take precedence.

- a. Lighting specified or identified in a specific use permit.
- b. Lighting required by federal, state, territorial, commonwealth or provincial laws or regulations.

3. Lighting Control Requirements

1. Automatic Switching Requirements Controls shall be provided that automatically extinguish all outdoor lighting when sufficient daylight is available using a control device or system such as a photoelectric switch, astronomic time switch or equivalent functions from a programmable lighting controller, building automation system or lighting energy management system, all with battery or similar backup power or device.

Exceptions to III.(C.) 1. Automatic lighting controls are not required for the following:

- a. Lighting under canopies.
- b. Lighting for tunnels, parking garages, garage entrances, and similar conditions.

2. Automatic Lighting Reduction Requirements

The Authority shall establish curfew time(s) after which total outdoor lighting lumens shall be reduced by at least 30% or extinguished.

Exceptions to III.(C.) 2. Lighting reductions are not required for any of the following:

- a. With the exception of landscape lighting, lighting for residential properties including multiple residential properties not having common areas.
- b. When the outdoor lighting consists of only one luminaire.
- c. Code required lighting for steps, stairs, walkways, and building entrances.
- d. When in the opinion of the Authority, lighting levels must be maintained.
- e. Motion activated lighting.
- f. Lighting governed by special use permit in which times of operation are specifically identified.
- g. Businesses that operate on a 24 hour basis

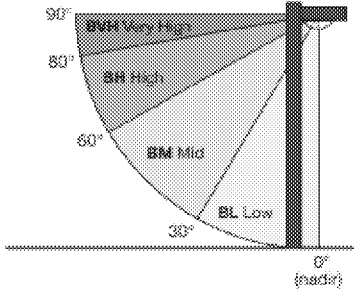
Maximum Allowable Backlight, Uplight and Glare (BUG) Ratings

For bug rating definitions, see BUG Rating Quick Reference Guide on back side.

Backlight	L20	L21	L22	L23	L24
Greater than 2 mounting heights from property line.	B1	B3	B4	B5	B5
1 to less than 2 mounting heights from property line and ideally oriented.	B1	B2	B3	B4	B4
0.5 to 1 mounting heights from property line and ideally oriented.	B0	B1	B2	B3	B3
Less than 0.5 mounting height to property line and property oriented.	B0	B0	B0	B1	B2
Uplight	L20	L21	L22	L23	L24
Allowed uplighting rating	U0	U1	U2	U3	U4
Allowed percentage light emission above 90 degrees for street or area lighting.	0%	0%	0%	0%	0%
Glare	L20	L21	L22	L23	L24
Allowed Glare Rating.	G0	G1	G2	G3	G4
Any luminaire not ideally oriented with 1 to less than 2 mounting heights to any property line of concern.	G0	G0	G1	G1	G2
Any luminaire not ideally oriented with 0.5 to less than 1 mounting heights to any property line of concern.	G0	G0	G0	G1	G1
Any luminaire not ideally oriented with less than 0.5 mounting heights to any property line of concern.	G0	G0	G0	G0	G1

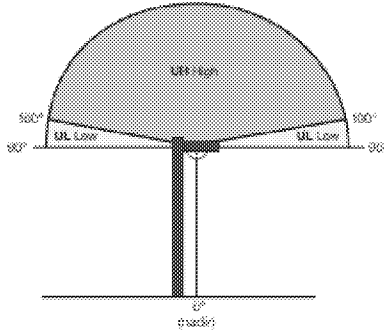
To be considered 'ideally oriented', the luminaire must be mounted with the backlight portion of the light output oriented perpendicular and towards the property line of concern.

BUG Rating Quick Reference Guide



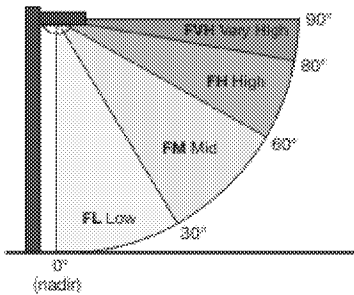
Backlight Rating

		Maximum Zonal Lumens					
		B0	B1	B2	B3	B4	B5
BH	110	500	1000	2500	5000	>5000	
BM	220	1000	2500	5000	8500	>8500	
BL	110	500	1000	2500	5000	>5000	



Uplight Rating

		Maximum Zonal Lumens					
		U0	U1	U2	U3	U4	U5
UH	0	10	100	500	1000	>1000	
UL	0	10	100	500	1000	>1000	
FVH	10	75	150	-	-	>150	
BVH	10	75	150	-	-	>150	



Glare Rating

Type I, Type II, Type III, Type IV

		Maximum Zonal Lumens					
		G0	G1	G2	G3	G4	G5
FVH	10	250	375	500	750	>750	
BVH	10	250	375	500	750	>750	
FH	600	1800	5000	7500	12000	>12000	
BH	110	500	1000	2500	5000	>5000	

Type V, V Square

		Maximum Zonal Lumens					
		G0	G1	G2	G3	G4	G5
FVH	10	250	375	500	750	>750	
BVH	10	250	375	500	750	>750	
FH	600	1800	5000	7500	12000	>12000	
BH	110	500	1000	2500	5000	>5000	

FAA Regulations

Subject: Obstruction Marking and Lighting

The height of a structure identified as an obstruction has been lowered from 500 feet above ground level (AGL) to 499 feet above ground level, by amendment to Title 14 Code of Federal Regulations (14 CFR) Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace (75 Federal Register 42303, July 21, 2010). Accordingly, all structures that are above 499 feet AGL are considered obstructions and the Federal Aviation Administration (FAA) will study them to determine their effect on the navigable airspace. This will ensure that all usable airspace at and above 500 feet AGL is addressed during an aeronautical study and that this airspace is protected from obstructions that may create a hazard to air navigation.

1.5 Modifications and Deviations.

Requests for modification or deviation from the standards outlined in this AC must be submitted to the FAA Obstruction Evaluation Group (OEG). The sponsor is responsible for adhering to approved marking and/or lighting limitations, and/or recommendations given, and should notify the FAA and FCC (for those structures regulated by the FCC) prior to removal of marking and/or lighting. A request received after a determination is issued may require a new study and could result in a new determination.

1. Modification Examples. Modifications will be based on whether they impact aviation safety. Examples of modifications are as follows:

- a. Marking and/or Lighting Only a Portion of an Object. The object may be located with respect to other objects or terrain that only a portion of it needs to be marked or lighted.
- b. No Marking and/or Lighting. The object may be located with respect to other objects or terrain, removed from the general flow of air traffic, or may be so conspicuous by its shape, size or color that marking or lighting would serve no useful purpose.
- c. Voluntary Marking and/or Lighting. The object may be located with respect to other objects or terrain that the sponsor feels increased conspicuity would better serve aviation safety. Sponsors who desire to voluntarily mark and/or light their structure should do so in accordance with this AC.
- d. Marking or Lighting an Object in Accordance with the Standards for an Object of Greater Height or Size. The object may present such an extraordinary hazard potential that higher standards may be recommended for increased conspicuity to ensure aviation safety.

2. Deviations. The assigned Obstruction Evaluation Specialist will conduct an aeronautical study of the proposed deviation(s) and forward their recommendation to FAA Headquarters, OEG Manager, in Washington, DC, for final approval. Examples of deviations that may be considered:

- a. Colors of objects.
- b. Dimensions of color bands or rectangles.
- c. Colors/types of lights.
- d. Basic signals and intensity of lighting.
- e. Night/day lighting combinations.
- f. Flash rate.

3. The FAA strongly recommends that owners become familiar with the different types of lighting systems and to specifically request the type of lighting system desired when submitting FAA Form 7460-1. Information on these systems is given in Table A-1 in Appendix A. While the FAA will make every effort to accommodate the structure sponsor's request, sponsors should also request information from system manufacturers to determine which system best meets their needs based on purpose, installation, and maintenance costs.

2.3 Marking and Lighting Equipment.

Considerable effort and research was expended to determine the minimum marking and lighting systems or quality of materials that will produce an acceptable level of aviation safety. The FAA will recommend only those marking and lighting systems that meet established technical standards. While additional lights may be desirable to identify an obstruction to air navigation and may, on occasion, be recommended, the

FAA will recommend minimum standards in the interest of safety, economy, and related concerns. Therefore, to provide an adequate level of safety, obstruction lighting systems should be installed, operated, and maintained in accordance with the recommended standards herein. Table A-1 in Appendix A contains descriptions of each FAA-approved obstruction lighting fixture that is referred to in this AC.

3.7 Omission or Alternatives to Marking.

The alternatives listed below require FAA review and concurrence.

3.7.1 High-Intensity Flashing White Lighting Systems.

High-intensity flashing white lighting systems are more effective than aviation orange and white paint and therefore can be recommended instead of paint marking. This is particularly true under certain ambient light conditions involving the position of the sun relative to the direction of flight. When high-intensity lighting systems are operated during daytime and twilight, other methods of marking may be omitted. When operated 24 hours a day, other methods of marking and lighting may be omitted.

3.7.2 Medium-Intensity Flashing White Lighting Systems.

When medium-intensity flashing white lighting systems are operated during daytime and twilight on structures 700 feet (213 m) AGL or less, other methods of marking may be omitted. Note: Sponsors must ensure that alternatives to marking are coordinated with the FCC for structures under its jurisdiction prior to making the change.

CHAPTER 4. LIGHTING GUIDELINE

4.1 Purpose.

This chapter describes the various obstruction lighting systems used to identify structures that have been determined to require added conspicuity. The lighting standards in this AC are the minimum necessary for aviation safety. Recommendations on lighting structures can vary, depending on terrain features, weather patterns, geographic location, and number of structures. Specific lighting guidelines for wind turbines are contained in Chapter 13.

4.2 Standards.

The standards outlined in this AC are based on using light units that meet specified intensities, beam patterns, color, and flash rates as stated in AC 150/5345-43, Specification for Obstruction Lighting Equipment. These standards may be obtained from: www.faa.gov/airports/resources/advisory_circulars/

4.3 Lighting Systems.

Obstruction lighting may be displayed on structures as follows:

1. Aviation Red Obstruction Lights. Use flashing lights and/or steady-burning lights during nighttime. Tower structures are typically marked with flashing red lights. Buildings and smaller obstructions located near airports should be marked with steady-burning red lights. (See Chapter 5).
2. Medium-Intensity Flashing White Obstruction Lights. Medium-intensity flashing white obstruction lights may be used during daytime and twilight with automatically selected reduced intensity for nighttime operation. When this system is used on structures 700 feet (213 m) AGL or less, other methods of marking and lighting the structure may be omitted. Aviation orange and white paint is always required for daytime marking on structures exceeding 700 feet (213 m) AGL. This system is not normally recommended on structures 200 feet (61 m) AGL or less.

3. High-Intensity Flashing White Obstruction Lights. High-intensity flashing white obstruction lights may be used during daytime with automatically selected reduced intensities for twilight and nighttime operations. When this system is used, other methods of marking and lighting the structure may be omitted. This system should not be used on structures 700 feet (213 m) AGL or less, unless an FAA aeronautical study shows otherwise. Note: All flashing lights on a structure should flash simultaneously except for catenary support structures, which have a distinct flashing sequence between the levels of lights (see paragraph 4.4).

4. Dual Lighting. This system consists of red lights for nighttime and high- or medium-intensity flashing white obstruction lights for daytime and twilight. When a dual lighting system incorporates medium-intensity flashing white lights on structures 700 feet (213 m) AGL or less or high-intensity flashing white lights on structures greater than 700 feet (213 m) AGL, other methods of marking the structure may be omitted.

5. Obstruction Lights During Construction. As the height of the structure exceeds each level at which permanent obstruction lights would be recommended, two or more lights of the type specified in the determination should be installed at that level. Temporary high or medium-intensity flashing white lights, as recommended in the determination, should be operated 24 hours a day until all permanent lights are in operation. In either case, two or more lights should be installed on the uppermost part of the structure any time it exceeds the height of the temporary construction equipment. They may be turned off for periods when they could interfere with construction personnel. If practical, permanent obstruction lights should be installed and operated at each level as construction progresses. The lights should be positioned to ensure that a pilot has an unobstructed view of at least one light at each level.

6. Obstruction Lights in Urban Areas. When a structure is located in an urban area where there are numerous other white lights (e.g., streetlights) red obstruction lights with painting or a medium-intensity dual system is recommended. Medium intensity lighting is not normally recommended on structures less than 200 feet (61 m).

7. Temporary Construction Equipment Lighting. Since there is such a variance in construction cranes, derricks and other drilling rigs, each case should be considered individually. Lights should be installed according to the standards given in Chapters 5, 6, 7, or 8, as they would apply to permanent structures.

6.4 Control Device.

The light intensity is controlled by a device (photocell) that changes the light's intensity when the ambient light changes. The system should automatically change intensity steps when, in the Northern Hemisphere, the northern sky illumination reaching a north facing vertical surface is as follows:

1. Day-to-Twilight (L-857 System). This should not occur before the illumination drops to 60 foot-candles (645.8 lux) but should occur before it drops below 35 footcandles (376.7 lux). The illuminance-sensing device should, if practical, face the northern sky in the Northern Hemisphere.
2. Twilight-to-Night (L-857 System). This should not occur before the illumination drops below 5 foot-candles (53.8 lux) but should occur before it drops below 2 footcandles (21.5 lux).
3. Night-to-Day. The intensity changes listed in subparagraph 10.4.1 and 10.4.2 above should be reversed when changing from the night-to-day mode.
4. Day-to-Night (L-866 or L-885/L-866). This should not occur before the illumination drops below 5 foot-candles (563.8 lux) but should occur before it drops below 2 foot-candles (21.5 lux).

5. Night-to-Day. The intensity changes listed in subparagraph 10.4.4 above should be reversed when changing from the night-to-day mode.

6. Red Obstruction (L-885). The red lights should not turn on until the illumination drops below 60 foot-candles (645.8 lux) but should occur before reaching a level of 35 foot-candles (367.7 lux). Lights should not turn off before the illumination rises above 35 foot-candles (367.7 lux) but should occur before reaching 60 foot-candles (645.8 lux)

3.3 Definitions of Terms Used in the Report

Architectural Element

“Architectural element” shall mean such major functional or decorative elements of a building as windows, doors, columns, pilasters, arches, eaves, cornices, gables, pediments and the like.

Billboard

Any sign on one or more poles that:

- is four feet or greater in height as measured from the natural or finished grade
- is structurally separate from an existing building or other improvement on a lot
- is supported by an independent footing inside an existing building or other improvement on a lot extending through the roof of a building or structure
- is supporting a sign panel that is attached to the poles, posts, or columns

Billboard, Electronic

A billboard, utilizing digital message technology, capable of changing the static message or copy on the sign electronically, such that, the alphabetic, pictographic, or symbolic informational content of which can be changed or altered on a fixed display surface composed of electronically illuminated or electronically actuated or motivated elements and can be changed or altered electronically. This includes billboards with displays that have to be preprogrammed to display only certain types of information (i.e., time, date, temperature) and billboards whose informational content can be changed or altered by means of computer-driven electronic impulses. This includes, without limitation, billboards also known as digital billboards or LED billboards.

Brightness

Brightness is the perceptual response to luminance. It is our response to a source of light, with sources being categorized between bright and dim. (Section 4.8 of the IESNA Lighting Handbook)

Candela

Basic unit for measuring luminous intensity from a light source in a given direction. A common candle emits light with a luminous intensity of roughly one candela. If emission in some directions is blocked by an opaque barrier, the emission would still be approximately one candela in the direction that is not obscured.

Digital Display

A digital display sign is a matrix of LEDs capable of displaying several digital messages/images in a rotation. These display panels are highly adaptable and can be programmed to display stationary advertisements, public art, or announcements. These media display panels integrate ambient light sensors to automatically reduce screen brightness depending on exterior light conditions. For example, the display would be at full brightness during a sunny day but dimmed to appropriate intensities at night.

Footcandle (FC)

An imperial unit of measurement, abbreviated as FC. The unit is defined as the amount of illumination the inside surface of an imaginary 1-foot radius sphere would be receiving if there were a uniform point source of one candela in the exact center of the sphere. The footcandle can be thought of as the amount of light that actually falls on a given surface. The footcandle is equal to one lumen per square foot. Footcandles are additive.

Face of Building

The general outer surface, not including cornices, bay windows or architectural projections, of any exterior wall of a building.

Illuminance

The areal density of the luminous flux incident at a point on a surface. The unit of illumination is footcandle.

LED - Light Emitting Diode

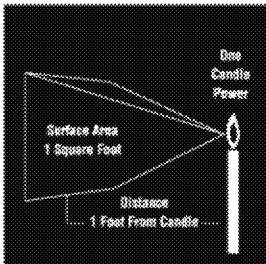
A pn-junction semiconductor device that emits incoherent optical radiation when forward biased.

LED Luminaire

A complete lighting unit consisting of LED-based light emitting elements and a matched driver together with parts to distribute light, to position and protect the light emitting elements, and to connect the unit to a branch circuit. The LED-based light emitting elements may take the form of LED packages (components), LED arrays (modules).

Lumen

A lumen is the basic unit of light, a measure of the perceived power of light. The lumen is defined in relation to the candela by $1 \text{ lumen} = 1 \text{ candela} \times 1 \text{ steradian}$.



Luminance

Is a photometric measure of the luminous intensity of a surface. The luminance indicates how much luminous power will be detected by an eye looking at the surface from a particular angle of view. It is an indicator of how bright the surface will appear. It is measured by candelas per meter squared (cd/m^2). (Section 12.18 of the IESNA Lighting Handbook)

Sign

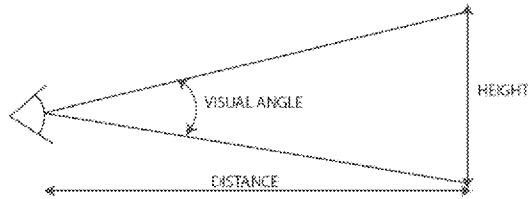
“Sign” shall mean:

- (a) Any display or delineation of letters, words, characters or other figures upon a building, structure or other object, for the purpose of attracting attention to the building or property or to merchandise or services offered. A sign shall include all parts, portions, units and materials composing the same, together with the frame, background, lighting, support and anchorage of same.

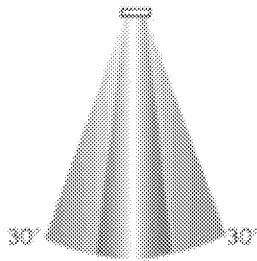
(b) Any notice, placard, bill, card, poster, banner, sticker, temporary sign or other device or arrangement attached to or printed on any surface which attracts or is intended to attract attention to an object, product, place, event, idea, concept, activity, institution, assembly, announcement, person, group, or includes a letter, word, bill, poster, picture, display board, lithograph, painting, sketch, map, balloon, inflatable, valance, sandwich board, model, figure, symbol, banner, flag, fluttering object, pennant, insignia, device or representation used as, or which is in the nature of, an announcement, direction, advertisement, declaration or illustration.

Visual Angle

The angle formed by two rays of light, or two straight lines drawn from the extreme points of an object to the center of the eye.



Viewing angles are defined as where the intensity of the LEDs are at 50% of their maximum brightness when a traveler is viewing the signage from a straight position. For example, at 15 degrees off-center, the LED brightness in a standard 30 degree viewing cone would be 50% of the maximum intensity. Viewing angles vary on the variation of the installation site. Factors like curving roadways, shoulder-mounted sign locations, and side visibility are some of the factors that affect the viewing angles.



*Desired viewing cone would be the narrower angle so that at 70 degrees the brightness is cut in half

Existing Conditions - Environmental Setting

The Project Site is located within the City of Inglewood. The future Project Site is located across the street from the future site of the Rams football stadium, it is across the street from the Hollywood Park Casino. The Project Site is also located in close proximity to a series of commercial and residential properties. The area surrounding the Project Site includes buildings ranging from one to three stories tall. The existing buildings feature building mounted internally illuminated signage, building mounted floodlights. There is a minimal amount of billboard signage locations on the street. The Hollywood Parks Casino features the most architectural and site lighting in the overall project site, as much of the area is under construction. The Hollywood Parks Casino features façade lighting, digital LED billboard, internally illuminated signage, and parking garage lighting.

Figure 3-1 – Current Google Maps Site Area



Figure 3-2 – Current Google Maps Site Area with Project Site and Usage Overlay



4 – SITE SURVEY

From January 21, 2019 through January 23, 2019 Lighting Design Alliance conducted a series of site visits to the City of Inglewood for the purposes of gathering existing light levels around the commercial and residential sites, and to collect comparative brightness data from other comparable buildings and existing signage. This survey will give a good measurement of the existing light levels on the site and will make it easier to quantify the assumed added lighting to the overall site from the contribution of the stadium.

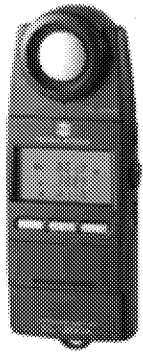
The first part of the survey involved getting the footcandle (FC) levels all around the public site to show existing light levels. The footcandle is the amount of light that actually falls on a given surface. The existing site is currently affected by LED street poles, building mounted floodlights, and illuminated signage. All of these factors and more are currently contributing to the existing light levels on the site.

Figure 4-1 – Site map showing the area site where footcandle readings of the existing light levels were taken from:

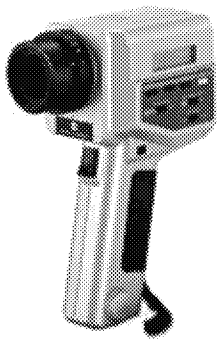


The second part of the survey involved taking note of existing brightness contributors that were located around this project site. This involved taking luminance measurements (cd/m²) of the brightness contributors. Luminance is a photometric measurement of the luminous intensity of a surface. The luminance indicates how much luminous power will be detected by an eye looking at the surface from a particular viewing angle. This is an indicator of how bright the surface will appear, and if it will be a contributor to glare.

In order to measure diversity, brightness, and density, measurements were taken during the day, and again during the evening. All footcandle/illuminance readings were taken using an illuminance/light meter from Konica Minolta – Chroma Meter CL-200A.



All luminance/brightness readings were taken using a luminance/spot meter from Minolta – Luminance Meter LS-110, which measures in cd/m^2 .



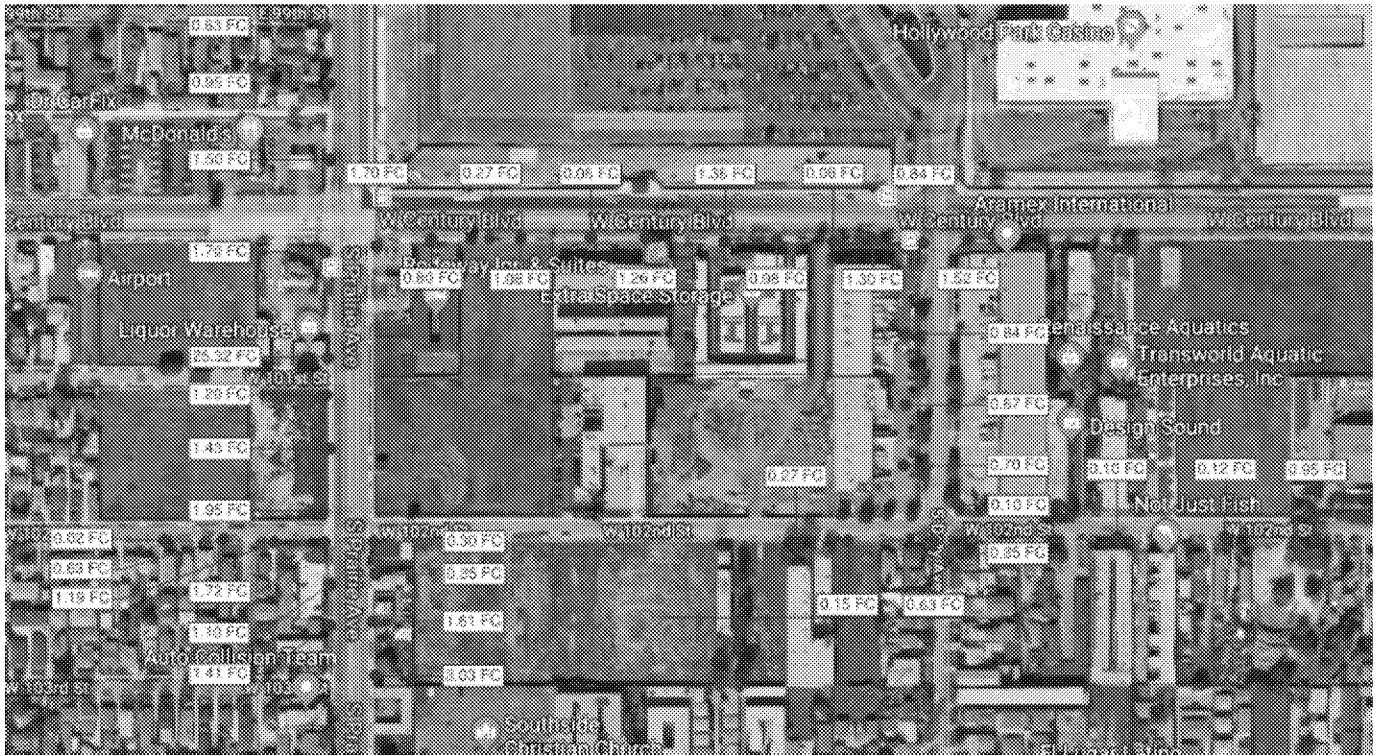
All measurements were taken from ground level which is the viewpoint of the pedestrian and automobile traffic. Note that the measurements were taken using a specific date and time and used a specific luminance meter. A different luminance meter may have a margin of error of +/- 5% difference and as images on static and digital signage are updated. Those different images produce different readings. While distance does not affect brightness, the viewing angle and the specific target can impact reading, so readings may vary. For all footcandle readings taken in the study, all were taken at 38" above the ground level, with the illuminance meter being stabilized on a tripod for consistent readings.

4.1 Site Brightness Documentation and Results

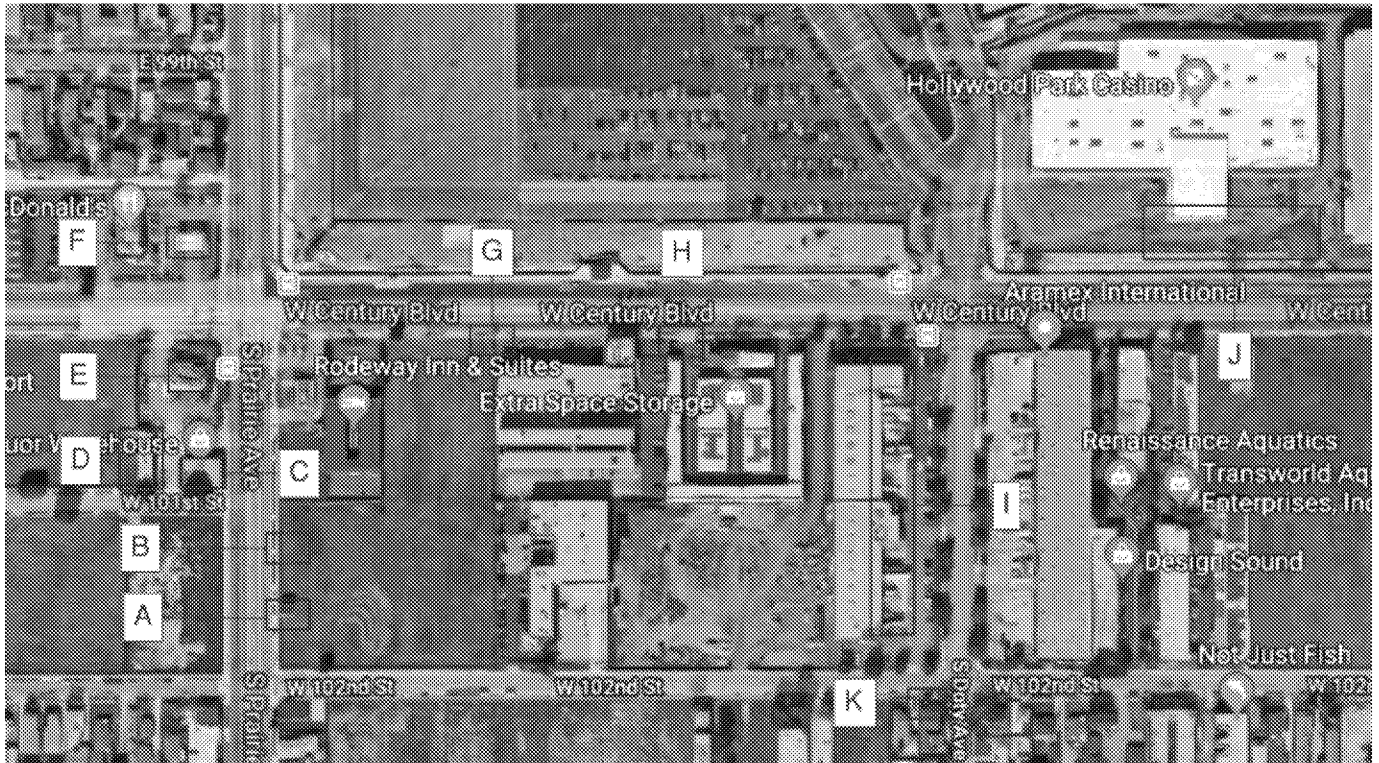
The onsite survey occurred on three consecutive evenings. This was to take similar readings across a few days to get the accurate average illumination number to confirm that the readings are consistent, and not being affected by a random occurrence.

- On January 21, 2019 starting at 5:00 PM, Lighting Design Alliance conducted a site visit to the City of Inglewood for the light level survey. On January 21, sunset was approximately at 5:13 PM.
- On January 22, 2019 starting at 5:00 PM, Lighting Design Alliance conducted a site visit to the City of Inglewood for the light level survey. On January 22, sunset was approximately at 5:14 PM.
- On January 23, 2019 starting at 5:00 PM, Lighting Design Alliance conducted a site visit to the City of Inglewood for the light level survey. On January 23, sunset was approximately at 5:15 PM.

Site Illuminance Map of Existing Footcandle Readings:



Site Luminance Readings of Existing Brightness Contributors:



A- Static Billboard Location at S. Prairie Avenue and W. 102 Street –

Yellow – 59.7 cd/m²

White – 69.5 cd/m²



B- Typical LED Street Pole – 21,532 cd/m²



*LED Pole Taken During Day



* LED Pole Taken During Night

- C- Façade Lighting – Liquor Warehouse 10023 S Prairie Ave, Inglewood, CA 90303 –
LED Fluorescent linear downlights – 17,300 cd/m²
LED façade twinkle lights – 859 cd/m²
Internally illuminated signage – 442 cd/m²



- D- Façade Lighting – Sunshine Coin Laundry 10001 S Prairie Ave, Inglewood, CA 90304 –
Internally illuminated signage – 116 cd/m²



- E- Façade Lighting – Starbucks 4000 W Century Blvd, Inglewood, CA 90304 – Internally illuminated signage – 201.5 cd/m²



- F- Façade Lighting – Chevron 4015 W Century Blvd, Inglewood, CA 90304 – Internally illuminated signage – 84.5 cd/m²



G- Static Billboard Location at W Century Boulevard – How to Train Your Dragon –

Light Blue – 63.9 cd/m²

White – 50.4 cd/m²



H- Façade Lighting – Extra Space Storage 3846 W Century Blvd, Inglewood, CA 90303 –

Internally illuminated signage –

Green – 44.2 cd/m²

White – 129 cd/m²

Building mounted floodlight – 5,125 cd/m²



- I- Façade Lighting – SES International Express 10105 S Doty Ave # A, Inglewood, CA 90303–
Building mounted floodlight – High Elevation – 89,000 cd/m²
Building mounted floodlight – Lower Elevation – 5,952 cd/m²



- J- Façade Lighting – Hollywood Park Casino 3883 W Century Blvd, Inglewood, CA 90303 –
Internally illuminated signage – 30.5 cd/m²
LED Parking Lot Pole – 11,005 cd/m²
Digital LED Screen –
White – 1,300 cd/m²
Red – 135 cd/m²
Blue – 57.4 cd/m²

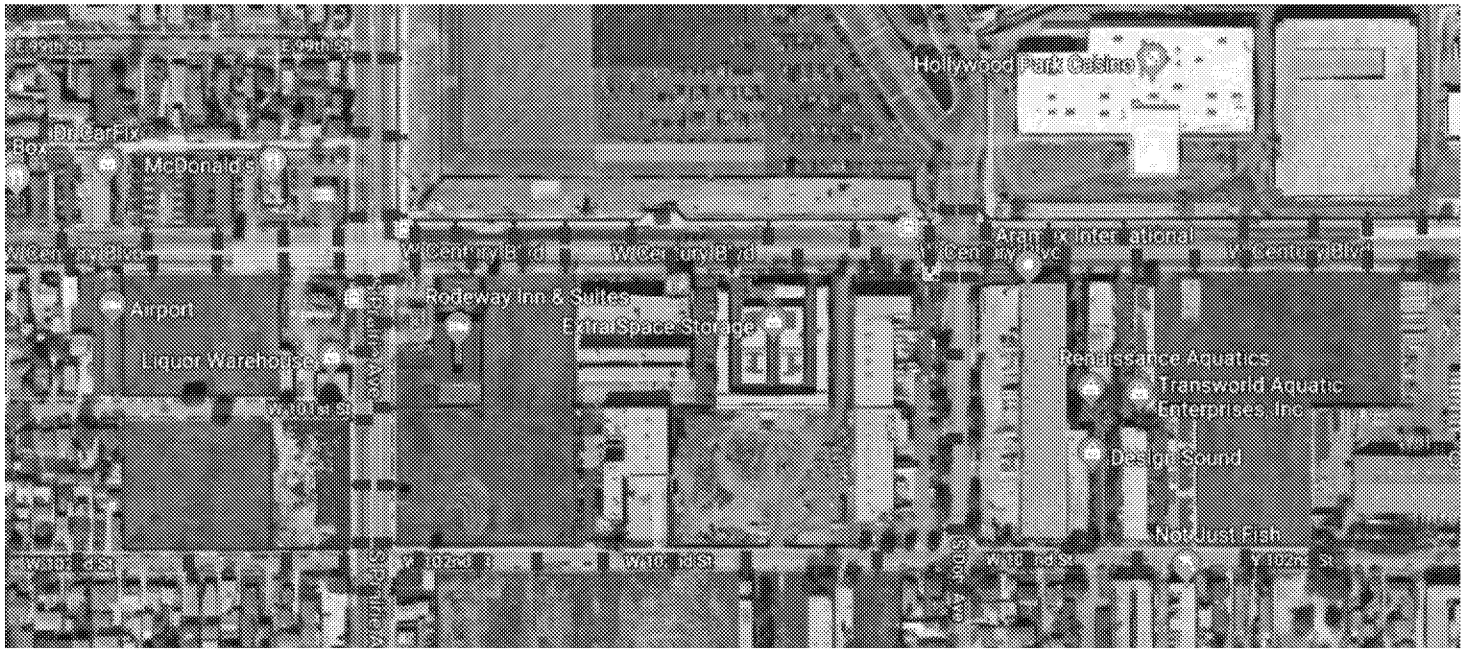




K- Façade Lighting – Residence 3800 W. 102nd Street, Inglewood, CA 90303–
Building mounted floodlight –6,100 cd/m²



Existing Street Pole Locations:



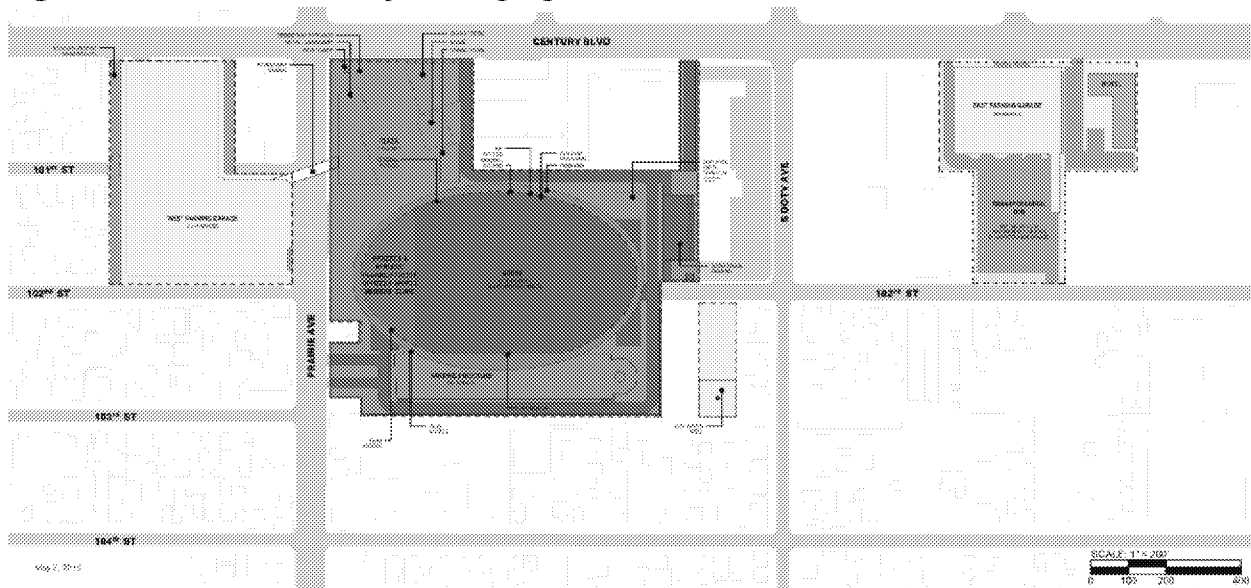
5 – PROJECT LIGHTING

The lighting scheme for the Arena, and Project Site overall, is being designed by AECOM. We are discussing the general lighting solution for each area and discussing the lighting fixture specifications that AECOM has selected, and used for their overall Site Photometric Calculations, which shows how much contributed lighting is coming from each portion of the project.

5.1 Arena Lighting

The central part of the Project Site that would include the arena, public plaza, community space, practice facility, sports medicine clinic, team offices, retail/restaurants, a parking structure, and related development. The tallest point of the Arena building is roughly 115'-6" above ground level.

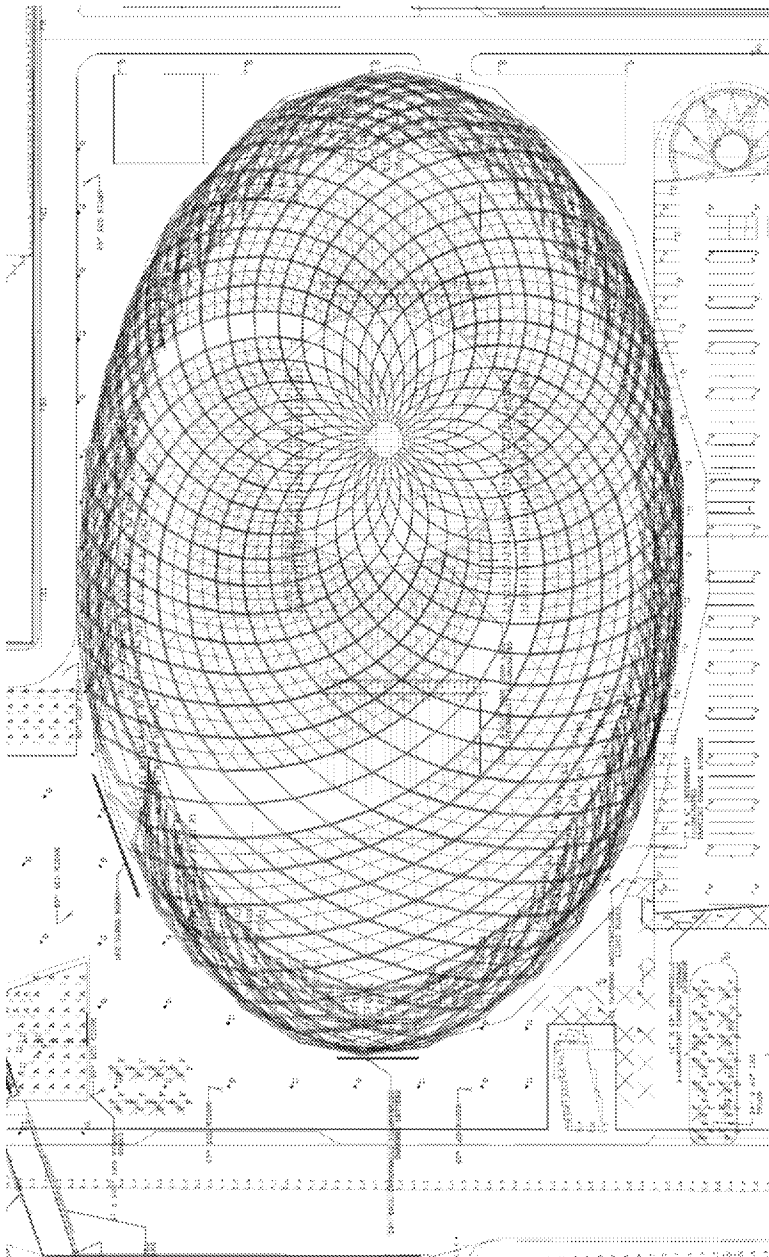
Figure 5-1 – Reference Site Map with Highlighted Arena and Plaza Location



Façade Lighting-

The façade is a combination of a glass curtain wall system. The sides of the façade consist of a perforated or patterned metal cladding with an integrated LED system for illumination. For the metal cladding lighting effect, light fixture will be creating an indirect lighting effect so that there are no visible light sources. The fixture is an RGB (red, green, blue) color changing LED tapelight mounted behind perforated metal façade to create a glow. Where the façade consists of solar arrays, or glass curtain walls, RGB LED flood lighting will be utilized to cast light upon the façade. The façade will also feature several signage locations. The signage locations will either be internally illuminated, or a digital screen. One digital screen location is facing the Plaza Zone, and there are 14' tall internally illuminated channel letters directed towards Prairie Avenue.

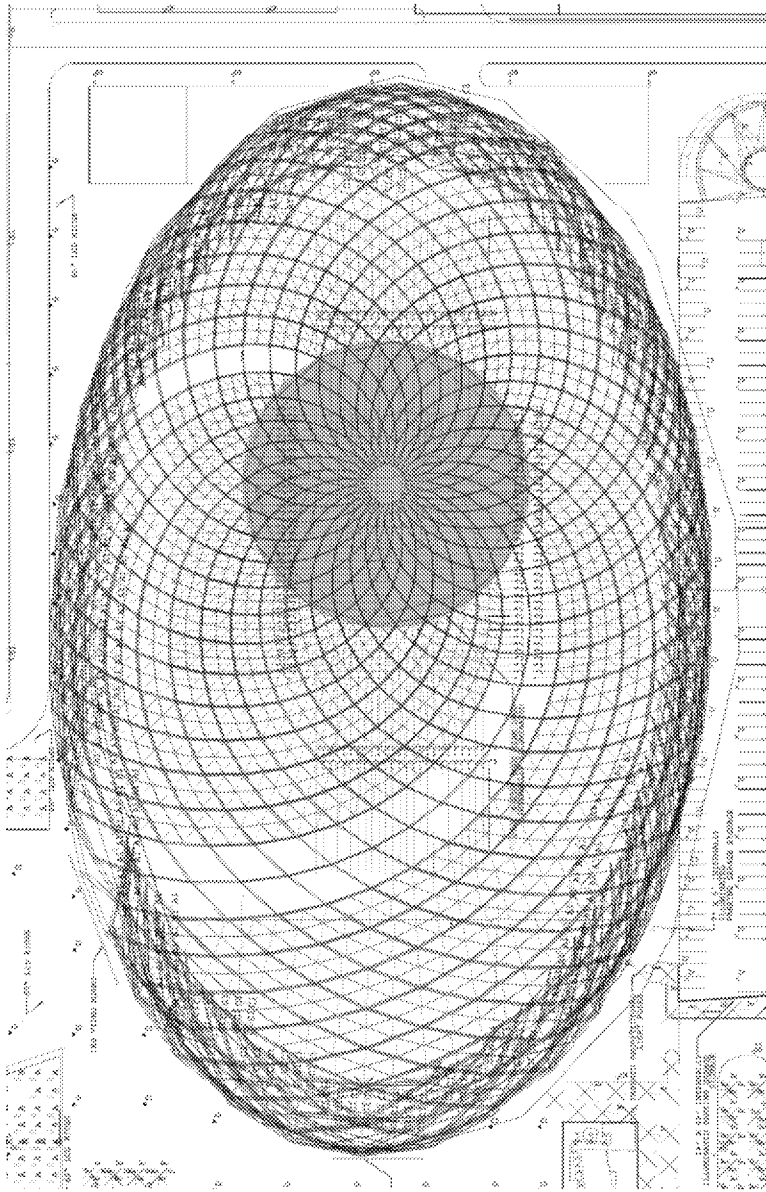
Figure 5-2 – Reference Plan of Arena Building



Roof Lighting-

Signage on roof to be visible for when planes are passing over. The fixture is an RGB (red, green, blue) color changing LED tapelight mounted around the raised 3D signage letters to create a halo light effect.

Figure 5-3 – Reference Plan of Arena Building, Showing Roof Signage Location



Interior Lighting-

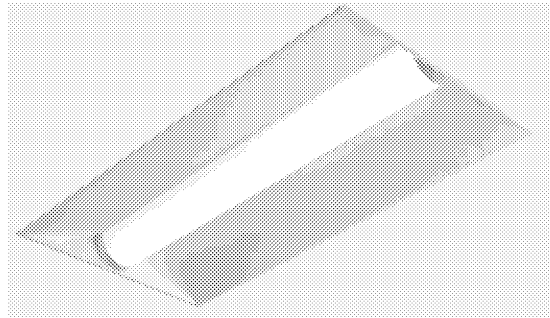
With the glass curtain wall system at the first level, there will be visible interior lighting that will be seen from the outside plaza and street. The interior lighting has not been defined yet. Illuminating vertical surfaces will allow the interior to be visible from the exterior through the glass walls.

Fixture types used for interior Arena illumination:

A1: Description- Recess Mounted 2'x4' LED Troffer with Indirect/direct optics (interior light fixture only)

Manufacturer- HE Williams

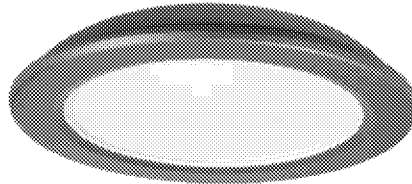
Reference Fixture Image-



C1: Description- LED sports flood light fixture: adjustable vertical horizontal yoke, visor, anti-glare lens, 100% down.

Manufacturer- Cooper Lighting - Metalux

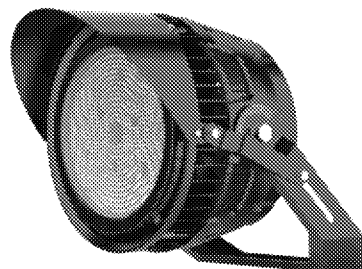
Reference Fixture Image-



J: Description- LED sports flood light fixture: adjustable vertical horizontal yoke, visor, anti-glare lens.

Manufacturer- Specgrade LED

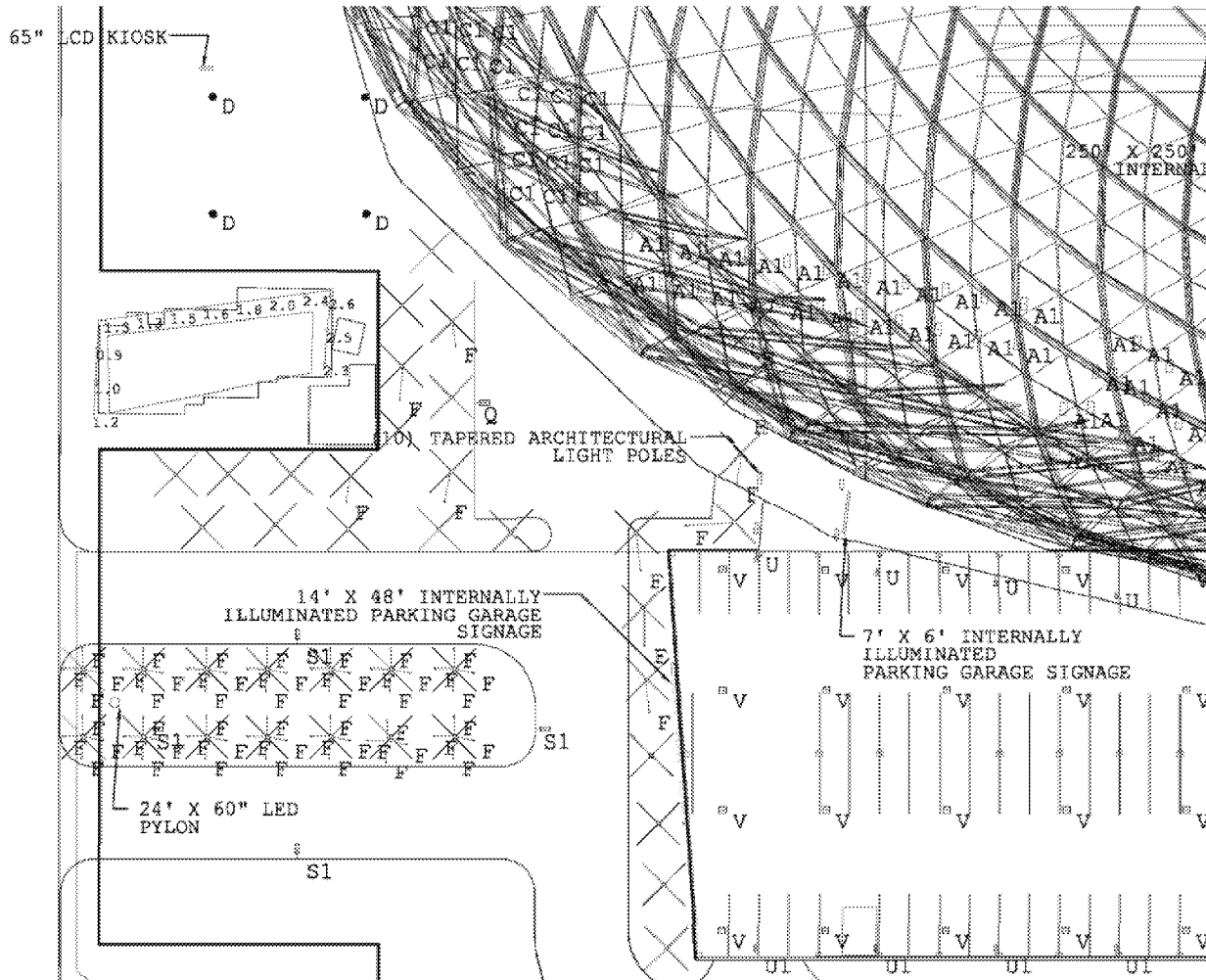
Reference Fixture Image-



Entry Drive off of Prairie Avenue Lighting-

The Entry Drive off Prairie Avenue has a landscaped median with digital LED pylon signage, and landscape mounted tree accent fixtures. Along the driveways are LED pole mounted lights to illuminate the drive aisles and exterior parking spaces. There are some decorative pedestrian level light poles around the plaza area to the west of the Arena building.

Figure 5-4 – Reference Plan of Entry Drive

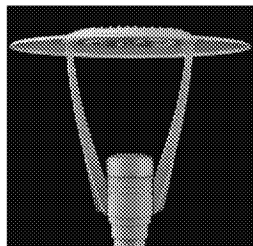


Fixture types used for Entry Drive illumination:

D: Description- Post top LED pedestrian light fixture with 100% cut-off optics, 12'-0" pole, and type V distribution optics

Manufacturer- Luminis

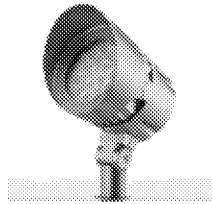
Reference Fixture Image-



F: Description- Small LED spot light with tight 15 degree optic distribution or in ground LED spot light with tight optics for landscape lighting

Manufacturer- FC Lighting

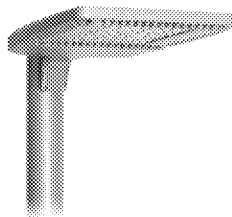
Reference Fixture Image-



Q & S1: Description- LED roadway/parking lot pole light fixture with 100% cut-off, BUG rated, 25'-0" pole

Manufacturer- Philips Gardco

Reference Fixture Image-



Plaza/Courtyard Lighting-

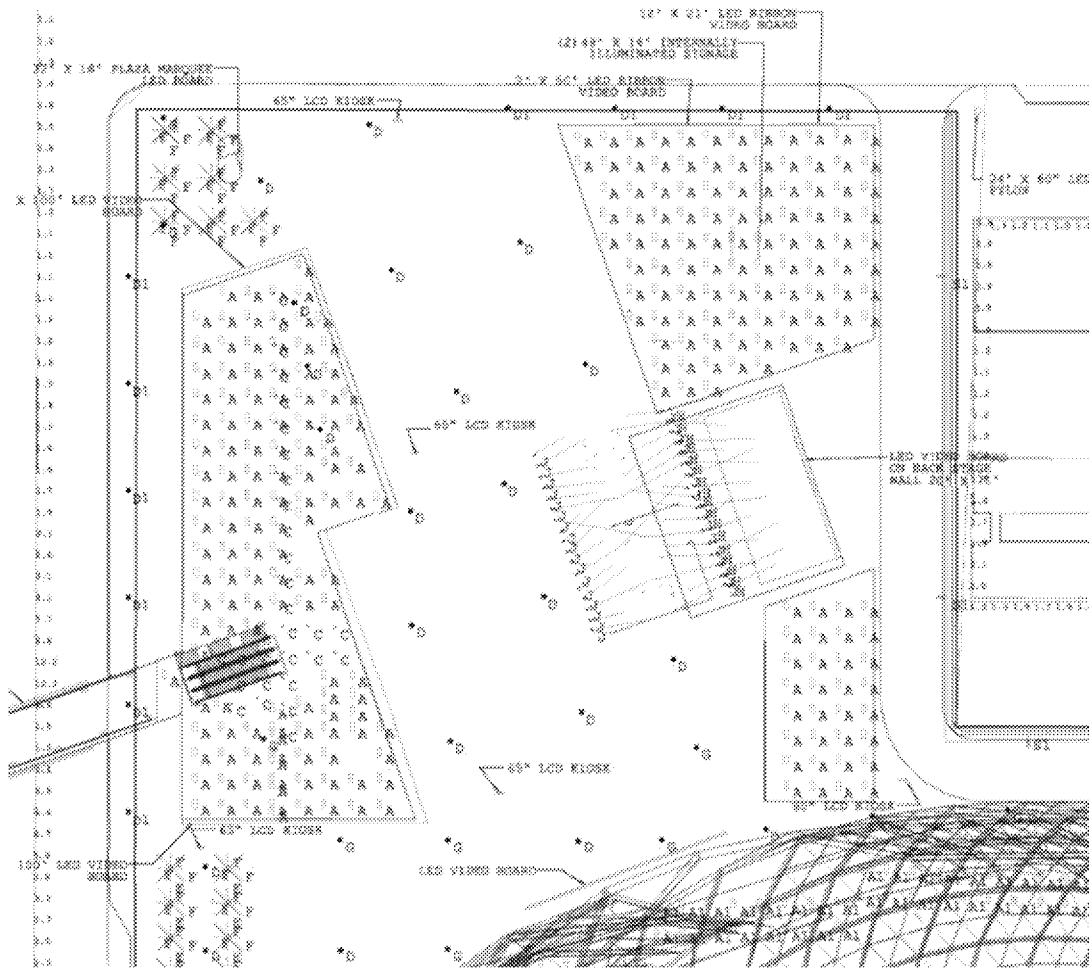
The Plaza has several layers of lighting to create a dynamic space.

- To create general illumination in the plaza, there is a series of pedestrian level light poles. These poles are designed to provide downlighting only, with little to no uplight.
- There are several planter locations where there are tree accent fixtures.
- On the retail portion of the façade, there is a series of surface mounted LED downlights to provide general illumination.
- Throughout the plaza there are several signage locations. There are façade-mounted LED digital screens, and pylon mounted LED digital screens on all four sides. The pylons have a series of LED adjustable floodlights mounted to the structure to provide accent lighting in the plaza.
- There will be an assumption for façade and interior lighting for the Restaurant and Retail spaces that will be designed with tenant coordination.

The stage area is located directly behind the public basketball court. The stage area will be used for special events, so it will require several layers of lighting to create dynamic events at night.

- On the back of the stage, there is a large-scale LED digital screen.
- To illuminate the performers on stage, there will be a theatrical hang-bar on which a series of color changing theatrical projector fixtures.
- To provide illumination on the public court, there are a series of pylon mounted LED digital screens on all four sides. The pylons have a series of LED adjustable floodlights mounted to the structure to provide accent lighting in the plaza.

Figure 5-5 – Reference Plan of Plaza

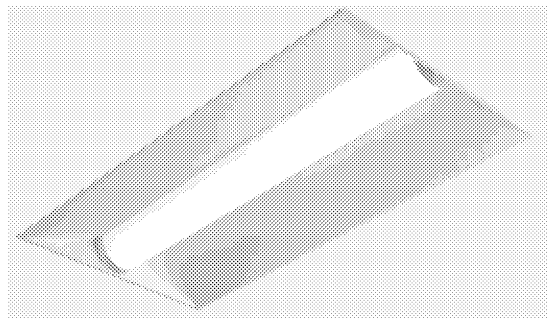


Fixture types used for Plaza illumination:

A: Description- Recess Mounted 2'x4' LED Troffer with Indirect/direct optics (interior light fixture only)

Manufacturer- HE Williams

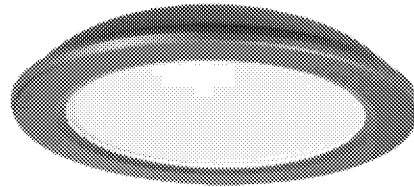
Reference Fixture Image-



C: Description- LED sports flood light fixture: adjustable vertical horizontal yoke, visor, anti-glare lens, 100% down.

Manufacturer- Cooper Lighting - Metalux

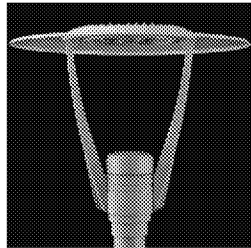
Reference Fixture Image-



D, D1 & G: Description- Post top LED pedestrian light fixture with 100% cut-off optics, 12'-0" pole, and type V distribution optics

Manufacturer- Luminis

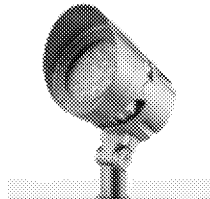
Reference Fixture Image-



F: Description- Small LED spot light with tight 15 degree optic distribution or in ground LED spot light with tight optics for landscape lighting

Manufacturer- FC Lighting

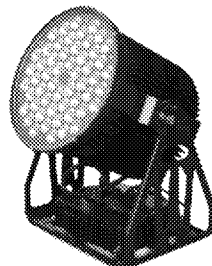
Reference Fixture Image-



H: Description- RGB LED color-changing projector adjustable vertical horizontal yoke, for theatrical lighting

Manufacturer- Specgrade LED

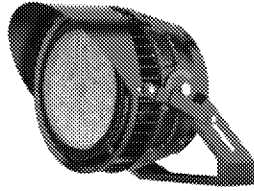
Reference Fixture Image-



J: Description- LED sports flood light fixture: adjustable vertical horizontal yoke, visor, anti-glare lens.

Manufacturer- Specgrade LED

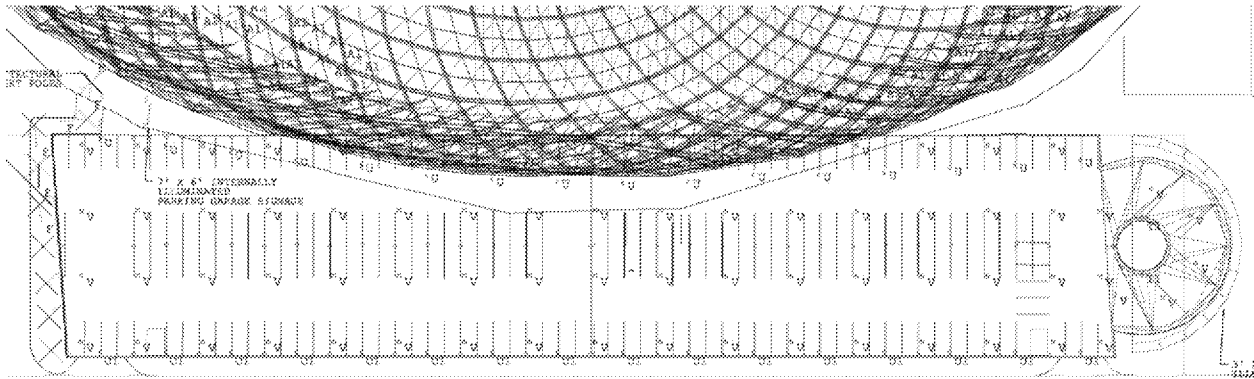
Reference Fixture Image-



Garage Lighting-

For the 5-story Team and Premium Fan Parking Garage located to the south of the Arena site, the building has minimal to no façade lighting. The intent would be to have the building be less illuminated on the outside, as it is located next to a residential zone. The parking garage façade has open portions on the vertical façade, so the interior is visible from the exterior depending on where the person is. The interior of the garage will be illuminated by a series of LED surface mounted downlights, so the fixtures will need to have the light source shielded with good glare control, so that the visual into the fixture from the exterior is minimized.

Figure 5-6 – Reference Plan of Parking Structure Attached to Arena

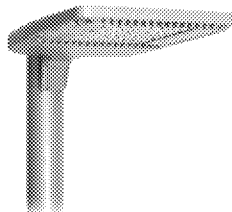


Fixture types used for Garage illumination:

U & U1: Description- LED roadway/parking lot pole light fixture with 100% cut-off, BUG rated, 25'-0" pole

Manufacturer- Philips Gardco

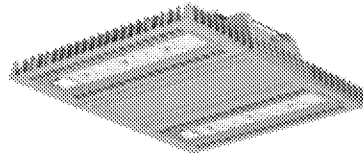
Reference Fixture Image-



V: Description- Garage/canopy LED light fixture with 100% cut-off, BUG rated, and surface mounted in parking garages for 100% downlight

Manufacturer- Philips Gardco

Reference Fixture Image-



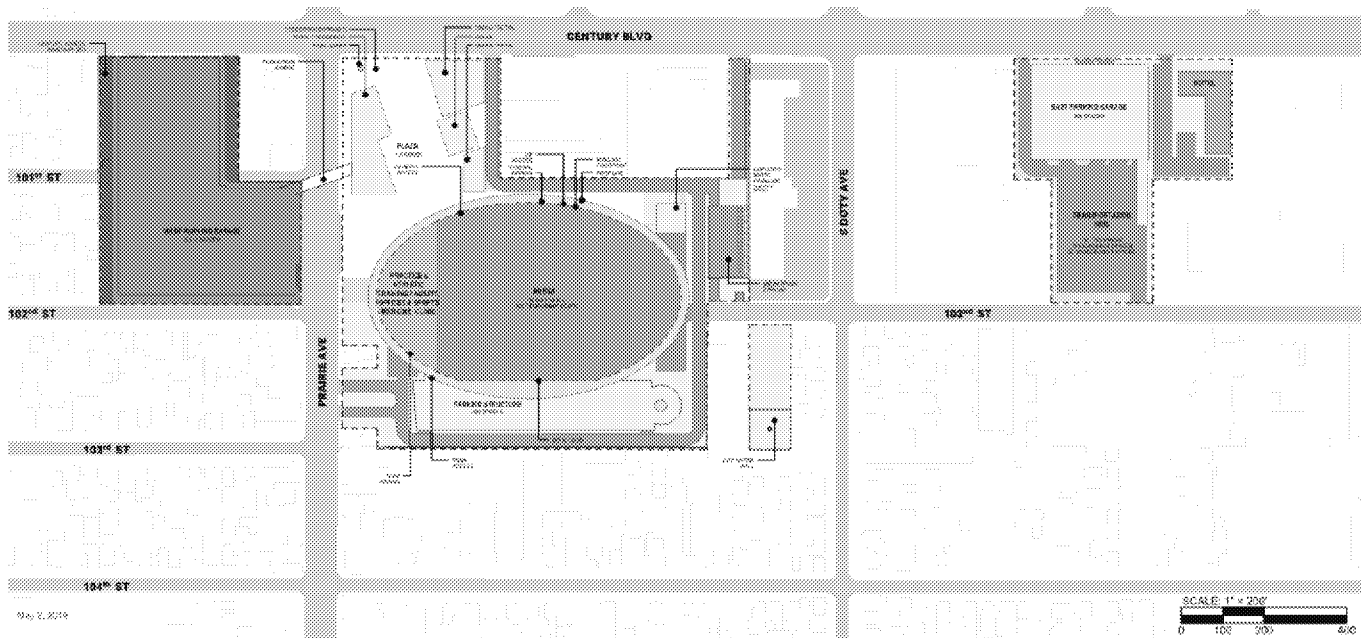
Street Lighting-

For the street lighting, we are assuming that the existing LED street poles will remain, and that no additional street poles will be added.

5.2 West Parking Garage Site Lighting

The part of the Project Site west of the Arena Site that would include a multi-level parking structure and a transportation hub including private or charter bus staging area and a drop-off, staging, and pick-up area for Transportation Network Company (TNC)² vehicles/taxis serving the Arena Site.

Figure 5-7 – Reference Site Map



Façade Lighting-

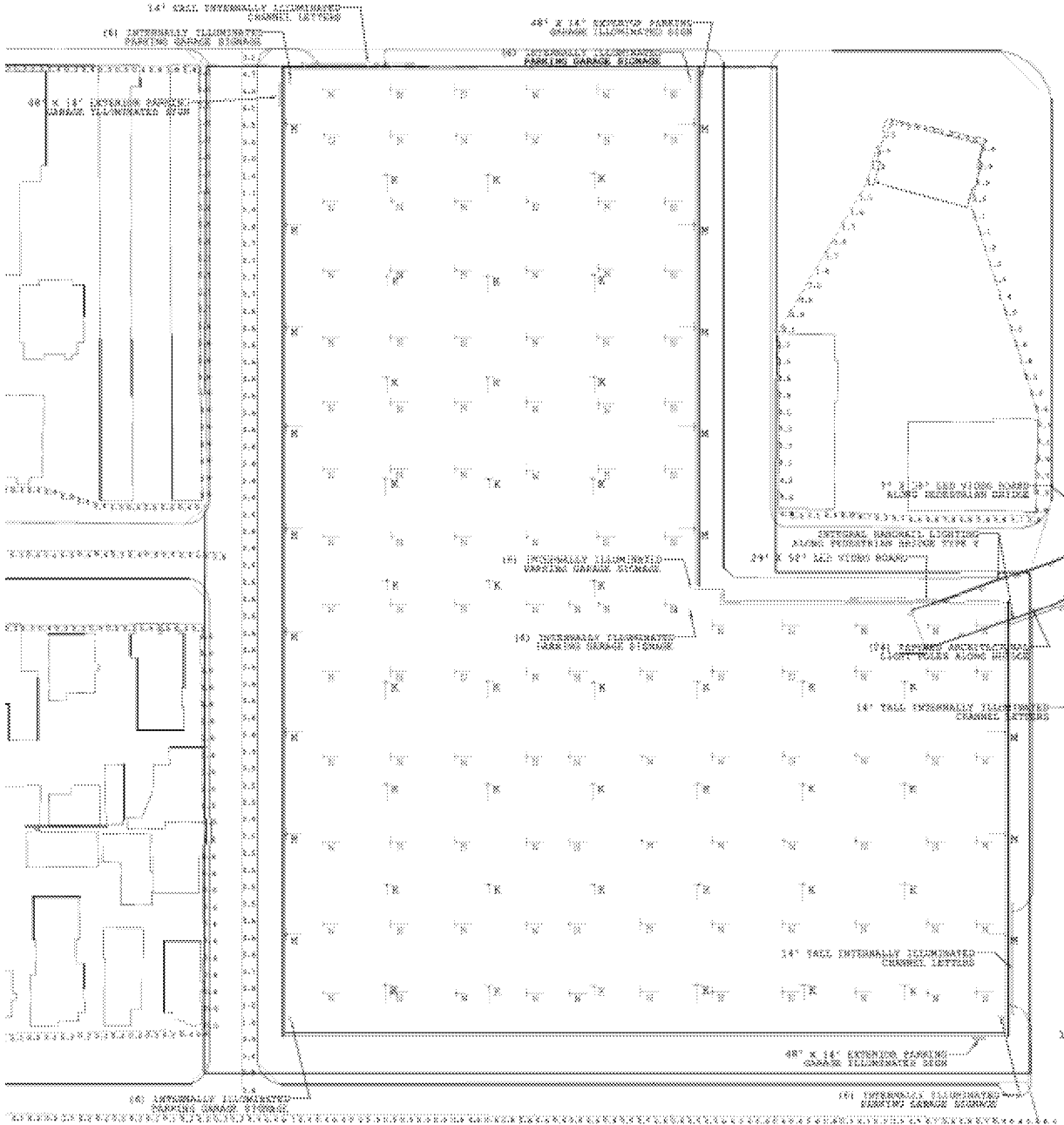
For the West Parking Garage located to the west of the Arena site, the building has minimal to no façade lighting. The intent would be to have the building be less illuminated on the outside, as it is located next to a residential zone. There are several internally illuminated façade mounted signage or channel letter locations around each façade. On the north facing façade located next to the pedestrian bridge is a LED video board.

² A transportation network company (TNC), sometimes known as a mobility service provider (MSP), is an organization that pairs passengers via websites and mobile apps with drivers who provide transportation services.

Garage Lighting-

The parking garage façade has open portions on the vertical façade, so the interior is visible from the exterior depending on where the person is. The interior of the garage will be illuminated by a series of LED surface mounted downlights, so the fixtures will need to have the light source shielded with good glare control, so that the visual into the fixture from the exterior is minimized.

Figure 5-8 – Reference Plan of West Garage

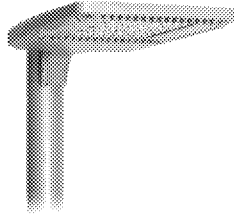


Fixture types used for Plaza illumination:

K & M: Description- LED roadway/parking lot pole light fixture with 100% cut-off, BUG rated, 25'-0" pole

Manufacturer- Philips Gardco

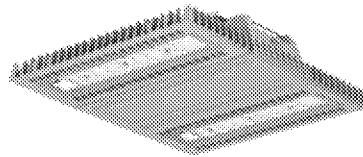
Reference Fixture Image-



N: Description- Garage/canopy LED light fixture with 100% cut-off, BUG rated, and surface mounted in parking garages for 100% downlight

Manufacturer- Philips Gardco

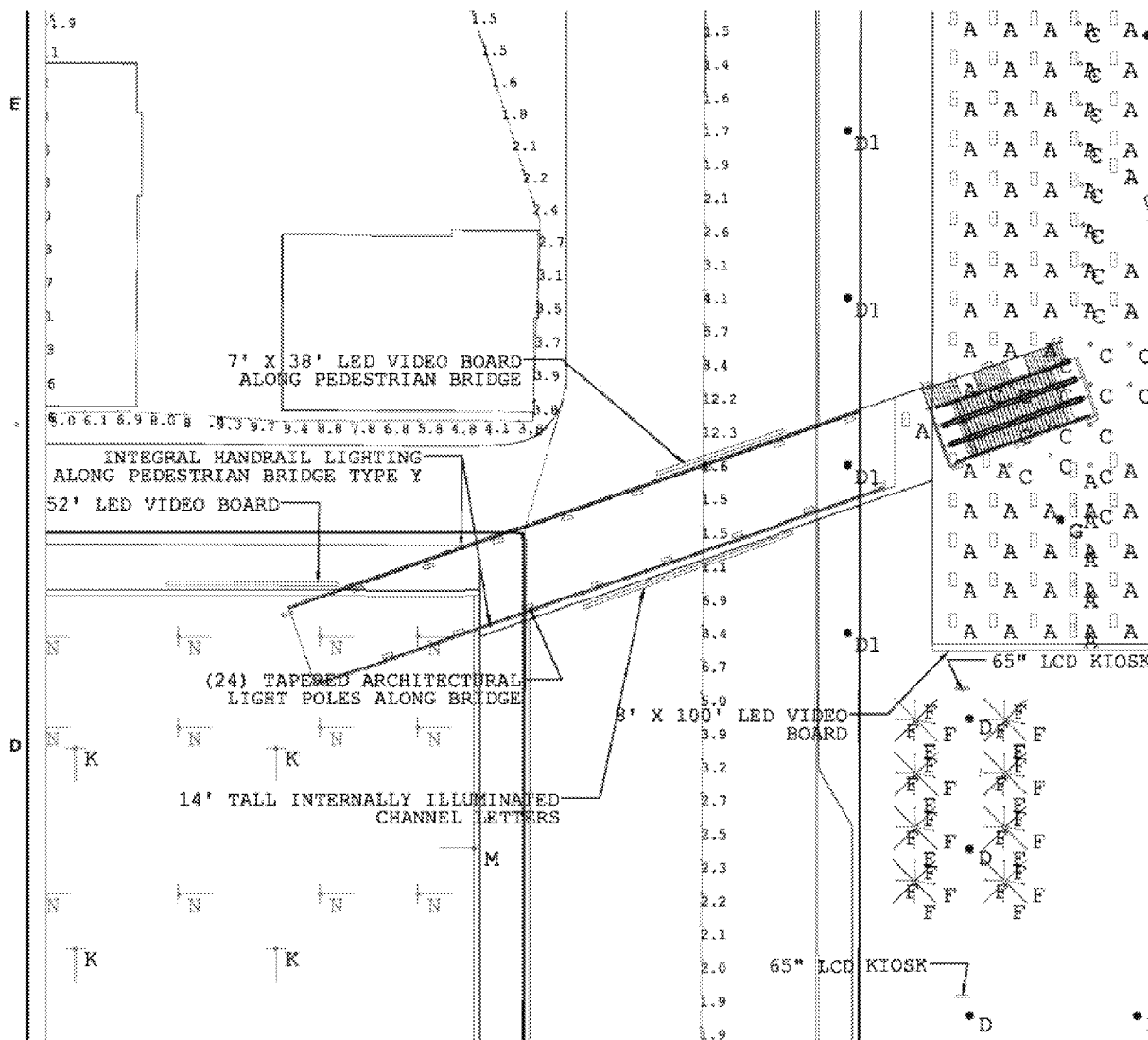
Reference Fixture Image-



Bridge Lighting-

The bridge links the parking lot with the Arena Plaza. The top of the bridge is open, so for illumination, there will be a handrail on each side of the bridge with an integrated asymmetric LED striplight to provide low level illumination on the bridge walkway path. There will also be digital signage attached to both sides of the bridge along Prairie Avenue.

Figure 5-9 – Reference Plan of Bridge



Street Lighting-

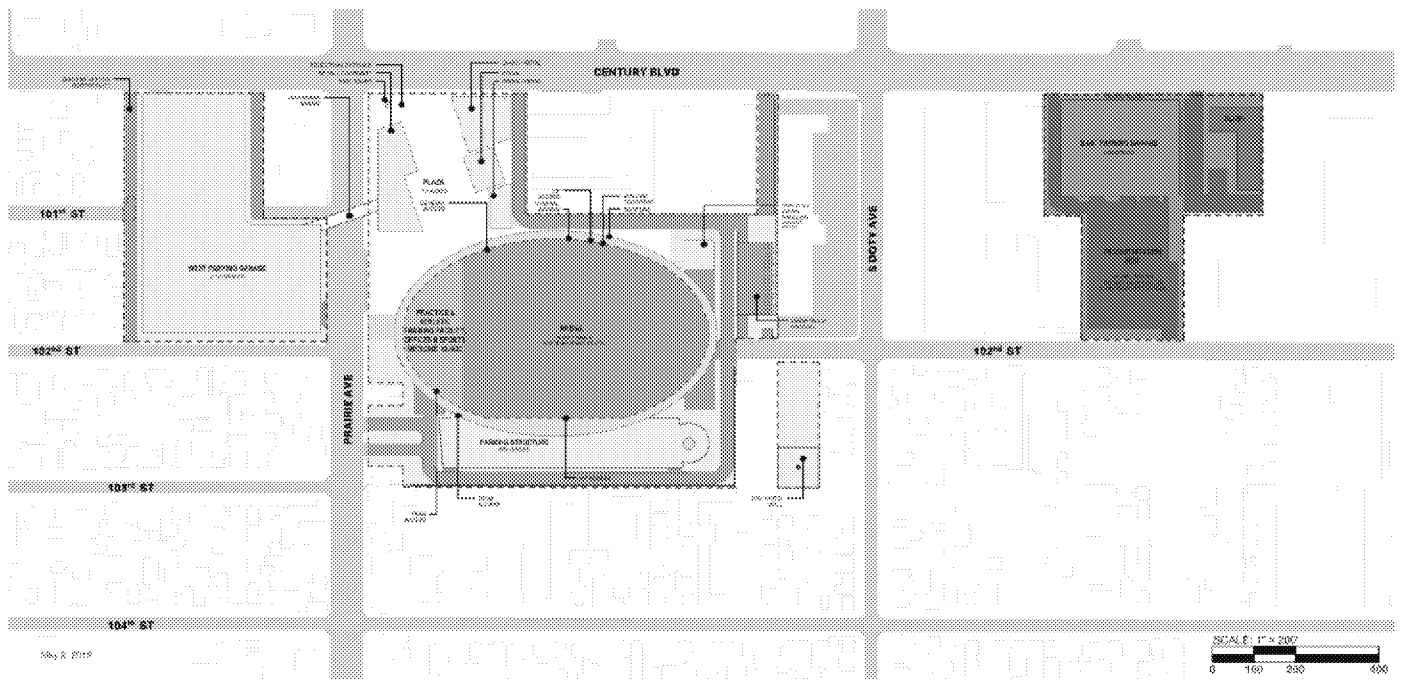
For the street lighting, we are assuming that the existing LED street poles will remain, and that no additional street poles will be added.

Confirm if any additional downlights are needed under the bridge to provide illumination on the street below.

5.3 East Transportation and Hotel Site Lighting

The portion of the Project Site east of the Arena Site that would include a surface parking lot serving the Arena Site and a limited-service hotel.

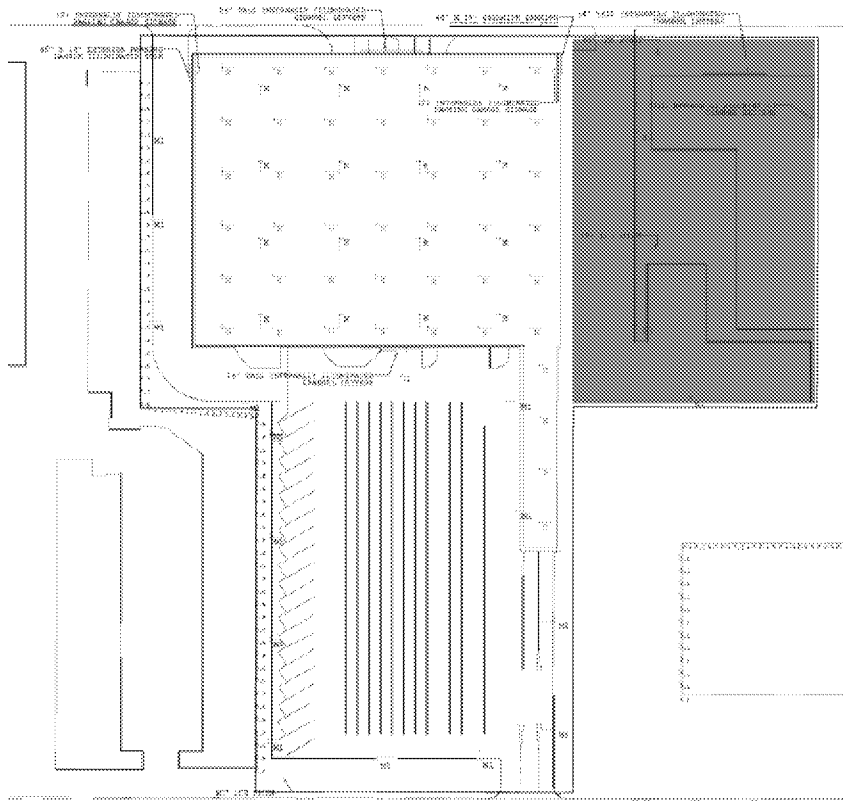
Figure 5-10 – Reference Site Map



Hotel Façade Lighting-

The Hotel Site façade will have a combination of façade accent lighting and illuminated signage. The lighting design for this portion of the project has not been finalized at the time of this report.

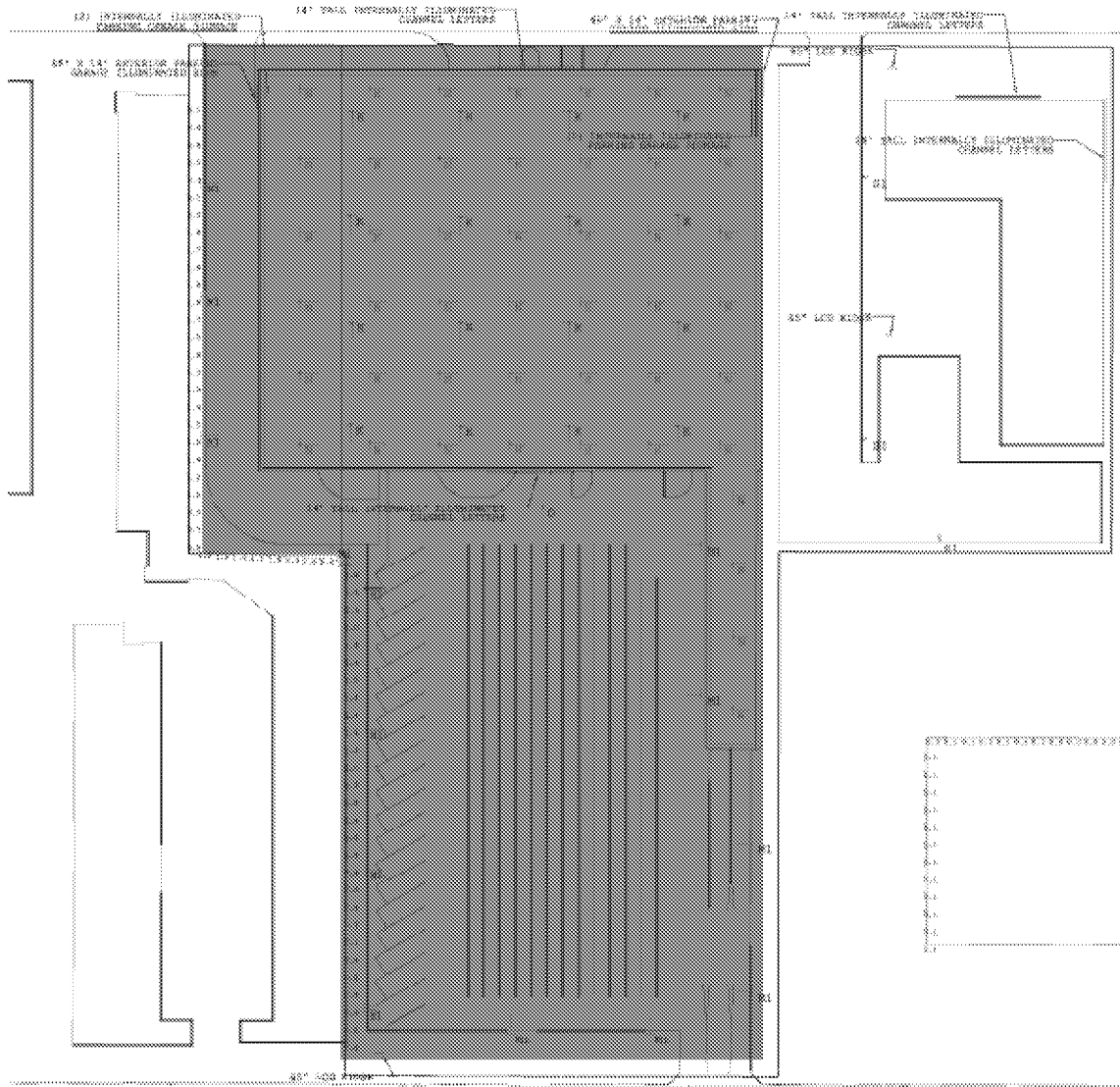
Figure 5-11 – Reference Plan of Hotel Site



Parking Lot Lighting-

The parking lot is located next to the parking garage and features a series of LED post top mounted fixture heads for general illumination of the parking lot for security purposes.

Figure 5-12 – Reference Plan of Parking Site

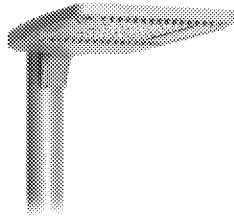


Fixture types used for Plaza illumination:

K & M: Description- LED roadway/parking lot pole light fixture with 100% cut-off, BUG rated, 25'-0" pole

Manufacturer- Philips Gardco

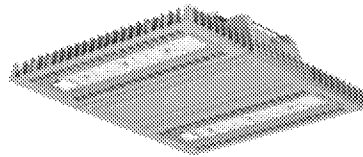
Reference Fixture Image-



N: Description- Garage/canopy LED light fixture with 100% cut-off, BUG rated, and surface mounted in parking garages for 100% downlight

Manufacturer- Philips Gardco

Reference Fixture Image-



Street Lighting-

For the street lighting, we are assuming that the existing LED street poles will remain, and that no additional street poles will be added.

5.4 Well Relocation Site Lighting

The portion of the Project Site east of the Arena Site that would contain on-site relocation of a City-owned and -operated potable water well. The Well Relocation Site would not include lighting.

6 – PROJECT VARIANTS LIGHTING

The Proposed Project includes two variants to circulation infrastructure. These variants are not proposed as part of the Project because there is some uncertainty about the feasibility of the variants. They are being identified and analyzed, however, to provide the flexibility to allow the City to approve them as part of the Proposed Project, if desired, and if the uncertainty around the implementation of one or both of the variants can be overcome.

West Century Boulevard Pedestrian Bridge Variant

The West Century Boulevard Pedestrian Bridge Variant would result in the construction of a second pedestrian bridge across West Century Boulevard (the Century Pedestrian Bridge), connecting a retail portion of the Arena Site to the Hollywood Park Specific Plan area to the north. The pedestrian bridge would provide a vertical clearance of approximately 14.5 to 15 feet over West Century Boulevard. The pedestrian bridge would connect with similar retail uses on the north side of West Century Boulevard. The pedestrian bridge would be constructed of materials similar to the Proposed Project's retail building in the plaza or the Arena Structure.

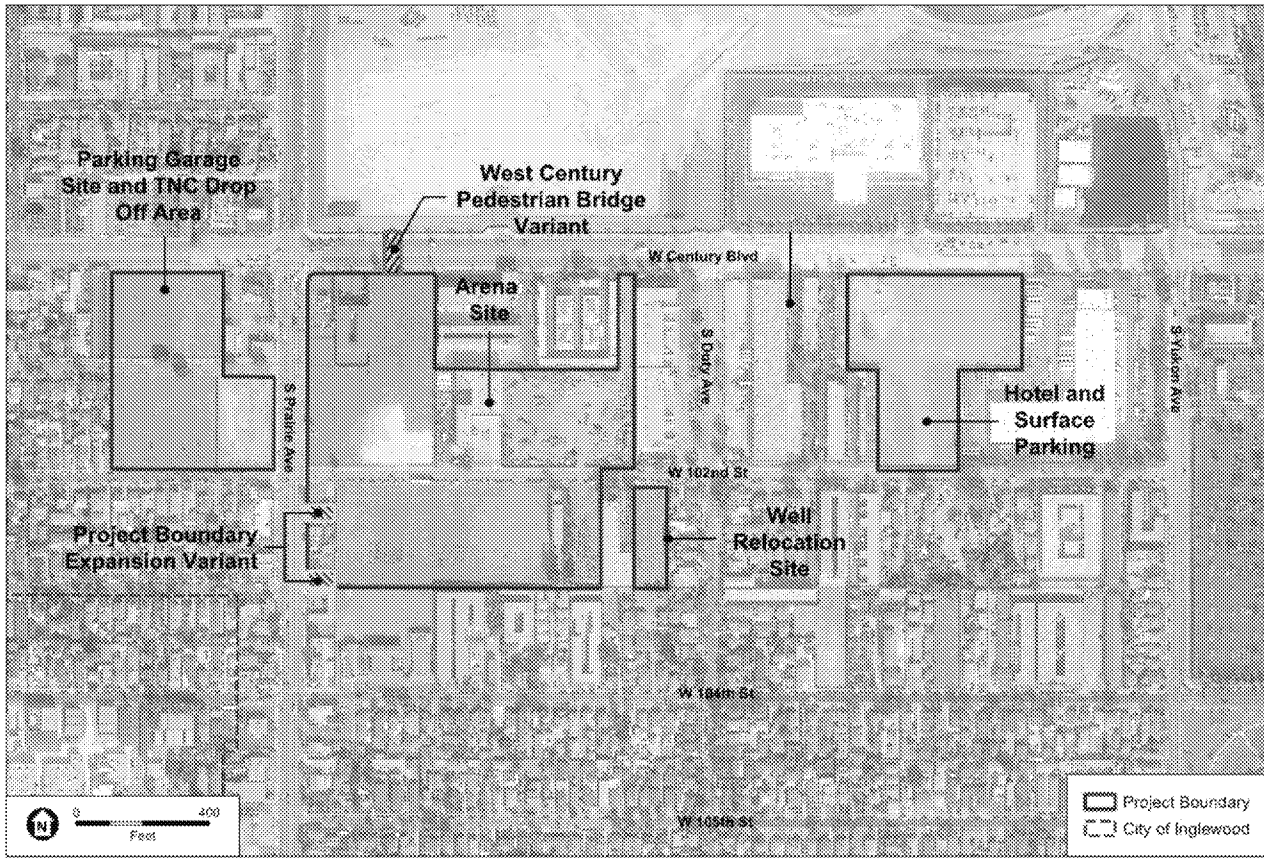
The top of the bridge would be open, so for illumination, there will be a handrail on each side of the bridge with an integrated asymmetric LED striplight to provide low level illumination on the bridge walkway path.

Alternate Prairie Access Variant

This variant would expand the boundary of the Arena Site portion of the Project Site by adding two additional properties to the Proposed Project: 10204 South Prairie Avenue and 10226 South Prairie Avenue. These two properties currently contain a single-family home and a triplex. Under this variant, the properties would be acquired through voluntary sales by the property owners to the project applicant. The residential uses on these two properties would be acquired and demolished as part of the Proposed Project. The acquisition and demolition of these two structures would allow the Arena Structure to be shifted slightly. As part of the Alternate Prairie Access Variant, the drop-off area for employees, team members, and visitors to the Arena Site would also shift slightly south, and site access to South Prairie Avenue would be slightly shifted south to more closely align with West 103rd Street. However, the overall circulation plan for the Project Site would not change.

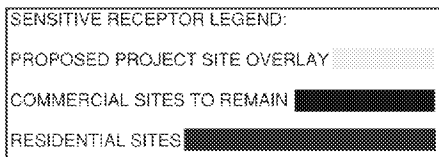
The lighting for the overall arena site would not change due to this variant, but it would remove the residential areas that are closest to the main Arena Site, and would remove the mitigation recommendations for the lighting on these sites if it was part of the overall site.

Figure 6-1 – Reference Site Map of Variant Locations



7 – SENSITIVE RECEPTORS (SR)

In the following site map, we have indicated in RED, the existing residential properties that surround the project site. Residential properties represent sensitive receptors for the purpose of this analysis. The YELLOW highlighted areas show the general layout of the new Project site, and how the existing residential and commercial sites will interact with the three main facility locations that will encompass the entire project scope.



To survey the potential impacts to the residential sites, we have broken them out individually to discuss the potential impacts that the Project site may have, what the contributed light levels will be per the AECOM photometric study.

For determining the lighting impacts from the Arena Project onto the Sensitive Receptors, we will be using the City of Los Angeles' CEQA thresholds for contributed light onto a residential site:

Chapter IX, Article 3, Section 93.0117 of the City of Los Angeles Municipal Code (LAMC) provides that no person shall construct, establish, create, or maintain any stationary exterior light source that may cause the following locations to either be illuminated by more than two footcandles of lighting intensity or receive direct glare from the light source:

- 1) Any exterior glazed window or sliding glass door on any other property containing a residential unit or units.
- 2) Any elevated habitable porch, deck, or balcony on any other property containing a residential unit or units.

- 3) Any ground surface intended for uses such as recreation, barbecue, or lawn areas on any other property containing a residential unit or units.

SR 1: 10204 Prairie Avenue

This residence is a series of smaller joined units, with three residential units. Under the Alternate Prairie Access Variant, this site would be demolished and redeveloped with the Proposed Project.

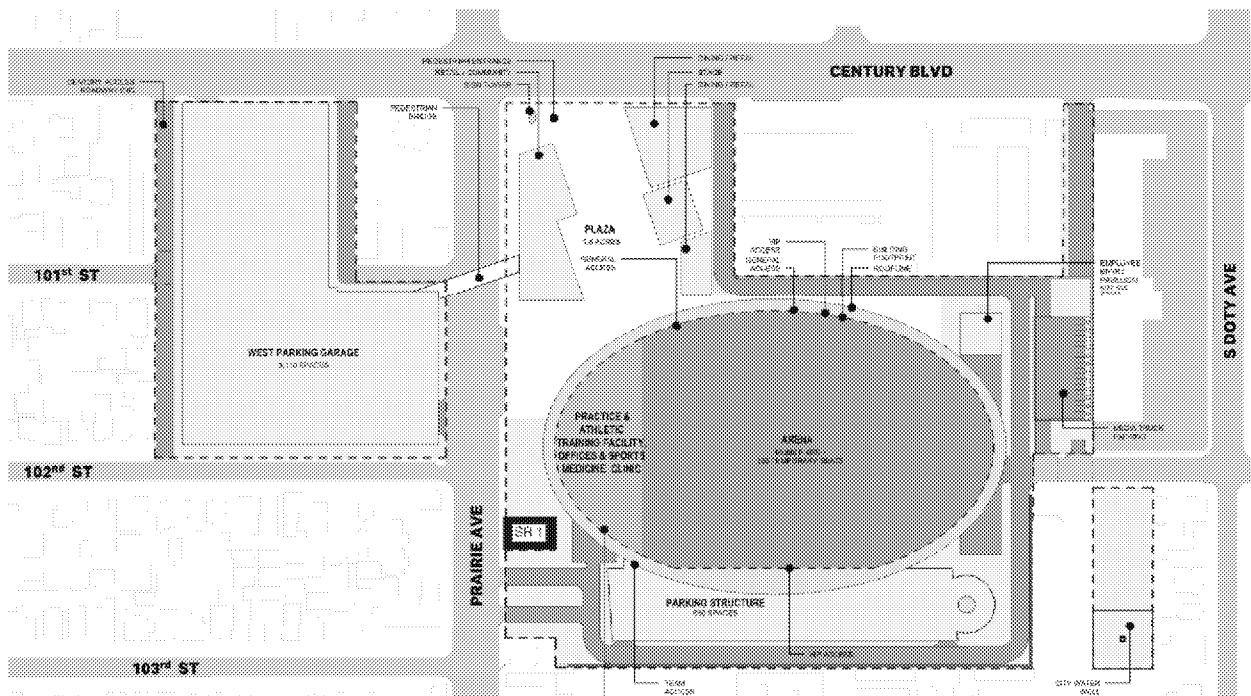
The residence is located roughly:

- 60' away from the edge of the south elevation of the Project Arena Building when measured from google maps
- 150' away from the edge of the West Parking Lot when measured from google maps
- 424' away from the edge of the West Parking Structure when measured from google maps
- 101' away from the Team and Premium Fan Parking Garage when measured from google maps

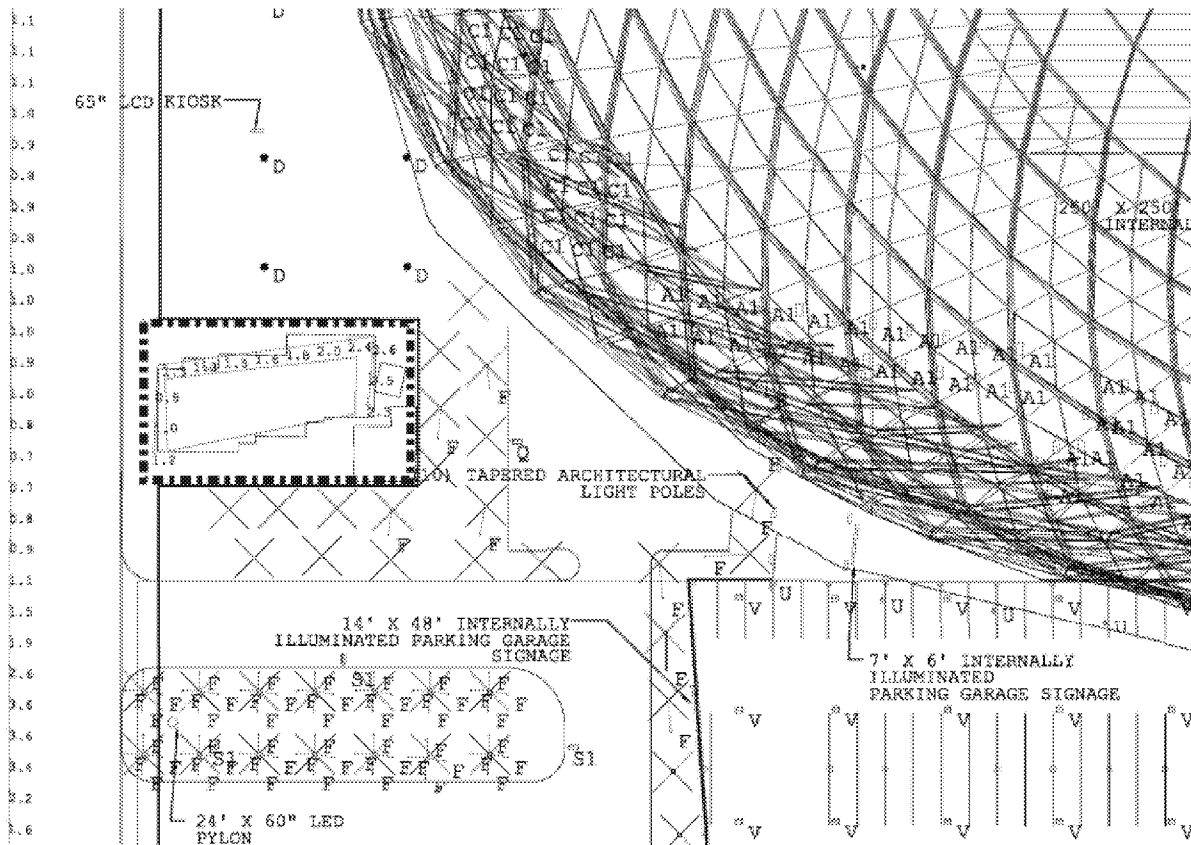
Overall Site Map:



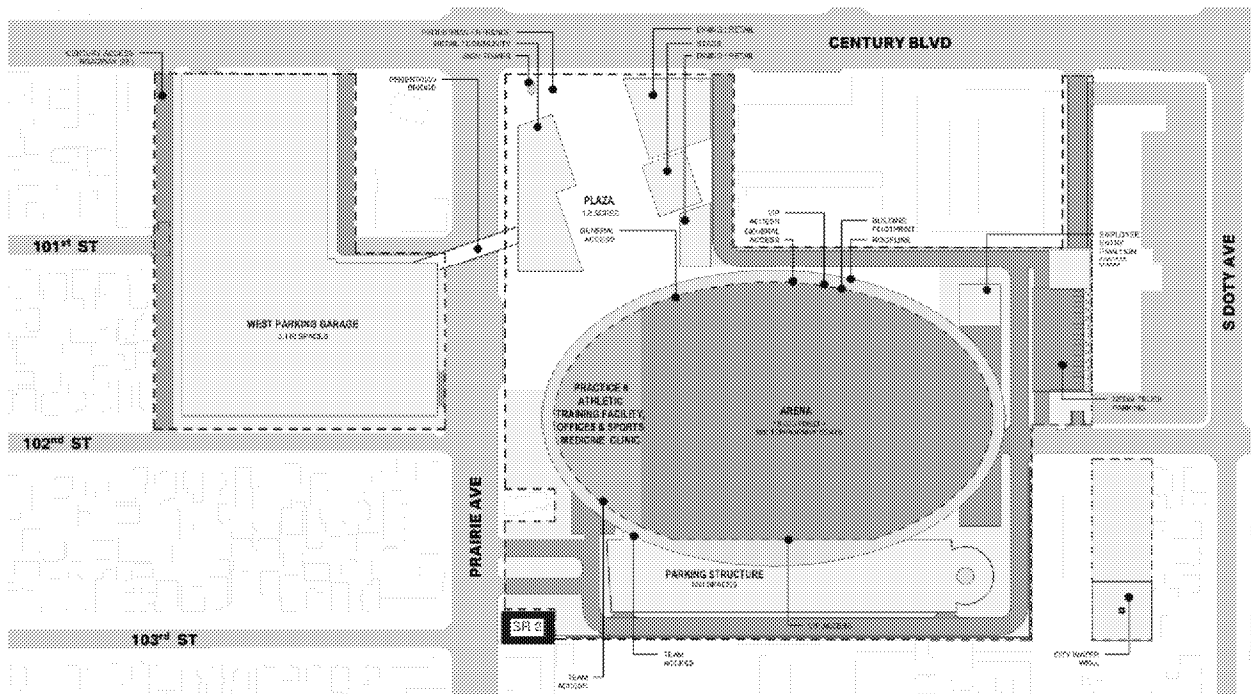
Location of SR 1 in relation to Proposed Project Site:



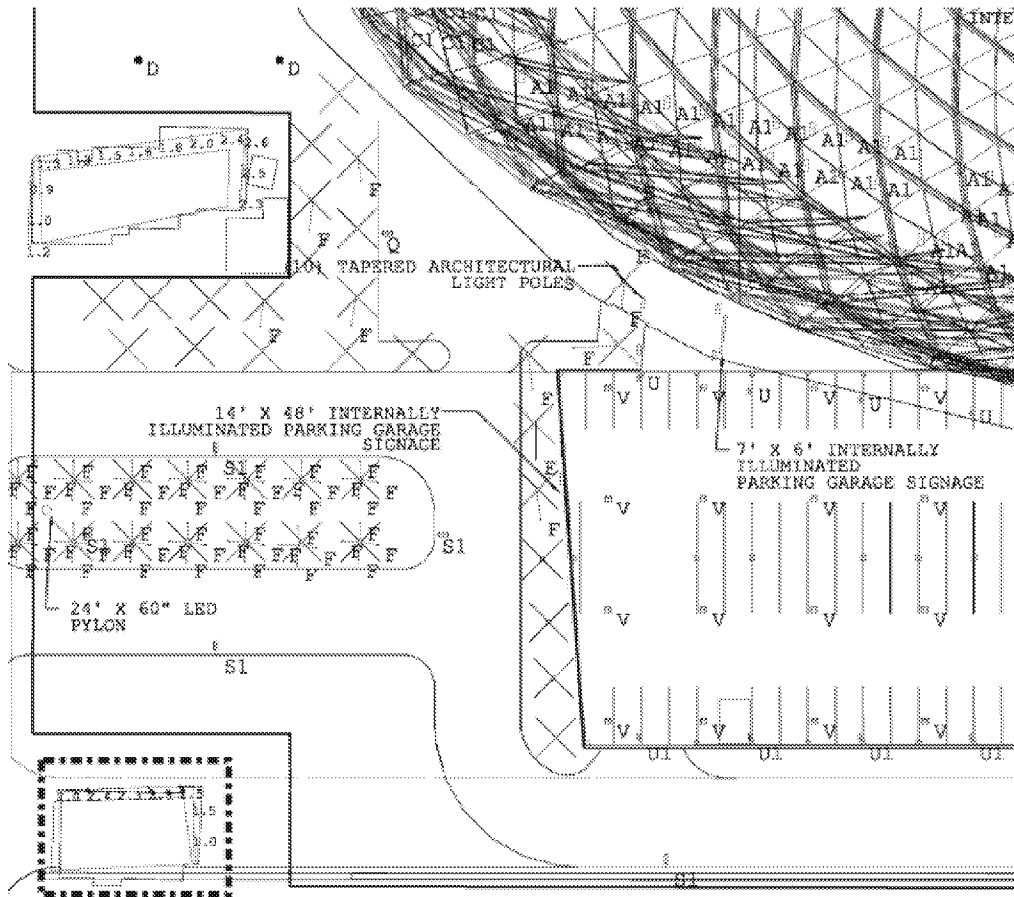
Enlarged AECOM Photometric Site Plan Showing SR 1 Site in Relation to Arena Building:



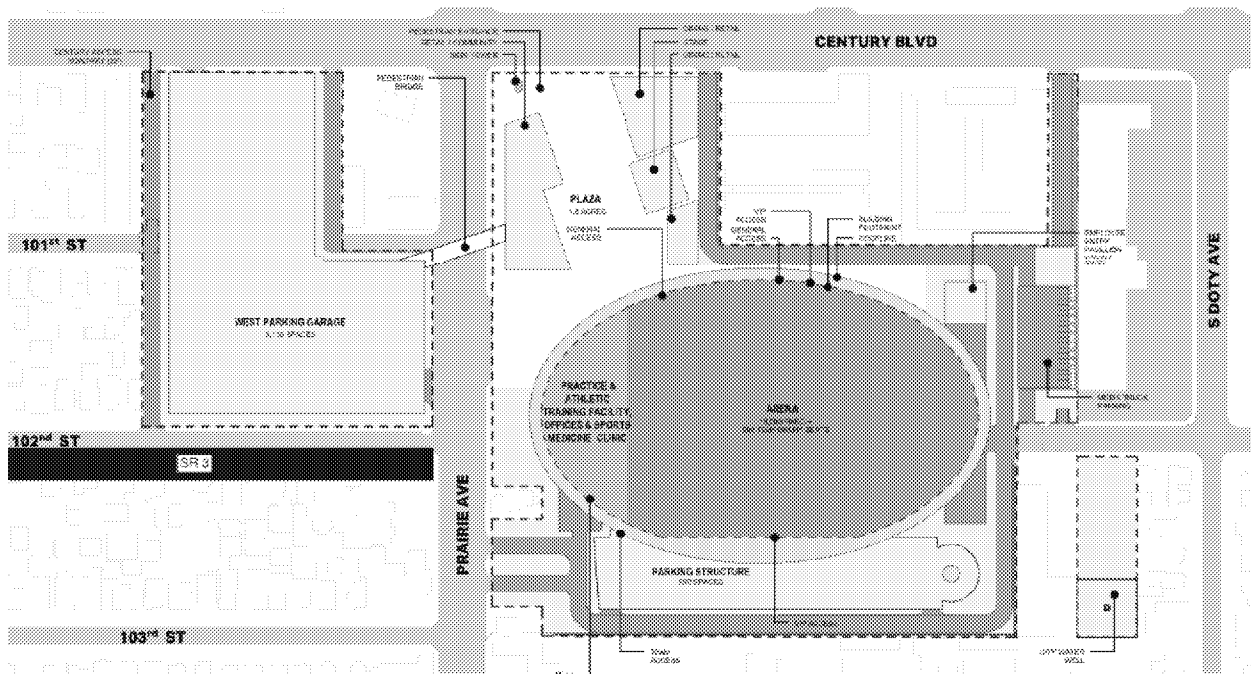
Location of SR 2 in relation to Proposed Project Site:



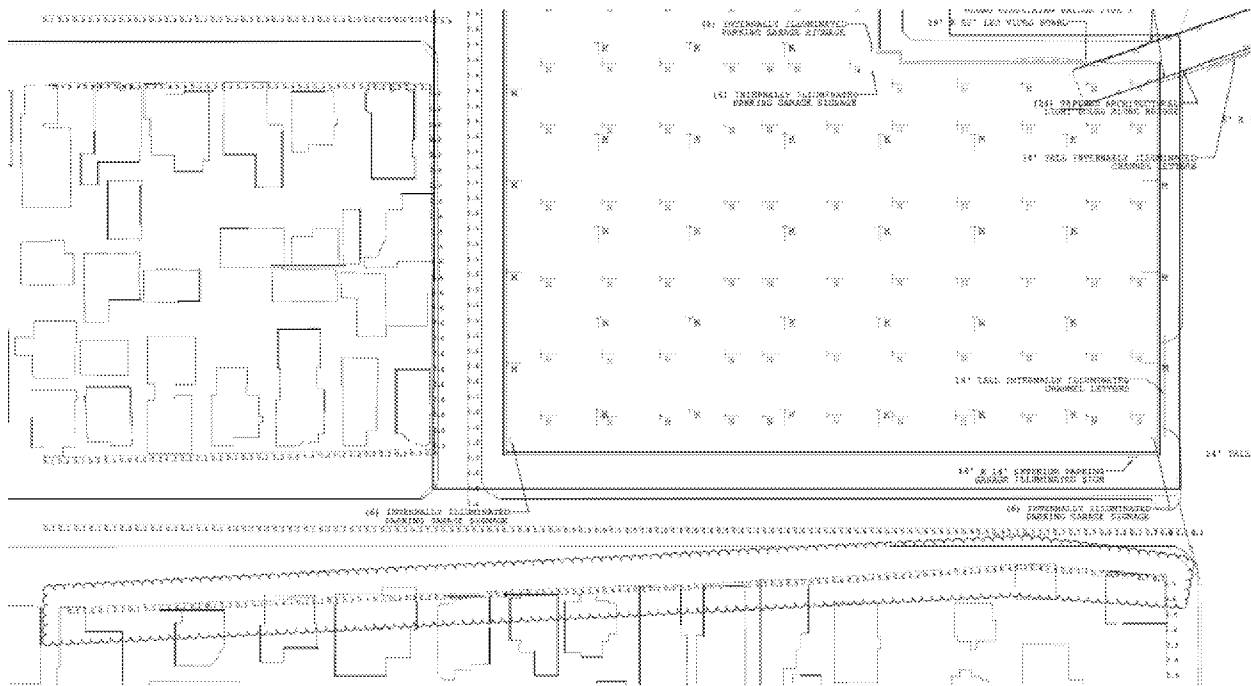
Enlarged AECOM Photometric Site Plan Showing SR 2 Site in Relation to Arena Building:



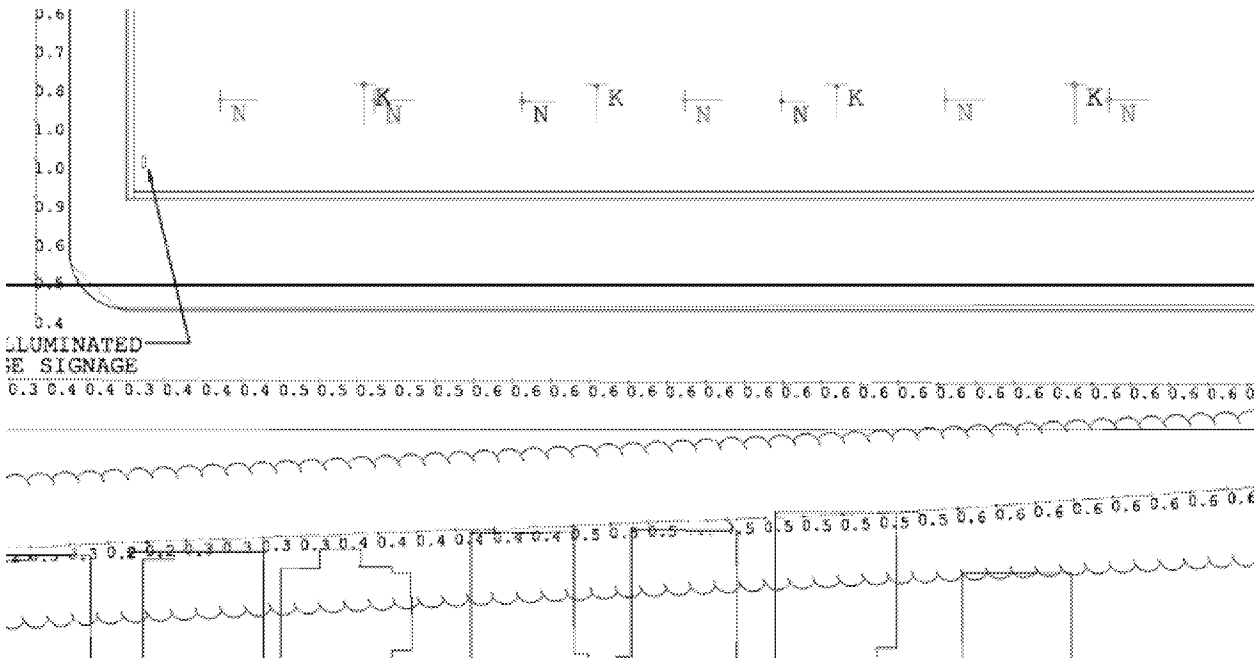
Location of SR 3 in relation to Proposed Project Site:



Enlarged AECOM Photometric Site Plan Showing SR 3 Site in Relation to West Garage Building:



Enlarged Area of Photometric Site Plan:



The footcandle levels that AECOM has calculated as contributed lighting onto the SR3 site range from 0.1 – 0.7 footcandles at north facing façade.

The existing footcandles levels that were taken during the overall site lighting survey at the SR3 location ranged from 0.02 – 1.19 footcandles at the north facing façade. LDA did not have access to the other sides of the SR3 site as it is a private residence.

Per the City of Los Angeles Municipal Code per CEQA, no lighting can provide more than 2.0 footcandles at any part of a residence; therefore the contributed lighting levels at the SR3 site are low enough to not trigger any serious concerns of light contribution. Mitigation measure can still be considered for better lighting practices to achieve the lowest lighting contribution as possible. Potential mitigation measures are detailed at the end of the report.

SR 4: Residential Block Behind New Site Access Road

We will survey this residential block as a whole, as this selection of buildings is generally an equal distance away from the Project site building. These residences will have a direct view to the backside of the West Parking Garage building. The residences located at the southern portion of this block may have minimal views of the West Elevation of the Arena Building.

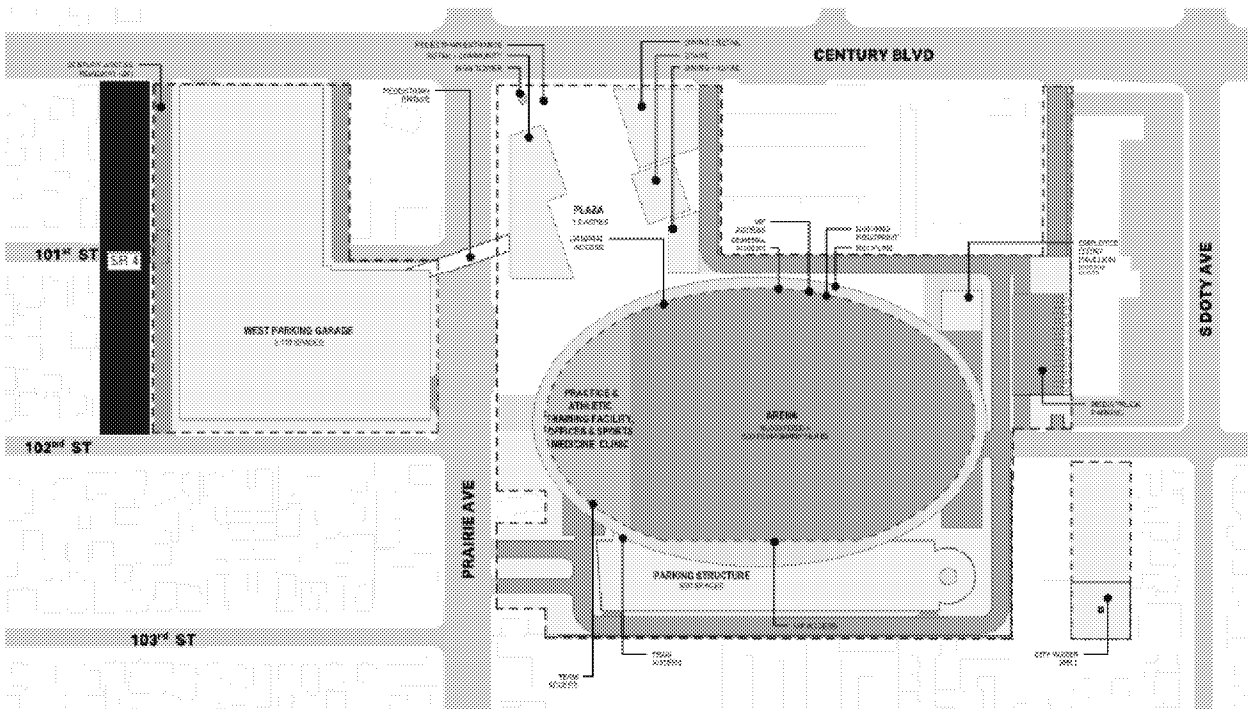
The residence is located roughly:

- 41'-0" away from the edge of the West Parking Lot

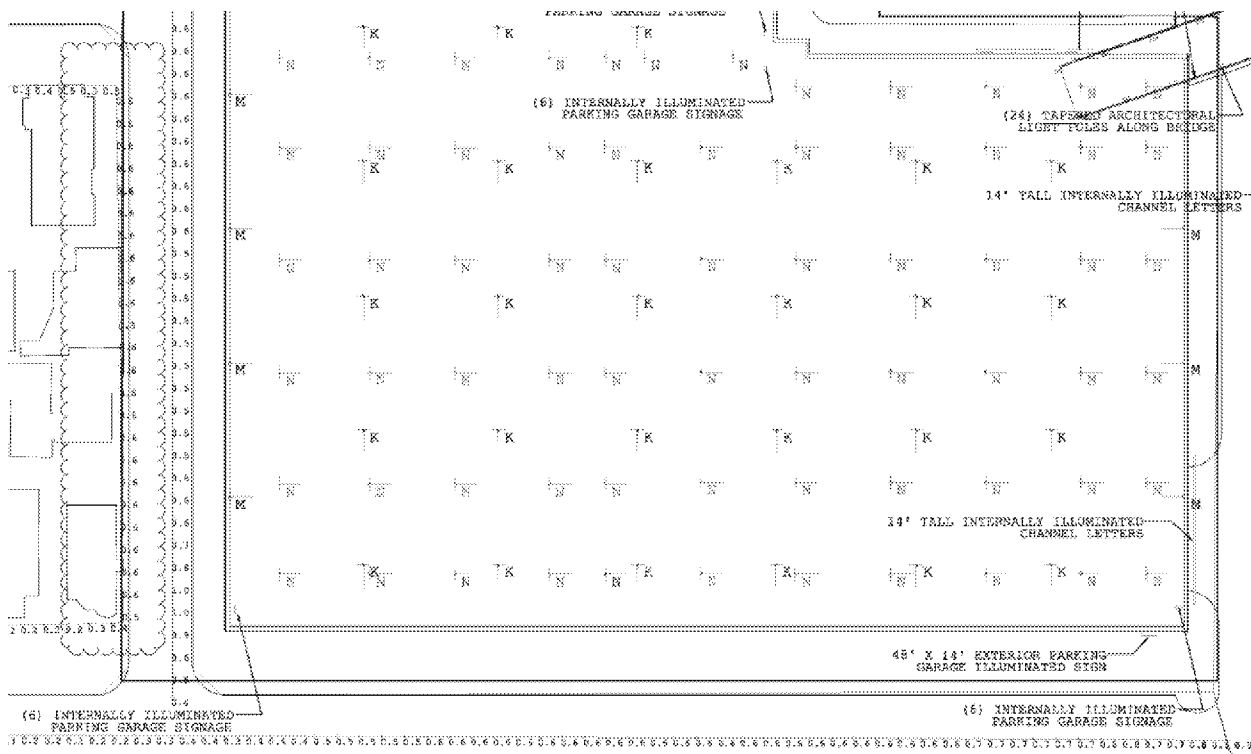
Overall Site Map:



Location of SR 4 in relation to Proposed Project Site:



Enlarged AECOM Photometric Site Plan Showing SR 4 Site in Relation to Garage Building:



The footcandle levels that AECOM has calculated as contributed lighting onto the SR4 site range from 0.5 – 2.1 footcandles at east facing façade.

The existing footcandles levels that were not taken during the site survey as we did not have access to this block of the site.

Per the City of Los Angeles Municipal Code per CEQA, no lighting can provide more than 2.0 footcandles at any part of a residence; therefore the contributed lighting levels at the SR2 site are too high at the corner of the east facing portion of the residences, as the highest point goes up to 2.1 footcandles. The potential cause of the higher footcandles in this area is that there is illuminated signage on the façade of the parking structure facing towards the residences. Per the regulations on contributions of signage lighting, the maximum contribution is 3.0 footcandles (Division 62, Sec. 91.6205 M of the LAMC). This means that if the contributor of these higher light levels at the corner are from the signage lighting, then they are within regulations. Mitigation measure can still be considered for better lighting practices to achieve the lowest lighting contribution as possible. Potential mitigation measures are detailed at the end of the report.

SR 5: Residential Block on West 103rd Street

We will survey this residential block as a whole, as this selection of buildings is generally an equal distance away from the Project site building. These residences are located behind a sound wall, south of the Team and Premium Fan Parking Garage.

The residence is located roughly:

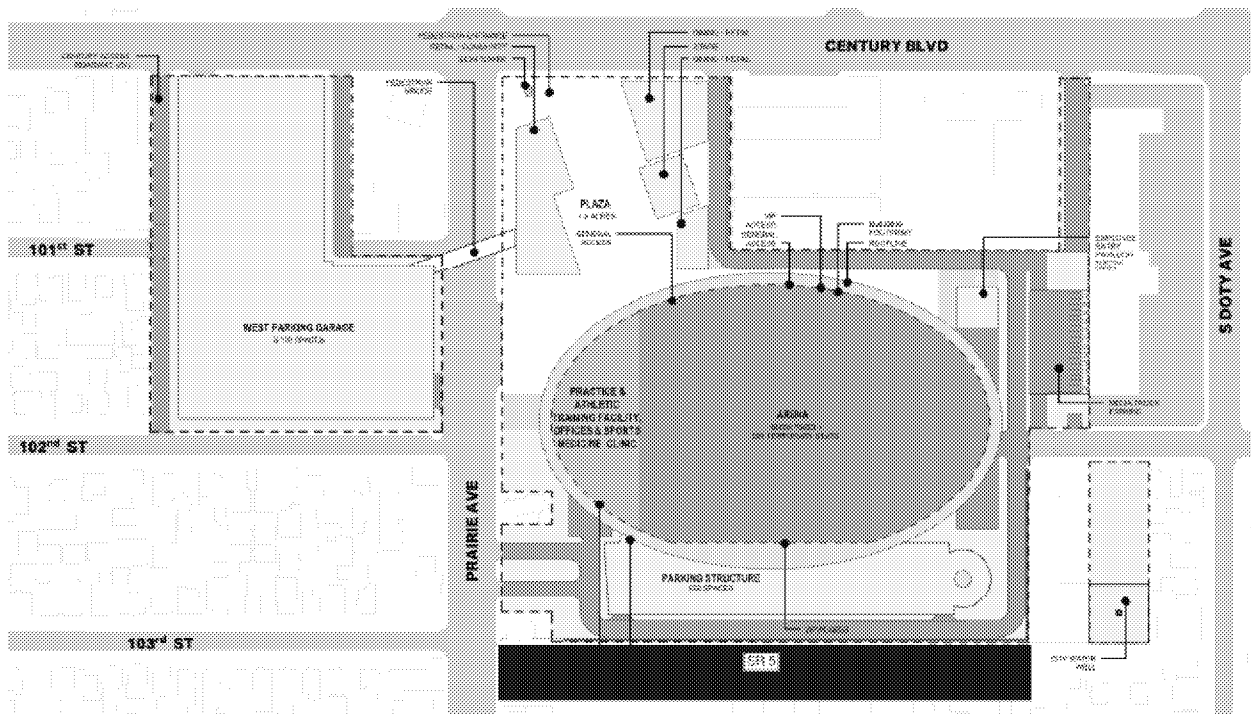
- 301’ away from the edge of the west elevation of the Project Arena Building when measured from google maps
- 162’ away from the edge of the west elevation of the Project Arena Building when measured from google maps

- 54' away from the Team and Premium Fan Parking Garage when measured from google maps

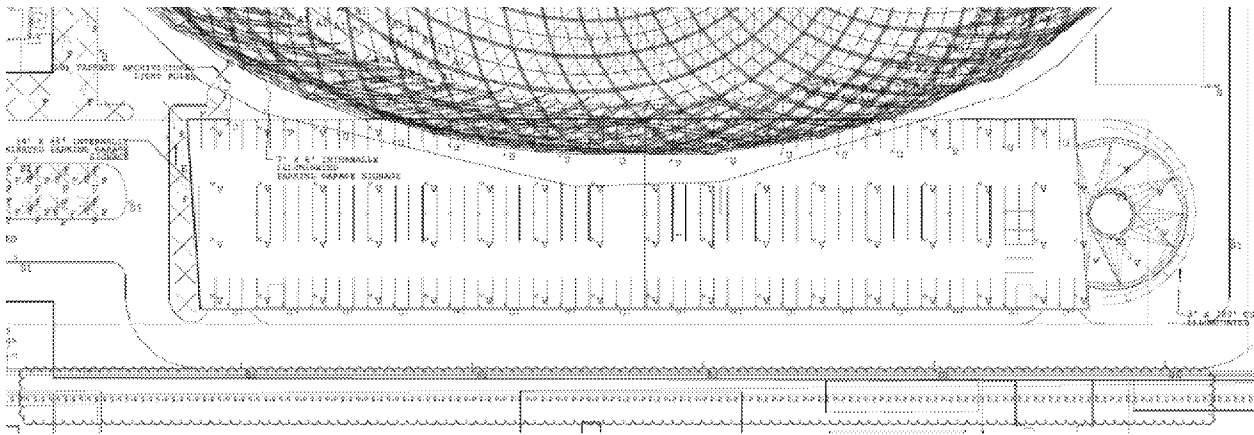
Overall Site Map:



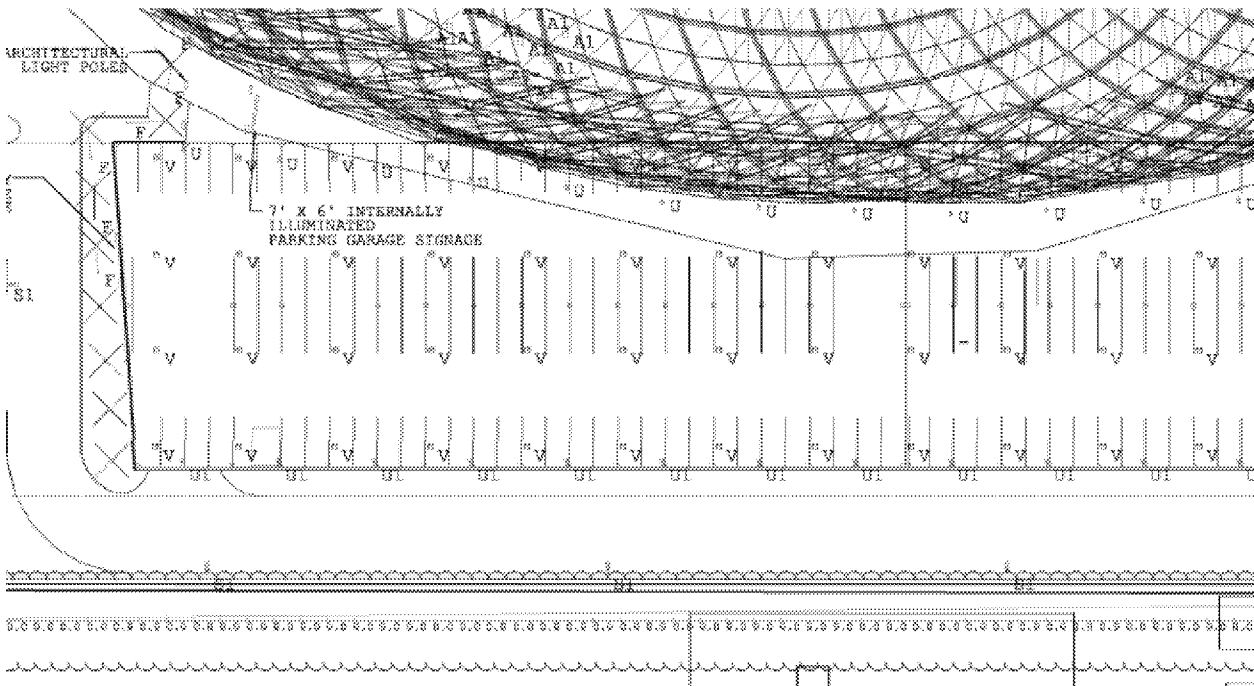
Location of SR 5 in relation to Proposed Project Site:



Enlarged AECOM Photometric Site Plan Showing SR 5 Site in Relation to Arena Garage Building:



Enlarged Area of Photometric Site Plan:



Per the photometric site calculation, the height of the sound wall is blocking all contributed light from the Project site from affecting the residential block, contributing 0.0 FC.

SR 6: Residential Block on W 102nd Street and S Doty Avenue

We will survey this residential block as a whole, as this selection of buildings is generally an equal distance away from the Project site buildings. These residences will have a direct view to the East Elevation, or backside of the Arena Site, and will have a view of the southern portion of the East Parking Lot. This residential block is already in close proximity to two commercial sites to the north on Doty Avenue.

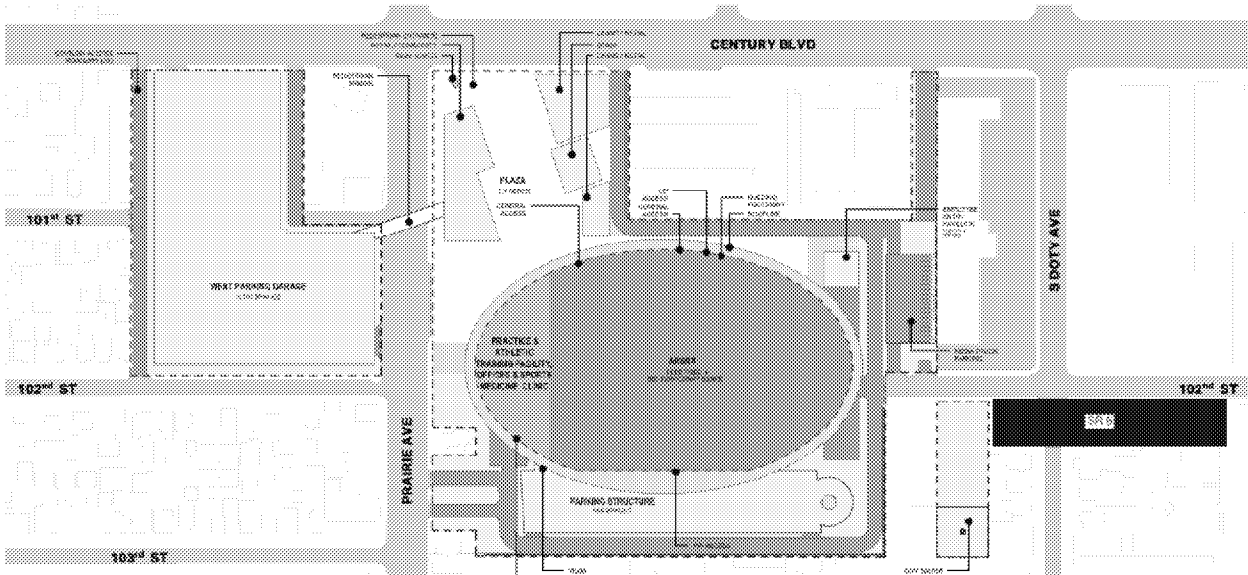
The residence is located roughly:

- 203' away from the edge of the East Parking Lot when measured from google maps
- 290' away from the edge of the East Façade of the Arena when measured from google maps

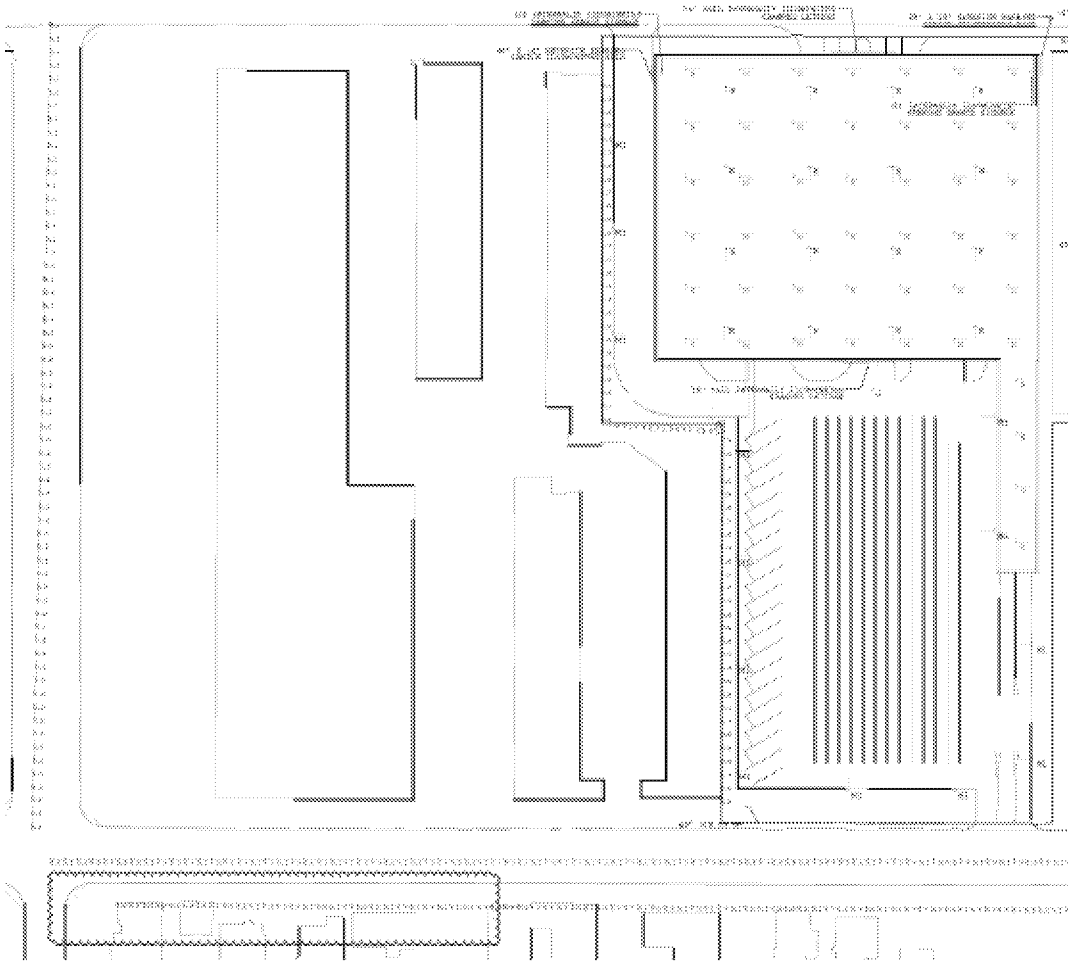
Overall Site Map:



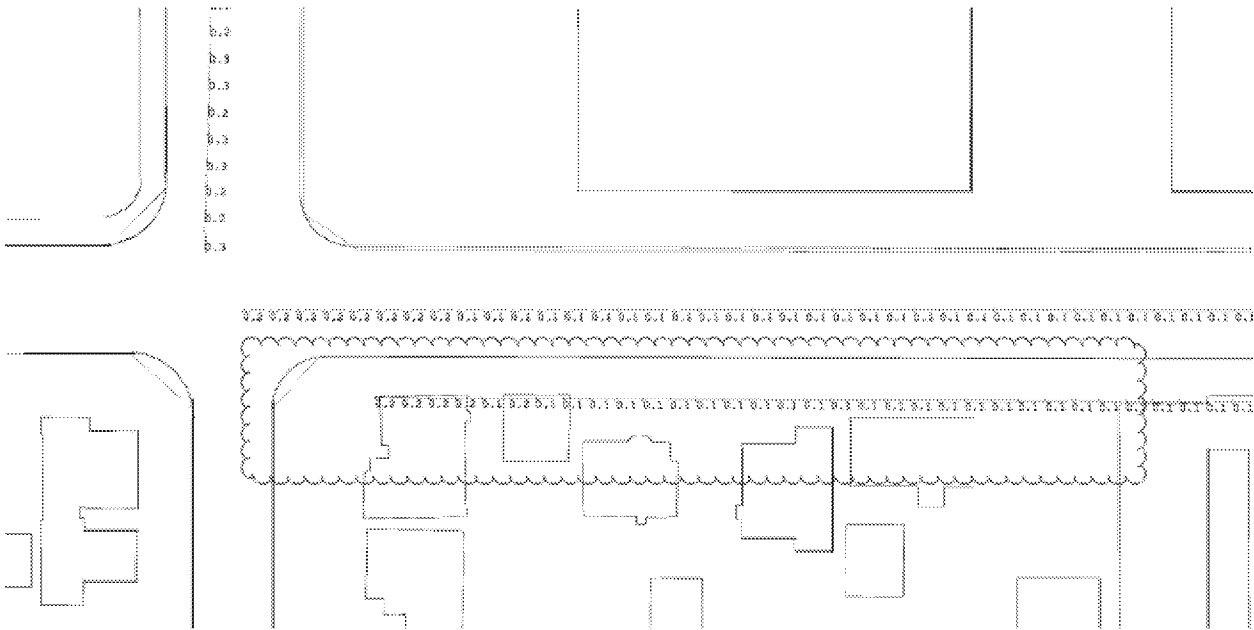
Location of SR 6 in relation to Proposed Project Site:



Enlarged AECOM Photometric Site Plan Showing SR 6 Site in Relation to East Transport:



Enlarged Area of Photometric Site Plan:



The footcandle levels that AECOM has calculated as contributed lighting onto the SR6 site range from 0.1 – 0.2 footcandles at north facing façade.

The existing footcandles levels that were taken during the overall site lighting survey at the SR6 location ranged from 0.15 – 0.27 footcandles at the north facing façade. We did not have access to the other sides of the SR6 site as it is a private residence.

Per the City of Los Angeles Municipal Code per CEQA, no lighting can provide more than 2.0 footcandles at any part of a residence; therefore the contributed lighting levels at the SR6 site are low enough to not trigger any serious concerns of light contribution. Mitigation measure can still be considered for better lighting practices to achieve the lowest lighting contribution as possible. Potential mitigation measures are detailed at the end of the report.

SR 7: Residential Block on W 102nd Street

This residential block, we will survey as a whole, as this portion of buildings are generally an equal distance away from the Project site buildings. These residences will have a direct view to the East Elevation, or backside of the Arena Site, and will have a view of the southern portion of the East Parking Lot and partial view to the Hotel site. This residential block is already in close proximity to two commercial sites to the north on Doty Avenue.

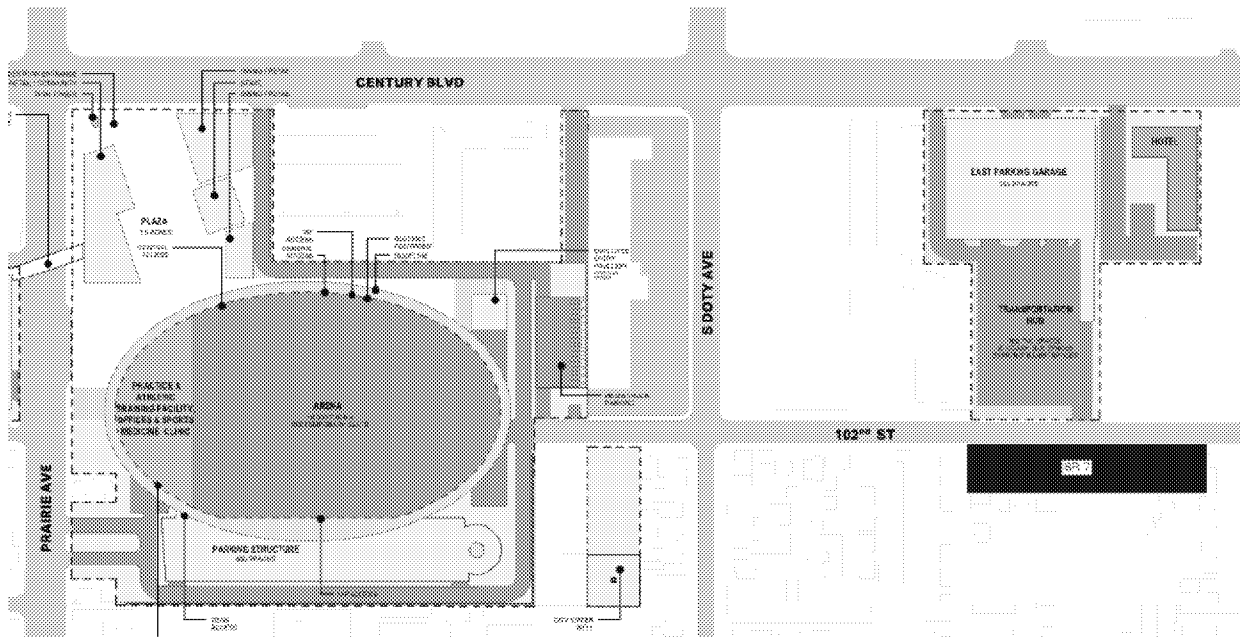
The residence is located roughly:

- 56’ away from the edge of the East Parking Lot when measured from google maps
- 917’ away from the edge of the East Façade of the Arena when measured from google maps
- 357’ away from the edge of the East Façade of the Arena when measured from google maps

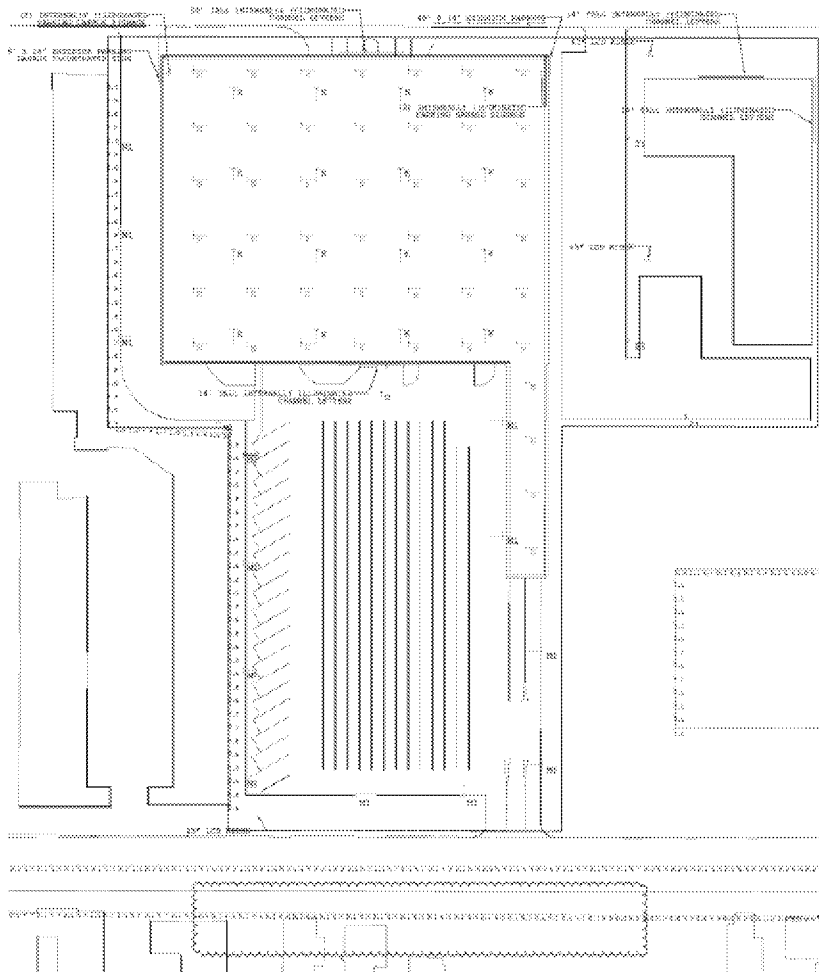
Overall Site Map:



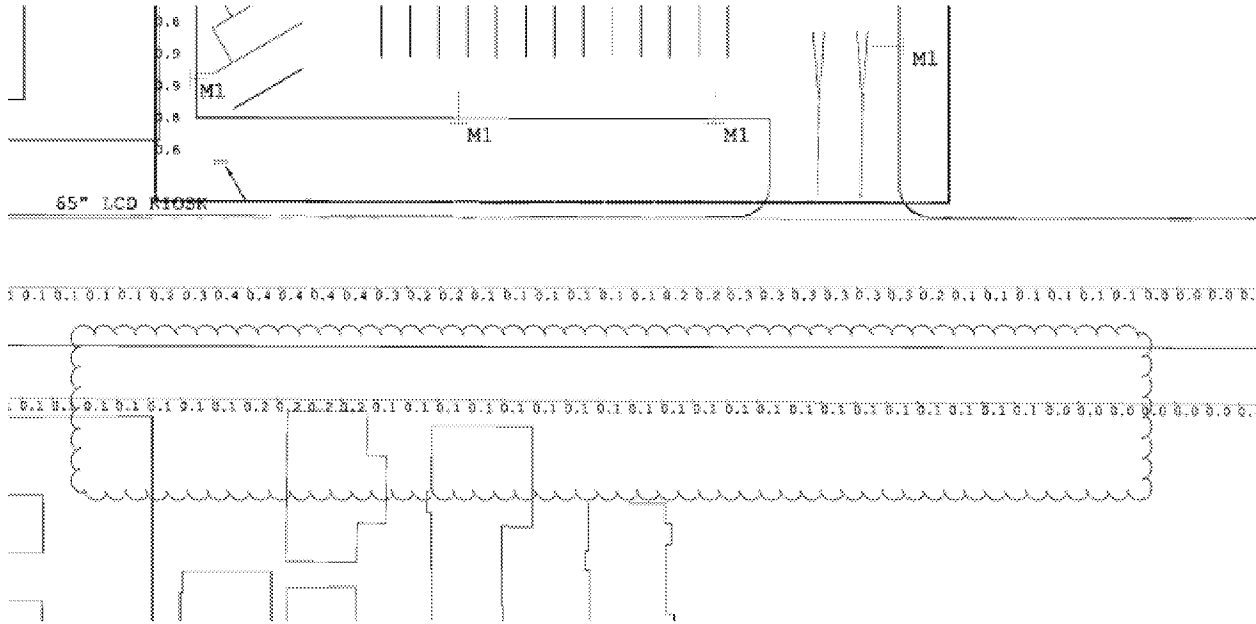
Location of SR 7 in relation to Proposed Project Site:



Enlarged AECOM Photometric Site Plan Showing SR 7 Site in Relation to East Transport:



Enlarged Area of Photometric Site Plan:



The footcandle levels that AECOM has calculated as contributed lighting onto the SR7 site range from 0.0 – 0.1 footcandles at north facing façade.

The existing footcandles levels that were taken during the overall site lighting survey at the SR7 location were 0.15 footcandles at the north facing façade. We did not have access to the other sides of the SR7 site as it is a private residence.

Per the City of Los Angeles Municipal Code per CEQA, no lighting can provide more than 2.0 footcandles at any part of a residence; therefore, the contributed lighting levels at the SR7 site are low enough to not trigger any serious concerns of light contribution. Mitigation measure can still be considered for better lighting practices to achieve the lowest lighting contribution as possible. Potential mitigation measures are detailed at the end of the report.

8 – SIGNAGE / INTEGRAL ELECTRONIC DISPLAY BRIGHTNESS

Integral electronic display signs are typically measured in nits, or candelas per square meter. Typically, integral electronic display signs are made up of different colored diodes, and a red diode, a green diode, and a blue diode make up each pixel. The higher resolution an integral electronic display sign is, the more pixels are contained in it.

Figure 8-1 – Conceptual Zoning of Signage Scope

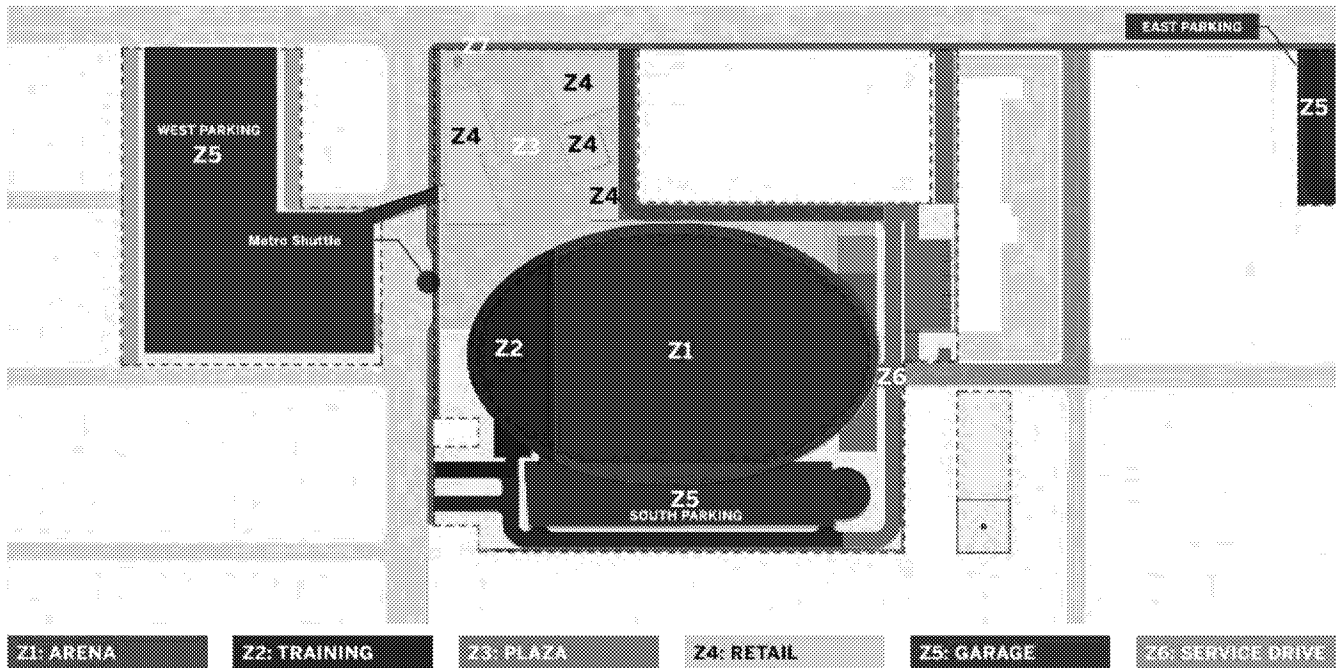
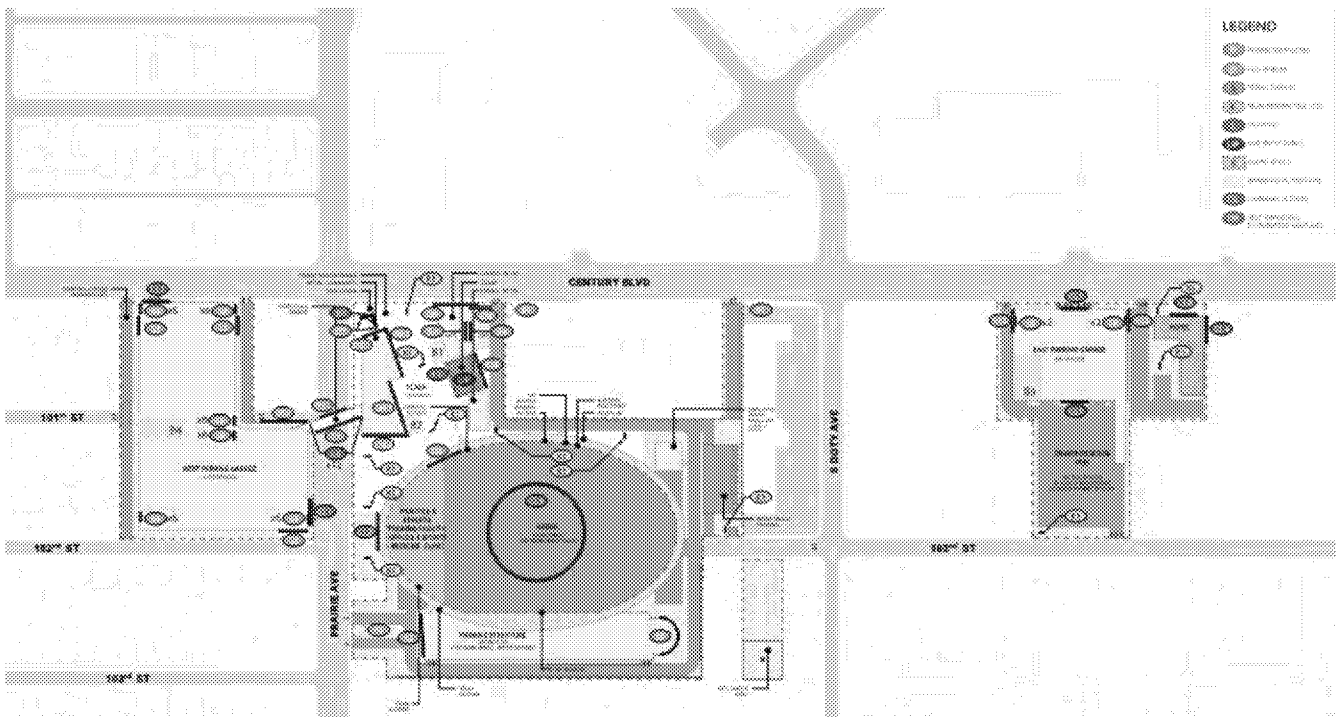


Figure 8-2 – Conceptual Sign Locations: Arena, Training Center, South Garage



There are four outdoor advertising structures (billboards) on the Arena Site. The vacant parcel at 10220 South Prairie Avenue includes a dual-faced static billboard which is lit by floodlights facing upward. This approximately 30-foot-tall billboard is mounted on dual poles and includes an access ladder for maintenance crews to climb to reach the billboard faces. The billboard faces are visible clearly visible to drivers on both northbound and southbound South Prairie Avenue.

The vacant parcel at 10200 South Prairie Avenue (southeast corner of South Prairie Avenue and West 102nd Street) has a dual-faced, static billboard mounted on a single pole. This billboard is not lit on either side. This billboard is rather small, both in height and in surface area; the top of the billboard is only approximately 15 feet from ground-level. The billboard is visible to southbound drivers on South Prairie Avenue, but an existing street tree somewhat obscures the billboard's visibility to drivers on northbound South Prairie Avenue.

The vacant parcel at the northeast corner of South Prairie Avenue and West 102nd Street contains a dual-faced, static billboard mounted on two metal poles. Both faces of the billboard are illuminated by floodlights that are directed upward. The billboard is approximately 20 feet tall and the billboard faces are clearly visible to drivers on both northbound and southbound South Prairie Avenue.

The Arena Site contains a fourth static billboard along West Century Avenue, immediately west of the unoccupied Airport Park View Motel parcel. This billboard is single faced, with advertising visible only to westbound drivers on West Century Boulevard. The billboard face is lit with a floodlight that is angled upward. This billboard is mounted on dual poles, is approximately 20 feet tall, and includes an access ladder for maintenance crews to climb to reach the billboard face.

White images on an integral electronic display are always the brightest, because the red, green and blue diodes are at full intensity. Because signs are rarely full white, the actual brightness of a sign is typically much less than the suggested maximum luminance.

For example, a typical integral electronic display manufactured by Young Electric Sign Company, the 100% luminance settings for different colors are:

White: 7000 candelas/m²

Red: 1500 candelas/m²

Green: 5100 candelas/m²

Blue: 700 candelas/m²

The above values come from a report to the Outdoor Advertising Association of America written by Dr. Ian Lewin on February 21, 2008.

Intensity depends on resolution (number of pixels per area), and the image on the sign. A lower resolution sign would be less bright than a higher resolution sign. The sign would never be fully white.

The proposed displays shall transition smoothly at a consistent rate of speed from the permitted daytime brightness to the permitted nighttime brightness levels, beginning at 45 minutes prior to sunset and concluding the transition to nighttime brightness 45 minutes after sunset. Where applicable, they shall also transition smoothly at a consistent rate of speed from the permitted nighttime brightness to the permitted daytime brightness levels, beginning 45 minutes prior to sunrise and concluding the transition to daytime brightness 45 minutes after sunrise.

ZONE 1: ARENA

Arena ID, Roof (ID01)-

Identifies the Arena from the air. Signage intended to communicate location via broadcast and to passengers on flights flying in, out, and over the arena area. Identification signage will be designed to work with required solar array.

Maximum allowable square footage (sf) per sign type – 40,000

Quantity - 1

Arena ID, Primary (ID02)-

Identifies the Arena at the most visible and highly trafficked areas of the campus site.

Maximum allowable square footage (sf) per sign type – 15,000

Quantity - 1

Arena ID, Secondary (ID03)-

Identifies the Arena at the less visible and less trafficked areas of the campus site.

Maximum allowable square footage (sf) per sign type – 7,500

Quantity - 1

Entrance ID (ID04)-

Identifies the Arena entrances for fans with General Admission and Premium event tickets (Clubs and Suites.)

Maximum allowable square footage (sf) per sign type – 1,500

Quantity - 2

Arena Amenity ID (ID05)-

Identifies exterior facing amenities, i.e. Box Office, Team Store, etc. accessible to fans from the Plaza. These elements may operate outside of event hours.

Maximum allowable square footage (sf) per sign type – 1,500

Quantity - 2

Event Graphic Overlay (EG)-

Allowance for application of temporary event graphics on the Arena. Graphics may include fabric, vinyl, or other material installations on or near the Arena façade and points of entry. Final size and placement may vary by event.

Maximum allowable square footage (sf) per sign type – 7,500 (Does not contribute to allowable sf)

Figure 8-3 – Zone 1 Arena Signage Breakdown and Recommendations

- **Sign Zone & Description-** Identification signage denotes the site, venue, and specific points of interest to fans, guests, and staff. Directional and information signs aid and guide the flow of vehicular and pedestrian traffic through the site and provide information about the site’s amenities and offerings.
- **Animation and/or Refresh –** Identifies the as defined lighting effects that the signage may display.
- **Recommended Hours of Operation –** Identifies recommended times of use for the signage per lighting practice recommendations, not per code standards.
- **Maximum Coverage and Size –** The as described allowable sign size per Signage Narrative.
- **Brightness –** Maximum Brightness recommendations for the signage per lighting practice recommendations, not per code standards.

Sign Zone	Signs Description	Animation and/or Refresh	Recommended Hours of Operation	Maximum Coverage and Size	Recommended Brightness Levels
ID01	Roof Mounted 3D letters that are to be edge-lit with RGB color changing striplight	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	225 ft x 180 ft with a maximum height of 5 ft above the roof line.	Confirm Brightness regulations with FAA
ID02	Integral Electronic Display Signs and Wall Signs	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	15,000 sf	The intensity shall not exceed 1,500 cd/m ² at night
ID03	Secondary ID Sign for building	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	7,500 sf	The intensity shall not exceed 500 cd/m ² at night
ID04	Tertiary Entrance ID Sign	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	1,500 sf	The intensity shall not exceed 500 cd/m ² at night
ID05	Exterior Amenities Entrance ID Sign	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	1,500 sf	The intensity shall not exceed 500 cd/m ² at night

ZONE 2: TRAINING CENTER

Training Center ID, Roof (ID10)-

Identifies the Arena from the air. Signage intended to communicate location via broadcast and to passengers on flights flying in, out, and over the arena area. Identification signage will be designed to work with required solar array.

Maximum allowable square footage (sf) per sign type – 15,000

Quantity - 1

Training Center ID, Primary (ID11)-

Large-scale identification facing heavily trafficked vehicular and/or pedestrian routes.

Maximum allowable square footage (sf) per sign type – 7,500

Quantity - 1

Training Center ID, Secondary (ID12)-

Smaller-scale identification facing lesser trafficked vehicular and/or pedestrian routes.

Maximum allowable square footage (sf) per sign type – 1,500

Quantity - 1

Entrance ID (ID13)-

Identifies point of entry for the Training Center's users and visitors.

Maximum allowable square footage (sf) per sign type – 1000

Quantity - 2

Entrance ID, Vehicular (ID20)-

Free-standing or building-mounted signage that identifies facility along primary vehicular approach; Indicates vehicular entrance.

Maximum allowable square footage (sf) per sign type – 180

Quantity - 1

Event Graphic Overlay (EG)-

Allowance for application of temporary event graphics on the Training Center. Graphics may include fabric, vinyl, or other material installations on or near the Training Center façade and points of entry. Final size and placement may vary by event. Event does not have to be specific to Training Center to be eligible to use this allowance – Graphics only need to apply to event hosted by venue in Arena development.

Maximum allowable square footage (sf) per sign type – 7,500 (Does not contribute to allowable sf)

Figure 8-4 – Zone 2 Training Center Signage Breakdown and Recommendations

- Sign Zone & Description- Identification signage denotes the site, venue, and specific points of interest to fans, guests, and staff. Directional and information signs aid and guide the flow of vehicular and pedestrian traffic through the site and provide information about the site’s amenities and offerings.
- Animation and/or Refresh – Identifies the as defined lighting effects that the signage may display.
- Recommended Hours of Operation – Identifies recommended times of use for the signage per lighting practice recommendations, not per code standards.
- Maximum Coverage and Size – The as described allowable sign size per Signage Narrative.
- Brightness – Maximum Brightness recommendations for the signage per lighting practice recommendations, not per code standards.

Sign Zone	Signs Description	Animation and/or Refresh	Recommended Hours of Operation	Maximum Coverage and Size	Recommended Brightness Levels
ID10	Roof mounted backlit signage panels	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	150 ft x 100 ft with a maximum height of 5 ft above the roof line.	Confirm Brightness regulations with FAA
ID11	Integral Electronic Display Signs and Wall Signs	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	7,500 sf	The intensity shall not exceed 1,500 cd/m ² at night
ID12	Secondary ID Sign for building	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	1,500 sf	The intensity shall not exceed 500 cd/m ² at night
ID13	Entrance ID Sign	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	500 sf	The intensity shall not exceed 500 cd/m ² at night
ID20	Vehicular Entrance ID Sign	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	180	The intensity shall not exceed 500 cd/m ² at night

ZONE 3: PLAZA

Plaza Marquee (ID30)-

Digital pylon at corner of site that identifies site and promotes upcoming events. May include pedestrian-scale map or directional information at base.

Maximum allowable square footage (sf) per sign type – 2,400

Quantity - 1

Plaza Feature ID (ID31)-

Building-scale feature element that may include lighting or animation that defines and identifies the North Plaza area.

Maximum allowable square footage (sf) per sign type – 12,000

Quantity - 1

Plaza ID, Primary (ID40)-

Signage to identify the Plaza. Signage could be incorporated into Feature, applied to surrounding retail buildings, installed on free-standing element, or integrated into pedestrian wayfinding signage depending on final plaza configuration and programming.

Maximum allowable square footage (sf) per sign type – 2,250

Quantity – 1

Plaza Orientation / Directional (D01)-

Pedestrian-scaled free-standing signage to help orient fans to the campus destinations (Arena, Training, and Retail) and amenities (Rideshare, Shuttle Stop, etc) Signage may include campus regulatory information and may be used to showcase upcoming events.

Maximum allowable square footage (sf) per sign type – 2,100

Quantity - 1

Video Board, West Retail (V01)-

Hi-res video boards attached to curving façade of West retail / Community Center building facing into Plaza; Content to include commissioned artwork from local, national, and international artists. Allowable content, hours of usage and other parameters described in Section 4.1.

Maximum allowable square footage (sf) per sign type – 3,000 (Does not contribute to allowable sf)

Quantity - 1

Video Board, Stage (V02)-

Hi-res video board at back of stage area along east side of plaza. Allowable content, hours of usage and other parameters described in Section 4.1.

Maximum allowable square footage (sf) per sign type – 750 (Does not contribute to allowable sf)

Quantity - 1

Event Graphic Overlay (EG)-

Allowance for application of temporary event graphics within the Plaza area. Graphics may include fabric or vinyl installations on existing infrastructure such as light poles and/or facades depending on the event

and audience; Allowance includes accommodation for free-standing temporary elements associated with an event, event host, or event sponsor.

Maximum allowable square footage (sf) per sign type – 10,000 (Does not contribute to allowable sf)

Figure 8-5 – Zone 3 Plaza Signage Breakdown and Recommendations

- Sign Zone & Description- Identification signage denotes the site, venue, and specific points of interest to fans, guests, and staff. Directional and information signs aid and guide the flow of vehicular and pedestrian traffic through the site and provide information about the site’s amenities and offerings.
- Animation and/or Refresh – Identifies the as defined lighting effects that the signage may display.
- Recommended Hours of Operation – Identifies recommended times of use for the signage per lighting practice recommendations, not per code standards.
- Maximum Coverage and Size – The as described allowable sign size per Signage Narrative.
- Brightness – Maximum Brightness recommendations for the signage per lighting practice recommendations, not per code standards.

Sign Zone	Signs Description	Animation and/or Refresh	Recommended Hours of Operation	Maximum Coverage and Size	Recommended Brightness Levels
ID30	Plaza Marquee – digital pylon screen on (2) sides	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	2,400 sf	The intensity shall not exceed 1,500 cd/m ² at night
ID31	Plaza free standing multi-sided pylon elements – digital screens on each side	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	12,000 sf	The intensity shall not exceed 1,500 cd/m ² at night
ID40	Primary Plaza ID, free standing signage element	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	2,250 sf	The intensity shall not exceed 500 cd/m ² at night
D01	Free-standing multi-sided pylon/monument with LED digital screens	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	2,100 sf	The intensity shall not exceed 500 cd/m ² at night
V01	Digital LED Video Wall	Videoboard will display any of the following: (a) movies and similar or related content, (b) broadcasts of sporting and other events of public interest, (c) a live or recorded feed showing activity occurring at the Site, (d) content that	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	3,000 sf	The intensity shall not exceed 1,500 cd/m ² at night

Sign Zone	Signs Description	Animation and/or Refresh	Recommended Hours of Operation	Maximum Coverage and Size	Recommended Brightness Levels
		markets and promotes upcoming events and/or replaying all or part of prior events or activities occurring at the Site, (e) content that markets and promotes Project Sponsor and Project Sponsor Affiliates, (f) artistic content meant to promote public enjoyment, to promote a non-profit Person operating in the service, arts or related industry, or to otherwise serve the public interest and (g) informational messages			
V02	Digital LED Video Wall	Videoboard will display any of the following: (a) movies and similar or related content, (b) broadcasts of sporting and other events of public interest, (c) a live or recorded feed showing activity occurring at the Site (d) content that markets and promotes upcoming events and/or replaying all or part of prior events or activities occurring at the Site, (e) content that markets and promotes Project Sponsor and Project Sponsor Affiliates, (f) artistic content meant to promote public enjoyment, to promote a non-profit Person operating in the service, arts or related industry, or to otherwise serve the public interest and (g) informational messages	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	750 sf	The intensity shall not exceed 1,500 cd/m ² at night

ZONE 4: RETAIL

Building ID (ID100)-

Identifies retail building or primary tenant for both vehicular and pedestrian traffic flows around and into site.

Maximum allowable square footage (sf) per sign type – 6,000
Quantity - 3

Tenant ID, Primary (ID101)-

Primary identification of retail tenant that aligns with tenant brand guidelines and complies with site signage parameters and defined by Campus / District zoning.

Maximum allowable square footage (sf) per sign type – 6,000
Quantity - 12

Tenant ID, Secondary (ID102)-

Secondary identification of retail tenant that aligns with tenant brand guidelines and complies with site signage parameters and defined by Campus / District zoning.

Maximum allowable square footage (sf) per sign type – 1,200
Quantity - 12

Tenant ID, Tertiary (ID103)-

Tertiary identification of retail tenant or information specific to tenant identification, hours of operations, regulations, etc. All signage and graphics to comply with tenant brand guidelines defined by Campus / District zoning.

Maximum allowable square footage (sf) per sign type – 1,000
Quantity - 12

Event Graphic Overlay (EG)-

Allowance for application of temporary event graphics within the Plaza area. Graphics may include fabric or vinyl installations on existing infrastructure such as light poles and/or facades depending on the event and audience; Allowance includes accommodation for free-standing temporary elements associated with an event, event host, or event sponsor.

Maximum allowable square footage (sf) per sign type – 7,500 (Does not contribute to allowable sf)

Figure 8-6 – Zone 4 Retail Signage Breakdown and Recommendations

- **Sign Zone & Description-** Identification signage denotes the site, venue, and specific points of interest to fans, guests, and staff. Directional and information signs aid and guide the flow of vehicular and pedestrian traffic through the site and provide information about the site’s amenities and offerings.
- **Animation and/or Refresh –** Identifies the as defined lighting effects that the signage may display.
- **Recommended Hours of Operation –** Identifies recommended times of use for the signage per lighting practice recommendations, not per code standards.
- **Maximum Coverage and Size –** The as described allowable sign size per Signage Narrative.
- **Brightness –** Maximum Brightness recommendations for the signage per lighting practice recommendations, not per code standards.

Sign Zone	Signs Description	Animation and/or Refresh	Recommended Hours of Operation	Maximum Coverage and Size	Recommended Brightness Levels
ID100	Building ID signage mounted on building facade	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	6,000 sf	The intensity shall not exceed 500 cd/m ² at night
ID110	Tenant ID signage mounted on building facade	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	6,000 sf	The intensity shall not exceed 500 cd/m ² at night
ID111	Secondary Tenant ID signage mounted on building facade	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	1,200 sf	The intensity shall not exceed 500 cd/m ² at night
ID112	Tertiary Tenant ID signage mounted on building facade	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	1,000 sf	The intensity shall not exceed 500 cd/m ² at night

ZONE 5: GARAGE

Garage ID (ID200)-

Primary garage identification. Signage may include digital panel to convey pricing, space availability, or other rotating information.

Maximum allowable square footage (sf) per sign type – 4,000
Quantity - 5

Garage Entrance ID (ID201)-

Signage identifying garage entrance. May be attached to building or free-standing, depending on location.

Maximum allowable square footage (sf) per sign type – 1,200
Quantity - 3

Event Graphic Overlay (EG)-

Allowance for application of temporary event graphics within the Plaza area. Graphics may include fabric or vinyl installations on existing infrastructure such as light poles and/or facades depending on the event and audience; Allowance includes accommodation for free-standing temporary elements associated with an event, event host, or event sponsor.

Maximum allowable square footage (sf) per sign type – 35,000 (Does not contribute to allowable sf)

Figure 8-7 – Zone 5 Garage Signage Breakdown and Recommendations

- Sign Zone & Description- Identification signage denotes the site, venue, and specific points of interest to fans, guests, and staff. Directional and information signs aid and guide the flow of vehicular and pedestrian traffic through the site and provide information about the site’s amenities and offerings.
- Animation and/or Refresh – Identifies the as defined lighting effects that the signage may display.
- Recommended Hours of Operation – Identifies recommended times of use for the signage per lighting practice recommendations, not per code standards.
- Maximum Coverage and Size – The as described allowable sign size per Signage Narrative.
- Brightness – Maximum Brightness recommendations for the signage per lighting practice recommendations, not per code standards.

Sign Zone	Signs Description	Animation and/or Refresh	Recommended Hours of Operation	Maximum Coverage and Size	Recommended Brightness Levels
ID200	Garage ID signage mounted on building facade	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	800 sf	The intensity shall not exceed 500 cd/m ² at night

Sign Zone	Signs Description	Animation and/or Refresh	Recommended Hours of Operation	Maximum Coverage and Size	Recommended Brightness Levels
ID201	Garage Entry ID signage mounted on building facade	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	400 sf	The intensity shall not exceed 500 cd/m ² at night

ZONE 6: SERVICE DRIVE

Vehicular Directional (D10)-

Identifies primary entrance to Service Drive and access to the site’s primary vehicular amenities (Parking Garage, Loading Dock).

Maximum allowable square footage (sf) per sign type – 180
Quantity - 2

Loading Dock ID (ID210)-

Identifies Loading Dock entrance.

Maximum allowable square footage (sf) per sign type – 300
Quantity - 1

Figure 8-8 – Zone 6 Service Drive Signage Breakdown and Recommendations

- Sign Zone & Description- Identification signage denotes the site, venue, and specific points of interest to fans, guests, and staff. Directional and information signs aid and guide the flow of vehicular and pedestrian traffic through the site and provide information about the site’s amenities and offerings.
- Animation and/or Refresh – Identifies the as defined lighting effects that the signage may display.
- Recommended Hours of Operation – Identifies recommended times of use for the signage per lighting practice recommendations, not per code standards.
- Maximum Coverage and Size – The as described allowable sign size per Signage Narrative.
- Brightness – Maximum Brightness recommendations for the signage per lighting practice recommendations, not per code standards.

Sign Zone	Signs Description	Animation and/or Refresh	Recommended Hours of Operation	Maximum Coverage and Size	Recommended Brightness Levels
D10	Free-standing, multi-sided pylon with integrated internally illuminated lettering	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	180 sf	The intensity shall not exceed 500 cd/m ² at night

ID210	Loading Dock ID signage mounted on building facade	External, Internal, or Accent Illumination or a combination thereof which may include color-changing capabilities, animation, movement, or other programmable effects.	Dawn to 2:00 am All signs must remain Static between 2:00 am and dawn	300 sf	The intensity shall not exceed 500 cd/m ² at night
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9 - MITIGATION MEASURES

Mitigation measures can be implemented throughout the project but should be prioritized for the portions of the site affecting the Sensitive Receptors where contributed light is higher than the prescribed standards of the Los Angeles Municipal Code. As these are recommendations, it will be up to AECOM to implement these suggestions as needed in their design and overall photometric calculation until it is verified that all Sensitive Receptors around the project site will not be receiving any contributed light over the 2 footcandle required level.

General mitigations recommendations include:

Arena Building Façade lighting: for the lighting that is used to backlight the perforated metal panels, the recommendation is to employ directed optics so that the light is contained within the perforated metal channel and not spilling light out away from the building façade. For the digital signage and illuminated channel letters, provide individually controlled and dimmable systems which can be set to an appropriate light level in the field and operated through astronomical timeclocks. We also recommend limiting signs with flashing, strobing, or blinking lights; mechanical/moving parts; or lighted monument signs.

Parking Garage Buildings: for the lighting inside the parking garage and on top of the roof, utilize fixtures with optics that are directing the majority of light into the parking garage structure and minimizing spill light off of it. For the parking garage structure openings, consider implementing a screening material which will allow ventilation but reduce stray light coming off of the fixtures.

Sensitive Receptor specific mitigation recommendations include:

For SR1, because the site is so close to the Arena building, entry drive, and parking structure, there are several routes for lowering the lighting impact onto the residence.

- At the Entry Drive, there is a 24' x 60" LED Pylon. We recommend that the digital display only be on the side facing out towards Prairie Avenue. Not having illuminated signage directed towards the residential site will help with minimizing lighting directed onto the property.
- Signage Lighting will be brighter during the daytime but will be dimmed at night to a preset light level per recommended standards.
- For the Fixture Type D, pedestrian level light poles, the fixture has a type V distribution which means that light is coming out of the fixture equally in a circular distribution onto the ground. For the locations of Type D that are in closer proximity to SR1, the fixture can accept an accessory option for a backlight shield which will significantly reduce the amount of spill light going onto the property.
- For the Fixture Type Q and S1 LED light poles, the fixtures have a forward throw distribution but there will be some inherit backlight coming off of the fixture. For the locations of Type Q and S1 that are in closer proximity to SR1, the fixture can accept an accessory option for a housing side shield which will significantly reduce the amount of spill light going onto the property. In addition to the house side shield option, there is a Type S1 fixture location that is facing directly towards the south façade of the SR1 residence. We would recommend relocating this fixture to the other side of the street and face away from the residence.
- For the Fixture Type V surface mounted downlight located inside of the parking garage, the fixture has an option for asymmetric distribution of light. To minimize spill light coming off of the parking garage, we recommend that for the Type V fixtures located closest to the parking garage walls have the asymmetric optics to direct the light into the center of the parking garage,

instead of the open optics that it currently has that would allow for some spilling away from the building.

- As a general recommendation, provide structural and/or vegetative screening from sensitive uses.
- Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive users.
- Restrict the operation of outdoor lighting for recreational activities past a certain hour at night after games are completed.

For SR2, because the site is so close to the Arena building, entry drive, and parking structure, there are several routes for lowering the lighting impact onto the residence.

- At the Entry Drive, there is a 24' x 60" LED Pylon. We recommend that the digital display only be on the side facing out towards Prairie Avenue. Not having illuminated signage directed towards the residential site will help with minimizing lighting directed onto the property.
- For the Fixture Type S1 LED light poles, the fixtures have a forward throw distribution but there will be some inherit backlight coming off of the fixture. For the locations of Type S1 that are in closer proximity to SR1, the fixture can accept an accessory option for a housing side shield which will significantly reduce the amount of spill light going onto the property.
- For the Fixture Type V surface mounted downlight located inside the parking garage, the fixture has an option for asymmetric distribution of light. To minimize spill light coming off of the parking garage, we recommend that for the Type V fixtures located closest to the parking garage walls have the asymmetric optics to direct the light into the center of the parking garage, instead of the open optics that it currently has that would allow for some spilling away from the building.
- As a general recommendation, provide structural and/or vegetative screening from sensitive uses.
- -Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive uses
- Restrict the operation of outdoor lighting for recreational activities past a certain hour at night after games are completed.

For SR4, because the site is so close to the West Parking Garage building, there are several routes for lowering the lighting impact onto the residence.

- The main concern for the location is at the corner of West Century Boulevard, where there is a higher level of contributed light due to an illuminated signage location. If the sign is moved or dimmed the amount of contributed light will be decreased.
- For the lighting inside the parking garage and on top of the roof, utilize fixtures with optics that direct the majority of light into the parking garage structure and minimizing spill light off of it.
- For the parking garage structure openings, consider implementing a screening material which will allow ventilation but reduce stray light coming off of the fixtures.