8888 WASHINGTON BOULEVARD DEVELOPMENT PROJECT – OFF-HOURS CONSTRUCTION

Final Noise & Lighting Technical Report

Prepared for
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ESA

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Executive Summary

Runyon Group is proposing to submit an off-hours construction work plan to Culver City (City) to obtain a temporary use permit (TUP) that functions as a variance to the City's noise ordinance allowing construction activities outside of the allowable construction hours (off-hours) of City's Municipal Code Noise Ordinance for the proposed 8888 Washington Development Project (Project) in Culver City, CA. The purpose of this noise and lighting technical report is to evaluate the potential short-term, temporary off-hours noise and lighting impacts resulting from implementation of the proposed off-hours Project construction.

The overall Project consists of the proposed redevelopment of an approximately 0.57-acre property located at 8888 Washington Boulevard between Higuera Street and Landmark Street in Culver City, just south of the City of Los Angeles. The Project would create commercial development within a four-story building located over three levels of subterranean parking, which would require soil excavation, concrete pouring, and building construction. In 2017, ESA prepared a Noise and Vibration Technical Report for the Project's Mitigated Negative Declaration (MND), in accordance with the California Environmental Quality Act (CEQA). The report included a noise analysis of the Project's overall construction, which was originally to occur entirely within the allowable construction hours of the City's noise ordinance from 8:00 A.M. and 8:00 P.M. Mondays through Fridays; 9:00 A.M. and 7:00 P.M. Saturdays; 10:00 A.M. and 7:00 P.M. Sundays.

This technical noise report has been prepared for Runyon Group to support the Culver City environmental review process regarding potential impacts to ambient noise associated with the proposed Project's request for construction outside of the allowable hours of the City's noise ordinance. This noise study is required by the City as part of the Project's proposed off-hours construction work plan to the City to obtain a TUP to the Culver City Noise Ordinance. Runyon Group proposes that daily Project construction activities start early at 5:00 a.m. every day during the City's construction off-hours (i.e., prior to 8:00 a.m. on weekdays, 9:00 a.m. on Saturdays, and 10:00 a.m. on Sundays and Holidays) for the duration of Project construction, approximately 16 months from May 25, 2018 to September 2019.

Off-hours Project construction activities generating noise would include soil excavation and truck hauling; concrete pour activities including concrete truck trips to and from the Project site and continuous concrete pouring onsite; and building construction including structural steel, sheet metal flooring, and roofing, including incidental events of worker operation of welding (burning), welding (cutting), laying metal deck, and other hand power tools on the floors of the building structure.

The proposed off-hours construction activities on the Project site would generate noise during the off-hours of 5:00 a.m. to 8:00 a.m. on weekdays, 5:00 a.m. to 9:00 a.m. on Saturdays, and 5:00 a.m. to 10:00 a.m. on Sundays, which would potentially impact the nearest noise sensitive receptor in the City (i.e., single-family residential neighborhood approximately 265 feet south of the Project site's southern boundary). Project off-hours construction activities would generate noise primarily from the operation of heavy equipment onsite, which would attenuate with

distance at the nearest single-family residences, which front and access Kruger Street, but whose backyards are located off Lindblade Street to the south, thereby closer to the Project site. In addition, haul trucks would operate off-hours from I-10 via South Robertson, stage at the Project site along Washington Boulevard, and depart the Project site via National Boulevard to I-10.

This report summarizes the Project noise levels generated on-site and experienced at the noise sensitive receptor off-site, and the potential for the Project to conflict with the applicable Culver City noise regulations, standards, and thresholds. The findings of the analyses are as follows:

- The Project's maximum unmitigated off-hours construction noise levels would not exceed the Culver City maximum noise level standards at the nearest residence in Culver City, except during the building construction phase (crane operation and incidental events) during the City's night period (7 p.m. to 7 a.m.).

- The Project's hourly average unmitigated off-hours construction noise levels would not exceed the Culver City hourly average noise level standards at the nearest residence in Culver City, except during the building construction phase (crane operation and incidental events) during the City's night period (7 p.m. to 7 a.m.).

- The Project's hourly average unmitigated off-hours construction noise levels during excavation and concrete phases, when added to existing quietest hourly average noise level during the Project off-hours at the nearest residence in Culver City, would not result in a perceptible increase in ambient noise levels During the building construction phase (crane operation and incidental events), the hourly average noise level of 69 dBA L_{eq} , when added to the measured quietest hour ambient noise level of 52 dBA L_{eq}, would result in ambient noise level of 69 dBA L_{eq}, which would be a strongly perceptible increase of 12 dBA (i.e., perceived as a doubling of noise).

- The Project's off-hours noise levels, when combined with the Ivy Station/8777 Washington Boulevard off-hours noise levels, does not measurably increase the Project's off-hours noise level at the nearest noise sensitive receptor. Therefore, the cumulative off-hours noise impact at the nearest noise sensitive receptor would be less than significant.

The Project off-hours construction activities onsite would require artificial lighting equipment as needed prior to daybreak, which may generate light trespass and/or glare onsite. However, the Project lighting analysis determined that light trespass illuminance at the nearest residence would be very low, and not significant, and the glare from the construction lighting equipment is not visible at the residence due to shielding by intervening structures.

Therefore, a variance to the Culver City Noise Ordinance for the Project's off-hours soil excavation and concrete pours construction phases would not result in adverse noise and lighting impacts, except during the building construction phase.

1. Introduction

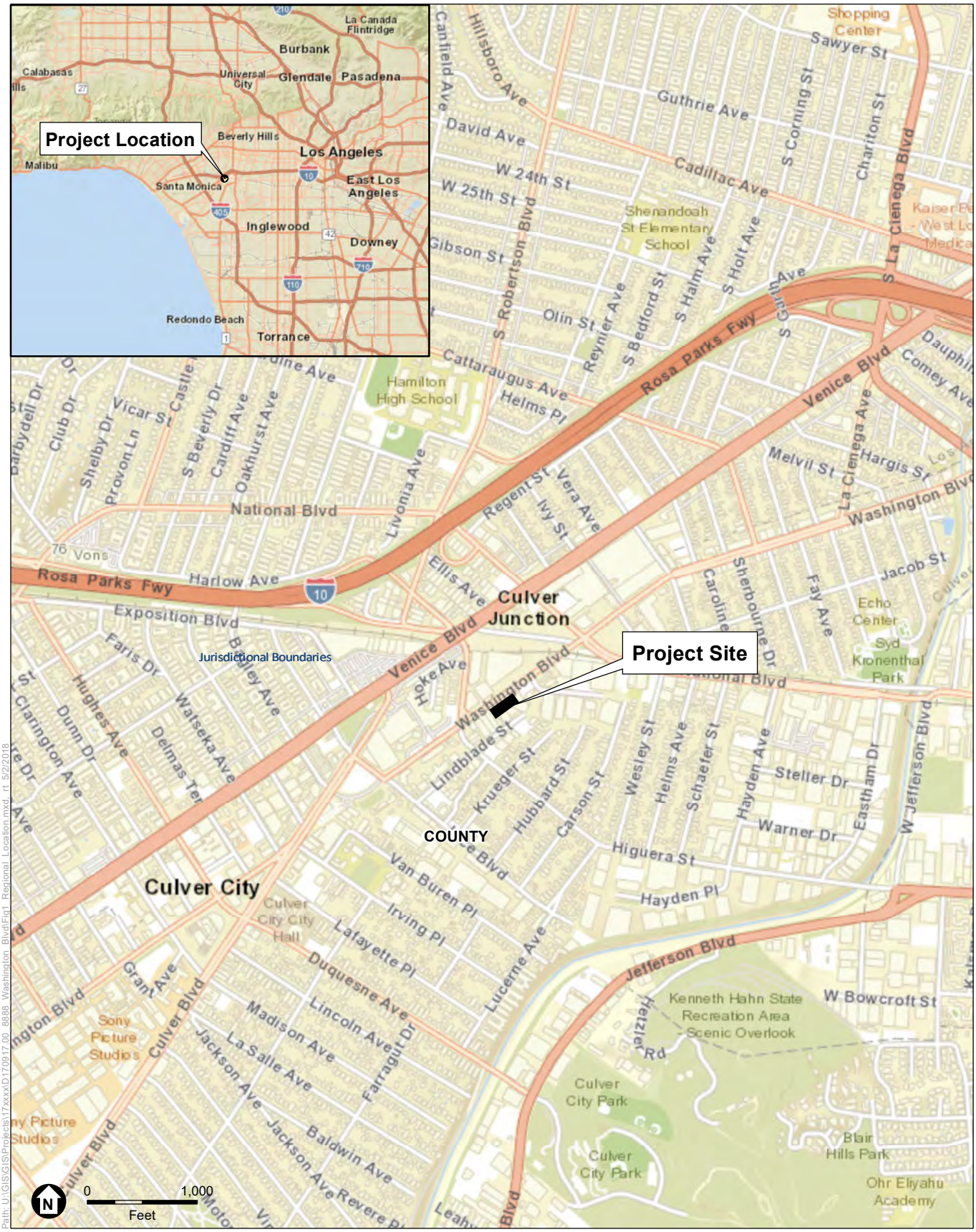
Runyon Group proposes off-hours construction activities for the proposed 8888 Washington Development Project (Project) at 8888 Washington Boulevard in Culver City (City), California. This technical report has been prepared to support the City's environmental review process regarding potential noise impacts to associated with the proposed off-hours Project's construction. This noise study is required as part of the Project's proposed off-hours construction work plan to be submitted to the City to obtain a Temporary Use Permit (TUP) allowing a variance to the City' Noise Ordinance, which limits general construction to between the hours of 8:00 A.M. and 8:00 P.M. Mondays through Fridays; 9:00 A.M. and 7:00 P.M. Saturdays; 10:00 A.M. and 7:00 P.M. Sundays.

This report identifies applicable City noise regulations, and evaluates potential noise impacts associated with the proposed off-hours construction of the Project. Where applicable, measures to mitigate or minimize noise impacts associated with the Project are included. Information used to prepare this analysis included the noise analysis in the Project's Mitigated Negative Declaration (MND), prepared in accordance with the California Environmental Quality Act (CEQA), the City's General Plan Noise Element and Municipal Code Noise Ordinance including meetings with City representatives, Project off-hours construction data provided by the applicant's general contractor (Millie and Severson), and other sources identified herein.

1.1 Project Location and Surrounding Land Uses

The Project site is located at 8888 Washington Boulevard between Higuera Street and Landmark Street in Culver City, just south of the City of Los Angeles, as shown in **Figure 1**. The boundary of Culver City and the City of Los Angeles is located directly north of the Project site. Interstate 10 (I-10) is located approximately 0.3 miles northwest of the Project site.

The surrounding land uses include Light Industrial/Commercial to the northeast, southeast, and southwest; and Light Industrial to the northwest across Washington Boulevard, as shown in **Figure 2**. The 2017 Project MND identified a multi-family residential use (apartments) adjacent to the Project site to the south along Lindblade Street, however, this use has since become vacant. Located within the vicinity of the Project site are the Park Center School at 3939 Landmark Street approximately 215 feet to the east; a single-/multi-family residential neighborhood, starting approximately 265 feet to the south, the Metro Expo Platform/Line and Metro Station and parking lot (currently under construction for the Ivy Station Mixed-Use Project) approximately 450 feet to the north; the recently occupied apartments (Access Culver City) at 8770 Washington Boulevard approximately 865 feet to the northeast; the Turning Point School at 8780 National Boulevard approximately 887 feet to the east. Therefore, the single-/multi-family residential neighborhood approximately 265 feet to the south would be the closest residence in Culver City potentially impacted by the Project's off-hours construction.



SOURCE: ESRI; Los Angeles County

8888 Wahington Blvd

Figure 1
Regional and Project Vicinity Location

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SOURCE: ESA, 2018; Google Maps, 2015 (Aerial)

8888 Washington Blvd

Figure 2
Surrounding Land Uses and Noise Measurement Locations

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1.2 Project Background

The overall Project construction consists of the proposed commercial development within a 4-story building located over three levels of subterranean parking, which would require soil excavation, foundation and floor concrete pouring, and building construction. The Project's Construction Management Plan in Appendix A identifies the Project site plan.

In 2017, ESA prepared a Noise and Vibration Technical Report for the Project's MND, in accordance with CEQA. The noise report and MND included a noise analysis of the Project's construction, which was originally to occur during the allowable construction hours of the City's noise ordinance.

This technical report has been prepared for Runyon Group to support the Culver City environmental review process regarding potential impacts to ambient noise associated with the proposed Project's construction outside of the allowable construction hours of the City's noise ordinance (off-hours). This noise study is required as part of the Project's proposed off-hours work plan to the City to obtain a TUP allowing a variance to the Culver City Noise Ordinance. The proposed off-hours construction activities on the Project site and adjacent roadways, which would generate noise potentially impacting nearby residences primarily from the operation of heavy equipment and trucks hauling to and from the Project site.

In addition, the Ivy Station Mixed-Use and 8777 Washington Development Projects to the north and northwest, are currently under construction and also propose off-hours construction activity such as concrete pours and concrete truck trips during early am off-hours this summer (2018). The Ivy Station Project has been approved for a TUP by the City to conduct off-hours construction work (i.e., concrete pours and soil hauling), and the 8777 Washington Boulevard Development Project has recently made application to the City for a TUP. Therefore, this analysis for the off-hours 8888 Washington Boulevard Project considers the potential cumulative noise impact of these projects potentially operating off-hours simultaneously, and the potential cumulative noise impact to nearby residences.

2. Project Description

2.1 Project Understanding

Runyon Group is proposing to submit application for a TUP to Culver City to obtain a variance to its noise ordinance to conduct Project construction activities outside of the allowable construction hours of the noise ordinance (i.e., off-hours); specifically, and an early start to the construction day starting at 5:00 a.m. daily during the Project construction period. Runyon Group requested that ESA assist in this submittal with the preparation of the noise and lighting studies of the Project's proposed off-hours construction work. ESA utilized the Project's 2017 noise technical report and MND in the preparation of the noise and lighting studies, as well as the recent noise and lighting studies for the Ivy Station and 8777 Washington Boulevard Development Projects, and report examples provided by Culver City of a previous project (C3) for off-hours construction in Culver City for a variance to its noise ordinance.

The City has established an off-hours nighttime (10:00 p.m. to 7:00 a.m.) and daytime (7:00 a.m. to 8:00 a.m.) noise level limit of 65 dBA L_{max} and 70 dBA L_{max} , respectively, at the property line of the noise sensitive receptor. The 65 and 70 dBA L_{max} limits are based on the City's operation noise standards in the Noise Element of the City's 1975 General Plan (City 1975), which establishes a nighttime and daytime levels of 65 and 70 dBA L_{eq}, respectively for a duration of one minute (i.e., 65 dBA and 70 dBA L_{max}, respectively), at the property line of the noise sensitive receptor.

The Project's proposed off-hours construction activities at the Project site are based on data provided to ESA from the applicant's general contractor (Millie and Severson), via email and phone conversations. The Project's off-hours construction work would occur on the Project site and on roadways adjacent to the Project site (truck hauling trips). The focus of this study is the impact of the Project's off-hours construction activities on the nearest noise sensitive receptor within Culver City to the Project site (i.e., the single-/multifamily residences approximately 265 feet south of the Project site.

2.2 Project Description

The Project's proposed off-hours construction activities on the Project site would require an "early start" to the Project's construction workday (i.e., starting at 5:00 a.m. for the entire duration of Project construction). Therefore, the Project's daily "early start" at 5:00 a.m. would occur outside of the allowable construction hours of the City's noise ordinance of between 8:00 A.M. and 8:00 P.M. Mondays through Fridays; 9:00 A.M. and 7:00 P.M. Saturdays; and 10:00 A.M. and 7:00 P.M. Sundays.

The Project construction's off-hours early start is needed to begin on Friday, May 25, 2018 and would continue daily (i.e., Monday – Sunday including holidays) for the entire duration of the Project's construction, approximately 16 months. Off-hours Project construction could potentially occur on holidays; although not anticipated for Memorial Day on Monday, May 28, 2018. The off-hours Project construction is anticipated to end in September 2019.

The Project's off-hours construction activities would include the following separate phases and equipment, as described in the Project Construction Management Plan in Appendix A of this report:

- Soil excavation and hauling;
- Concrete transport and foundation/floor pouring; and
- Building Construction (Structural steel erection, sheet metal floor placement, roof placement; and building interior work).

Soil Excavation and Hauling

The Project's off-hours construction would include soil excavation onsite and soil hauling offsite, requiring the use of heavy equipment on the Project site including one excavator and five dump trucks. This phase is already ongoing during the allowable hours, and the site excavation is currently at a depth of 15 feet below grade. Therefore, the excavator would operate onsite at

depths of 15 to a maximum of 30 feet below grade and also at grade at Washington Boulevard, where the excavator would fill dump trucks with up to five trucks queuing at one time, as shown in Appendix 3 of the Project Construction Management Plan in Appendix A.

During Project soil excavation, dump trucks would constantly travel to and from the Project site to transport excavation soil offsite for disposal. The haul trucks would access Project site from I-10 via South Robertson and stage along Washington Boulevard at the Project site and depart the Project site via National Boulevard to I-10 in the City of Los Angeles, as shown in Appendix 1 of the Construction Management Plan in Appendix A of this report. All of the haul truck staging and loading by excavator activities would occur along the curbside of Washington Boulevard adjacent to the Project site's northern boundary, and excavator would excavate soil below grade onsite.

Concrete Pours

The Project's off-hours construction would include concrete transport and pouring onsite, requiring the use of heavy equipment on the Project site including one concrete boom pump and three concrete trucks. The concrete pump would operate onsite at grade at Washington Boulevard, where concrete trucks would provide concrete to the pump, with three concrete trucks queuing and idling at one time.

During Project concrete pouring, concrete trucks would constantly travel to and from the Project site to provide a continuous supply of concrete for continuous concrete pours. The concrete trucks would access Project site on the same haul route as for soil transport, as discussed above and shown in Appendix 1 of the Construction Management Plan in Appendix A of this report. The concrete pouring and staging activities would include the onsite operation of a concrete pump and three concrete trucks idling and arriving and departing, as shown in Appendix 4 of the Project Construction Management Plan in Appendix A. All of the concrete truck staging and concrete pump activities would occur along the curbside of Washington Boulevard adjacent to the Project site's northern boundary, and concrete would be pumped into the below grade foundation on onto the ground and upper floors.

Building Construction

The Project's off-hours construction would include structure construction of the building including the steel structure, three sheet metal floors above grade, a roof, and interior work, requiring the use of heavy equipment on the Project site of a conventional mobile crane for lifting materials and equipment. The crane would operate onsite at grade at Washington Boulevard. In addition, incidental events of worker operation of welding (burning), welding (cutting), laying metal deck, and other hand power tools would occur on the floors of the building structure to secure the steel structure, floors, and roof to the building structure.

3. Environmental Setting

3.1 Noise Characteristics and Descriptors

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air). Noise is generally defined as unwanted sound (i.e., loud, unexpected, or annoying sound). Acoustics is defined as the physics of sound. In

acoustics, the fundamental scientific model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. Acoustics addresses primarily the propagation and control of sound.

Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level) that is measured in decibels (dB), which is the standard unit of sound amplitude measurement. The dB scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound, with 0 dB corresponding roughly to the threshold of human hearing and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound. Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude. When all the audible frequencies of a sound are measured, a sound spectrum is plotted, consisting of a range of frequency from 20 to 20,000 Hz.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. Sound is measured using an electronic filter that deemphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements.

Noise Exposure and Community Noise

An individual's noise exposure is a measure of noise over a period of time. A noise level is a measure of noise at a given instant in time. The noise levels are representative of measured noise at a given instant in time; however, they rarely persist consistently over a long period of time. Rather, community noise varies continuously over a period of time with respect to the contributing sound sources of the community noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic. What makes community noise variable throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment change the community noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a community noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

L_{eq}: The equivalent sound level used to describe noise over a specified period of time in terms of a single numerical value; the L_{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L_{eq} may also be referred to as the average sound level.

L_{max}: The maximum, instantaneous noise level experienced during a given period of time.

CNEL: The Community Noise Equivalent Level, is the average A-weighted noise level during a 24-hour day that is obtained after an addition of 5 dB to measured noise levels between the hours of 7:00 a.m. to 10:00 p.m. and after an addition of 10 dB to noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

Noise Effects on People

Noise is generally loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that is a nuisance or disruptive. The effects of noise on people can be placed into four general categories:

- Subjective effects (e.g., dissatisfaction, annoyance);
- Interference effects (e.g., communication, sleep, and learning interference);
- Physiological effects (e.g., startle response); and
- Physical effects (e.g., hearing loss).

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. Interference effects of environmental noise refer to those effects that interrupt daily activities and include interference with human communication activities, such as normal conversations, watching television, telephone conversations, and interference with sleep. Sleep interference effects can include both awakening and arousal to a lesser state of sleep. With regard to the subjective effects, the responses of individuals to similar noise events are diverse and are influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

Overall, there is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction on people. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which

one has adapted (i.e., comparison to the ambient noise environment). In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships generally occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change in noise levels is considered to be a barely perceivable difference;
- A change in noise levels of 5 dBA is considered to be a readily perceivable difference; and
- A change in noise levels of 10 dBA is subjectively heard as doubling of the perceived loudness.

These relationships occur in part because of the logarithmic nature of sound and the dB scale. The human ear perceives sound in a non-linear fashion hence the dB was developed. Because the dB scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. Under the dB scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two sources are each producing sound of the same loudness, the resulting sound level at a given distance would be approximately 3 dBA higher than one of the sources under the same conditions. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA. Under the dB scale, three sources of equal loudness together produce a sound level of approximately 5 dBA louder than one source, and ten sources of equal loudness together produce a sound level of approximately 10 dBA louder than the single source.

Noise Attenuation

When noise propagates over a distance, it changes in level and frequency content. The manner in which noise reduces with distance depends on factors such as the type of noise source and the propagation path. Noise from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern; therefore, this type of propagation is referred to as “spherical spreading.” Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at a rate between 6 dBA for acoustically “hard” sites and 7.5 dBA for acoustically “soft” sites for each doubling of distance from the reference measurement as their energy is continuously spread out over a spherical surface. Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites.

Roadways and highways consist of several localized noise sources on a defined path, and hence are treated as “line” sources, which approximate the effect of several point sources. Noise from a line source propagates over a cylindrical surface, often referred to as “cylindrical spreading.” Line sources (e.g., traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites

and 4.5 dBA for soft sites for each doubling of distance from the reference measurement.[1] Therefore, noise due to a line source attenuates less with distance than that of a point source with increased distance.

Additionally, receptors located downwind from a noise source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels. Sound levels can be increased at large distances (e.g., more than 500 feet) due to atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also have significant effects.

3.2 Existing Conditions

The Project site is currently prepared for Project construction within the allowable hours of the City ‘s noise ordinance. As shown on **Figure 2**, the Project site is adjacent to Washington Boulevard and surrounded by light industrial and commercial uses, with residential and school uses in proximity. The Metrorail right-of-way and the Culver City Metrorail station is located approximately 450 feet north of the Project site. I-10 is located approximately 0.3 miles northwest of the Project site. Therefore, the predominant noise source in the vicinity of the Project site is vehicle traffic noise from the adjacent roadways and the nearby I-10. Secondary noise sources are existing general commercial activities including loading dock/delivery truck activities, trash compaction, and refuse service activities; residential landscape maintenance activities; and scheduled Metrorail traffic and occasional aircraft flyovers.

Existing Ambient Noise Levels

An overnight ambient noise measurement was conducted on April 18-19, 2018 in proximity to the nearest occupied residence to the Project site, approximately 265 feet south of the Project site’s southern boundary, as previously shown on **Figure 2**, to characterize the hourly average ambient noise levels at the nearest residence during the off-hours (5:00 a.m. to 8:00 a.m.) construction activity at the Project site. The noise meter was deployed and left to run unmanned continuously overnight from 4:00 p.m. on Wednesday, April 18, 2018 to 8:00 a.m. on Thursday April 19, 2018 along Lindblade Street approximately 100 feet north of the nearest residence property line.

The noise measurement was conducted with Larson Davis model LxT Type 2 sound level meter (SLM). The SLM was calibrated with a Larson Davis model CAL 200 before and after the measurement. Following the calibration, a wind screen was placed over the microphone, and the frequency weighting on the SLM was set at “A” and “slow response”. The noise meter was enclosed in a locked weather proof case with microphone exposed and secured with locks in a discrete location. During the measurement, the microphone for the SLM was placed approximately five feet above the ground surface. The results of the ambient off-hours noise measurement are summarized in **Table 1**.

[1] California Department of Transportation (Caltrans), *Technical Noise Supplement* (TeNS). September, 2013.

TABLE 1
SUMMARY OF NIGHT AMBIENT NOISE MEASUREMENTS

Location, Day of the Week, Date, and Hours	Hourly Average Noise Levels, dBA L_{eq}
Night Measurement	
Wednesday 4/18/18	
4:00 p.m. to 5:00 p.m.	55.5
5:00 p.m. to 6:00 p.m.	57.9
6:00 p.m. to 7:00 p.m.	61.0
7:00 p.m. to 8:00 p.m.	55.4
8:00 p.m. to 9:00 p.m.	54.3
9:00 p.m. to 10:00 p.m.	53.9
10:00 p.m. to 11:00 p.m.	53.9
11:00 p.m. to 12:00 a.m.	51.6
Thursday 4/19/18	
12:00 a.m. to 1:00 a.m.	46.6
1:00 a.m. to 2:00 a.m.	45.8
2:00 a.m. to 3:00 a.m.	48.4
3:00 a.m. to 4:00 a.m.	49.7
4:00 a.m. to 5:00 a.m.	49.8
5:00 a.m. to 6:00 a.m.	58.5
6:00 a.m. to 7:00 a.m.	55.2
7:00 a.m. to 8:00 a.m.	54.7
8:00 a.m. to 8:30 a.m.	59.2

SOURCE: ESA, 2018.

As shown in Table 1, during the Project's proposed weekday "early start" hours of 5:00 a.m. to 8:00 a.m., the hourly average ambient noise levels ranged from approximately 58.5 dBA L_{eq} to approximately 54.7 dBA $L_{eq.}$ Therefore, the quietest hour was from 7:00 a.m. to 8:00 a.m. measured at approximately 54.7 dBA L_{eq}. The primary noise source during the measurements was vehicle traffic on major roadways in the vicinity to the Project site (i.e., Washington Boulevard). The increase of approximately 9 dBA L_{eq} from the 4:00 a.m. hour to the 5:00 a.m. hour was based on a high level (84 dBA L_{max}) event recorded during the 5:00 a.m. hour.

Noise Sensitive Receptors

Noise sensitive receptors are defined as those specific land uses that have associated indoor and/or outdoor human activities that may be subject to stress and/or significant interference from noise produced by community sound sources. Typically, residences, hospitals, and schools are considered noise sensitive, as their land uses of sleeping, recuperation, and concentration, can be adversely affected by noise.

The noise sensitive land use closest to the Project site in Culver City, potentially impacted by the Project's off-hours construction, are the single-/multi-family one-and two-story residences approximately 265 feet to the south of the Project site's southern boundary, as previously shown on **Figure 2**. Other noise sensitive land uses located within the vicinity (approximately 500 feet) of the Project site, which would not be impacted by the off-hours (5:00 a.m. to 8:00 a.m.) construction, include the Park Center School at 3939 Landmark Street approximately 215 feet to

the east. There is a vacant apartment building located adjacent to the southwest corner of the Project site, which is unsuitable for habitation due to disrepair including gas leaks, would remain vacant for the duration of the Project's off-hours construction period.

3.3 Regulatory Setting

Culver City General Plan Noise Element

The Noise Element of the General Plan identifies noise-sensitive land uses and noise sources, defines areas of noise impact, and establishes goals, policies, and programs to ensure that City residents are protected from excessive noise (Culver City 1995). The noise goals and policies of the Noise Element applicable to the Project's off-hours construction includes:

> **Policy 2.A** Create a comprehensive ordinance establishing noise regulation criteria, and standards for noise sources and receptors to include but not be limited to the following:
>
> – Noise reduction features during site planning to mitigate anticipated noise impacts on affected noise sensitive land uses, such as schools, hospitals, convalescent homes, and libraries.
>
> – Temporary sound barrier installation at construction site if construction noise is impacting nearby noise sensitive land uses.
>
> – Noise abatement and acoustical design criteria for construction and operation of any new development.

The City's noise standards are contained in the City's 1995 General Plan Noise Element, which establishes a daytime (7:00 a.m. to 10:00 p.m.) level of 55 dBA Leq and a nighttime (10:00 p.m. to 7:00 a.m.) level of 50 dBA Leq for a duration of 30 minutes; and 70 dBA Leq (daytime) and 65 dBA Leq (nighttime) for a duration of one minute at the property line of the noise sensitive receptor, as shown in **bold** in **Table 2** (City 1995).

TABLE 2
CULVER CITY NOISE STANDARDS

Daytime levels 7:00 AM – 10:00 PM	Nighttime Levels 10:00 PM – 7:00 AM	Duration
55 dBA - Leq	**50 dBA - Leq**	**30 minute**
60 dBA - Leq	55 dBA - Leq	15 minute
65 dBA - Leq	60 dBA - Leq	5 minute
70 dBA - Leq	**65 dBA - Leq**	**1 minute**
75 dBA - Leq	70 dBA - Leq	Never

Source: City 1995.

Based on these noise standards in Table 2, the City has established maximum noise level limits of 70 dBA L_{max} and 65 dBA L_{max} for off-hours construction noise during off-hour daytime and nighttime periods, respectively. (i.e. 70 and 65 dBA L_{max} at the property line of the nearest residence).

Culver City Municipal Code

Chapter 9.07 of the City of Culver City Municipal Code (CCMC) provides specific noise restrictions and exemptions for noise sources within Culver City. Culver City's noise regulations state that construction activity shall be prohibited, except between the hours of 8:00 A.M. and 8:00 P.M. Mondays through Fridays; 9:00 A.M. and 7:00 P.M. Saturdays; 10:00 A.M. and 7:00 P.M. Sundays.

4. Impacts and Mitigation Measures

This section describes the impact analysis relating to noise impacts for the Project including the methodology, applicable impact thresholds used to determine the impacts of the Project including potential cumulative noise impacts associated with other off-hours construction projects in the vicinity of the Project site. Where impacts are identified, mitigation measures are proposed, if any to reduce noise impacts.

4.1 Methodology

Project off-hours construction noise levels at the nearest residence were estimated using the FHWA's Roadway Construction Noise Model (RCNM) and equipment noise levels at the source (Appendix B), and construction equipment information and location on-site, provided by Millie and Severson, General Contractors. The off-hours noise levels were calculated based on the number and type of equipment operating simultaneously (i.e., the concrete hauling and pouring), and their location on the Project site. Potential off-hours construction noise levels from the Project site were attenuated by distance and intervening barriers to the nearest sensitive receptor located offsite in Culver City (i.e., the residences approximately 265 feet south of the Project site's southern boundary), as shown in Appendix B. These assumptions represent the worst-case off-hours noise scenario; typically, construction activities are spread out and moving throughout a project site, located further away from affected receptors. The estimated Project off-hours construction noise levels at the affected receptor were then analyzed against the off-hours construction noise standards established by Culver City, to determine whether an exceedance of allowable noise levels would occur.

4.2 Impact Thresholds

Off-hours construction noise limits are based on Culver City noise standards for daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.). Therefore, the Project's off-hours maximum construction noise (L_{max}), estimated at the property line of the nearest noise sensitive receptor in Culver City, shall not exceed 65 dBA L_{max} during each nighttime off-hours of 5:00 – 6:00 a.m., and 6:00 – 7:00 a.m.; and not exceed 70 dBA L_{max} during the daytime off-hour of 7:00 – 8:00 a.m.

In addition, the Project's off-hours hourly average construction noise (L_{eq}), estimated at the property line of the nearest noise sensitive receptor in Culver City, shall not exceed the daytime (7:00 a.m. to 10:00 p.m.) standard level of 55 dBA L_{eq}, and the nighttime (10:00 p.m. to 7:00 a.m.) standard level of 50 dBA L_{eq} (City 1995), as previously shown in Table 2. However, the existing hourly average ambient levels measured in the vicinity of the Project site and nearest

residence property lines, are at or greater than these standards. As shown in Table 1, the measured 58.5 dBA L_{eq} from 5:00 a.m. to 6:00 a.m and 55.2 dBA L_{eq} from 6:00 a.m. to 7:00 a.m. are higher than the City's nighttime (10:00 p.m. to 7:00 a.m.) limit of 50 dBA L_{eq}, and the measured 54.7 dBA L_{eq} from 7:00 a.m. to 8:00 a.m is approximately the City's daytime standard (7:00 a.m. to 10:00 p.m.) level of 55 dBA $L_{eq.}$ Therefore, this analysis assumes that the existing ambient levels plus 3 dBA (i.e., the increase that results from doubling a noise source) are assumed to be the City's allowable hourly average noise level (L_{eq}) limit for the Project's off-hours construction noise at the property line of the nearest noise sensitive receptor. Therefore, the assumed adjusted limits would be 58.2 dBA L_{eq} nighttime and 57.2 dBA L_{eq} daytime at this location.

4.3 Project Impact Analysis

Each of the Project's proposed off-hours construction activities of soil excavation and hauling, concrete transport pouring, and building construction, would generate noise from the operation of heavy equipment and power hand tools onsite including truck queuing and idling, and truck hauling offsite. Table 3 provides the estimated maximum noise levels generated during each of the off-hours construction phases, including the equipment type and number, noise level, usage factor, and distance to the property line of the nearest off-site noise sensitive receptor, as detailed in Appendix B.

TABLE 3
ONSITE CONSTRUCTION EQUIPMENT NOISE LEVELS AT SOURCE AND NEAREST RESIDENCE

Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, L_{max}**	**Acoustical Usage Factor (%)**	**Distance (ft)**
Soil Excavation and Hauling				
Excavator	1	81	40	330
Haul Truck	1	76	20	370
Haul Truck	1	76	20	375
Haul Truck	1	76	20	380
Haul Truck	1	76	20	385
Haul Truck	1	76	20	390
Concrete Hauling and Pours				
Concrete Pump	1	81	20	330
Concrete Truck	1	79	40	370
Concrete Truck	1	79	40	375
Concrete Truck	1	79	40	380
Structural Steel Erection/Sheet Metal Floor Placement/Roof Placement				
Crane	1	81	40	330
Air Compressor	1	78	50	335

Incidental Events (power hand tools, etc)	1	97	5	300

Source: FHWA 2006, University of Washington 2002.

As shown in Table 3, the construction equipment use anticipated during Project's off-hours construction activities would generally produce maximum noise levels ranging from approximately 76 to 81 dBA L_{max} at a reference distance of 50 feet from the noise source (FHWA 2006), except for approximately 97 dBA L_{max} at 50 feet (University of Washington 2002) from the use of power hand tools during the incidental events of the building construction phase, as shown in Appendix B. These maximum noise levels would occur when equipment is operating at full power, and includes estimated usage factors for the equipment, which are based on FHWA's RNCM User's Guide.[2]

During off-hours Project construction, the nearest offsite noise sensitive receptor in Culver City would be exposed to the Project's off-hours construction noise, in which, the highest noise levels generated when multiple pieces of construction equipment are being operated simultaneously, per construction phase (i.e., with no phases overlapping). As discussed previously and shown in Table 3, the Project's estimated construction noise levels were calculated for the maximum equipment required to operate simultaneously (i.e., the worst-case noise scenario).

The estimated maximum and hourly average noise levels at the nearest residence offsite were calculated using FHWA's RCNM, and the overall results are shown Table 4 and detailed in Appendix B. **Table 4** shows the estimated unmitigated construction noise levels that would occur at the nearest offsite sensitive use during the Project's off-hours construction activities at the Project site, based on noise attenuation by distance (-6 dBA per doubling of distance) (i.e., without the implementation of any noise reduction measures, e.g., temporary noise barriers) and barrier noise attenuation of approximately 10 – 15 dBA from the current intervene barriers of existing buildings adjacent to and south of the Project site, and south of Lindblade Street adjacent to the nearest residences.

TABLE 4
UNMITIGATED OFF-HOURS CONSTRUCTION NOISE LEVELS AT NEAREST RESIDENCE

Construction Phases	Estimated Maximum Construction Noise Levels (dBA L_{max})	Estimated Hourly Average Construction Noise Levels (dBA L_{eq})
Soil Excavation and Hauling	50	48
Concrete Pours	50	49
Structural Steel Erection/Sheet Metal Floor Placement/Roof Placement	81	69

[2] Federal Highway Administration (FHWA), Roadway Construction Noise Model User's Guide, 2006.

City Off-Hours Noise Standards		
10:00 p.m. to 7:00 a.m.	*65*	*50 **
7:00 a.m. to 10:00 p.m.	*70*	*55 **

- *Existing measured ambient levels at the project and receptor site boundaries, as shown in Table 1, already exceed these standards; therefore, the existing ambient levels (plus 3 dBA) are assumed to be the standards not to exceed. Therefore, assumed adjusted limits would be 58.2 dBA L_{eq} nighttime and 57.2 dBA L_{eq} daytime at this location.

SOURCE: ESA, 2017.

As shown in Table 4, the Project's unmitigated maximum and hourly average off-hours construction noise levels of 50 dBA $L_{max,}$ respectively, at the nearest offsite noise sensitive receptor in Culver City (i.e., residences approximately 265 feet south of the Project site) during the soil excavation and concrete pouring phases, would not exceed the City's night and day maximum off-hours noise limits of 65 dBA L_{max} and 70 dBA $L_{max,}$ respectively. However, during the Structural Steel Erection/Sheet Metal Floor Placement/Roof Placement phase, the maximum noise levels of 81 dBA L_{max} at the residence would exceed the City's night and day maximum off-hours noise limits of 65 dBA L_{max} and 70 dBA $L_{max,}$ respectively. The exceedance is based primarily on the incidental worker activity and use of power tools vertically on the building structure, which would have direct or partial line-of-sight with the residences, thereby no noise attenuation from the existing ground-level barriers, while the operation of the crane and compressor at ground-level would provide barrier attenuation of approximately 10 -15 dBA.

The Project's unmitigated hourly average off-hours construction noise levels of 48 and 49 dBA $L_{eq,}$ respectively at the nearest offsite noise sensitive receptor in Culver City during the soil excavation and concrete pouring phases would not exceed the City's day hourly average off-hours limits of 50 dBA L_{eq} and 55 dBA L_{eq}., assumed adjusted for ambient to 58.2 dBA L_{eq} nighttime and 57.2 dBA L_{eq} daytime at this location. However, during the Structural Steel Erection/Sheet Metal Floor Placement/Roof Placement phase, in which the hourly average noise levels of 69 dBA L_{eq} would exceed the City's night hourly average off-hours limits of 50 dBA L_{eq} and 55 dBA L_{eq}, assumed adjusted for ambient to 58.2 dBA L_{eq} nighttime and 57.2 dBA L_{eq} daytime at this location. The exceedance is based on the same criteria as for the maximum noise levels above of the incidental worker activity and use of power tools vertically on the building structure (assuming a conservative 5 percent (%) usage rate). Using a less conservative usage rate of 1%, the hourly average noise levels would be less, at 62 dBA L_{eq}, however, still exceeding the City's night/day hourly average off-hours limits of 50 dBA L_{eq} and 55 dBA L_{eq}, respectively, assumed adjusted for ambient to 58.2 dBA L_{eq} nighttime and 57.2 dBA L_{eq} daytime at this location.

In addition, the Project's off-hours hourly average construction noise during the soil excavation and concrete pouring phases at the nearest residences would be below the measured hourly average ambient night noise level of approximately 55 dBA L_{eq} during the quietest hour of

Project off-hours. Combining the measured ambient noise level of approximately 55 dBA L_{eq} during the quietest hour of 7:00 a.m. to 8:00 a.m. and the highest estimated concrete or excavation noise level of 52 dBA L_{eq}, would result in 57 dBA L_{eq}, which would be an increase of approximately 2 dBA, which would be a less than perceptible increase at the nearest residence during the Project's off-hours construction. During the building construction phase, the hourly average noise level of 69 dBA L_{eq}, when added to the measured quietest hour ambient noise level of 52 dBA L_{eq}, would result in ambient noise level of 69 dBA L_{eq}, a strongly perceptible increase of 12 dBA (i.e., perceived as a doubling of noise). Therefore, no mitigation measures are required for the Project's off-hours soil excavation and concrete phases. However, the following noise reduction measure is recommended to be implemented to further reduce maximum and hourly average construction noise levels at the adjacent sensitive receptor during off-hours Project construction:

> All mobile off-road construction equipment operating at the Project site shall be equipped with properly operating mufflers. Idling equipment shall be turned off when not in use.

As shown in Table 4, the noise levels of the Structural Steel Erection/Sheet Metal Floor Placement/Roof Placement phase at the nearest residences would exceed the City's off-hours maximum and hourly average night and day noise limits, primarily due to the vertical height of the crane and incidental events above the barriers of the intervening buildings, resulting in line-of-sight with the nearest residences. Due to the heights, there is no feasible mitigation that could be implemented to block of the line-of-sight of the crane and incidental events from the residences to achieve sufficient noise attenuation below the City's noise limits at residences.

4.4 Cumulative Impact Analysis

This section presents a cumulative noise analysis of the proposed Project's off-hours construction noise in combination with the Ivy Station and 8777 Washington Boulevard Development Projects off-hours construction noise occurring simultaneously, and any potential cumulative noise impacts to the nearest noise sensitive receptor for either of projects (Residences south of the project site or Access Apartments).

The Ivy Station Mixed-Use and 8777 Washington Boulevard Development Projects are located approximately 500 feet northeast of the Project site along Washington Boulevard at the intersection with National Boulevard, and adjacent to the Access Apartments to the east across the intersection of National and Washington Boulevards, as shown in **Figure 2**. The Ivy Station and 8777 Washington Boulevard Projects consists of the development of multi-story buildings over subterranean parking structures, which require soil excavation and hauling, and concrete pouring to occur outside the allowable construction hours of the City Noise Ordinance. Both projects are currently under construction, and has been approved by the City to conduct off-hours construction work (i.e., concrete pours and soil hauling), based on off-hours construction noise and lighting technical reports prepared by ESA, which included a cumulative noise analysis of both project operating simultaneously.

As both projects are across the street from the nearest residence, the combined off-hours construction noise 77 dBA L_{max} and 73 dBA L_{eq} exceeded City thresholds requiring mitigation

measures. However, the combined off-hours noise level generated by both projects does not measurably increase the noise level for either project operating separately. Therefore, the cumulative off-hours noise impact at the nearest noise sensitive receptor was determined to be less than significant. The Ivy Station Project has been approved for a TUP by the City to conduct off-hours construction work, and the 8777 Washington Boulevard Development Project has recently made application to the City for a TUP.

The Project at 8888 Washington Street is approximately 450 feet south of the Ivy Station Mixed-Use Project, approximately 550 feet southwest of the 8777 Washington Boulevard Project, and approximately 865 feet to the southwest of the Access Culver City Apartments. As noise attenuates with distance at a rate of -6 dBA per doubling of distance, the off-hours construction noise of Ivy Station and 8777 Washington Boulevard Development Projects would not result in a perceptible increase at the nearest residence to the Project at 8888 Washington Street, when added to the Project's off-hours construction noise. Therefore, the cumulative off-hours noise impact at the nearest noise sensitive receptor would be less than significant.

5. References

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Lighting

In addition to noise, the Project's off-hours construction early start to the day (i.e., at 5:00 a.m.) would require artificial lighting during hours of darkness (i.e. before sunrise), as needed. The appropriate lighting equipment (i.e., tower portable lights) associated with the off-hours construction activities, including terminology, and Project lighting design and impacts are discussed below.

Lighting Terminology

Lighting is defined as the state of illumination. Illuminance is the measure of emitted light falling on a surface; luminance is the measure of light reflected or emitted by it. The intensity of outdoor artificial lighting is selected based on its designed use (i.e., security, safety, visibility, or construction/maintenance) during periods of low or no natural light. Illuminance is typically measured in units of light intensity as foot-candles (fc)—the illuminance of one candle on a one square foot surface, located one foot away.

Glare is defined as offensive or undesirable light resulting from an excessively high contrast between a light source and its surrounding background. Glare can result in visual discomfort and reduce the ability to see objects. Glare usually results from a direct line-of-sight with an unshielded lighting source (lamp) from vehicles, streets, parking areas, building and site security, or entertainment/sporting venues. Glare can be controlled by proper design, location, and height of light fixtures and their light output.

Light trespass or spill light is unwanted light outside of the area intended to be illuminated by the lighting source. Light trespass is typically an undesirable condition, where surface illumination extends beyond the designed area of illumination; e.g., light spills from the source property onto an adjacent property. Like glare, light trespass can be controlled by the location and height of the lighting pole in addition to the shielding and glare control of the light source.

Project Lighting Design Considerations

The Project lighting design contains design performance measures to reduce glare and light trespass, including appropriate lighting pole height and location, and lamp shielding. Pole heights for the Project's early start off-hours construction would meet industry standards for lighting this type of activity. Strategic placement of the poles in relation to the activities (e.g., concrete pouring) is key to the proper lighting of the site in relation to the neighboring properties. Lamp sources would vary in multiple combinations based on the luminance level requirements of the site facilities. The proposed lighting would include external shielding reflectors to provide light shielding and glare control, decreasing the visibility of these high intensity lamps. The reflector and visor system would reduce light spill by 50 percent. Lighting would be strategically located and aimed toward the targeted construction areas of the Project site with visor shields.

The Project lighting calculation evaluated the illuminance light trespass from the Project based on the following assumptions. Four 20-foot high lighting poles would be located on the Project site, approximately 40 feet from each corner of the of the Project boundary. Each pole consists of three LED narrow beam floodlights, each at 303 watts, 40,861 lumens. Fixtures are tilted 50 to 75

degrees (°) above nadir (i.e., the angle pointing directly downward from the luminaire, or 0°). The construction area on the Project site would be illuminated to an average illuminance of 10 fc or higher. The lighting calculation graphics for the Project are provided in Appendix B.

Project Lighting Impact Analysis

The proposed lighting plan for the Project would use appropriate lighting design controls including lamp type, pole location and height, and light shields and visors would reduce the potential for light trespass and glare off-site. Project lighting fixtures would direct light toward the interior of the site. The lighting design would prevent disability glare (i.e., reduction of the ability to see or identify objects). Glare and light spill would be minimized based on the design criteria.

The Project's construction lighting equipment may generate light trespass and/or glare on the Project site; however, the light trespass and illuminance at the nearest residence in Culver City (approximately 265 feet south of the Project site's southern boundary with intervening one-story structures) would be very low, and not significant, and the glare from the construction lighting equipment would not be visible at the nearest residence. The light trespass would be below the CalGreen threshold of 0.74 fc at the nearest residential property. Therefore, a variance to the Culver City Noise Ordinance for the Project's off-hours construction would not result in adverse lighting impacts. Appendix B includes the Project lighting calculations and graphics.

Appendix A

Project Construction Management Plan

MILLIE and SEVERSON
GENERAL CONTRACTORS

CONSTRUCTION MANAGEMENT PLAN

8888 WASHINGTON BLVD.

Culver City, CA

February 28, 2017

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MILLIE and SEVERSON
GENERAL CONTRACTORS

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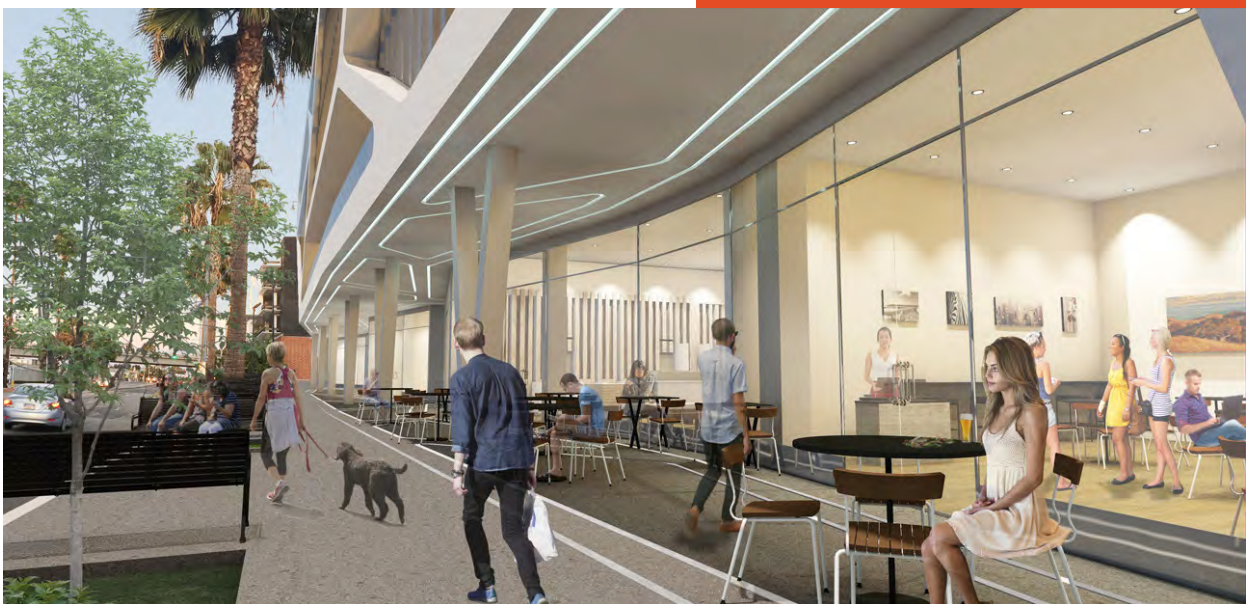
INTRODUCTION



MILLIE and SEVERSON
GENERAL CONTRACTORS

INTRODUCTION

Purpose

This Construction Management Plan has been documented to anticipate how the Project Management team shall implement and conduct its site management responsibilities during the Construction phase of the "8888 Washington" Project (the Project).

The aim of this Plan is to describe the scope and anticipated scheduling of construction as a means of ensuring and facilitating an integrated and coordinated construction phase and informative framework for public education of the objectives of the Project.

This plan is included as part of the 8888 Washington Blvd Site Plan Review.

Scope

This Plan provides a holistic approach that:

- anticipates how the project management team will comply with requirements relating to construction;
- defines the project objectives and targets of particular relevance to the construction phase;
- describes constraints specific to the construction phase and the project in general;
- details the proposed strategy for the construction phase, with particular regard to establishment resourcing, site organization and construction controls.

Program

The proposed program will require the construction of:

- 1 Subterranean Levels
- 1 Podium Level
- Commercial Office 3-story steel structure

The construction strategies will optimize scheduling and minimize impact to surrounding streets, neighbors, and other potential stakeholders.

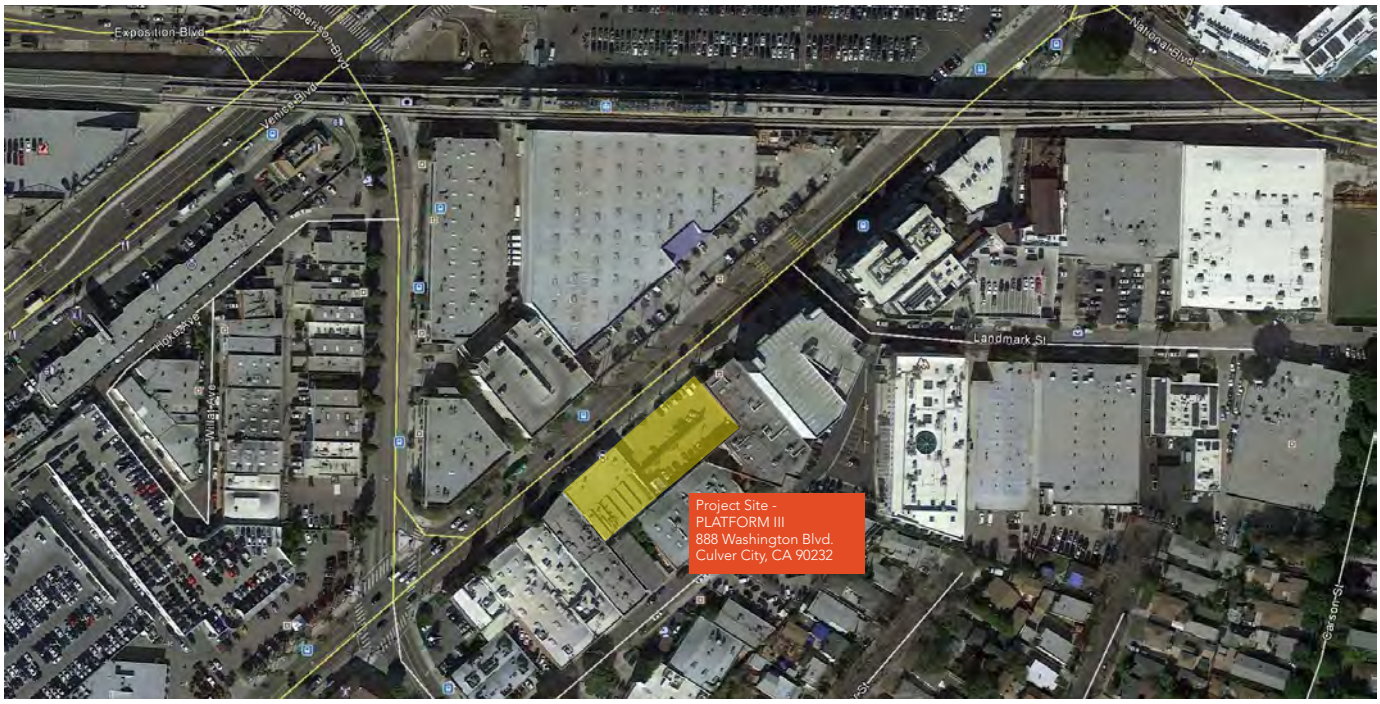
Where an impact from material handling and/or construction planning is anticipated, stakeholders and authorities will be consulted before implementation.

INTRODUCTION

Site Location

The proposed development site (see below) is located at 8888 Washington Blvd in Culver City and is bounded on three sides by private commercial properties to the south, west and east.

The site area is approximately .57 acre and is located within Culver City's Transportation Oriented Development district in close proximity to Metro's Expo Line Culver City Station.



MILLIE and SEVERSON
GENERAL CONTRACTORS

SECTION 02

CONSTRUCTION MANAGEMENT

MILLIE and SEVERSON
GENERAL CONTRACTORS

CONSTRUCTION MANAGEMENT

External Constraints

The major external constraints on the project are:

- Maintaining smooth vehicular, bicycle, and pedestrian traffic flow with minimal disruptions to the surrounding streets;
- Minimizing impact on traffic during peak hours;
- Minimizing impact on neighbors

Upon commencement, our project team's anticipated tasks will be:

- Locate a project office, site accommodation and facilities;
- Confirm the locations of existing services and obtain all necessary permits and approvals; and
- Arrange for the installation of temporary services – power, water and sewer to service the project during construction

Anticipated Approvals

A series of permits will be required for project phases including demolition, excavation, subterranean and above ground construction.

We foresee that these approvals may include contingencies requiring additional design and submittal that must be approved before work can begin. Some anticipated items requiring further approval might include, but not be limited to:

- Final Construction Management Plan;
- Erosion and Sediment Control Plan; and
- Shoring and Excavation Plan
- Off-site improvements
- Temporary Use Permit (TUP) application for consideration of extended construction hours

Before any lane closures and/or other temporary modifications to traffic are implemented, further approvals will be required from Culver City Public Works Traffic Management Division and/or other pertinent city departments. These items might include, but will not limited to:

- Traffic Control Plan including, but not limited to vehicular, bicycle, and pedestrian traffic routing.
- Temporary closure of parking spots in front project site.
- Off-site Civil work including lighting, signage, landscape, paving, and striping.
- Temporary Use Permit (TUP) application for consideration of extended construction hours.

Site Security

The site will be secured using appropriate fences and/or hoardings, with access gates manned with qualified security guards (as necessary)/traffic control (when street work or lane closers are required). Entry will be controlled and will be limited to approved personnel and equipment.

All visitors to the site will be required to report to the site office, and will be registered in a visitors log book and go through Millie and Severson on Site safety training program.

CONSTRUCTION MANAGEMENT

Public / Worker Safety

All site staff and subcontractors will be required to complete Millie and Severson site specific safety orientation before beginning work on site. The orientation will cover aspects relating to health, safety, and onsite practice standards. Specific items may include, but will not be limited to site access, emergency evacuation procedures, location of first aid facilities, location of amenities, site hours, material handling, noise and dust policies and environmental management.

Millie & Severson Safety officer will conduct regular inspections of the project site, and will be actively involved in ensuring compliance with Cal/OSHA and/or other safety standards, reviewing Safety Management Plans, and making recommendations with regard to health and safety issues.

Pedestrian Detours

Closure of the sidewalk on Washington Blvd for pedestrian use is anticipated throughout the Construction process. Proper sidewalk closure signs and signage to have pedestrian use the side walk on the other side of Washington Blvd. Pedestrians approaching the site will be detoured to the north sidewalk by use of the crosswalks at the Higuera and Landmark Street intersections.

General Onsite Administration

The Project Construction Manager will maintain an office at the project site if required. The Project Construction Manager and field staff will be responsible for implementing and maintaining procedures and policies.

Construction Hours

- General Construction
  The project will comply with Culver City's allowable construction hours of:
  - Monday-Friday: 8:00 AM through 8:00 PM
  - Saturdays: 9:00 AM through 7:00 PM
  - Sundays and National holidays (temporary in nature, if required): 10:00 AM through 7:00 PM
- Hauling and/or Material Delivery/Removal

Dirt hauling and construction material deliveries or removal are prohibited by city ordinance during morning (7:00 AM – 9:00 AM) and afternoon (4:00 PM – 6:00 PM) peak traffic periods. It should be noted that this requirement will have the effect of prolonging overall construction time.

Building and construction materials storage locations will change from time to time depending on the area of work in progress and the site area available, but shall be at all times in compliance with State and Federal safety standards. Approval of storage locations shall be obtained from applicable City staff.

SECTION 03

CONSTRUCTION METHODOLOGY

MILLIE and SEVERSON
GENERAL CONTRACTORS

CONSTRUCTION METHODOLOGY

Proposed Construction Sequencing

- Shoring and grading to the rough sub-grade at the -23' level. Anticipated duration: 60 working days between July and September. See Appendix 3 for equipment and dump truck staging.
- Placing the foundations and creating the "structural box" with our shotcrete perimeter walls. Anticpated duration: 118 working days between September and February. See Appendix 4 for concrete trucks and pump equipment.
- Structural steel is erected from the podium up. Anticpated duration: 110 working days between February and July. See Appendix 5 for crane location.
- We have included engineering for the re-shoring of the parking structure to allow the steel erection with the crane on the podium.
- In the erection process we will erect the building stairs as soon as the superstructure can accept them.
- We will need to utilize a crane to place the mechanical equipment and we will coordinate this work with the staging of the railings, PV panels, roof gravel and planting materials with the same crane move. Anticipated duration: 82 working days between August and December.
- As we are working on the roof level we have installed the scaffolding and are framing the building. The stand-offs for the GFRC and glazing systems are completed as we move to exterior framing and the exterior envelope. Anticipated duration: 102 working days between June and November.
- As we proceed through the skin we are simultaneously working on the core spaces. This core work includes interior framing, and overhead MEPs, only commencing with the drywall as the building becomes weather tight. Anticipated duration: 82 working days between August and December
- While we work to complete the interior core spaces we will also be working on completing the complex shapes of the GFRC and glazing systems. Anticipated duration: 102 working days between June and November.
- While the Building is a focus we have not neglected or forgotten about the site or off-site work. Interestingly the site work is primarily on the parking garage itself. We will be building the trash and bicycle storage rooms with CMU walls along with timely completion of the roofing and applicable MEP systems. The transformer yard is then completed and we should be energized early enough to eliminate any need for generators to assist with the elevator installation. The Podium level curbs, walks, and ramps are being completed while the street improvements are also moving toward completion.
- Site concrete, site furnishing and landscaping as well as offsite improvements should finish just before the completion of the core and shell buildin

Demolition and Excavation

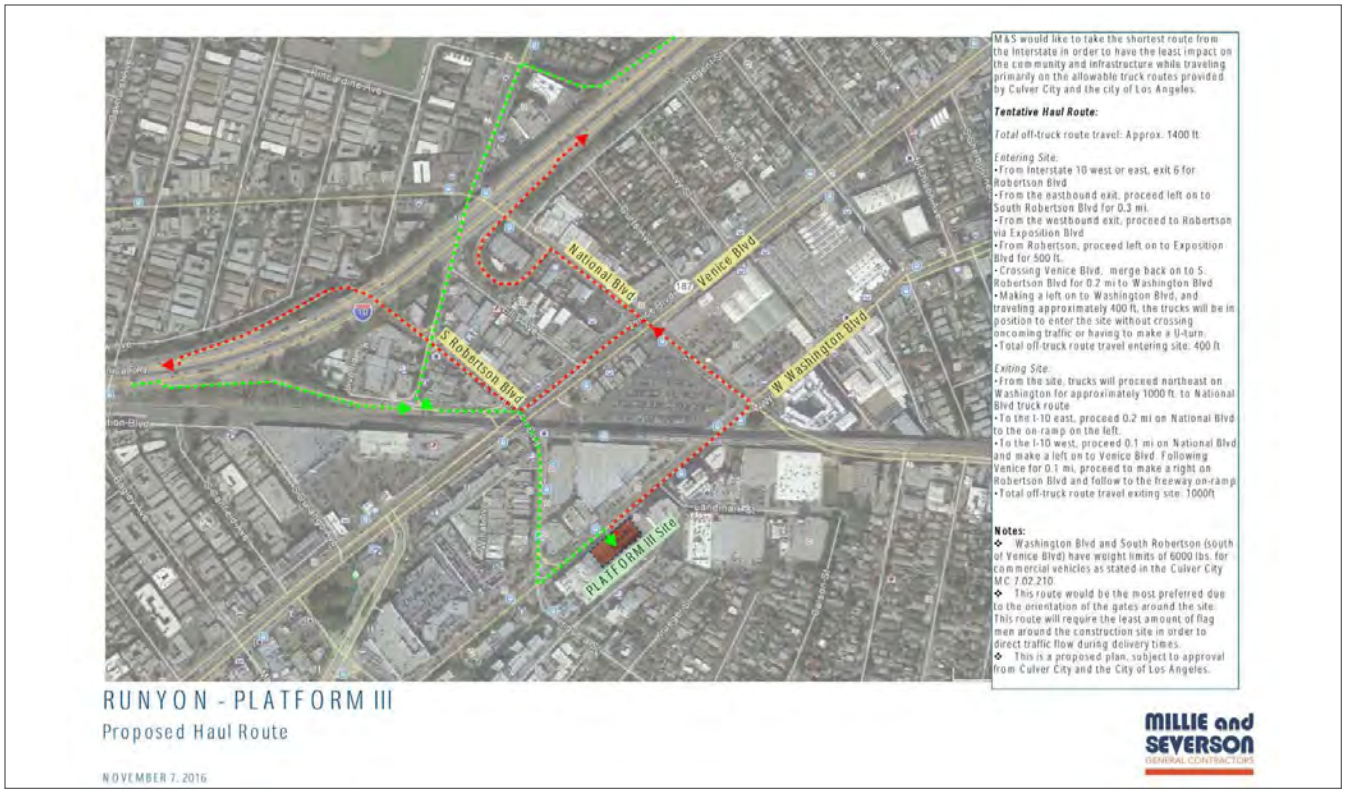
(60 work days)

The site is currently a commercial property that includes a one story commercial building, a small storage structure, and surface parking. The existing building will be demolished and debris sorted for recycling prior to removal.

Existing services within the site will be located and either capped if redundant or modified if they are to be used as temporary services for construction.

Demolition is expected to take 22 work days with impact to traffic from debris hauling occurring over the course of 10 days with an estimated 4 truckloads being hauled each day. Trucks will enter the site from Washington Blvd and exit onto Washington Blvd. (see next page).

CONSTRUCTION METHODOLOGY



Staging and Haul Routes

- A formal Construction Traffic Management Plan will be prepared by a traffic or civil engineer registered in the State of California.
- The Construction Traffic Management Plan shall be submitted to the City Engineer and Planning Manager for review and approval prior to the issuance of any Project demolition, grading, or excavation permit.
- The Construction Traffic Management Plan shall also be reviewed and approved by the City's Fire and Police Departments. The City Engineer and Planning Manager reserve the right to reject any engineer at any time and to require that the Plan be prepared by a different engineer.
- The Construction Traffic Management Plan shall contain, but not be limited to, the following:
- Contractors Name of 24 hour emergency contact.
- Phone numbers for local police, fire, and emergency response

A shoring system will be required to support the site walls during excavation. Shoring will begin with placement of soldier piles along the site's perimeter. This process is estimated to take approximately 36 days. Lagging spanning between soldier piles we be placed in coordination with the excavation of the site. As the site is excavated, there will be a need to provide bracing to further support the shoring system.

CONSTRUCTION METHODOLOGY

The Police, Fire and Transportation Departments, along with nearby schools, homeowner groups and other interested parties and stakeholders, should be notified in writing at least 48 hours prior to any lane closures. The Final Construction Management Plan will specify the notification system as required by City Staff

The project will require the excavation of 23 FT of earth below street level with an expected time frame 60 days. Dirt hauling is anticipated to occur over 36 consecutive days within the 60 day excavation period. 125 dump trucks per day will be required to haul the estimated volume of dirt from the site. Per Culver City's Municipal Code, dirt hauling is prohibited during the morning (7:00 AM to 9:00 AM) and afternoon (4:00 PM to 6:00 PM) peak traffic periods.

Subterranean Work

Based on the geotechnical report, the structure will require a mat foundation. In order to facilitate its and future construction, we foresee the installation of a tower crane adjacent to the building core.

As excavation is completed, in-ground services will be installed followed by preparation of the ground to receive the structural mat foundation that will be cast in concrete.

Because of the desire to minimize impacts on the flow of traffic on Washington, we propose the use of boom pumps for the placing of concrete. These booms pumps will be located on Washington Blvd.

Structure Construction
(217 work days)

The Steel Structure construction of the project will encompass three floors above grade levels. The time frame required to complete the Structural Steel portions of the project is anticipated to take approximately 217 work days. Included within this time-frame is the exterior assembly of Glass and Glazing and GFRC/ Stucco/ Metal panel finishes.

The Structural steel trade will be supported by, but not limited to, a conventional mobile crane for lifting of materials and equipment. The structure will have temporary perimeter guardrail systems to provide fall protection.

Building Enclosure

The GFRC/Stucco & Glass enclosure for the three levels of above grade office and commercial spaces will be erected as soon as practical to commence sealing floors so that finishes and fit out.

Services and Finishes

For the concrete commercial and subterranean portions of the building, the installation of the services will commence as each of slabs are cast and the formwork is stripped.

Similarly, as each level of structural steel component of the project has been constructed to a point allowing construction of the next level, the trades installing the required services will begin their installation work.

The installation of services will be organized in several passes, with the first pass termed as "rough in of services". This typically includes all services that can be installed without needed the protection of the building façade.

Exterior finish typically begin after the building envelope has been installed. In the concrete commercial part of the project this is usually after the enclosure has been installed. The exterior walls will be layered with waterproofing, and ultimately finished with the required finish material.

Offsite Work

(35 work days running concurrent with completion of interior fit-out)

Offsite work is expected to begin as soon as the building envelope is installed.

Offsite work will consist of, but may not be limited to, replacement of sidewalk along the street facing sides of project perimeter, installation/relocation of street lighting and signage, placement of landscaping, trees, utility connections into the project site.

Every effort will be made to minimize the impact on vehicle traffic flow on Washington Blvd. We do foresee the need for temporary lane closures on Washington Blvd as required for this project. In order to alleviate the effects on traffic, we anticipate scheduling lane closures required for certain activities to evening after the peak traffic hours. Those activities that will be performed during daytime hours will be scheduled to take place after the morning peak traffic hours.

SECTION 04

ENVIRONMENTAL

MILLIE and SEVERSON
GENERAL CONTRACTORS

ENVIRONMENTAL

General

The objective of this section is to identify the proposed methods that will be employed to minimize potential impacts of noise, vibration and air quality in the vicinity of the development.

Noise and Vibration Management

Normal work hours will occur within Culver City's allowable construction hours of 8:00 AM to 8:00 PM, Monday-Friday. There will be some Saturday work that will occur within the allowable hours of 9:00 AM to 7PM. While not anticipated, Sunday work hours may be required in order to keep to the construction schedule. If Sunday work is needed, it will occur within the allowable hours of 10:00 AM to 7PM.

All subcontractors will be responsible for managing noise and vibration in accordance with their project specific Management Plans. Some mitigating measure will be:

- Requiring all construction equipment to be operated with an exhaust muffler and sound control devices that meet or exceed those provided on the original equipment.
- Requiring proper maintenance of construction equipment to minimize noise emissions.
- Staging of construction material deliveries behind hoarding to minimize noise emitting from idling vehicles.
- Requiring stationary source equipment to be located the greatest distance from the public right-of-way.
- Requiring construction workers to be respectful of the surrounding neighborhood and keep non-construction related noise to a minimum prior to, during, and after allowed construction hours.
- After hours work may be required for specific tasks in order to minimize impacts to pedestrians, vehicular traffic or in the interest of safety.

All after hour's work will be subject to the Communication Management Plan. Consultation with pertinent Culver City departments will occur prior to any works being scheduled. Businesses and surrounding residents will be given notification via email of the proposed after hours work prior to the starting said work including details of the work to be performed with an anticipated time required to undertake each activity.

We do not foresee significant vibration generated by the construction that might impact adjoining properties.

Dust Management and Erosion Control

Dust and Erosion control measures will be implemented as required, and will comply with SCAQMD and Culver City regulations for controlling fugitive dust and Erosion. Measures that may be employed include:

- Site Perimeter: Erection of a 6 ft. high fence with attached windscreen at the site's perimeter under which sand bags and/or straw wattles will be placed.
- Demolition: All trucks removing materials from site will be loaded within the site perimeter and will be required to cover loads as deemed necessary for dust control.
- Excavation: Rumble strips at truck entry/exit ways, watering down working of stockpiles and surfaces as required, covering of stocks while minimizing piling of material, and use of street sweepers to maintain adjacent roadways.
- Construction: Maintain a high level of housekeeping to minimize likelihood of windblown dust.

SECTION 05

APPENDICES

MILLIE and SEVERSON
GENERAL CONTRACTORS

APPENDICES

Appendix 1

Proposed Construction Traffic Route

Appendix 2

Proposed Overall Site Logistics Plan

Appendix 3

Proposed Grading and Excavation Plan

Appendix 4

Proposed Concrete Placement Plan

Appendix 5

Proposed Steel Erection Plan

Appendix 6

Proposed Site Logistics Plan

APPENDIX 1

M&S would like to take the shortest route from the Interstate in order to have the least impact on the community and infrastructure while traveling primarily on the allowable truck routes provided by Culver City and the city of Los Angeles.

Tentative Haul Route:

Total off-truck route travel: Approx. 1400 ft

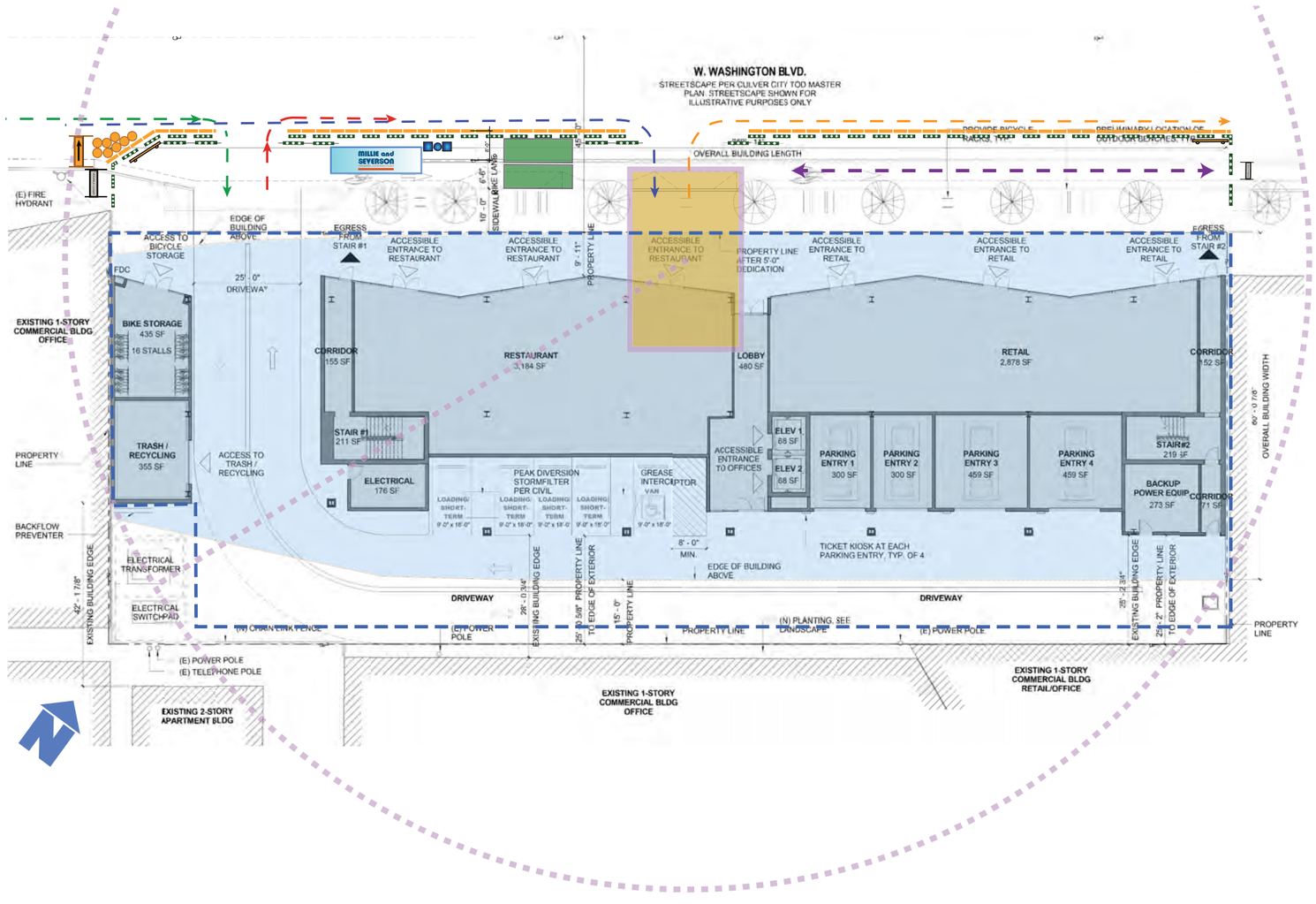
Entering Site:
- From Interstate 10 west or east, exit 6 for Robertson Blvd
- From the eastbound exit, proceed left on to South Robertson Blvd for 0.3 mi.
- From the westbound exit, proceed to Robertson via Exposition Blvd
- From Robertson, proceed left on to Exposition Blvd for 500 ft.
- Crossing Venice Blvd, merge back on to S. Robertson Blvd for 0.2 mi to Washington Blvd
- Making a left on to Washington Blvd, and traveling approximately 400 ft, the trucks will be in position to enter the site without crossing oncoming traffic or having to make a U-turn.
- Total off-truck route travel entering site: 400 ft

Exiting Site:
- From the site, trucks will proceed northeast on Washington for approximately 1000 ft. to National Blvd truck route
- To the I-10 east, proceed 0.2 mi on National Blvd to the on-ramp on the left.
- To the I-10 west, proceed 0.1 mi on National Blvd and make a left on to Venice Blvd. Following Venice for 0.1 mi, proceed to make a right on Robertson Blvd and follow to the freeway on-ramp
- Total off-truck route travel exiting site: 1000ft

Notes:
- Washington Blvd and South Robertson (south of Venice Blvd) have weight limits of 6000 lbs. for commercial vehicles as stated in the Culver City MC 7.02.210.
- This route would be the most preferred due to the orientation of the gates around the site. This route will require the least amount of flag men around the construction site in order to direct traffic flow during delivery times.
- This is a proposed plan, subject to approval from Culver City and the City of Los Angeles.

RUNYON - PLATFORM III

APPENDIX 2



LEGEND

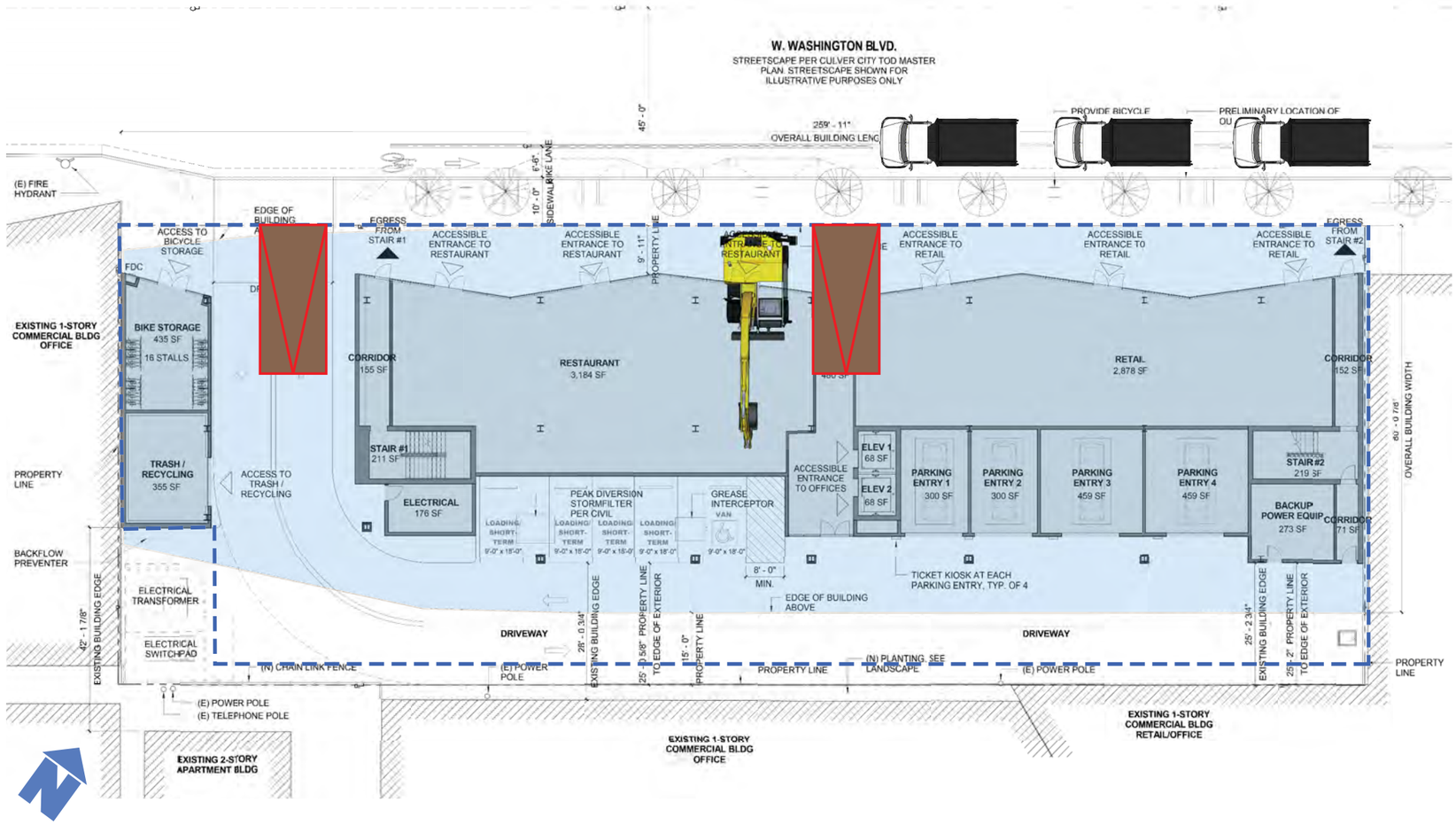
- MILLIE and SEVERSON construction trailer office location
- MILLIE and SEVERSON construction sign location
- 6' chain link construction fence with k-rail barricade protection
- Construction access rolling gate to remain open during construction hours
- Arrow Board vector sign to direct traffic away from closed
- Traffic impact barrels and delineators
- Two way traffic sign placed on both ends of traffic diversion
- Sidewalk closed sign at multiple locations in order to give advanced notice to pedestrians
- Primary access entry route
- Primary access exit route
- Secondary access entry route by permission only
- Secondary access exit route by permission only
- Construction workers portable restroom and wash station area
- Break area canopy
- Construction waste bins
- Superstructure footprint
- Underground parking footprint
- Concrete truck zone during pours
- Potential crawler crane location and extent of reach- added shoring to underground structure required to carry equipment load Also, proposed location of concrete pump or excavation equipment as equipment is needed.

PLATFORM III

Site Logistics Plan

MILLIE and SEVERSON GENERAL CONTRACTORS

APPENDIX 3



LEGEND

Cat Excavator 390F L (2017)

Dump truck staging zone during demo/excavation

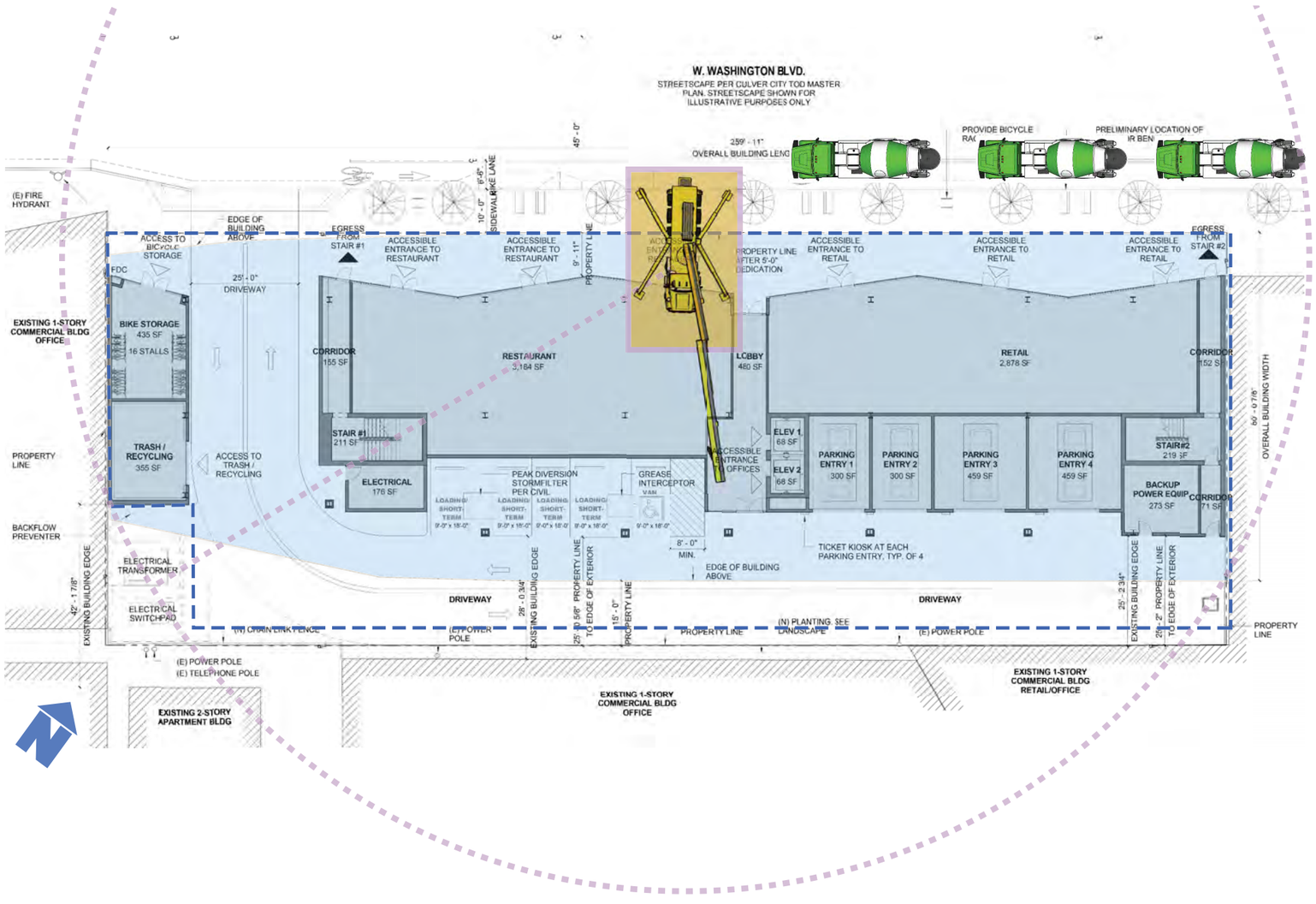
Ramp up/down

Superstructure footprint

Extents of excavation

MILLIE and SEVERSON GENERAL CONTRACTORS

APPENDIX 4



LEGEND

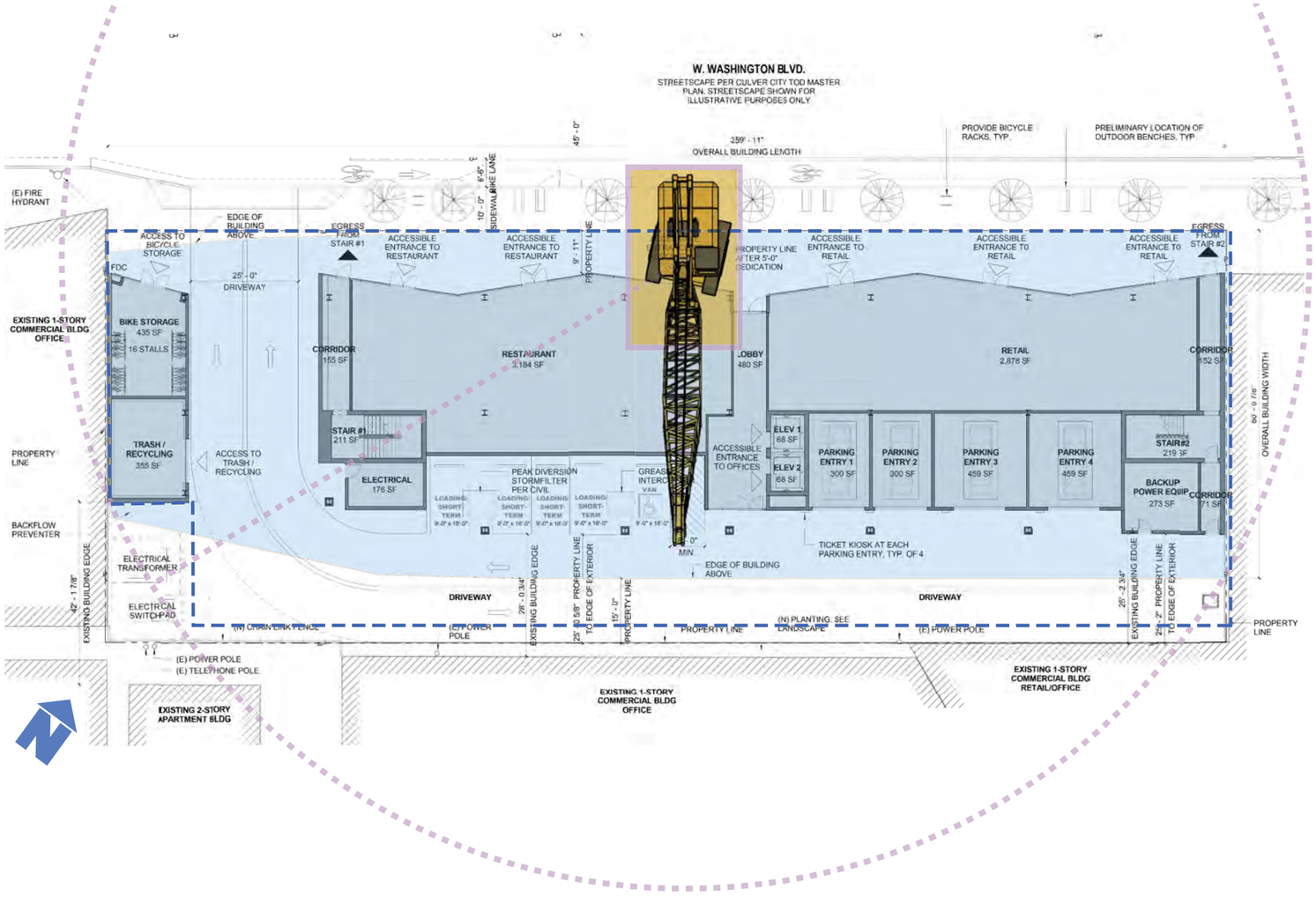
- Concrete pump truck location
- Superstructure footprint
- Underground parking footprint
- Concrete truck zone during pours
- Potential concrete pump truck location and extent of reach-added shoring to underground structure required to carry equipment load.

PLATFORM III

Site Logistics Plan - Concrete

MILLIE and SEVERSON GENERAL CONTRACTORS

APPENDIX 5



LEGEND

- Crawler crane location
- Superstructure footprint
- Underground parking footprint
- Potential crawler crane location and extent of reach- added shoring to underground structure required to carry equipment load.

PLATFORM III

Site Logistics Plan - Steel

MILLIE and SEVERSON GENERAL CONTRACTORS

PLATFORM III
Site Logistics Plan

MILLIE and SEVERSON
GENERAL CONTRACTORS
LICENSE #99031

OFFICE LOCATIONS

LOS ALAMITOS

3601 Serpentine Drive
Post Office Box 3601
Los Alamitos, CA 90720
(562) 493 3611

ONTARIO

3270 Inland Empire Blvd
Suite 100
Ontario, CA 91764
(909) 291 7380

STEVENSON RANCH

24961 The Old Road | Suite 104
Stevenson Ranch, CA 91381
(818) 610 9046

NORTHERN CALIFORNIA

6602 Owens Drive I Ste 50
Pleasanton, CA 94588
(925) 227 0700

Appendix B

Project Off-Hours Construction Activities and Noise Calculations

Project: 8888 Washington Boulevard Development Project – Off-Hours Construction

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

				Sensitive Receptor				
Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**	**Distance (ft)**	**Lmax**	**Leq**	**L10**	**Estimated Noise Shielding, dBA**
Concrete Puring					**50**	***49***		
Concrete Pump	1	81	20%	330	50	43	46	15
Concrete Trucks on Washington	1	79	40%	370	47	43	46	15
Concrete Trucks on Washington	1	79	40%	375	46	43	46	15
Concrete Trucks on Washington	1	79	40%	380	46	42	45	15
Soil Excavation and Hauling					**50**	***48***		
Excavator	1	81	40%	330	50	46	49	15
Dump/Haul Trucks	1	76	20%	370	44	37	40	15
Dump/Haul Trucks	1	76	20%	375	43	37	40	15
Dump/Haul Trucks	1	76	20%	380	43	36	39	15
Dump/Haul Trucks	1	76	20%	385	43	36	39	15
Dump/Haul Trucks	1	76	20%	390	43	36	39	15
Structural Steel Erection/Shhet Metal Floor Placement/Roof Placement					**81**	***69***		
Cranes	1	81	40%	330	55	51	54	10
Air Compressor	1	78	20%	335	46	39	42	15
Incidental Events	1	97	5%	300	81	68	71	0

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Project: 8888 Washington Boulevard Development Project – Off-Hours C

Construction Noise Impact on Sensitive Receptors

Parameters

Construction Hours:	8	Daytime hours (7 am to 7 pm)
	0	Evening hours (7 pm to 10 pm)
	0	Nighttime hours (10 pm to 7 am)
Leq to L10 factor	3	

Construction Phase **Equipment Type**	**No. of Equip.**	**Reference Noise Level at 50ft, Lmax**	**Acoustical Usage Factor**
Concrete Puring			
Concrete Pump	1	81	20%
Concrete Trucks on Washington	1	79	40%
Concrete Trucks on Washington	1	79	40%
Concrete Trucks on Washington	1	79	40%
Soil Excavation and Hauling			
Excavator	1	81	40%
Dump/Haul Trucks	1	76	20%
Dump/Haul Trucks	1	76	20%
Dump/Haul Trucks	1	76	20%
Dump/Haul Trucks	1	76	20%
Dump/Haul Trucks	1	76	20%
Structural Steel Erection/Shhet Metal Floor Placement/Roof Placement			
Cranes	1	81	40%
Air Compressor	1	78	20%
Incidental Events	1	97	5%

Source for Ref. Noise Levels: LA CEQA Guides, 2006 & FHWA RCNM, 2005

Welding, Burninç Welding, Cutting Laying Metal De Other Hand Power Tool

Lmax	119.7	Lmax	122.8	Lmax	119.9	Lmax	118.3	Average Noise Levels		
D1	3	D1	3	D1	5	D1	3	94.00	##	
D2	50	D2	50	D2	50	D2	50	100.00	##	
	-24		-24		-20		-24	98.00	##	
	95		98		100		94	95.00	##	97

Equipment

Description	No. of Equip.	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Distance to Receptor, ft	Estimated Noise Shielding, dBA
Aerial Lift	1	75	20%		
Air Compressor	1	78	50%		
Auger Drill Rig	1	85	20%		
Backhoe	1	80	40%		
Bar Bender	1	80	20%		
Boring Jack Power Unit	1	80	50%		
Chain Saw	1	85	20%		
Clam Shovel (dropping)	1	93	20%		
Cement and Mortar Mixers	1	79	40%		
Compactor (Ground)	1	83	20%		
Concrete Mixer Trucks	1	79	40%		
Concrete Pump Trucks	1	81	20%		
Concrete Saw	1	90	20%		
Cranes	1	81	40%		
Crusher, Jaw	1	84	10%		
Crusher, Secondary	1	94	10%		
Dozer	1	82	40%		
Drill Rig Truck	1	79	20%		
Dump/Haul Trucks	1	76	20%		
Excavator	1	81	40%		
Forklift	1	75	10%		
Front End Loader	1	79	40%		
Generator Sets	1	81	50%		
Graders	1	85	40%		
Pile Driver	1	101	20%		
Jackhammer	1	89	20%		
Other Equipment	1	85	50%		
Pavement Scarifier	1	90	20%		
Paver	1	77	50%		
Pickup Truck	1	75	40%		
Pumps	1	81	50%		
Roller	1	80	20%		
Rubber Tired Loader	1	79	50%		
Scrapers	1	84	40%		
Skid Steer Loaders	1	80	40%		
Vacuum Street Sweeper	1	82	10%		
Tractor/Loader/Backhoe	1	80	25%		
Pile Driver (Impact)	1	101	20%		
Pile Driver (Sonic)	1	96	20%		
Trenching Machine	1	80	50%		
Water Trucks	1	80	10%		
Welders	1	74	40%		
Man Lift	1	75	20%		

Appendix C

Project Off-Hours Construction Lighting Graphics

LIGHTING CALCULATION REPORT

Date:5/10/2018

8888 WASHINGTON BLVD EIR
CONSTRUCTION SITE LIGHTING
LIGHT TRESSPASS CALCULATION AT NEAREST
OCCUPIED RESIDENTIAL PROPERTIES

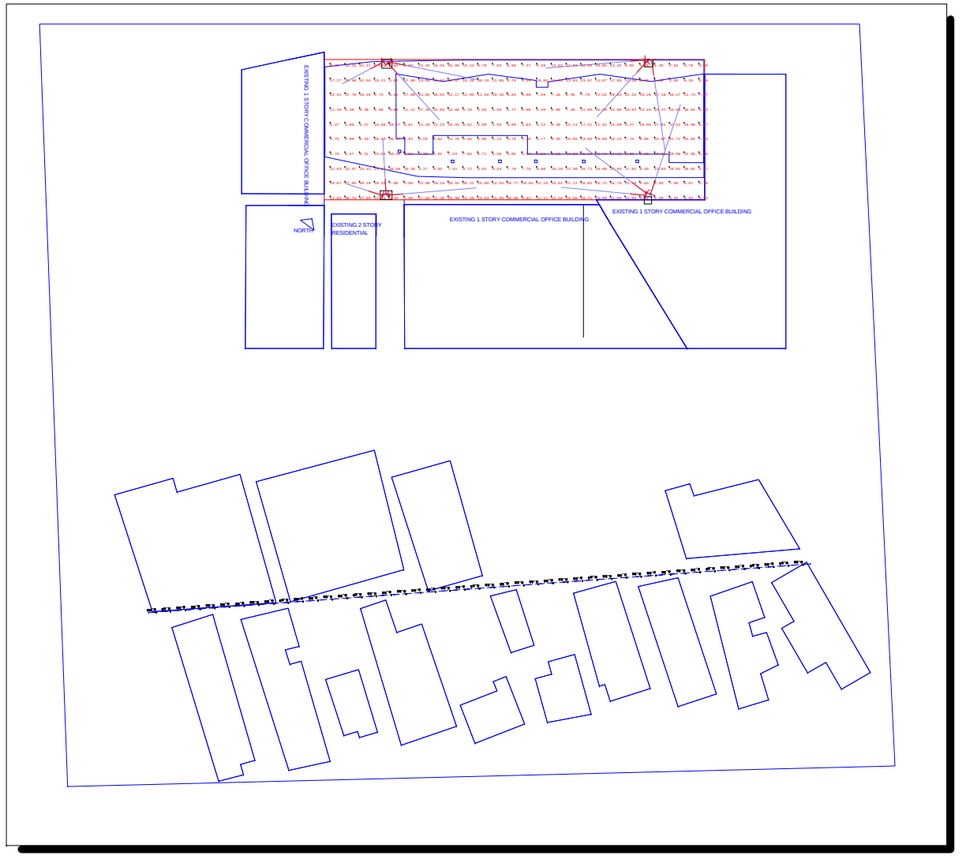
CALCULATION CRITERIA:LIGHT TRESPASS LIMIT: 0.74 MAX AT RESIDENTIAL PROPERTY LINE
(SOURCE: CAL GREEN, IESNA TABLE 26.5 LIGHTING ZONE 3)

LIGHTING ILLUMINANCE CRITERIA: 10 FC AVERAGE TARGET
(SOURCE: IESNA HANDBOOK 10TH EDITION, TABLE 30.2)

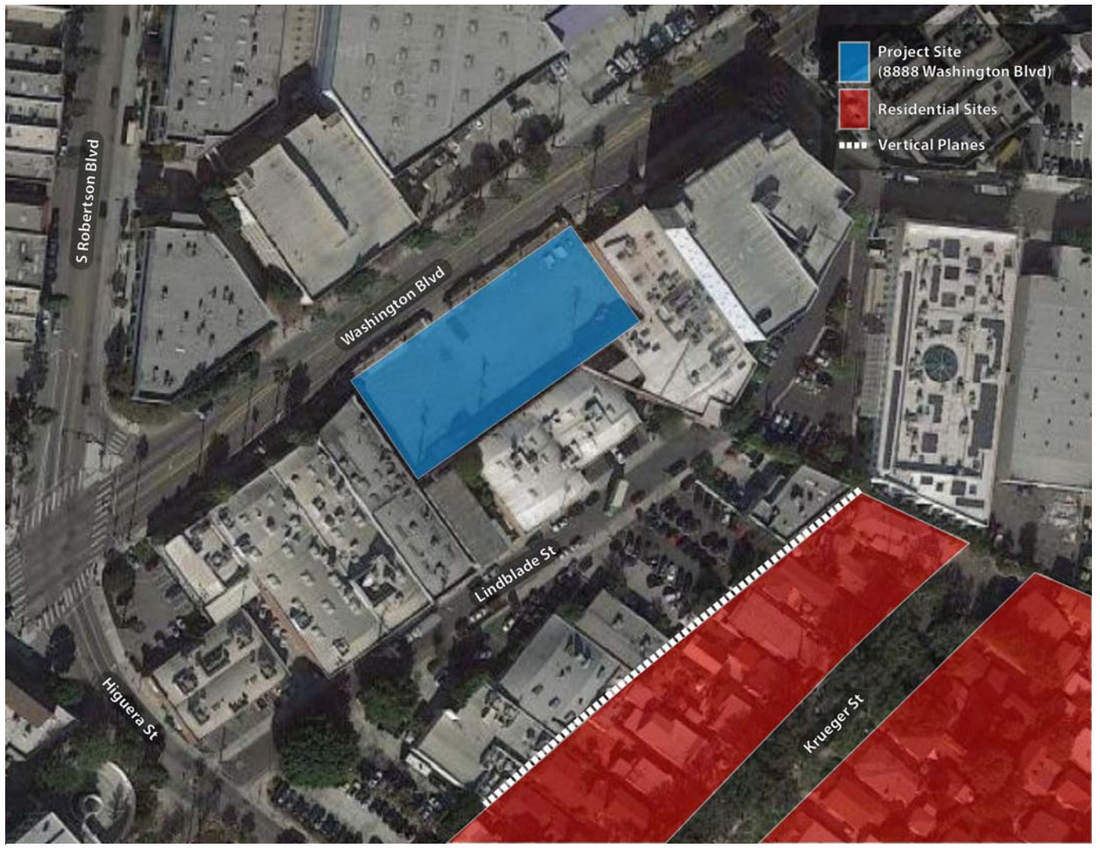
Luminaire Schedule					
Symbol	Qty	Label	Total Lamp Lumens	LLF	Description
⊙	12	84521	N.A.	1.000	

Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Max/Min
Project Site	Illuminance	Fc	14.48	87.85	1.33	66.05
Vertical_Residential	Illuminance	Fc	0.11	0.36	0.00	N.A.

The Lighting Calculation evaluated the illuminance light trespass from the Project with the following assumptions:
1 - Four 20 ft high poles were located on the project site, approximatly 40 ft from each corner of the project boundary.
2 - Each pole consisted of 3 LED narrow beam floodlights, each at 303 watts, 40,861 lumens. Fixtures are tilted 50 to 75 degrees above nadir.
3 - The construction area was illuminated to an average illuminance of 10 footcandles or higher.
Temporary fencing around the construction area was not considered in this analysis. If different pole or light fixture are specified for the Project, height of pole should be no higher than 20 ft, and light fixture total output should not exceed the total output in this analysis.



View_1:Calculation Plan View



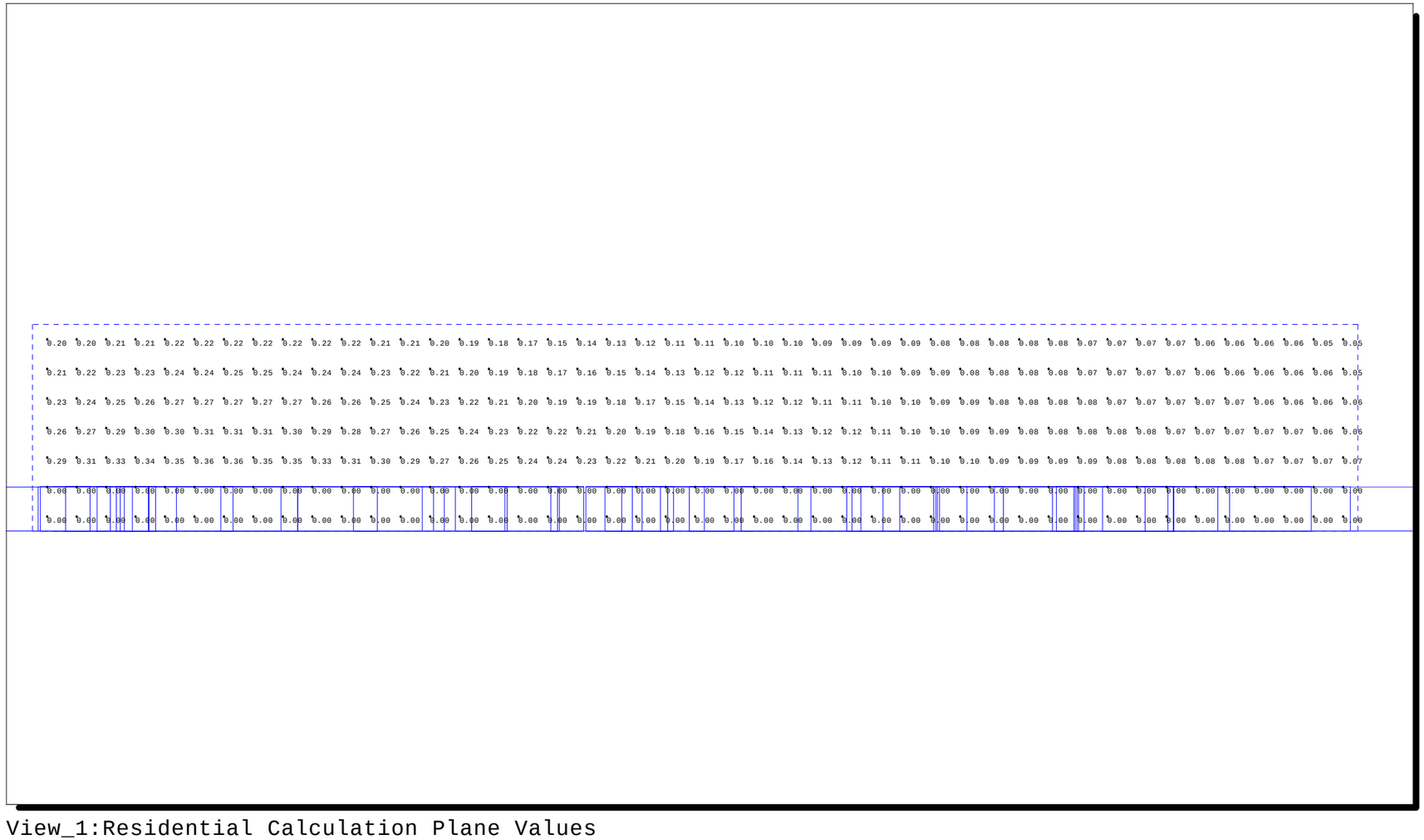
LIGHTING CALCULATION REPORT

Date:5/10/2018

8888 WASHINGTON BLVD EIR
CONSTRUCTION SITE LIGHTING
LIGHT TRESSPASS CALCULATION AT NEAREST
OCCUPIED RESIDENTIAL PROPERTIES

CALCULATION CRITERIA:LIGHT TRESPASS LIMIT: 0.74 MAX AT RESIDENTIAL PROPERTY LINE
(SOURCE: CAL GREEN, IESNA TABLE 26.5 LIGHTING ZONE 3)

LIGHTING ILLUMINANCE CRITERIA: 10 FC AVERAGE TARGET
(SOURCE: IESNA HANDBOOK 10TH EDITION, TABLE 30.2)



View_1:Residential Calculation Plane Values

LIGHTING CALCULATION REPORT

Date:5/10/2018

FRANCIS KRAHE & ASSOCIATES

8888 WASHINGTON BLVD EIR
CONSTRUCTION SITE LIGHTING
LIGHT TRESSPASS CALCULATION AT NEAREST
OCCUPIED RESIDENTIAL PROPERTIES

CALCULATION CRITERIA: LIGHT TRESPASS LIMIT: 0.74 MAX AT RESIDENTIAL PROPERTY LINE
(SOURCE: CAL GREEN, IESNA TABLE 26.5 LIGHTING ZONE 3)

LIGHTING ILLUMINANCE CRITERIA: 10 FC AVERAGE TARGET
(SOURCE: IESNA HANDBOOK 10TH EDITION, TABLE 30.2)

View_1:Project Site Calculation Plan View

LIGHTING CALCULATION REPORT

Date:5/10/2018

8888 WASHINGTON BLVD EIR
CONSTRUCTION SITE LIGHTING
LIGHT TRESSPASS CALCULATION AT NEAREST
OCCUPIED RESIDENTIAL PROPERTIES

CALCULATION CRITERIA:LIGHT TRESPASS LIMIT: 0.74 MAX AT RESIDENTIAL PROPERTY LINE
(SOURCE: CAL GREEN, IESNA TABLE 26.5 LIGHTING ZONE 3)

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