THE CULVER STUDIOS CPA 7 – TEMPORARY USE PERMIT

Off-Hours Finishing of Concrete Pours
Noise & Lighting Technical Report

Prepared for
The Culver Studios Owner, LLC
11111 Santa Monica Blvd., Suite 1100
Los Angeles, CA 90025

June 2019

ESA

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Executive Summary

The Culver Studios Owner, LLC is submitting an application to Culver City (City) to obtain a temporary use permit (TUP) to allow for finishing activities of heavy daytime concrete pours at the below-grade foundation and decks of the proposed Van Buren parking structure at The Culver Studios in Culver City, CA (Project). The required concrete pour finishing activities has to be performed immediately after concrete pours prior to hardening, which would occur until 8:00 p.m., as allowed under the Culver City Municipal Code (noise ordinance). The off-hour finishing activities would occur from approximately 8:00 pm until as late as 10:00 p.m. This noise and lighting 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.

The Project is located at the proposed parking garage (Project Site) at The Culver Studios at 9336 West Washington Boulevard in Culver City. The proposed parking garage is located of the western edge of The Culver Studios' campus along Van Buren Place, adjacent to two-story single- and multi-family residences. The Project Site boundary currently includes a 20-foot high construction sound wall, erected temporarily for the duration of the construction of the parking structure and other campus improvements in compliance with condition of approval #76. The proposed parking garage includes three subterranean parking levels, which require mat slab foundation and elevated deck concrete pouring and finishing. Swinerton Builders, the general contractor for the project, formally requested an extension to work hours due to anticipated heavy concrete pours for the below-grade mat foundation and elevated deck pours for the Van Buren Parking Structure (Appendix B).

This technical noise report has been prepared for The Culver Studios Owner, LLC to support the Culver City environmental review process regarding potential impacts to ambient noise and light at residences from construction outside of the allowable hours of the City's noise ordinance. This noise and lighting study is required by the City to obtain a TUP to the Culver City noise ordinance. The purpose of this noise and lighting technical report is to demonstrate that the noise levels generated by the proposed off-hours finishing activities would not exceed applicable City noise standards, or substantially increase existing ambient noise levels at the surrounding noise sensitive receptors (i.e., adjacent residences).

The proposed off-hours Project finishing work for concrete pours are related to daytime concrete pours for the below-grade levels of the proposed parking structure and would occur within an area surrounded by a 20-foot high construction sound wall. The off-hours activities on the Project Site would operate small hand-held finishing construction equipment, which generate noise levels that would attenuate (with distance and the Project Site perimeter sound wall) at the nearest noise sensitive receptors (i.e., adjacent residences). In addition to noise, the off-hours construction activities would require artificial lighting on the Project Site, as the off-hours work would occur in darkness during the evening hours from 8:00 p.m. to 10:00 p.m.

Based on the scope of work provided by Swinerton (April 17, 2019), the proposed off-hours Project construction activities are related to after the daytime concrete pours (ending as late as 8:00 p.m.) for the below-grade foundation and elevated decks of the proposed parking structure. The off-hours construction activities would occur after all concrete is poured and placed, and would include finishing and clean-up activities for approximately two hours from 8:00 p.m. to 10:00 p.m. and would be completed as late as 10:00 pm. The off-hours construction activities would include the operation of small finishing equipment (i.e., power vibrating screens, concrete backpack vibrators, and walk behind finish trowels). In addition, the off-hours construction activities would require artificial lighting equipment (i.e., 18-foot-high light towers) at ground-level of the off-hours area on the Project Site within the 20-foot sound wall, for worker visibility and safety.

The focus of this noise and lighting study will be to assess the noise and light generated on-site by off-hours activities (finishing of the concrete pours) and assess any potential noise and lighting impacts to the nearest residential properties the Project Site. The existing 20-foot-high sound wall along the perimeter of the Project Site would reduce the noise generated onsite and to the adjacent residences, and block the light generated onsite to the residences.

This report summarizes the Project noise levels generated on-site and attenuated by distance and the sound wall to the noise sensitive receptors 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 off-hours unmitigated maximum construction noise levels would not exceed the Culver City maximum and average noise level standards at the nearest residence in Culver City.

- The Project's off-hours unmitigated hourly average construction noise levels, when added to existing ambient hourly average noise level at the nearest residence in Culver City, would barely result in a perceptible increase in ambient noise levels (i.e., a 3 dBA increase).

The Project off-hours construction activities onsite would require artificial lighting equipment on-site, which may generate light trespass and/or glare onsite; however, the Project lighting towers (18 feet high) would be located below the top of the 20-foot-high site perimeter sound wall. Therefore, the light trespass illuminance and the glare generated on site from the construction lighting equipment would not be visible at the residences due to the shielding by the intervening site perimeter sound wall.

Therefore, a variance to the Culver City noise ordinance (i.e., TUP) for the Project's off-hours finishing of daytime concrete pours would not result in adverse noise and lighting impacts.

1. Introduction

The Culver Studios Owner, LLC proposes off-hours construction activities for the proposed parking garage (Project) at The Culver Studios in Culver City, CA. This technical report has been prepared to support the City's environmental review process regarding potential noise and lighting 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. Information used to prepare this analysis includes the noise analysis in The Culver Studios Innovation Plan, Comprehensive Plan Amendment (CPA) No. 7 Environmental Impact Report (EIR) (SCH 2016111064), prepared in accordance with the California Environmental Quality Act (CEQA), the City's General Plan Noise Element and Municipal Code noise ordinance including Project off-hours construction data provided by the applicant's general contractor (Swinerton), and other sources identified herein.

1.1 Project Location and Surrounding Land Uses

The Project is located at 9336 West Washington Boulevard in Culver City at the proposed parking garage at The Culver Studios (Project Site), as shown in **Figure 1**. The Project Site is disturbed and currently under construction for the proposed parking structure. The Project Site is adjacent to The Culver Studios to the north; and single- and multi-family residences to the east and west, and across Van Buren Place (a 2-lane collector) to the south.

1.2 Project Background

The Culver Studios campus is currently under development pursuant to the recent CPA No. 7 EIR including the construction of proposed parking structure within the allowable construction hours of the City's noise ordinance, which includes an existing 20-foot high sound wall along the perimeter of the campus, including the proposed parking structure. The proposed off-hours Project construction activities (finishing of poured concrete) relate to and follow the heavy daytime concrete pours for the below-grade levels of the proposed Van Buren Parking Structure which occur within typical allowable noise ordinance hours that end at 8:00 p.m. Therefore, the focus of the noise and lighting study will be the noise and light generated on-site by off-hours activities (finishing of the concrete pours) from 8:00 p.m. to 10:00 p.m. and any potential noise and lighting impacts to the residences adjacent to existing sound wall surrounding the parking structure. The existing 20-foot-high sound wall along the site perimeter (including proposed garage) was erected to reduce the construction noise (by 20 dB or more) from the site to the nearest residences, which is detailed in Appendix A.

SOURCE: Open Street Map, 2019

The Culver Studios CPA 7 TUP

Figure 1
Project Vicinity and Ambient Noise Measurement Location

ESA

2. Project Description

2.1 Project Understanding

The proposed off-hours Project construction activities are based information and data provided to ESA from the Client and General Contractor (Swinerton Builders) via email and phone conversations, and Project Site observations via Google Earth (which shows the existing temporary 20-foot-high construction sound wall along the Project Site boundary).

The City's Municipal Code (noise ordinance) states 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. The Client is proposing an off-hours construction work plan to the City to obtain a TUP to the City's noise ordinance to conduct project construction activities outside of the allowable construction hours of City's noise ordinance. The Client has requested that ESA assist in this submittal by completing a noise and lighting study of the proposed off-hours construction work to support submittal of a TUP application to the City for approval at the soonest possible monthly City Council Hearing.

The noise impact analysis of the Project off-hours work is based on not exceeding the City's established noise level limits of the City's noise standards of the Noise Element of the City's 1975 General Plan, which establishes a daytime (7:00 a.m. to 10:00 p.m.) hourly average noise level limit of 55 dBA L_{eq} and a maximum noise level limit of 70 dBA L_{max} at a residential property line (City 1975).

2.2 Project Description

Based on the scope of work provided by Swinerton (June 12, 2019), the proposed off-hours Project construction activities would occur after the daytime concrete pours (anticipated to end at 8:00 p.m.) from concrete trucks for the below-grade foundation and decks of the proposed parking structure. The off-hours construction activities would include finishing and clean-up activities for approximately 2 hours from 8:00 p.m. to 10:00 p.m. The off-hours construction activities would include the operation of small finishing equipment (i.e., power vibrating screens, concrete backpack vibrators, and walk behind finish trowels). In addition, the off-hours construction activities would require artificial lighting equipment (i.e., light towers) at the off-hours construction area on the Project Site for worker visibility and safety. The off-hours Project construction work would occur throughout the surface of the concrete pours of below grade foundation and elevated decks of the parking structure, within the 20-foot high site perimeter temporary construction barrier. Appendix B details the Project off-hours work.

The Project proposes the off-hours construction activities to start at 8:00 p.m. and end at 10:00 p.m., on the weekdays (Monday – Friday) of the weeks provided in the scope of work provided by Swinerton (dated June 12, 2019) (subject to change). The Project's off-hours construction is estimated to require a total of ten non-contiguous weeks to complete, anticipated occurring in early September- late October 2019 and early January 2020 – mid March 2020 (subject to change). Note that concrete pours would not have two slabs poured on the same day if the ranges overlap. The heavy concrete pours scope of work for the parking structure (including off-hours concrete finishing) is detailed in Appendix B.

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 part of a larger active construction site and is surrounded by single-family residential neighborhoods. The Project Site being analyzed during the concrete pour is located along the southern boundary of the overall construction site along Van Buren Place (See Figure 1). The analyzed location is bounded by Van Buren Place to the south, single-family residential to the east and west, and the rest of the construction site to the north.

The predominant existing noise source in the vicinity of the Project Site is vehicle traffic noise from roadways adjacent to the Project Site including Van Buren Place and Lucerne Avenue. Secondary noise sources include school operations at the nearby Linwood E. Howe Elementary School and residential-related activities, such as, landscaping and home improvement activities.

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 are the 2-story, multi-family residence buildings that abut the southern Project Site boundary. The tree-lined residential property line is approximately 40 feet from the Project Site. These residences front along Van Buren Place, which connects to Lucerne Avenue to the south and turns eastbound into A Street to the North. These multi-family residences represent the nearest sensitive receptor (i.e., residence) to the Project Site, and, therefore, illustrates the worst-case scenario for potential noise and lighting impacts from the construction activities of the Project night work during the off-hours of the City's construction hours.

Existing Ambient Noise Levels

Ambient noise measurements were conducted at one location, representing the nearest noise sensitive land use (i.e., multi-family residences) in the vicinity of the night work on the Project Site to establish an estimate of ambient noise levels during the evening/night hours when the

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

proposed night work would occur. The measurement location, along with proposed night work location and existing nearby residential development, are shown on Figure 1. The ambient noise measurement was conducted overnight over a 2-hour period, beginning on at 8:00 p.m. on Tuesday, May 28, 2019 and continuing until 10:00 p.m.

The ambient noise measurement was conducted using the Larson-Davis Sound Track LxT1 Precision Integrated Sound Level Meter ("SLM"). The LxT1 SLM is a Type 1 standard instrument, as defined in the American National Standard Institute S1.4. All instruments were factory and field calibrated, and operated according to the applicable manufacturer specification. The SLM was set up at a secure, discreet location, activated, and left unmanned for the monitoring period, as typically done for long-term measurements. The SLM microphone was placed at a height of 5 feet above the local grade, at the measurement location 1, multi-family residential uses along Van Buren Place, as shown in Figure 1. A summary of noise measurement data is provided in **Table 1**.

TABLE 1
SUMMARY OF AMBIENT NOISE MEASUREMENTS

Location, Day of the Week, Date, and Hours	Average Night Noise Levels, dBA L_{eq}
R1	
Tuesday Night, 5/28/19	
8:00 p.m. to 9:00 p.m.	54.6
9:00 p.m. to 10:00 p.m.	53.7
8:00 p.m. to 10:00 p.m. (2-hour period)	**54.1**

SOURCE: ESA, 2019.

As shown in Table 1, the existing hourly average ambient noise levels, during the estimated start and end hours of the proposed night work (8 p.m. to 10 p.m.) ranged from approximately 53.7 dBA L_{eq} to 54.6 dBA L_{eq} and averaged 54.1 dBA L_{eq} at the monitoring location (at the nearest residence). The quietest hour was measured at 53.7 dBA L_{eq} from 9:00 to 10:00 p.m.

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.) hourly average noise level limit of 55 dBA Leq and maximum noise level limit of 70 dBA L_{max} (based on the 70 dBA Leq (daytime) for a duration of one minute at the residential property line, 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.

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. If impact thresholds are exceeded, mitigation measures are proposed 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 Swinerton, General Contractors. The off-hours noise levels were calculated based on the number and type of equipment operating simultaneously (i.e., for the finishing of the concrete pours), and their location and elevation on the Project Site. Potential off-hours construction noise levels from the Project Site were attenuated by distance and intervening barriers (i.e., site perimeter construction sound wall) to the nearest sensitive receptor located offsite in Culver City (i.e., the residences adjacent to the Project Site boundary), as shown in Figure 1. 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 project construction noise level limits are based on Culver City noise standards for daytime (7:00 a.m. to 10:00 p.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 70 dBA L_{max} during the off-hours of 8:00 p.m. to 10:00 p.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} (City 1995) during the off-hours of 8:00 p.m. to 10:00 p.m., as previously shown in Table 2.

The existing hourly average ambient level of 54 dBA L_{eq} (averaged over the 2-hour period from 8:00 to 10:00 p.m.) measured at the nearest residence property line adjacent to the sound wall of the proposed parking structure is approaching the City's daytime standard of 55 dBA L_{eq}. Therefore, for this analysis, the City's daytime standard of 55 dBA L_{eq} would assume to be adjusted to the measured existing ambient level of 54 dBA L_{eq} plus 3 dBA (i.e., the increase that results from doubling a noise source). Therefore, the assumed adjusted limit would be 57 dBA L_{eq} daytime at this location.

4.3 Project Impact Analysis

The proposed construction activities of the Project off-hours work would include the equipment listed in **Table 3**, below (i.e., hand-held concrete finishing tools and light towers with generators). The equipment is assumed to operate simultaneously and within 40 feet of the closest sensitive receptors. Light towers will be placed around the perimeter of the finishing work (i.e., the concrete pours of the below-grade foundation and elevated decks). The two closest light towers to the sound wall with residences on the other side are analyzed with one located at 40 feet and the other at 75 feet from the wall. The concrete pour finishing activity will require up to four pieces of each type of equipment spread out and moving over the entire concrete pour surface, however, the analysis assumes only one piece of each type will operate simultaneously in the same area nearest the wall. The remaining equipment would be operating at various further distances from the wall and residences and would not directly affect the noise levels at the closest residences.

As such, the noise levels generated onsite by the off-hours finishing activities within the sound wall and attenuated by distance (-6 dBA per doubling of distance) and the sound wall (conservatively at -20 dBA) at the nearest residence on the other side of the sound wall would vary depending on the particular type, number, duration, and location (distance and elevation) of the noise sources. The maximum and average noise levels of the finishing activities are estimated in **Table 3**, which shows the equipment, reference noise level, usage factor, distance to the property line of the nearest off-site residence, and the maximum and average noise level at the property line.

TABLE 3
CONSTRUCTION EQUIPMENT NOISE LEVELS AT SOURCE AND NEAREST RESIDENCE

Finishing Equipment	Number	Noise Level at 50 ft (dBA L_{max})	Acoustical Usage factor (%)	Distance to Receptor (ft)	Noise Level at Receptor (dBA L_{max})	Noise Level at Receptor (dBA L_{eq})
Power Vibrating Screeds	1	25	50	40	7	4
Concrete Backpack Vibrators	1	75	50	40	57	54
Walk Behind Finish Trowel	1	65	50	40	47	44
Light Tower	1	67	100	40	49	49
Light Tower	1	67	100	75	43	43

Source: FHWA 2006, ESA 2019.
Note: Noise levels include a 20 dBA reduction from the installed noise wall.

During the Project off-hours finishing activity, the nearest offsite noise sensitive receptor that would be exposed to the Project's night work noise would be the residences located directly west of the Project Site. The highest noise levels would be generated when multiple pieces of construction equipment are being operated simultaneously. The Project's estimated construction noise levels were calculated for the maximum equipment required to operate simultaneously, as shown in **Table 4** (i.e., the worst-case scenario). Furthermore, the noise analysis and calculations include a conservative 20 dBA reduction (rated as STC of 27 in Appendix A) from the site perimeter noise barrier to the closest sensitive receptors, and do not include any potential additional attenuation from the below-grade location of the finishing work. The estimated noise levels at the offsite sensitive receptors were calculated using FHWA's RCNM, and the overall results are shown Table 4, and detailed in Appendix C.

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

Activity	Estimated Maximum Construction Noise Levels (dBA L_{max})	Estimated Hourly Average Construction Noise Levels (dBA L_{eq})
Finishing of Concrete Pours	57	54.3
City Off-Hours Noise Standards *7:00 a.m. to 10:00 p.m*	70	55

Note: Noise levels include a 20 dBA reduction from the installed noise barrier.
SOURCE: ESA, 2019.

As shown in Table 4, the maximum night work noise levels at the property line of 57 dBA L_{max} and 54 dBA L_{eq} would not exceed the City's maximum and hourly average daytime noise limits

of 70 dBA L_{max} and the hourly average of 55 dBA L_{eq}, respectively. Therefore, no mitigation is required.

The Project's off-hours noise level at the residential property line of 54 dBA L_{eq} would be at the measured average ambient night noise level of approximately 54 dBA L_{eq} over the off-hours period (8 p.m. to 10 p.m.). Combined, the resultant noise level (ambient plus finishing) would increase ambient levels by approximately 3 dBA to 57 dBA L_{eq}, which would be a barely perceptible increase (i.e., a 3 dBA increase) during the off-hours, which are considered daytime hours by the City (i.e., City night hours are after 10:00 p.m., when typical residential sleeping activities are assumed to begin). Therefore, a variance to the Culver City noise ordinance for the Project's off-hours finishing work would not result in adverse noise impacts.

5. References

Alice Sutter and Associates, 2002. *Construction Noise: Exposure Effects, and the Potential for Remediation: A Review and Analysis*. Table V. Median 1-min Sound Levels in Leq by Equipment/Tool. AIHA Journal (63), November/December. Available at https://www.osha.gov/SLTC/noisehearingconservation/construction.html.

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

Federal Transit Administration (FTA), 2006. *Transit Noise and Vibration Impact Assessment*, May.

Occupational Safety and Health Administration (OSHA), Occupational Noise Exposure, Construction, References. Available at https://www.osha.gov/SLTC/noisehearingconservation/construction.html.

University of Washington, Department of Environmental and Occupational Sciences. 2002. Tables: *Ten Loudest Tools.* http://www.cpwrconstructionsolutions.org/structural_steel/hazard/719/erect-and-dismantle-scaffolds-noise.html

U.S. Environmental Protection Agency (USEPA), 1974. *EPA Identifies Noise Levels Affecting Health and Welfare*, April.

Lighting

In addition to noise, the Project's off-hours construction would require artificial lighting during hours of reduced sunlight to darkness (i.e. 8:00 p.m. to 10:00 p.m., especially for the pours in

November and December), as needed for work vision and safety. The proposed lighting equipment (i.e., 18-foot high tower portable lights) at the poured concrete foundation and elevated decks within the 20-foot high sound wall, including lighting terminology, and Project lighting design and impacts are discussed below, and detailed in Appendix B.

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.

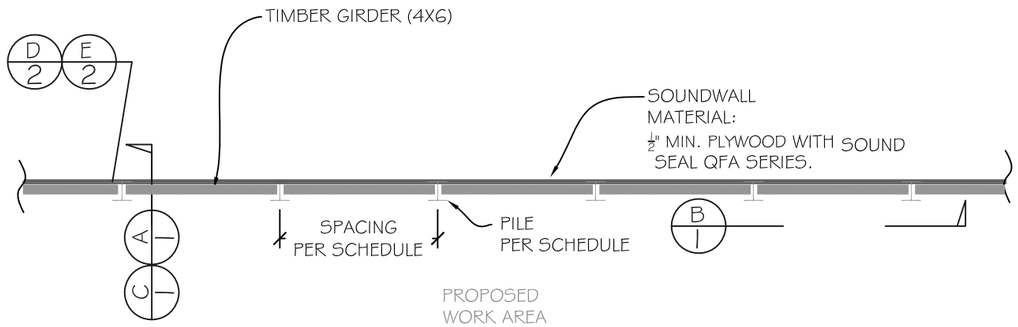
Light trespass or spill light is unwanted light outside of the area intended to be illuminated by the lighting source. Light trespass is typically an undesirable condition, where surface illumination extends beyond the designed area of illumination; e.g., light spills from the source property onto an 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 Analysis

The Project off-hours lighting contains design performance measures to reduce glare and light trespass, including a restricted lighting pole height of 18 feet, which would be below the 20-foot high sound wall which currently screens Project Site construction activities from adjacent residential uses. The lighting would also be directed to the work areas and otherwise located and shielded to avoid off-site light spill. Lamp sources would vary in multiple combinations based on the luminance level requirements for the construction activities. The lighting would include external shielding reflectors and visors to provide light shielding and glare control, decreasing the visibility of these high intensity lamps. Lighting would be strategically located and aimed toward the targeted construction areas of the Project Site with the visor shields. Given the shielded and directed nature of the lamps and the 18-foot height of the light poles that would be located below the existing 20-foot sound wall surrounding the construction area, the line of sight to nearby residential properties would be blocked and no appreciable light spill would occur. As such, light trespass would not exceed 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.

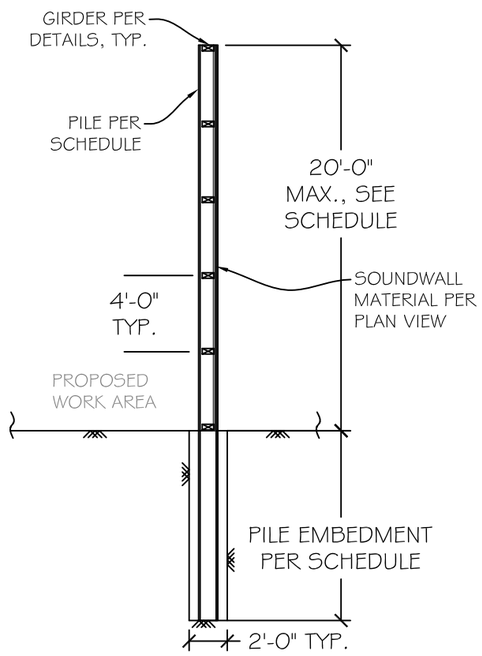
Appendix A

Existing Sound Wall Design and Specifications



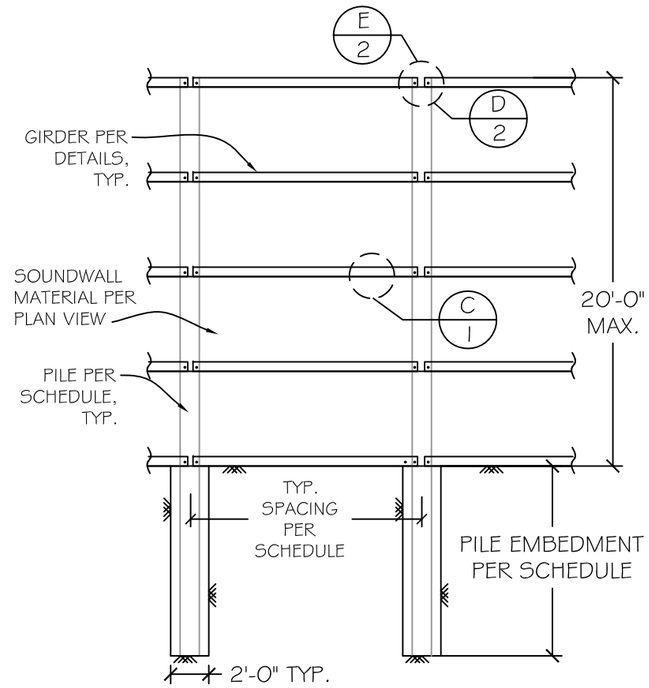
TYPICAL SOUNDWALL - PLAN VIEW

SCALE: NOT TO SCALE



A TYPICAL SOUNDWALL, SECTION VIEW

SCALE: 1/8" = 1'-0"



B TYPICAL SOUNDWALL, ELEVATION VIEW

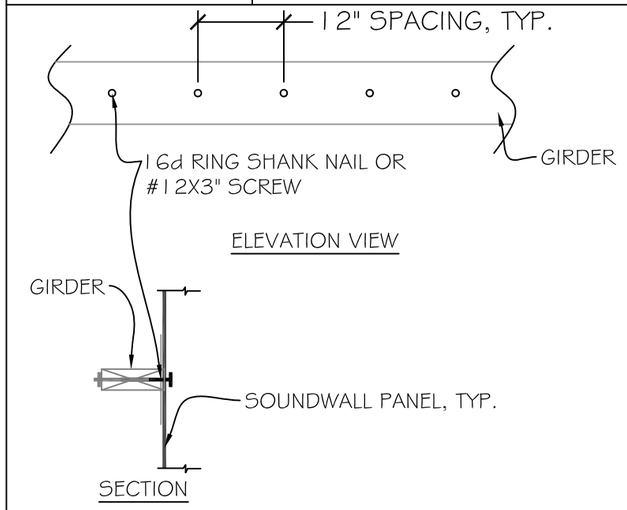
SCALE: 1/8" = 1'-0"

DESIGN CRITERIA:
1) DESIGN LOADS BASED ON ASCE 7-10:
- WIND IMPORTANCE FACTOR: 1.0, CAT. II.
- BASIC WIND SPEED: 110MPH
- SURFACE ROUGHNESS: B
- EXPOSURE: B
2) GEOTECH REPORT: 400 PSF/FT PASSIVE PRESSURE, PER SOILS REPORT, HCP-1-01-060618 by Geo Design.

MATERIAL SPECIFICATIONS:
1) HP AND W SHAPES TO BE ASTM A992 (50 KSI STEEL) MINIMUM.
2) TIMBER: DF #2, ROUGH CUT.
3) PILE BACKFILL: CLSM, 100e100 OR 1 SACK SLURRY.
4) TUBE STEEL: A500 GR. B, 46 KSI. STEEL PIPE: ASTM A53 GR B.
5) SOUND PANELS: 1/2 " MIN. PLYWOOD., WITH SOUND SEAL QFA SERIES.
6) BOLTS: ASTM A307.

INSTALLATION PROCEDURE:
1) PILES ARE INSTALLED BY DRILLED METHOD, 24" DIA HOLE, WITH CLSM BACKFILL.
2) ASSEMBLE SOUNDWALL PANELS PER DETAILS HEREIN.
3) DISASSEMBLY / RESTORATION IS COMPLETED PER PROJECT PLANS AND SPECS.

GENERAL NOTES:
1) THIS PLAN SHALL BE IMPLEMENTED BY THE CONTRACTORS COMPETENT PERSON AS DEFINED BY TITLE 8, CHAP. 4, SECT. 1504(a) OF THE SAFETY ORDERS, AND INSTALLED PER SECT. 1541.1(e).
2) REACHES SHOWN ARE APPROXIMATE. IF A SOIL TYPE OR CONDITIONS IS ENCOUNTERED WHICH REQUIRES A DIFFERENT INSTALLATION METHOD, THEN PLANS SHALL BE REVISED AND RESUBMITTED FOR APPROVAL.
3) CALCULATIONS NOT SHOWN HEREON ARE ON FILE AT THE ACCEPTING AGENCY AND/OR THE OFFICE OF THE CONTRACTOR.
4) CONTRACTOR TO LOCATE ALL EXISTING UTILITIES AND PROTECT IN PLACE.
5) WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS.
6) THIS DESIGN IS VALID ONLY FOR THE PROJECT AND CONTRACTOR LISTED.



C SOUNDWALL PANEL TO GIRDER CONN.

SCALE: NONE

MASTER PILE SCHEDULE: CANTILEVERED DRILLED/FILLED PILES

WALL HEIGHT	PILE SPACING	REQUIRED EMBED.	PILE LENGTH	PILE SECTION
H	s	D	L	
(ft)	(ft)	(ft)	(ft)	
20	14.0	10.0	30.0	W8X21

B.A. SIMS ENGINEERING, INC.
5150 E. PCH, STE 200
LONG BEACH, CA 90804
(562) 735-4955

REGISTERED PROFESSIONAL ENGINEER
BRADLEY A. SIMS
C 58238
EXP. 6/30/20
CIVIL
STATE OF CALIFORNIA

811 Know what's below. Call before you dig.

REVISIONS:
X xxx

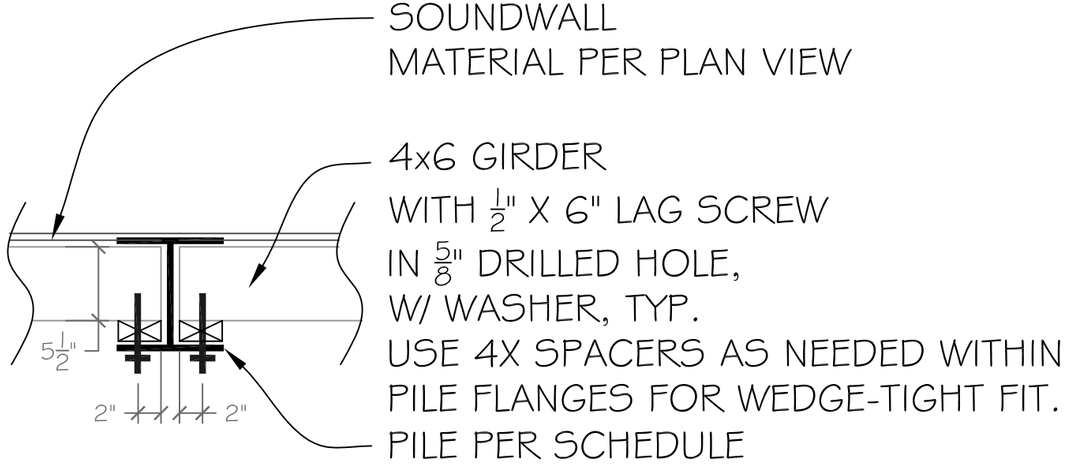
LUCAS BUILDERS, INC.
4020 N. PALM ST., SUITE 207
FULLERTON, CA 92835
(310) 853-0690

PROJECT: CULVER STUDIOS REDEVELOPMENT
9336 W. WASHINGTON BLVD, CULVER CITY, CA

TEMPORARY SOUNDWALLS
DESIGN CASE 1 - PILES WITH TIMBER FRAMING

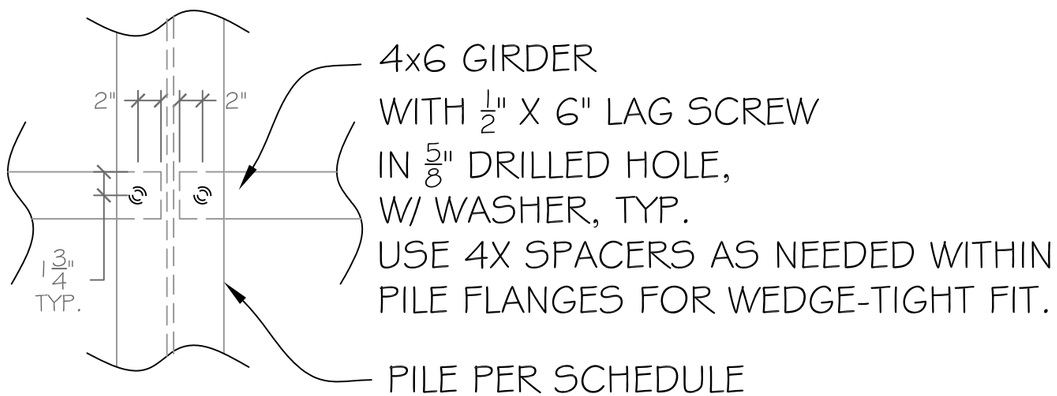
APPLICABLE LOCATIONS: ANY LOCATION ON THE PROJECT

DWG. #: 18334-1 SCALE: AS NOTED
DATE: 7/11/18 BY: BAS SHEET 1 OF 2



D/1 GIRDER TO PILE CONNECTION - PLAN VIEW

SCALE: NONE



E/1 GIRDER TO PILE CONNECTION - ELEVATION VIEW

SCALE: NONE

Know what's below. Call before you dig.

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TEMPORARY SOUNDWALLS
DESIGN CASE 1 - PILES WITH TIMBER FRAMING

APPLICABLE LOCATIONS: ANY LOCATION ON THE PROJECT

DWG. #: 18334-1 SCALE: AS NOTED

DATE: 7/11/18 BY: BAS SHEET 2 OF 2

B.A. SIMS ENGINEERING, INC.
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Structural Calculations
Temporary Sound Walls CASE 1
PROJECT: CULVER STUDIOS
REDEVELOPMENT
9336 W. WASHINGTON BLVD,
CULVER CITY, CA
CONTRACTOR: LUCAS BUILDERS

TERMS AND CONDITIONS / LIMITATION OF LIABILITY:

B.A. Sims Engineering, Inc. was engaged to provide calculations for the above project.
By making use of this document and the associated plans, the CLIENT (LUCAS BUILDERS, INC.) hereby acknowledges and agrees to the folowing terms and conditions:

1) CLIENT binds himself, his partners, his agents, and his contractors to this agreement in respect to all of the terms and conditions herein.

2) ENGINEER has no authority insofar as the CLIENT's personnel are concerned. CLIENT is admonished to observe all applicable safety regulations for the protection of personnel.

3) CLIENT shall defend, indemnify and hold harmless ENGINEER from all costs of litigation that may arise out of alleged damages or injuries associated with the execution of the work defined by this agreement, including attorney's fees and judgments, unless it is proven in a court of law that said injuries or damages resulted directly from negligent errors or omissions in the work prepared by the ENGINEER.

4) The ENGINEER does not issue any warrantees or guarantees and is not responsible for the completion or quality of performance of the contracts by any CLIENT, contractor, or other 3rd parties.

5) Services provided under this agreement are for the exclusive use by the CLIENT. There are no intended third party beneficiaries of this agreement.

6) Nothing contained in the ENGINEER's work shall relieve the CLIENT from complying with applicable local, state, and federal building codes and laws.

7) To the greatest extent allowed by law, the aggregate liability of ENGINEER for any and all injuries, claims, demands, losses, expenses or damages, of whatever kind, arising out of or in any way related to this agreement or the services provided by ENGINEER on this project, shall be limited to $10,000 or the total fee received by ENGINEER pursuant to this agreement, whichever is lower. Further, no officer, director, shareholder or employee of ENGINEER shall bear any personal liability to CLIENT for any and all injuries, claims, demands, losses, expenses or damages, of whatever kind or character, arising out of or in any way related to this agreement or the services provided by ENGINEER on this project.

10) All disputes between CLIENT and ENGINEER arising out of or relating to this agreement shall be submitted to nonbinding mediation prior to commencement of any other judicial proceeding or litigation.

11) CLIENT shall make no claim either directly or in a third party claim, against ENGINEER unless CLIENT has first provided ENGINEER with a written certification executed by an independent professional currently practicing in the same discipline as ENGINEER and licensed in the state of the subject project. This certification shall a) contain the name and license number of the certifier; b) specify each and every act or omission that the certifier contends is a violation of the standard of care expected of a professional performing professional services under similar circumstances; and c) state in complete detail the basis for the certifier's opinion that each such act or omission constitutes such a violation. This certificate shall be provided to ENGINEER not less than thirty (30) calendar days prior to the presentation of any claim or the institution of any judicial proceeding.

12) In the event of any mediation, arbitration or litigation arising from or related to this agreement, the prevailing party shall be entitled to recovery of all reasonable costs incurred, including staff time, court costs, attorney's fees, expert fees and other related costs and expenses.

End of Terms and Conditions.

7/10/18

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Design criteria:

1) Caltrans Trenching and Shoring Manual.
2) CAL-OSHA Construction Safety Orders, Article 6.
3) AISC Manual of Steel Construction (ASD), 13th Edition.
4) 2010 CBC.

Site Specific Criteria:

1) Soils report: HCP-1-01-060618 by Geo Design.

Units: $pcf := \frac{lb}{ft^3}$ $k := 1000 \cdot lb$ $psf := \frac{lb}{ft^2}$ $ksi := \frac{k}{in^2}$ $plf := \frac{lb}{ft}$ $ksf := \frac{k}{ft^2}$ $klf := \frac{k}{ft}$

$psi := \frac{lb}{in^2}$ $sf := ft^2$ $E := 29000 \cdot ksi$ $cf := ft^3$ $ftk := ft \cdot k$ $ea := 1$

Lateral pressures:

Wind pressure: Exposure B, 110 mph. See MECAWIND wind output attached.

$H := 20 \cdot ft$ 20' high sound wall:

At elev. 20': $WL_{20} := 17.42 \cdot 0.6 \cdot psf = 10.452 \cdot psf$ (converted to ASD level)

At elev. 18': $WL_{18} := 16.9 \cdot 0.6 \cdot psf = 10.14 \cdot psf$

At elev. 16': $WL_{16} := 16.34 \cdot 0.6 \cdot psf = 9.804 \cdot psf$

At elev. 14": $WL_{14} := 16.04 \cdot 0.6 \cdot psf = 9.624 \cdot psf$

Passive pressure: 400 psf/ft up to 4,000 psf, above groundwater, per report pg 14.

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Pile Schedule: Cantilevered, drilled piles.
See Shoring Suite output attached.

WALL HEIGHT H (ft)	PILE SPACING s (ft)	REQUIRED EMBED. D (ft)	PILE LENGTH L (ft)	PILE SECTION
20	14.0	10.0	30.0	W8X21

Timber girder design: Check worst case (center girder). See Enercalc output attached.

Span: $L := 14 \cdot ft$ Tributary width: $s := 4 \cdot ft$

Dead load: $DL := 2.5 \cdot psf \cdot s$ weight of sound wall material and 1/2" plywood. (plywood is considered non-structural)

$DL = 10 \cdot plf$

Wind load: $WL := s \cdot WL_{20} = 41.808 \cdot plf$

$WL = 41.808 \cdot plf$

See Enercalc output attached for calcs, 4x6 DF#2 OK.

Timber girder to pile connection: (1) 1/2" dia. lag screw per connection.

Check shear:

$$V := \frac{WL \cdot \frac{s}{2}}{1 \cdot ea} \quad V = 83.616\,lb$$ shear per fastener, assume full load acts vertically

$V_{ALLOW} := 1 \cdot ea \cdot 314 \cdot lb$ allowable shear per fastener (per NDS worksheet attached, p. 28-29)

$if(V < V_{ALLOW}, "OK", "NO GOOD") = "OK"$ **(1) 1/2" dia. (min. A307) OK.**

Check tension:

$$T := \frac{WL \cdot \frac{s}{2}}{1 \cdot ea} \quad T = 83.616\,lb$$ tension per fastener

$T_{ALLOW} := 1 \cdot ea \cdot \frac{\pi}{4} \cdot \left(\frac{1}{2} \cdot in\right)^2 \cdot 22.5 \cdot ksi \quad T_{ALLOW} = 4.42 \cdot k$ allowable tension per fastener (per AISC Manual Table 7-1 for A307 bolts)

$if(T < T_{ALLOW}, "OK", "NO GOOD") = "OK"$ **(1) 1/2" dia. (min. A307) OK.**

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Check bolt edge distance and end distance for girder:

Diameter: $D := 0.5 \cdot in$

Edge distance: $d_{min} := 4 \cdot D$ $d_{min} = 2 \cdot in$ (per NDS Table 11.5.1A)

Sound wall panel to timber girder connection: (1) 16d @ 12" o.c. $s := 12 \cdot in$

Check shear:

$V := \frac{DL \cdot s}{1 \cdot ea}$ $V = 10\,lb$ shear per fastener

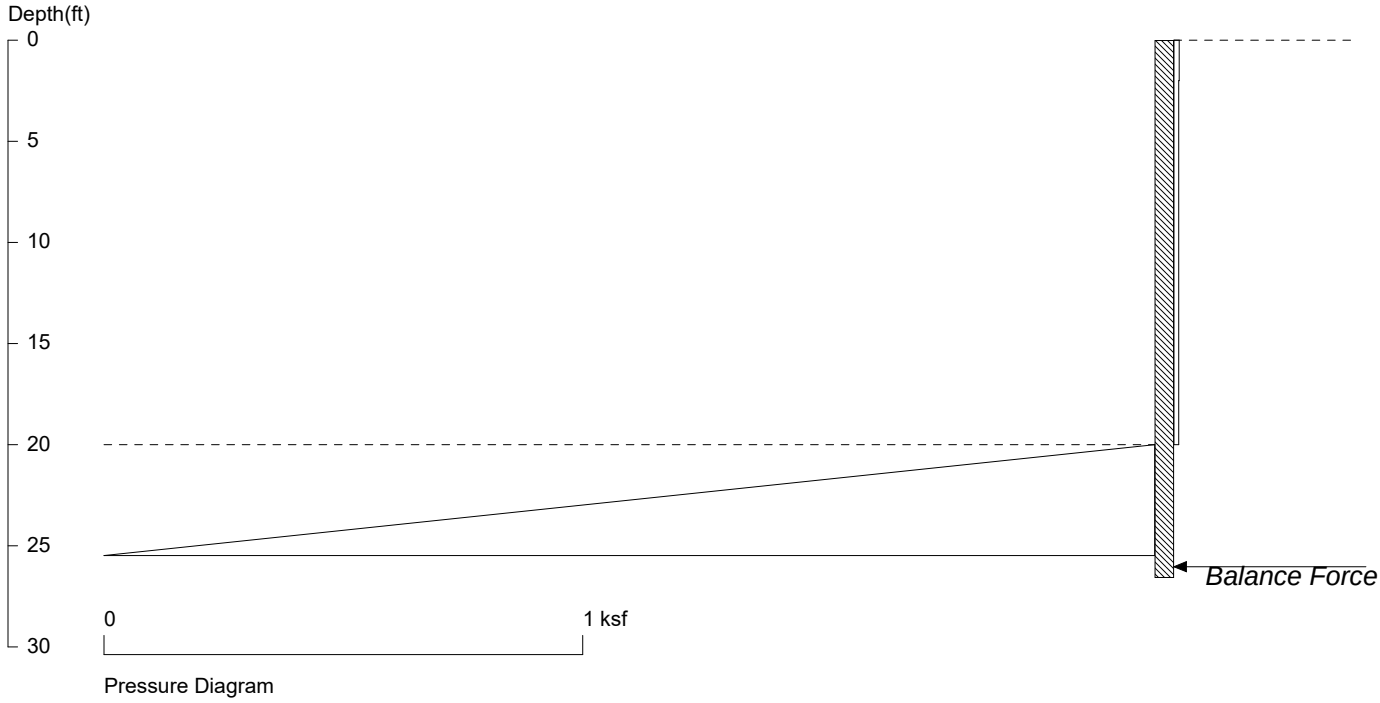
$V_{ALLOW} := 1 \cdot ea \cdot 116 \cdot lb$ allowable shear per fastener

$if\left(V < V_{ALLOW}, "OK", "NO\ GOOD"\right) = "OK"$ **(1) 16d @ 16 o.c. OK., or #12 screw**

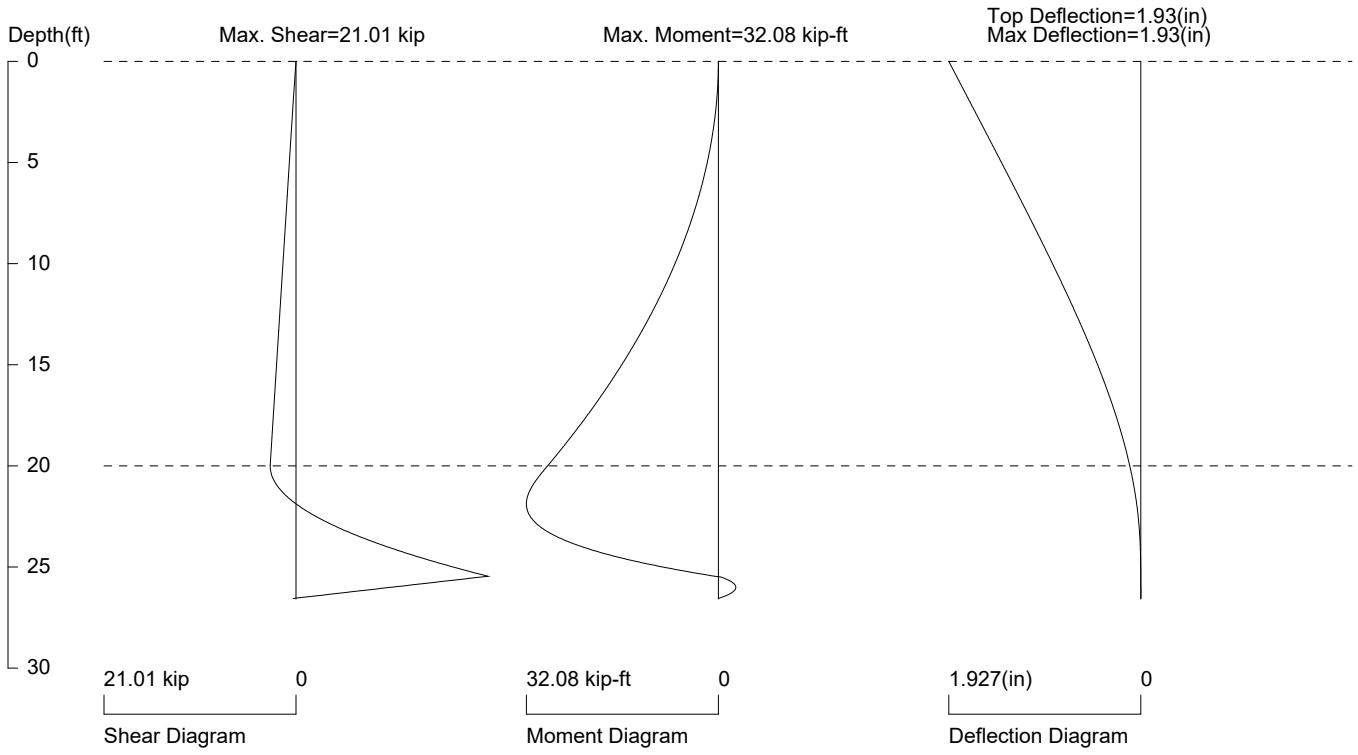
Sound Wall Material: 1/2" p.w. and Sound Seal curtain,
- Panels are manufactured by Sound Seal, Inc. (see spec. attached).
- The exterior grade curtain panels have grommets across the top and exterior grade Velcro on the vertical edges.

20' Sound Wall - Culver Studios

Cantilevered pile design - 14' spacing



Pressure Diagram



Shear Diagram | Moment Diagram | Deflection Diagram

PRESSURE, SHEAR, MOMENT, AND DEFLECTION DIAGRAMS

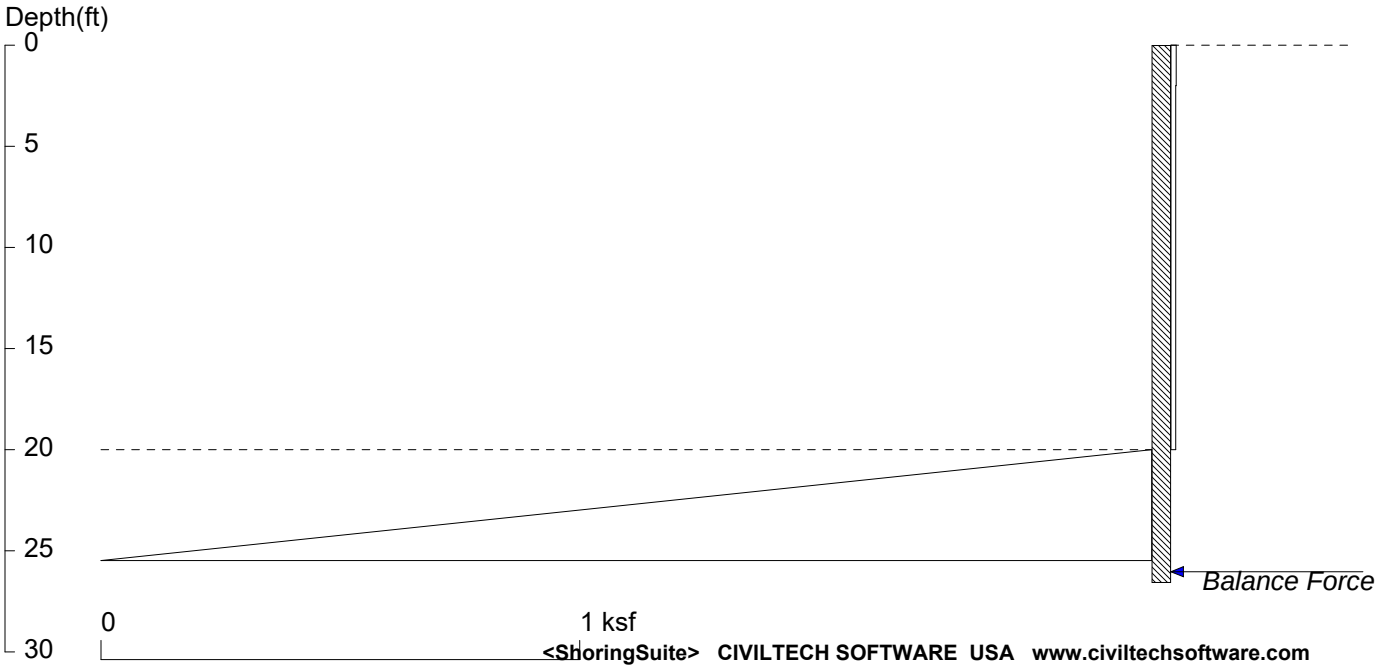
Based on pile spacing: 14.0 feet or meter

Pile: W8X21 meet Section Requirements. Properties: E (ksi)=29000, I (in4)=75.3

Date: 7/11/2018 File Name: X:\2018\18334-Lucas Co-soundwalls-Culver City Sony Studios\Case 1 – H piles with wood frame\18334-1-20-s14.sh8

20' Sound Wall - Culver Studios

Cantilevered pile design - 14' spacing



Licensed to 4324324234 3424343
Date: 7/11/2018 File Name:

Wall Height=20.0 Pile Diameter=2.0 Pile Spacing=14.0 Wall Type: 2. Soldier Pile, Drilled

PILE LENGTH: Min. Embedment=6.58, Min. Pile Length=26.58
MOMENT IN PILE: Max. Moment=32.08 per Pile Spacing=14.0 at Depth=21.86

PILE SELECTION:
Request Min. Section Modulus = 12.8 in3/pile, Fy= 50 ksi = 345 MPa, Fb/Fy=0.6
W8X21 has Section Modulus = 18.2. It is greater than Min. Requirements!, Top Deflection = 1.93(in)

ACTIVE SPACING:	Z depth	Spacing
1	0.00	14.00
2	20.00	2.00

PASSIVE SPACING:	Z depth	Spacing
1	20.00	4.00

ACTIVE PRESSURES (ACTIVE, WATER, & SURCHARGE):

No.	Z1	P1	Z2	P2	Slope
1	0.0	0.01	2.0	0.01	0.000
2	2.0	0.01	4.0	0.01	0.000
3	4.0	0.01	20.0	0.01	0.000

PASSIVE PRESSURES:

No.	Z1	P1	Z2	P2	Slope
1	20.00	0.00	25.49	4.00	0.4000

UNITS: Width/Spacing/Diameter/Length/Depth - ft, Force - kip, Moment - kip-ft,
UNITS: Friction/Bearing/Pressure - ksf, Pres. Slope - kip/ft3, Deflection - in

B.A. SIMS ENGINEERING, INC.
5150 E PCH STE 200
LONG BEACH, CA 90804
(562) 735-4955

Project Title:
Engineer:
Project Descr:

Project ID: 18334-1

Printed: 11 JUL 2018, 3:42PM

Wood Column

File = X:\2018\13H86B~T\CUYUC0~M\18334-1.ec6
ENERCALC, INC. 1983-2017, Build:10.17.12.10, Ver:10.17.12.10

Lic. # : KW-06007230 — Licensee : B.A. SIMS ENGINEERING

Description : Timber Girder

Code References

Calculations per 2012 NDS, IBC 2012, CBC 2013, ASCE 7-10
Load Combinations Used : ASCE 7-10

General Information

Analysis Method : Allowable Stress Design
End Fixities : Top & Bottom Pinned
Overall Column Height : 14.0 ft
(Used for non-slender calculations)

Wood Species : Douglas Fir - Larch
Wood Grade : No.2

Fb +	900.0 psi	Fv	180.0 psi
Fb -	900.0 psi	Ft	575.0 psi
Fc - Prll	1,350.0 psi	Density	32.210 pcf
Fc - Perp	625.0 psi		

E : Modulus of Elasticity . . .

	x-x Bending	y-y Bending	Axial
Basic	1,600.0	1,600.0	1,600.0 ksi
Minimum	580.0	580.0	

Wood Section Name : **4x6**
Wood Grading/Manuf. : Graded Lumber
Wood Member Type : Sawn

Exact Width : **3.50** in
Exact Depth : **5.50** in

Area	19.250	in^2
Ix	48.526	in^4
Iy	19.651	in^4

Allow Stress Modification Factors

Cf or Cv for Bending	1.30
Cf or Cv for Compression	1.10
Cf or Cv for Tension	1.30
Cm : Wet Use Factor	1.0
Ct : Temperature Factor	1.0
Cfu : Flat Use Factor	1.0
Kf : Built-up columns	1.0 *NDS 15.3.2*
Use Cr : Repetitive ?	No

Brace condition for deflection (buckling) along columns :
X-X (width) axis : Unbraced Length for X-X Axis buckling = 14.0 ft, K = 1.0
Y-Y (depth) axis : Unbraced Length for X-X Axis buckling = 14.0 ft, K = 1.0

Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Column self weight included : 60.282 lbs * Dead Load Factor
BENDING LOADS . . .
Lat. Uniform Load creating My-y, D = 0.010 k/ft
Lat. Uniform Load creating Mx-x, W = 0.0420 k/ft

DESIGN SUMMARY

Bending & Shear Check Results

PASS Max. Axial+Bending Stress Ratio = **0.6642** : 1
Load Combination : +D+0.60W+H
Governing NDS Forumla : np + Mxx + Myy, NDS Eq. 3.9-
Location of max.above base : 6.953 ft
At maximum location values are . . .
Applied Axial : 0.06028 k
Applied Mx : 0.6174 k-ft
Applied My : 0.2450 k-ft
Fc : Allowable : 200.657 psi

PASS Maximum Shear Stress Ratio = **0.07636** : 1
Load Combination : +D+0.60W+H
Location of max.above base : 14.0 ft
Applied Design Shear : 13.745 psi
Allowable Shear : 180.0 psi

Maximum SERVICE Lateral Load Reactions . .

Top along Y-Y	0.2940 k	Bottom along Y-Y	0.2940 k
Top along X-X	0.070 k	Bottom along X-X	0.070 k

Maximum SERVICE Load Lateral Deflections . . .
Along Y-Y 0.4726 in at 7.047 ft above base
for load combination : W Only
Along X-X 0.2779 in at 7.047 ft above base
for load combination : +D+H

Other Factors used to calculate allowable stresses . . .

	Bending	Compression	Tension

Load Combination Results

Load Combination	C_D	C_P	Maximum Axial + Bending Stress Ratios: Stress Ratio	Status	Location	Maximum Shear Ratios: Stress Ratio	Status	Location
+D+H	1.000	0.135	0.2956	PASS	6.953 ft	0.03030	PASS	14.0 ft
+D+L+H	1.000	0.135	0.2956	PASS	6.953 ft	0.03030	PASS	14.0 ft
+D+Lr+H	1.000	0.135	0.2956	PASS	6.953 ft	0.03030	PASS	14.0 ft
+D+S+H	1.000	0.135	0.2956	PASS	6.953 ft	0.03030	PASS	14.0 ft
+D+0.750Lr+0.750L+H	1.000	0.135	0.2956	PASS	6.953 ft	0.03030	PASS	14.0 ft
+D+0.750L+0.750S+H	1.000	0.135	0.2956	PASS	6.953 ft	0.03030	PASS	14.0 ft
+D+0.60W+H	1.000	0.135	0.6642	PASS	6.953 ft	0.07636	PASS	14.0 ft
+D+0.70E+H	1.000	0.135	0.2956	PASS	6.953 ft	0.03030	PASS	14.0 ft
+D+0.750Lr+0.750L+0.450W+H	1.000	0.135	0.5716	PASS	6.953 ft	0.05727	PASS	0.0 ft
+D+0.750L+0.750S+0.450W+H	1.000	0.135	0.5716	PASS	6.953 ft	0.05727	PASS	0.0 ft
+D+0.750L+0.750S+0.5250E+H	1.000	0.135	0.2956	PASS	6.953 ft	0.03030	PASS	14.0 ft

B.A. SIMS ENGINEERING, INC.
5150 E PCH STE 200
LONG BEACH, CA 90804
(562) 735-4955

Project Title:
Engineer:
Project Descr:

Project ID: 18334-1

Printed: 11 JUL 2018, 3:42PM

Wood Column

File = X:\2018\13H86B~T\CUYUC0~M\18334-1.ec6
ENERCALC, INC. 1983-2017, Build:10.17.12.10, Ver:10.17.12.10

Lic. # : KW-06007230 **Licensee : B.A. SIMS ENGINEERING**

Description : Timber Girder

Load Combination Results

Load Combination	C_D	C_P	Maximum Axial + Bending Stress Ratios: Stress Ratio	Status	Location	Maximum Shear Ratios: Stress Ratio	Status	Location
+0.60D+0.60W+0.60H	1.000	0.135	0.5430	PASS	6.953 ft	0.07636	PASS	14.0 ft
+0.60D+0.70E+0.60H	1.000	0.135	0.1762	PASS	6.953 ft	0.01818	PASS	0.0 ft

Maximum Reactions

Note: Only non-zero reactions are listed.

Load Combination	X-X Axis Reaction @ Base	@ Top	k	Y-Y Axis Reaction @ Base	@ Top	Axial Reaction @ Base	My - End Moments @ Base	@ Top	k-ft	Mx - End Moments @ Base	@ Top
+D+H	0.070	0.070				0.060					
+D+L+H	0.070	0.070				0.060					
+D+Lr+H	0.070	0.070				0.060					
+D+S+H	0.070	0.070				0.060					
+D+0.750Lr+0.750L+H	0.070	0.070				0.060					
+D+0.750L+0.750S+H	0.070	0.070				0.060					
+D+0.60W+H	0.070	0.070		0.176	0.176	0.060					
+D+0.70E+H	0.070	0.070				0.060					
+D+0.750Lr+0.750L+0.450W+H	0.070	0.070		0.132	0.132	0.060					
+D+0.750L+0.750S+0.450W+H	0.070	0.070		0.132	0.132	0.060					
+D+0.750L+0.750S+0.5250E+H	0.070	0.070				0.060					
+0.60D+0.60W+0.60H	0.042	0.042		0.176	0.176	0.036					
+0.60D+0.70E+0.60H	0.042	0.042				0.036					
D Only	0.070	0.070				0.060					
Lr Only											
L Only											
S Only											
W Only				0.294	0.294						
E Only											
H Only											

Maximum Deflections for Load Combinations

Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance
+D+H	0.2779 in	7.047 ft	0.000 in	0.000 ft
+D+L+H	0.2779 in	7.047 ft	0.000 in	0.000 ft
+D+Lr+H	0.2779 in	7.047 ft	0.000 in	0.000 ft
+D+S+H	0.2779 in	7.047 ft	0.000 in	0.000 ft
+D+0.750Lr+0.750L+H	0.2779 in	7.047 ft	0.000 in	0.000 ft
+D+0.750L+0.750S+H	0.2779 in	7.047 ft	0.000 in	0.000 ft
+D+0.60W+H	0.2779 in	7.047 ft	0.284 in	7.047 ft
+D+0.70E+H	0.2779 in	7.047 ft	0.000 in	0.000 ft
+D+0.750Lr+0.750L+0.450W+H	0.2779 in	7.047 ft	0.213 in	7.047 ft
+D+0.750L+0.750S+0.450W+H	0.2779 in	7.047 ft	0.213 in	7.047 ft
+D+0.750L+0.750S+0.5250E+H	0.2779 in	7.047 ft	0.000 in	0.000 ft
+0.60D+0.60W+0.60H	0.1667 in	7.047 ft	0.284 in	7.047 ft
+0.60D+0.70E+0.60H	0.1667 in	7.047 ft	0.000 in	0.000 ft
D Only	0.2779 in	7.047 ft	0.000 in	0.000 ft
Lr Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
L Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
S Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
W Only	0.0000 in	0.000 ft	0.473 in	7.047 ft
E Only	0.0000 in	0.000 ft	0.000 in	0.000 ft
H Only	0.0000 in	0.000 ft	0.000 in	0.000 ft

B.A. SIMS ENGINEERING, INC.
5150 E PCH STE 200
LONG BEACH, CA 90804
(562) 735-4955

Project Title:
Engineer:
Project Descr:

Project ID: 18334-1

Printed: 11 JUL 2018, 3:42PM

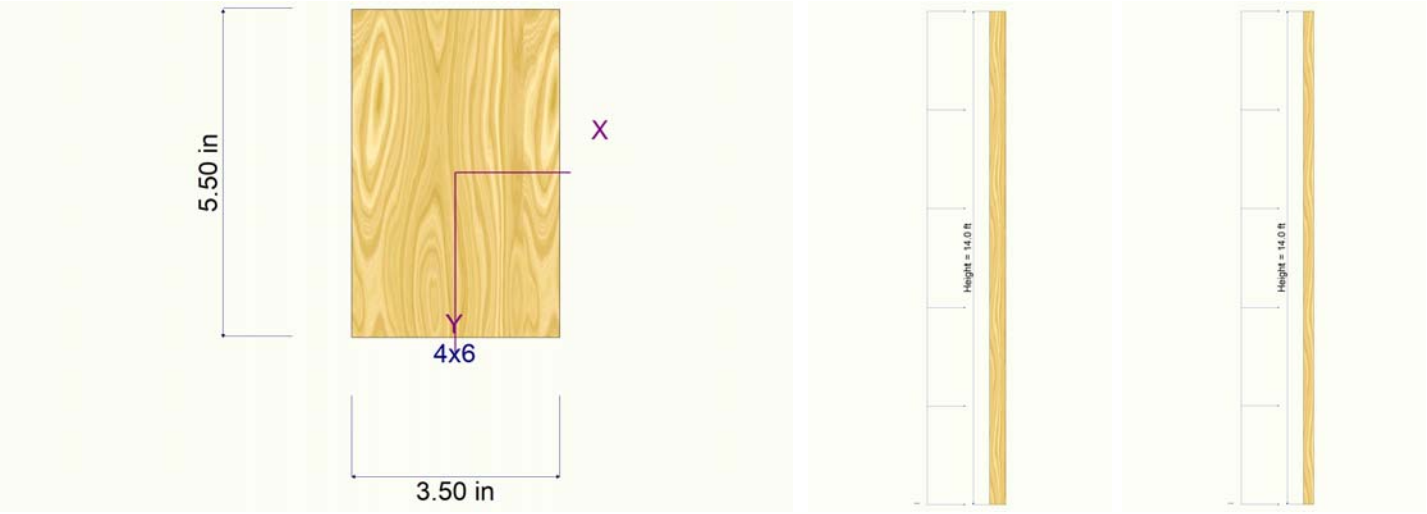
Wood Column

File = X:\2018\13H86B~T\CUYUC0~M\18334-1.ec6
ENERCALC, INC. 1983-2017, Build:10.17.12.10, Ver:10.17.12.10

Lic. # : KW-06007230 **Licensee : B.A. SIMS ENGINEERING**

Description : Timber Girder

Sketches



MecaWind Pro v2.2.8.4 per ASCE 7-10

Developed by MECA Enterprises, Inc. Copyright www.mecaenterprises.com

Date	: 7/9/2018	Project No.	: 18334
Company Name	: B.A. Sims Engineering	Designed By	:
Address	: 5150 E. PCH Suite 200	Description	: 20' Soundwall
City	: Long Beach	Customer Name	: Lucas Builders
State	: CA	Proj Location	: Culver City, CA

File Location: C:\Users\Mike\Desktop\18334-20.wnd

Input Parameters: Other Structures & Building Appurtances MWFRS (Ch 29)

Basic Wind Speed(V)	= 110.00 mph		
Structural Category	= II	Exposure Category	= B
Natural Frequency	= N/A	Flexible Structure	= No
Importance Factor	= 1.00	Kd Directional Factor	= 0.85
Damping Ratio (beta)	= 0.01		
Alpha	= 7.00	Zg	= 1200.00 ft
At	= 0.14	Bt	= 0.84
Am	= 0.25	Bm	= 0.45
Cc	= 0.30	l	= 320.00 ft
Epsilon	= 0.33	Zmin	= 30.00 ft
B - Horizontal Dim.	= 200.00 ft	Ht- Grade to Top of Sign	= 20.00 ft
W - Sign Depth	= 0.50 ft	S - Vertical Sign Dim.	= 20.00 ft
Bs- Ratio of B / S	= 10.00	Sh- Ratio of S / Ht	= 1.00
E - Solidity Ratio	= 100.00 %	Elb - Base Elevation	= .00 ft

Gust Factor Calculations

Gust Factor Category I Rigid Structures - Simplified Method

Gust1: For Rigid Structures (Nat. Freq.>1 Hz) use 0.85 = 0.85

Gust Factor Category II Rigid Structures - Complete Analysis

Zm:	0.6*Ht	= 30.00 ft
lzm:	Cc*(33/Zm)^0.167	= 0.30
Lzm:	l*(Zm/33)^Epsilon	= 309.99 ft
Q:	(1/(1+0.63*((B+Ht)/Lzm)^0.63))^0.5	= 0.81
Gust2:	0.925*((1+1.7*lzm*3.4*Q)/(1+1.7*3.4*lzm))	= 0.82

Gust Factor Summary

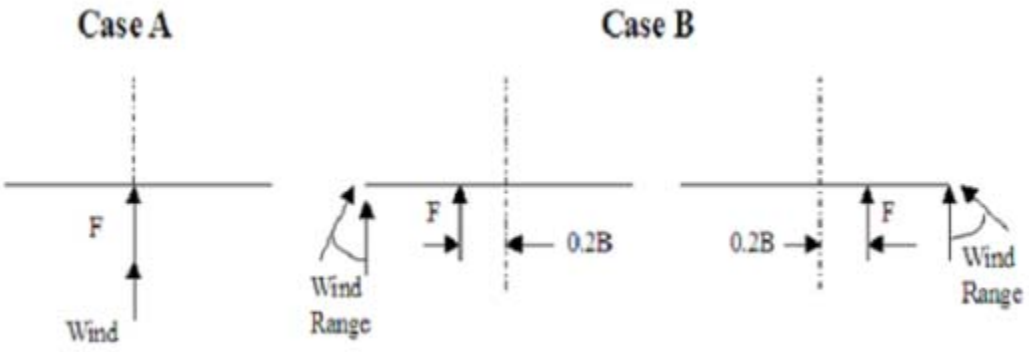
Not a Flexible Structure use the Lessor of Gust1 or Gust2 = 0.82

Design Wind Pressure - Other Structures

Elev ft	Kz	Kzt	qz psf	W_Pres_Cf(1.30) psf
20.00	0.62	1.00	16.428	17.42
18.00	0.61	1.00	15.941	16.90
16.00	0.59	1.00	15.414	16.34
14.00	0.57	1.00	15.132	16.04
12.00	0.57	1.00	15.132	16.04
10.00	0.57	1.00	15.132	16.04
8.00	0.57	1.00	15.132	16.04
6.00	0.57	1.00	15.132	16.04
4.00	0.57	1.00	15.132	16.04
2.00	0.57	1.00	15.132	16.04

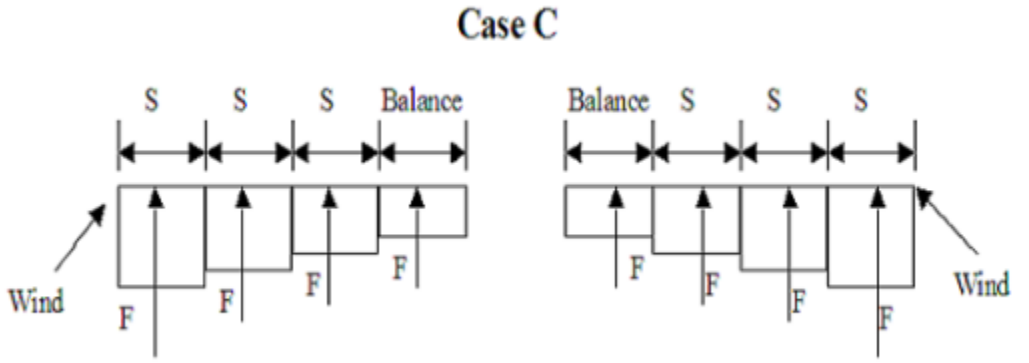
Note: W_Pres_Cf is Wind Pressure based on Cf(Force Coefficient)

Figure 29.4-1: Wind Loads for Solid Signs & Freestanding Walls



Cf - Force Coefficient	=	1.30
Rd - Reduction Factor (1-(1-E)^1.5)	=	1.00
Kz	=	0.62
Kzt	=	1.00
Qz	=	16.43 psf
Wind Pressure at Elevation 20 ft	=	17.42 psf

Notes: 1) Signs with openings comprising < 30% of gross area are considered solid signs
2) Force Coefficients for solid signs with openings shall be multiplied by Rd
3) Case C only applies when Bs >= 2



Distance from leading edge ft	Cf Force Coeff.	Kz	Kzt	Qh psf	Wind_Pressure @ Distance psf
From 0 to 20.0	3.00	0.62	1.00	16.43	40.19
From 20.0 to 40.0	1.96	0.62	1.00	16.43	26.26
From 40.0 to 60.0	1.48	0.62	1.00	16.43	19.83
From 60.0 to 200.0	0.76	0.62	1.00	16.43	10.18

RdC - Reduction Factor for Case C (1.8 - S / Ht) = 0.80
Note: When S / Ht > 0.8 then Cf must be multiplied by RdC.

Connection Calculator

AMERICAN WOOD COUNCIL

www.awc.org

Connection Calculator available for the **Android OS**.

Connection Calculator available for the **iPhone**.

Design Method	Allowable Stress Design (ASD)
Connection Type	Lateral loading
Fastener Type	Bolt
Loading Scenario	Single Shear - Wood Main Member

Main Member Type	Douglas Fir-Larch
Main Member Thickness	1.5 in.
Main Member: Angle of Load to Grain	90
Side Member Type	Steel
Side Member Thickness	1/4 in.
Side Member: Angle of Load to Grain	0
Fastener Diameter	1/2 in.
Load Duration Factor	C_D = 1.0
Wet Service Factor	C_M = 1.0
Temperature Factor	C_t = 1.0

Connection Yield Modes

Im	473 lbs.
Is	2175 lbs.
II	314 lbs.
IIIm	436 lbs.
IIIs	513 lbs.
IV	597 lbs.

Adjusted ASD Capacity	**314 lbs.**

- Bolt bending yield strength of 45,000 psi is assumed.
- The Adjusted ASD Capacity is only applicable for bolts with adequate end distance, edge distance and spacing per NDS chapter 11.

- ASTM A36 Steel is assumed for steel side members 1/4 in. thick, and ASTM A653 Grade 33 Steel is assumed for steel side members less than 1/4 in. thick.

While every effort has been made to insure the accuracy of the information presented, and special effort has been made to assure that the information reflects the state-of-the-art, neither the American Wood Council nor its members assume any responsibility for any particular design prepared from this on-line Connection Calculator. Those using this on-line Connection Calculator assume all liability from its use.

The Connection Calculator was designed and created by Cameron Knudson, Michael Dodson and David Pollock at Washington State University. Support for development of the Connection Calculator was provided by American Wood Council.

QFA-SERIES
QUILTED FIBERGLASS ABSORBERS

QFA-SIL-1" Noise Control Blankets

QFA-SIL-1" Noise Blankets are Quilted Fiberglass Absorbers that are attached to plywood at construction sites to both improve the sound transmission loss of plywood and reduce the reflection of sound waves back to the job site. The QFA-EXT-1" product consists of a UV and weather resistant silicone-coated-fiberglass cloth facing on one side of one-inch thick quilted fiberglass with non-porous scrim backing. All edges bound and sewn with Gore Tenera exterior grade thread.

- Maximum longevity, UV and weather resistance
- STC- 27 when attached to ¾" thick plywood
- NRC .70 Sound Absorption rating
- Class A Flammability Rating

Product Data:

Description Silicone-coated-fiberglass cloth (SCFC) facing / 1" fiberglass batt / Non-woven porous scrim facing, quilted together

Nominal thickness 1.0 inches

Temperature range -60° to +400° F

Standard width 48" wide

Roll length 25' long

Weight 0.33 lbs. psf

Acoustical Performance:

Sound Absorption Performance:

	OCTAVE BAND FREQUENCIES (Hz)						
Product	**125**	**250**	**500**	**1000**	**2000**	**4000**	**NRC**
QFA-SIL-1"	.18	.68	.74	.72	.58	.36	.70

Per ASTM C 423

Sound Transmission Loss Values:

	OCTAVE BAND FREQUENCIES (Hz)						
Product	**125**	**250**	**500**	**1000**	**2000**	**4000**	**STC**
¾" Ply/QFA-SIL 1"	18	23	27	28	30	33	27

Per ASTM E-90

SOUND SEAL®

Appendix B
Project Heavy Concrete Pours Scope of Work

SWINERTON

June 12, 2019

The Culver Studios
9336 Washington Blvd.
Culver City, California 90232
Attn: Tony Biddle

RE: The Culver Studios Project – Van Buren Parking Structure Heavy Pours

Dear Tony Biddle,

Swinerton Builders formally requests an extension to work hours due to anticipated heavy mat foundation and elevated deck pours for the Van Buren Parking Structure.

Attached are the following exhibits that outline the scope of work and approximate work schedule on pour days.

Van Buren – Mat Pour Sequence

- This exhibit outlines the approximate locations of breaks/splits in each pour sequence for the mat foundation at the P3 Level.
- Each area identified has the amount of CY of concrete that will be needed for each pour on that particular day.
- Volume of concrete per mat foundation area varies; the TUP request are for pours approx. at or over 830 CY that will extend work past 8PM.
- Please note that Mat Foundation Pours will start Early September through Late October for all concrete pours, see table below for break-out and approximated timeline of the 'Heavy Pours'.
- Anticipated pour dates below will not have two slabs poured on the same day if ranges overlap.

Level	CY	Pour #	Anticipated Pour Date (Subject to Change)
P3 (Mat)	950	5	Between 9/16/19 - 9/27/19
P3 (Mat)	930	6	Between 9/23/19 - 10/4/19
P3 (Mat)	860	7	Between 9/30/19 - 10/11/19
P3 (Mat)	830	9	Between 10/7/19 - 10/18/19
P3 (Mat)	830	10	Between 10/14/19 - 10/25/19
P3 (Mat)	830	12	Between 10/21/19 -11/1/19

VB Mat Foundation - Heavy Pour Timeline

- This exhibit lineates a typical work day schedule on days that a mat foundation area will be poured.
- The work day starts at 8AM with set up and concrete trucks start to enter the site at 9AM.
  - In this scenario we are projecting 90 CY of concrete placed per hour.
  - Note that due to trucking weight requirements within Culver City, each concrete truck is projected to carry only 9 CY of concrete per load.
  - This equates to having one concrete truck enter the site approx. every 6 minutes.
  - The frequency of trucks estimated at every 6 minutes may be impacted depending on local traffic conditions on pour days.
- Concrete trucks may enter the site as late as 7-8PM, contingent on frequency of trucks.
  - Note that this table depicts pours through and past the highest volume. Example: Pour 5 for 950 CY will finish between 7-8PM and not at 8PM at a volume of 990 CY.
- After all concrete is placed, finishing/cure/clean-up will take place throughout the night for approximately 2 hours and anticipated to be complete around 9PM-10PM at the latest for pours with volumes of 930-950CY.
  - For pours with volumes of 830-860CY, last truck is anticipated between 6-7PM; Finishing/Cure/Clean-up is expected to be completed beween 8-9PM.

SWINERTON

VB Elevated Decks - Heavy Pour Timeline

- *Van Buren Parking Structure is approximately 9 stories high.*
  - *Below Grade Levels: P3 Mat Slab, P2 Elevated Deck, P1 Elevated Deck.*
  - *Above Grade Levels: L1-L6 (6 Above Grade Decks).*
  - *Each floor plate/deck has been broken up into three sections. For those sections, heavy pours are considered to be at the following decks:*

Level	CY	Deck Pour #	Anticipated Pour Date (Subject To Change)
P1	850	5	Between 1/6/20 - 1/17/20
P1	700	6	Between 1/20/20 - 1/31/20
1	830	8	Between 2/10/20 - 2/21/20
1	730	9	Between 3/2/20 - 3/13/20

- The heavy pours are anticipated to occur per the dates noted above. Please note that these are projections and are subject to change based on the project's progress throughout construction. Other pours will occur in between the noted pours, however, they are not listed on this table as they are not expected to go past 8PM due to the anticipated volume of concrete being placed.
- This exhibit lineates a typical work day schedule on days that an elevated deck at the parking structure will be poured.
- Work day setup is similar to VB Mat Foundation. The work day starts at 8AM with set up and concrete trucks start to enter the site at 9AM.
  - In this scenario we are projecting 81 CY of concrete placed per hour. At the time that the decks will be poured, there will be less available space on site to stage trucks and provide adequate turn-around space.
  - Note that due to trucking weight requirements within Culver City, each concrete truck is projected to carry only 9 CY of concrete per load.
  - The frequency of trucks is estimated at being on site every at an average of having a truck on site every 6.5 minutes.
  - The frequency of trucks estimated at every 6.5 minutes may be impacted depending on local traffic conditions on pour days.
    - Current projection includes a loss of 4 minutes per hour due to traffic/congestion.
- Concrete trucks may enter the site as late as 8PM, contingent on frequency of trucks.
- The area with the largest volume is depicted in this table which is approximately 850 CY.
- After all concrete is placed, finishing will take place throughout the night for approximately 2 hours and anticipated to be complete around 9-10PM.

Overall Schedule Timeline

With the information provided in the exhibits noted above, the current schedule projects that the heavy mat foundation pours will start July 2019 and the elevated heavy deck pours at Van Buren Parking Structure will last through January 2020, see table above. These dates are rough estimates due to the impact that adverse weather has on the current schedule.

Based on the information above, we request the work hours to be extended for both labor on site and trucks traveling to and from the site for concrete placement at Van Buren Parking Structure through 10PM on the days the decks noted have concrete being placed on site.

If you have any questions or comments pertaining to this matter, please let us know.

Sincerely,

Carlos Villacorta
Sr. Project Manager
Swinerton Builders

The Culver Studios

VB Mat Foundations - Heavy Pour Timeline

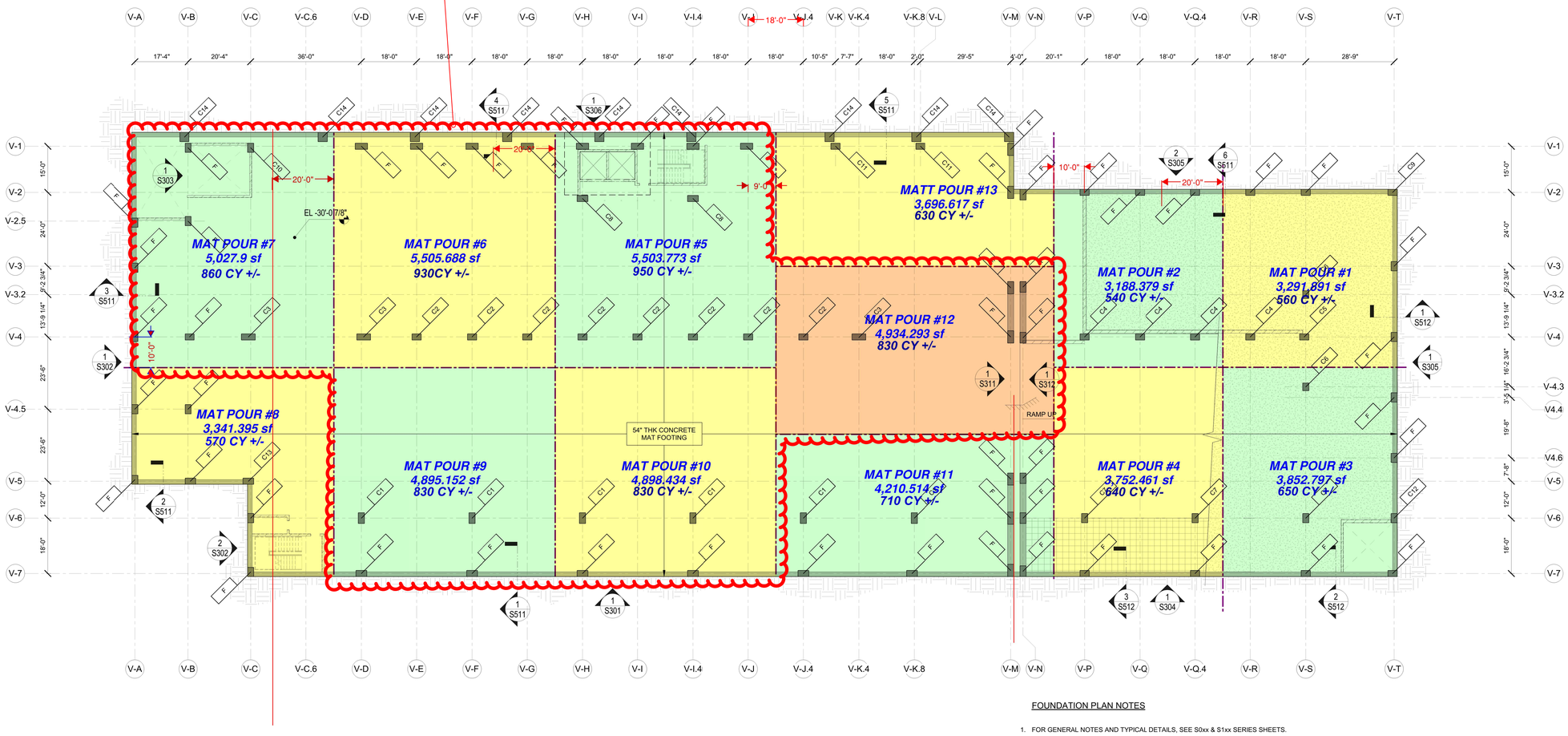
Note: After Last Concrete Truck - Approx. 2 Hours Are Required for Finishing, Cure, and Clean-Up

Time Frame		Activity	Frequency per Hour	Trucks per Hour (60 Min/Frequency)	Total Yards Allowed Per Truck (CC Weight Limit)	CY This Hour	Cum. Yd.	Notes
8:00:00 AM	9:00:00 AM	Pump Set-Up/Prep.	N/A	N/A	N/A	N/A	N/A	Set Up Time for Pump/Hose/Priming/Final Adjustments Prior to Pour
9:00:00 AM	10:00:00 AM	Concrete Pour Start	6	10.0	9	90.0	90.0	One Concrete Truck Roughly Every 6 Min.
10:00:00 AM	11:00:00 AM	Pour	6	10.0	9	90.0	180.0	One Concrete Truck Roughly Every 6 Min.
11:00:00 AM	12:00:00 PM	Pour	6	10.0	9	90.0	270.0	One Concrete Truck Roughly Every 6 Min.
12:00:00 PM	1:00:00 PM	Pour	6	10.0	9	90.0	360.0	One Concrete Truck Roughly Every 6 Min.
1:00:00 PM	2:00:00 PM	Pour	6	10.0	9	90.0	450.0	One Concrete Truck Roughly Every 6 Min.
2:00:00 PM	3:00:00 PM	Pour	6	10.0	9	90.0	540.0	One Concrete Truck Roughly Every 6 Min.
3:00:00 PM	4:00:00 PM	Pour	6	10.0	9	90.0	630.0	One Concrete Truck Roughly Every 6 Min.
4:00:00 PM	5:00:00 PM	Pour	6	10.0	9	90.0	720.0	One Concrete Truck Roughly Every 6 Min.
5:00:00 PM	6:00:00 PM	Pour	6	10.0	9	90.0	810.0	One Concrete Truck Roughly Every 6 Min.
6:00:00 PM	7:00:00 PM	Clean-Up Pump / Finishing	6	10.0	9	90.0	900.0	One Concrete Truck Roughly Every 6 Min.
7:00:00 PM	8:00:00 PM	Finishing	6	10.0	9	90.0	990.0	One Concrete Truck Roughly Every 6 Min./Lights & Small Equipment
8:00:00 PM	9:00:00 PM	Finishing	N/A	N/A	N/A	N/A	N/A	Lights & Small Equipment
9:00:00 PM	10:00:00 PM	Finishing	N/A	N/A	N/A	N/A	N/A	Lights & Small Equipment

Equipment Used During Finishing Hours (All Deck Pours)

Equipment Type	Noise/Light Levels (dB/fC)	Quantity/Per Pour
Light Towers	7.5/fc	4-6
Power Vibrating Screeds	20-25 dB	3-4
Concrete Backpack Vibrators	70-75 dB	3-4
Walk Behind Finish Trowel	60-65 dB	3-4

TUP REQUESTED FOR ALL HEAVY POURS



FOUNDATION PLAN NOTES

1. FOR GENERAL NOTES AND TYPICAL DETAILS, SEE S0xx & S1xx SERIES SHEETS.
2. TOP OF CONCRETE SLAB ELEVATIONS VARIES. SEE ARCHITECTURAL DRAWINGS FOR CONCRETE SLAB ELEVATIONS, SLOPES, CURBS, DRAINS, ETC.
3. ALL COLUMNS SHALL BE CENTERED ON GRIDLINES, UNLESS NOTED OTHERWISE.
4. ALL FOOTINGS AND GRADE BEAMS SHALL BE CENTERED ON WALLS AND COLUMNS, UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF JOINTS AND ADDITIONAL REINFORCING IN CONCRETE SLAB-ON-GRADE, SEE SHEETS S101 & S102.
6. C1 — INDICATES COLUMN MARK - SEE NON-FRAME COLUMN SCHEDULE ON SHEET S401, F - INDICATES MOMENT FRAMES, SEE MOMENT FRAME ELEVATIONS ON S301 THRU S312
7. ALL ADDED REINFORCING IS IN ADDITION TO TYPICAL REINFORCING AND IS TO BE CENTERED ON GRIDLINES, UNLESS NOTED OTHERWISE.
8. ALL TYPICAL REINFORCING IS CONSIDERED TO BE CONTINUOUS AND LAPPED PER 1/S1.01.
9. INDICATES AREA OF 7"THICK CONCRETE SLAB
10. INDICATES AREA OF 8" THICK CONRETE SLAB
11. INDICATES AREA TO BE INFILLED WITH GEOFOAM

FOUNDATION / LEVEL P3 PLAN — 1/16" = 1'-0" — 1

OWNER:

the CULVER STUDIOS EST. 1918

CONTRACTOR:

SWINERTON

ARCHITECT:

CPC

Choate Parking Consultants, Inc.
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Irvine, CA. 92614
telephone 949-474-0880
facsimile 949-474-2420

REGISTERED PROFESSIONAL ENGINEER — MICHAEL A. WAGGONER — No. 3738 — STRUCTURAL — STATE OF CALIFORNIA

CONSULTANT:

FICCADENTI WAGGONER and CASTLE Structural Engineers
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Tel.: (949) 474-0502 Fax: (949) 474-1801 • www.fwcse.com

CULVER STUDIOS
VAN BUREN GARAGE
4050 VAN BUREN PL.
CULVER CITY, CA 90232

REVISION:	DATE:	DESCRIPTION:
1		
2		
3		
4		

DRAWN: Author
SCALE: As indicated
FWCSE NUMBER: A18-026

SHEET TITLE:

LEVEL P3 / FOUNDATION PLAN

SHEET NUMBER:

S210

11/16/18 Set

SWINERTON

The Culver Studios

VB Elevated Decks - Heavy Pour Timeline

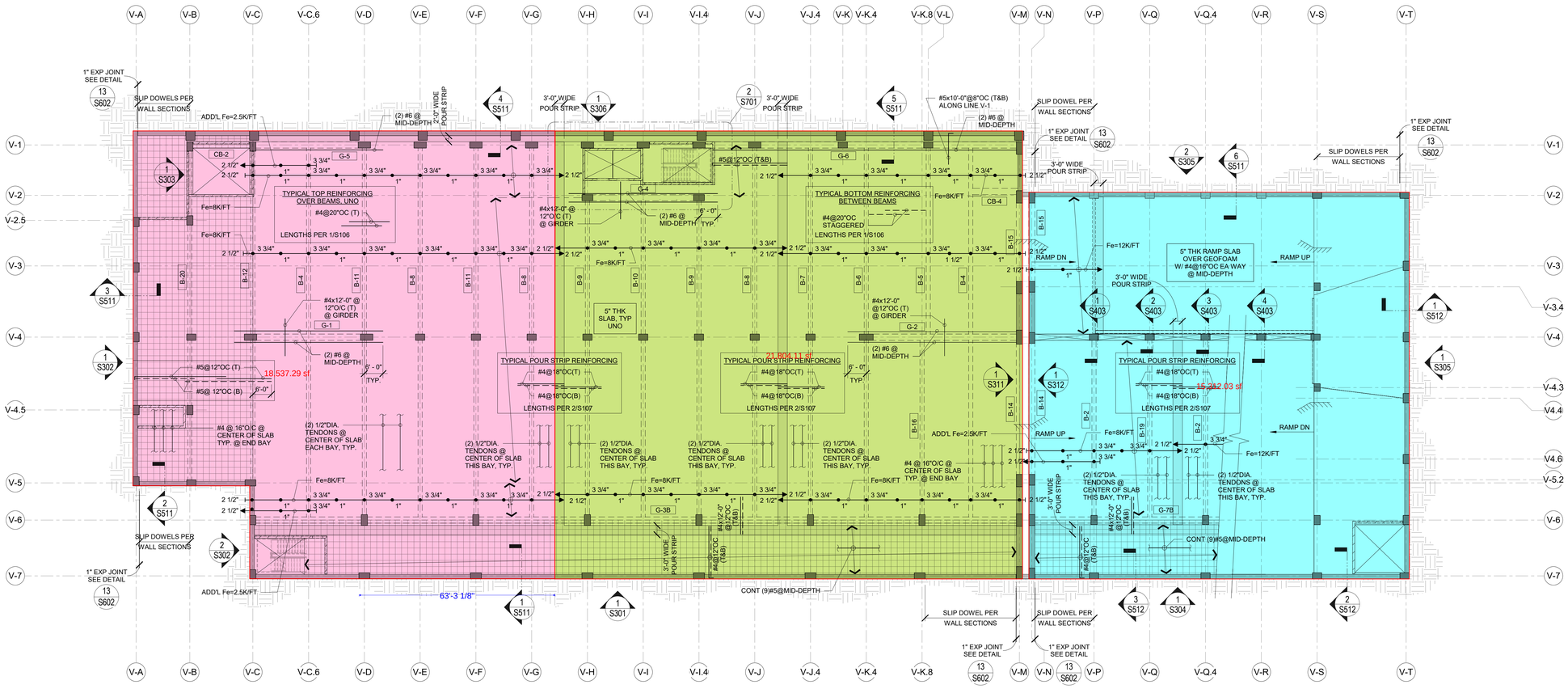
Note: After Last Concrete Truck - Approx. 2 Hours Are Required for Finishing, Cure, and Clean-Up

Time Frame		Activity	Frequency per Hour	Trucks per Hour [Rounded Down] (60 Min./Freq.)	Total Yards Allowed Per Truck (CC Weight Limit)	CY This Hour	Cum. Yd.	Notes
8:00:00 AM	9:00:00 AM	Pump Set-Up/Prep.	N/A		N/A	N/A	N/A	Set Up Time for Pump/Hose/Priming/Final Adjustments Prior to Pour
9:00:00 AM	10:00:00 AM	Concrete Pour Start	7	8.0	9	72.0	72.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic
10:00:00 AM	11:00:00 AM	Pour	7	8.0	9	72.0	144.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic
11:00:00 AM	12:00:00 PM	Pour	7	8.0	9	72.0	216.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic
12:00:00 PM	1:00:00 PM	Pour	7	8.0	9	72.0	288.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic
1:00:00 PM	2:00:00 PM	Pour	7	8.0	9	72.0	360.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic
2:00:00 PM	3:00:00 PM	Pour	7	8.0	9	72.0	432.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic
3:00:00 PM	4:00:00 PM	Pour	7	8.0	9	72.0	504.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic
4:00:00 PM	5:00:00 PM	Pour	7	8.0	9	72.0	576.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic
5:00:00 PM	6:00:00 PM	Pour	7	8.0	9	72.0	648.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic
6:00:00 PM	7:00:00 PM	Pour	7	8.0	9	72.0	720.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic
7:00:00 PM	8:00:00 PM	Pour/Finish/Clean-Up	7	8.0	9	72.0	792.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic/Lights & Small Equipment
8:00:00 PM	9:00:00 PM	Pour/Finish/Clean-Up	7	8.0	9	72.0	864.0	One Concrete Truck Roughly Every 7 Min. + 4 Min. Differential for Traffic/Lights & Small Equipment
9:00:00 PM	10:00:00 PM	-	N/A	N/A	N/A	N/A	N/A	Lights & Small Equipment

Equipment Used During Finishing Hours (All Deck Pours)

Equipment Type	Noise/Light Levels (dB/fC)	Quantity/Per Pour
Light Towers	7.5/fc	4-6
Power Vibrating Screeds	20-25 dB	3-4
Concrete Backpack Vibrators	70-75 dB	3-4
Walk Behind Finish Trowel	60-65 dB	3-4

NOTE: SHEET INCLUDED FOR REFERENCE.
POURS ON THIS ELEVATED DECK LEVEL NOT ANTICIPATED TO EXCEED CCMC WORK HOURS.



FRAMING PLAN NOTES

1. FOR GENERAL NOTES AND TYPICAL DETAILS, SEE S0 & S1 SERIES SHEETS.
2. SEE ARCHITECTURAL FOR SLAB ELEVATIONS, DEPRESSIONS, SLOPE, OPENINGS, CURBS, DRAINS, TRENCHED SLAB EDGE LOCATIONS, ETC. AND FOR WALL OVERALL DIMENSIONS, LOCATION OF OPENINGS, ETC. NOT INDICATED ON STRUCTURAL DRAWINGS.
3. VERIFY ALL DIMENSIONS/ELEVATIONS PRIOR TO START OF WORK.
4. MAXIMUM SPACING OF POST-TENSION STRANDS SHALL BE 40"O/C.
5. STRESSING SEQUENCE SHALL BE AS FOLLOWS:
   A. DISTRIBUTED TENDONS (FIRST)
   B. BANDED TENDONS (SECOND)
6. INDICATES POST-TENSION REINFORCING TENDON.
7. INDICATES REINFORCING STEEL WITH TYPICAL 90 OR 180 HOOKS PER DETAIL 1/S101. LENGTHS INDICATES ON PLAN DO NOT INCLUDE HOOKS.
8. B-1 | G-1 / UP-1 | CB-1 — INDICATES POST-TENSION AND CONCRETE BEAM MARK - SEE BEAM ELEVATIONS ON SHEETS S411 THROUGH S431
9. INDICATES RAMP UP.
10. INDICATES RAMP DOWN.
11. ALL SLAB REINFORCING SHALL BE CENTERED ON GRIDLINES, UNLESS NOTED OTHERWISE.
12. LOCATE ALL (T) TOP AND (B) BOTTOM REINFORCING STEEL PER DETAILS ON SHEETS S106 & S107 & S108.
13. FOR ALL REFERENCES TO NON-FRAME COLUMNS, SEE SHEETS S402 & S403.
14. PROVIDE INSERTS AT BOTTOM SIDE OF ELEVATED SLAB TO SUSPEND ALL PIPING PER DETAIL 24/S104. SEE PLUMBING AND FIRE PROTECTION DRAWINGS FOR PIPING SIZES AND LOCATIONS.
15. ALL ADDED REINFORCING SHOWN ON PLAN ARE IN ADDITION TO TYPICAL REINFORCING.
16. INDICATES AREA OF 7"THICK CONCRETE SLAB
17. INDICATES AREA OF 8" THICK CONRETE SLAB
18. INDICATES AREA OF CONCRETE SLAB TRANSITION FROM 8" TO 5"
19. FOR TYPICAL INETRIOR & EXTERIOR NON-BEARING CMU WALLS, SEE DETAIL 21/S601 & 26/S601

N TRUE NORTH

N PROJECT NORTH

LEVEL P2 FRAMING PLAN | 1/16" = 1'-0" | 1

OWNER:

the CULVER STUDIOS
EST. 1918

CONTRACTOR:

SWINERTON

ARCHITECT:

CPC
Choate Parking Consultants, Inc.
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VAN BUREN PARKING STRUCTURE
4050 VAN BUREN PL
CULVER CITY, CA 90232

REVISION:	DATE:	DESCRIPTION:

DRAWN: Author
SCALE: As indicated
FWCSE NUMBER: A18-026

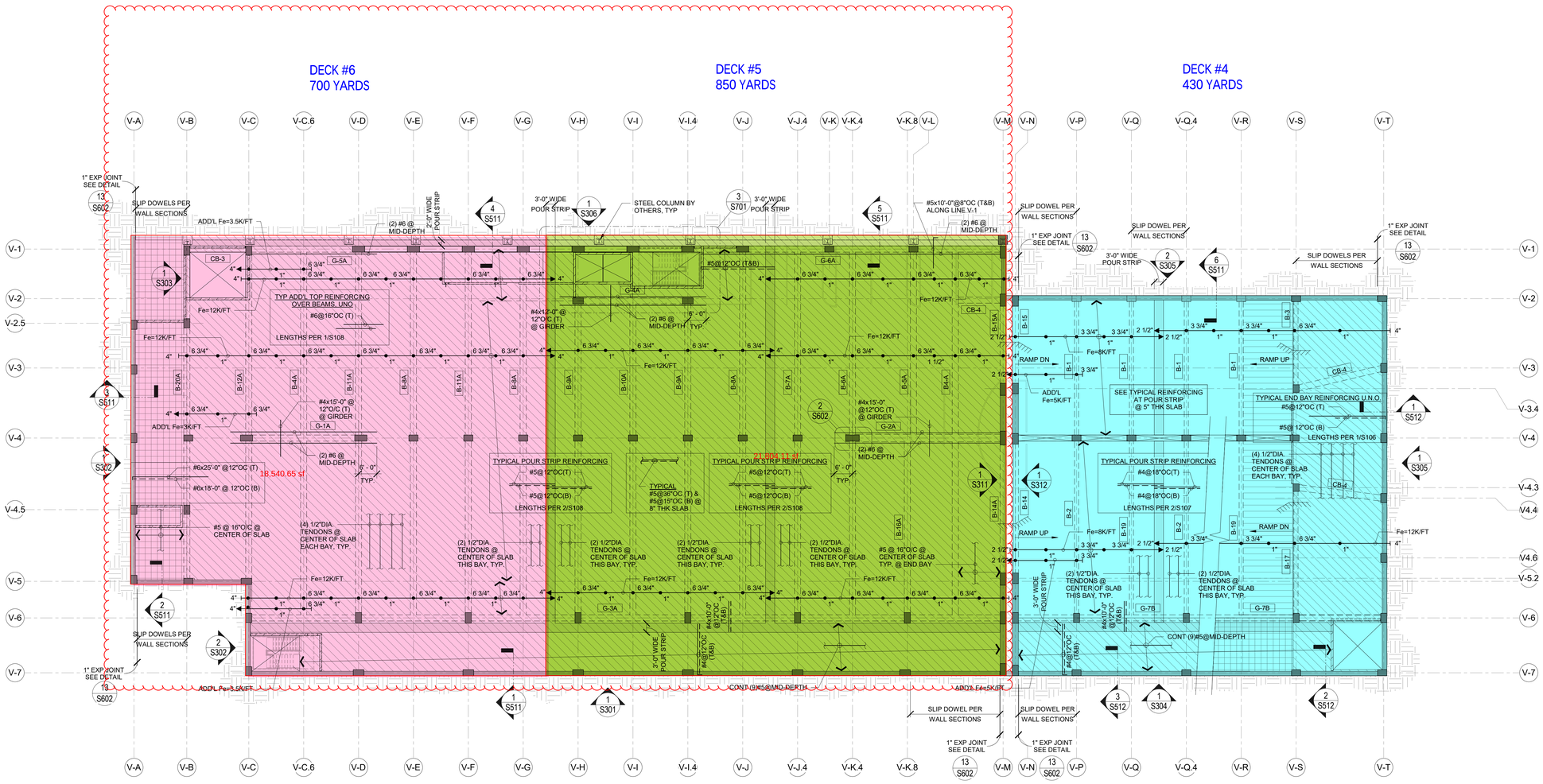
SHEET TITLE:

LEVEL P2 FRAMING PLAN

SHEET NUMBER:

S220

NOTE: CLOUDED DECK AREAS ANTICIPATED TO EXCEED CCMC WORK HOURS DUE TO VOLUME OF CONCRETE PLACED IN ONE WORK DAY.



FRAMING PLAN NOTES

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3. VERIFY ALL DIMENSIONS/ELEVATIONS PRIOR TO START OF WORK.
4. MAXIMUM SPACING OF POST-TENSION STRANDS SHALL BE 40'O/C.
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   B. BANDED TENDONS (SECOND)
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13. FOR ALL REFERENCES TO NON-FRAME COLUMNS, SEE SHEETS S402 & S403.
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TRUE NORTH | PROJECT NORTH

LEVEL P1 FRAMING PLAN | 1/16" = 1'-0" | 1

OWNER:

the CULVER STUDIOS EST. 1918

CONTRACTOR:

SWINERTON

ARCHITECT:

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4050 VAN BUREN PL
CULVER CITY, CA 90232

REVISION:	DATE:	DESCRIPTION:

DRAWN: Author
SCALE: As indicated
FWCSE NUMBER: A18-026

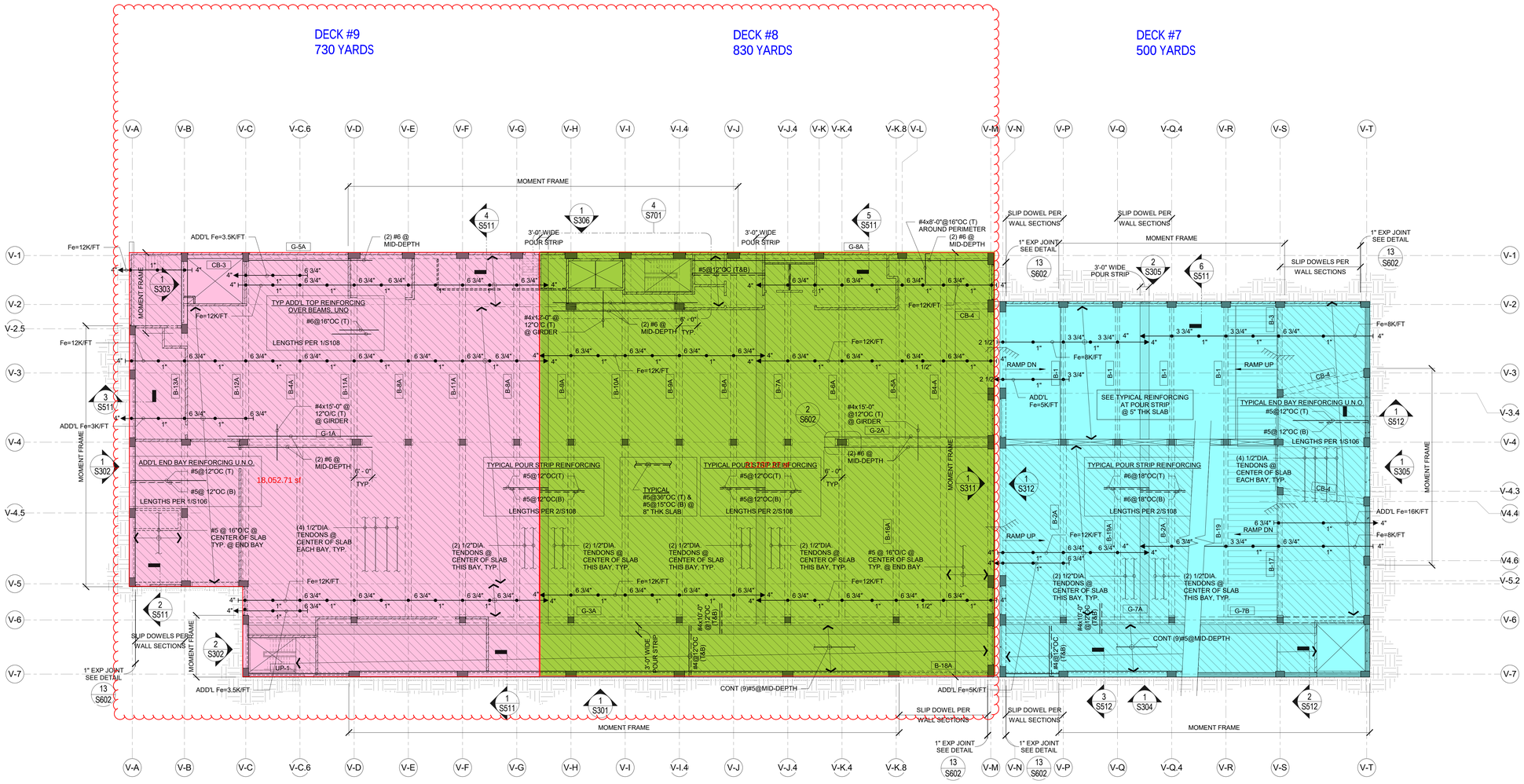
SHEET TITLE:

LEVEL P1 FRAMING PLAN

SHEET NUMBER:

S230

NOTE: CLOUDED DECK AREAS ANTICIPATED TO EXCEED CCMC WORK HOURS DUE TO VOLUME OF CONCRETE PLACED IN ONE WORK DAY.



FRAMING PLAN NOTES

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TRUE NORTH | PROJECT NORTH

GROUND LEVEL FRAMING PLAN | 1/16" = 1'-0" | 1

OWNER:
the CULVER STUDIOS EST. 1918

CONTRACTOR:
SWINERTON

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VAN BUREN PARKING STRUCTURE
4050 VAN BUREN PL
CULVER CITY, CA 90232

REVISION:	DATE:	DESCRIPTION:

DRAWN: JB
SCALE: As indicated
FWCSE NUMBER: A18-026

SHEET TITLE:
GROUND LEVEL FRAMING PLAN

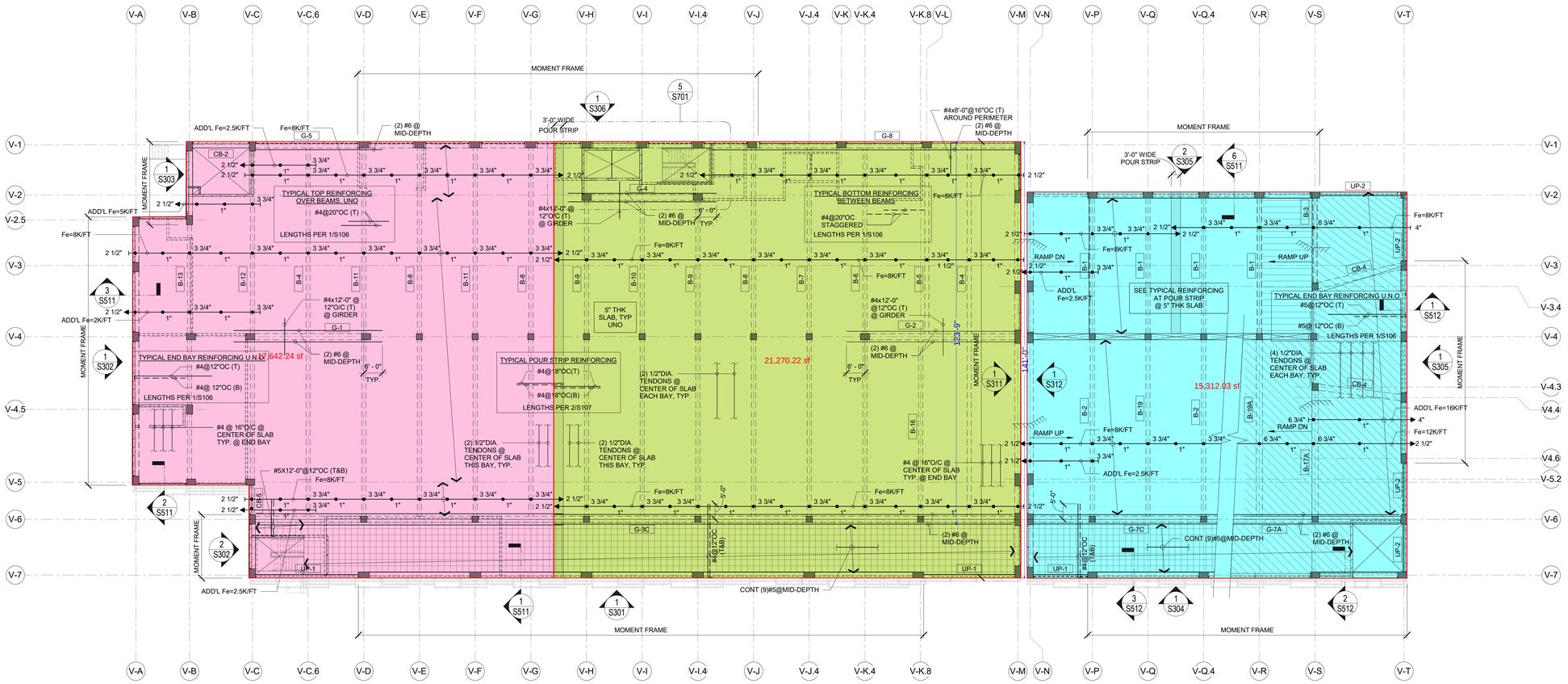
SHEET NUMBER:
S240

NOTE: SHEET INCLUDED FOR REFERENCE.
POURS ON THIS ELEVATED DECK LEVEL NOT ANTICIPATED TO EXCEED CCMC WORK HOURS.

DECK #12
525 YARDS

DECK #11
630 YARDS

DECK #10
500 YARDS



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TRUE NORTH

PROJECT NORTH

SECOND LEVEL FRAMING PLAN

1/16" = 1'-0"

1

OWNER:

the CULVER STUDIOS
EST. 1918

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SWINERTON

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4050 VAN BUREN PL
CULVER CITY, CA 90232

REVISION:	DATE:	DESCRIPTION:

DRAWN: Author
SCALE: As indicated
FWCSE NUMBER: A18-026

SHEET TITLE:

SECOND LEVEL FRAMING PLAN

SHEET NUMBER:

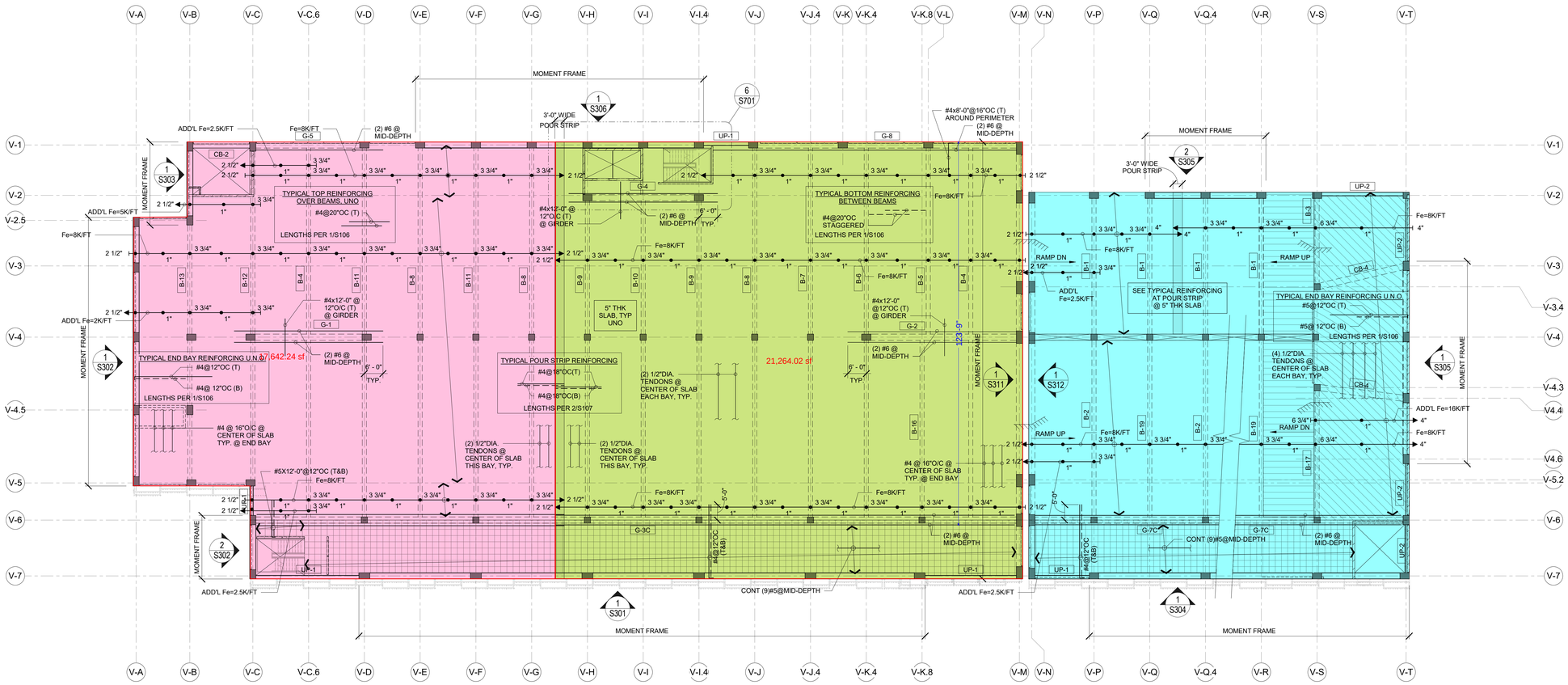
S250

NOTE: SHEET INCLUDED FOR REFERENCE.
POURS ON THIS ELEVATED DECK LEVEL NOT ANTICIPATED TO EXCEED CCMC WORK HOURS.

DECK #15
525 YARDS

DECK #14
630 YARDS

DECK #13
500 YARDS



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N TRUE NORTH

N PROJECT NORTH

THIRD LEVEL FRAMING PLAN | 1/16" = 1'-0" | 1

OWNER:
the CULVER STUDIOS
EST. 1918

CONTRACTOR:
SWINERTON

ARCHITECT:
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4050 VAN BUREN PL
CULVER CITY, CA 90232

REVISION:	DATE:	DESCRIPTION:

DRAWN: Author
SCALE: As indicated
FWCSE NUMBER: A18-026

SHEET TITLE:
THIRD LEVEL FRAMING PLAN

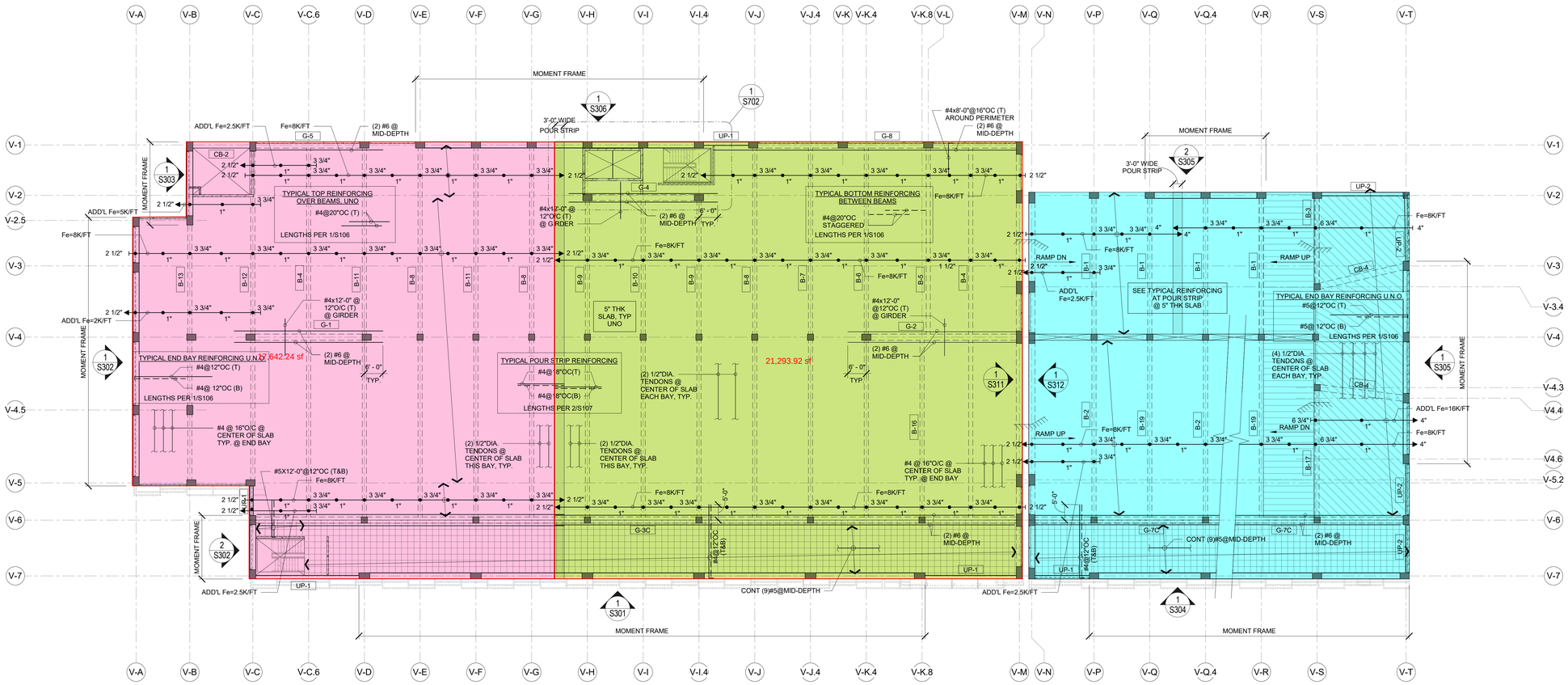
SHEET NUMBER:
S260

NOTE: SHEET INCLUDED FOR REFERENCE.
POURS ON THIS ELEVATED DECK LEVEL NOT ANTICIPATED TO EXCEED CCMC WORK HOURS.

DECK #18
575 YARDS

DECK #17
630 YARDS

DECK #16
500 YARDS



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N TRUE NORTH

N PROJECT NORTH

FOURTH LEVEL FRAMING PLAN — 1/16" = 1'-0" — 1

OWNER:

the CULVER STUDIOS
EST. 1918

CONTRACTOR:

SWINERTON

ARCHITECT:

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REGISTERED PROFESSIONAL ENGINEER — MICHAEL A. WAGGONER — No. 3738 — STRUCTURAL — STATE OF CALIFORNIA

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VAN BUREN PARKING STRUCTURE
4050 VAN BUREN PL
CULVER CITY, CA 90232

REVISION:	DATE:	DESCRIPTION:

DRAWN: Author
SCALE: As indicated
FWCSE NUMBER: A18-026

SHEET TITLE:

FOURTH LEVEL FRAMING PLAN

SHEET NUMBER:

S270

NOTE: SHEET INCLUDED FOR REFERENCE.
POURS ON THIS ELEVATED DECK LEVEL NOT ANTICIPATED TO EXCEED CCMC WORK HOURS.

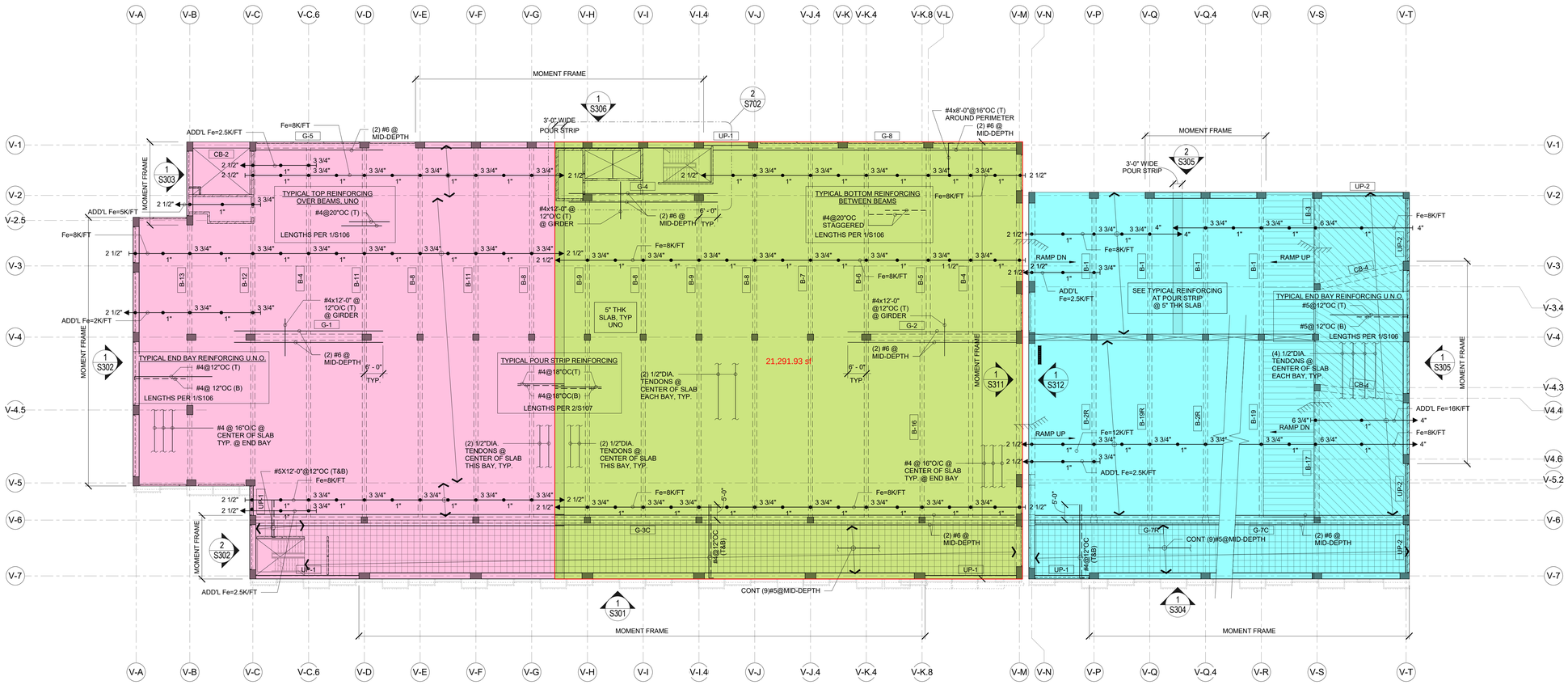
DECK #20

DECK #19

DECK #21
500 YARDS

~~DECK #17~~
630 YARDS

~~DECK #20~~
500 YARDS



FRAMING PLAN NOTES

1. FOR GENERAL NOTES AND TYPICAL DETAILS, SEE S0 & S1 SERIES SHEETS.
2. SEE ARCHITECTURAL FOR SLAB ELEVATIONS, DEPRESSIONS, SLOPE, OPENINGS, CURBS, DRAINS, TRENCHED SLAB EDGE LOCATIONS, ETC. AND FOR WALL OVERALL DIMENSIONS, LOCATION OF OPENINGS, ETC. NOT INDICATED ON STRUCTURAL DRAWINGS.
3. VERIFY ALL DIMENSIONS/ELEVATIONS PRIOR TO START OF WORK.
4. MAXIMUM SPACING OF POST-TENSION STRANDS SHALL BE 40"O/C.
5. STRESSING SEQUENCE SHALL BE AS FOLLOWS:
   A. DISTRIBUTED TENDONS (FIRST)
   B. BANDED TENDONS (SECOND)
6. INDICATES POST-TENSION REINFORCING TENDON.
7. INDICATES REINFORCING STEEL WITH TYPICAL 90 OR 180 HOOKS PER DETAIL 1/S101. LENGTHS INDICATES ON PLAN DO NOT INCLUDE HOOKS.
8. B-1 | G-1 / UP-1 | CB-1 — INDICATES POST-TENSION AND CONCRETE BEAM MARK - SEE BEAM ELEVATIONS ON SHEETS S411 THROUGH S431
9. INDICATES RAMP UP.
10. INDICATES RAMP DOWN.
11. ALL SLAB REINFORCING SHALL BE CENTERED ON GRIDLINES, UNLESS NOTED OTHERWISE.
12. LOCATE ALL (T) TOP AND (B) BOTTOM REINFORCING STEEL PER DETAILS ON SHEETS S106 & S107 & S108.
13. FOR ALL REFERENCES TO NON-FRAME COLUMNS, SEE SHEETS S402 & S403.
14. PROVIDE INSERTS AT BOTTOM SIDE OF ELEVATED SLAB TO SUSPEND ALL PIPING PER DETAIL 24/S104. SEE PLUMBING AND FIRE PROTECTION DRAWINGS FOR PIPING SIZES AND LOCATIONS.
15. ALL ADDED REINFORCING SHOWN ON PLAN ARE IN ADDITION TO TYPICAL REINFORCING.
16. INDICATES AREA OF 7"THICK CONCRETE SLAB
17. INDICATES AREA OF 8" THICK CONRETE SLAB
18. INDICATES AREA OF CONCRETE SLAB TRANSITION FROM 8" TO 5"
19. FOR TYPICAL INETRIOR & EXTERIOR NON-BEARING CMU WALLS, SEE DETAIL 21/S601 & 26/S601

TRUE NORTH

PROJECT NORTH

FIFTH LEVEL FRAMING PLAN | 1/16" = 1'-0" | 1

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REVISION:	DATE:	DESCRIPTION:

DRAWN: Author
SCALE: As indicated
FWCSE NUMBER: A18-026

SHEET TITLE:

FIFTH LEVEL FRAMING PLAN

SHEET NUMBER:

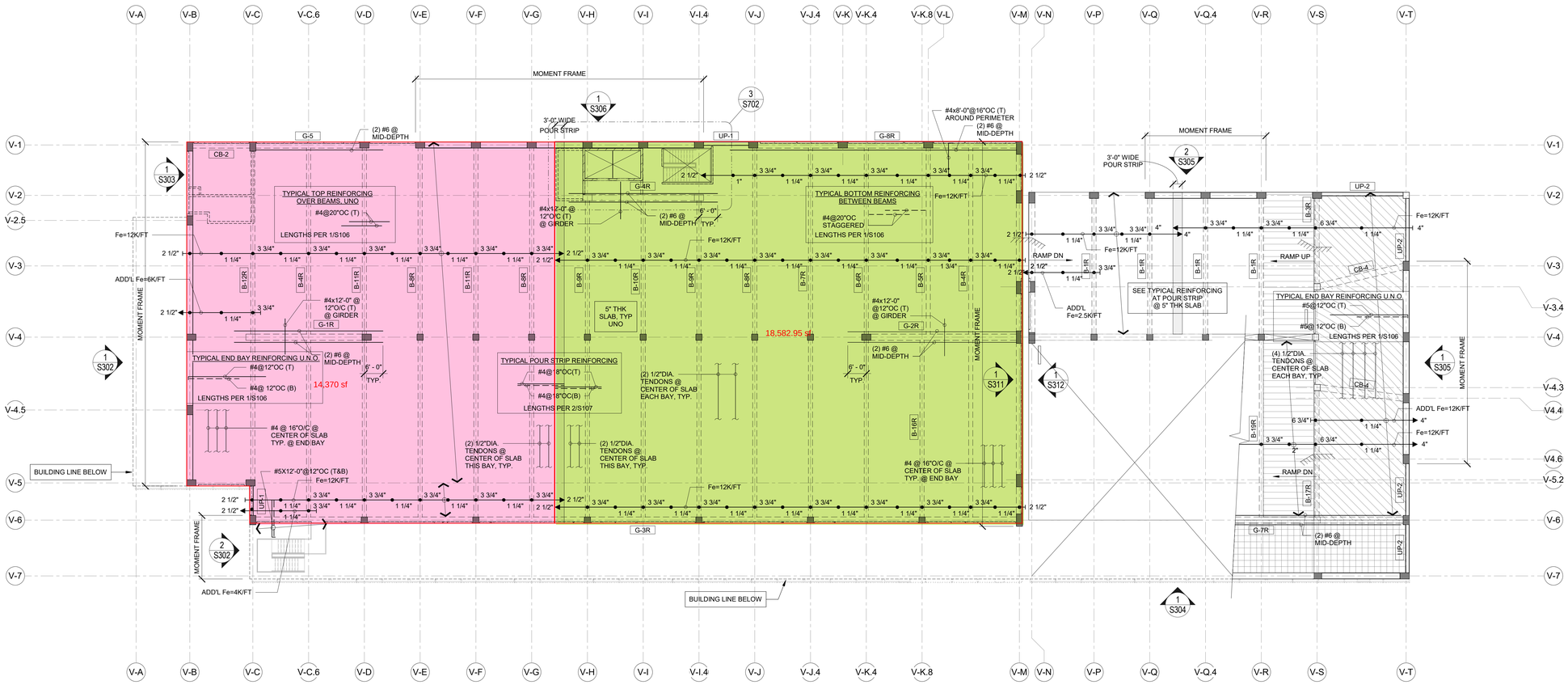
S280

NOTE: SHEET INCLUDED FOR REFERENCE.
POURS ON THIS ELEVATED DECK LEVEL NOT ANTICIPATED TO EXCEED CCMC WORK HOURS.

DECK #22

DECK #23
450 YARDS

~~DECK #23~~
~~530 YARDS~~



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N TRUE NORTH

N PROJECT NORTH

TOP LEVEL FRAMING PLAN

1/16" = 1'-0"

1

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REVISION:	DATE:	DESCRIPTION:

DRAWN: Author
SCALE: As indicated
FWCSE NUMBER: A18-026

SHEET TITLE:

TOP LEVEL FRAMING PLAN

SHEET NUMBER:

S290

BV50A-H Backpack Vibrators

Backpack Vibrators

BV50A-H Backpack Vibrators Technical specifications

Dimensions	
L x W x H	23 x 14 x 22 in
L x W x H Shipping	28.4 x 18.5 x 25.6 in
Operating weight	27.7 lb
Shipping weight	35 lb
Engine / Motor	
Engine / Motor type	Air-cooled Single Cylinder 4-Cycle
Engine / Motor manufacturer	Honda
Engine / Motor	GXH 50
Displacement	3 in^3
Engine performance	2.1 hp
Engine RPM	7200-7800 rpm
Power Rating Specification	SAE J1349
Starting device	Recoil
Fuel type	Gasoline
Fuel consumption	0.09 US gal/h
Tank capacity	0.81 US qt
Vibrations (no load)	12,000 rpm

MULTIVIBE
CONCRETE FINISHING EQUIPMENT

MULTIVIBE DRILLSCREED

Original Drillscreeds ex factory have been fitted with Milwaukee V28 and M28 latest model Powerdrills. When ordering the factory must know which model will be used because the drill clamps are different.

The operation of the drillscreed is entirely similar to the Honda Petrol Engine version as it relates to the screeding process,

The significant difference is, of course, the duration of power available, as this is a battery operated version.

The unit is supplied with 2 nos. Lithium Ion V28 or M28 Batteries. Advantages of this new technology are that its gradual power loss is experienced until complete failure, when the battery will require re-charging.
Indicator lights on the battery itself provide a visual indication of the power usage at any given time.

HOW MUCH CONCRETE CAN I SCREED WITH A SINGLE BATTERY?

This will depend on the density of the mix, slump used, etc. In general and in ideal conditions it should be possible to screed approximately about 30 minutes at ½ speed. You should be able to place 2 truck loads then get 2nd battery. Excessively dry concrete, which would require additional vibration, would shorten the life of the battery. The M28 will screed more area.

CT 36-9-V Walk-behind Trowel, Variable Speed

Item Number: 0009447

CT 36-9-V

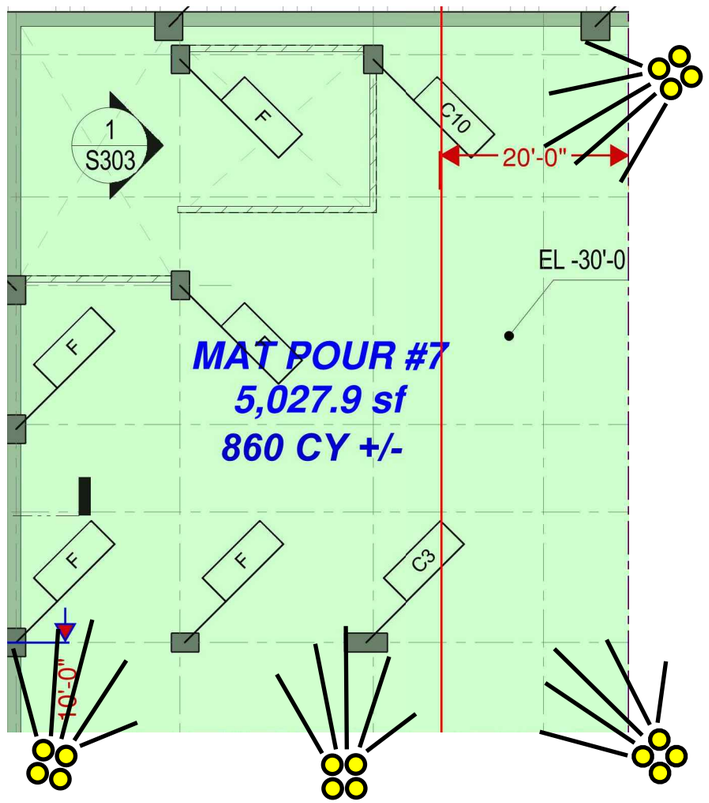
Float and finish, faster than ever, with variable speed power trowels

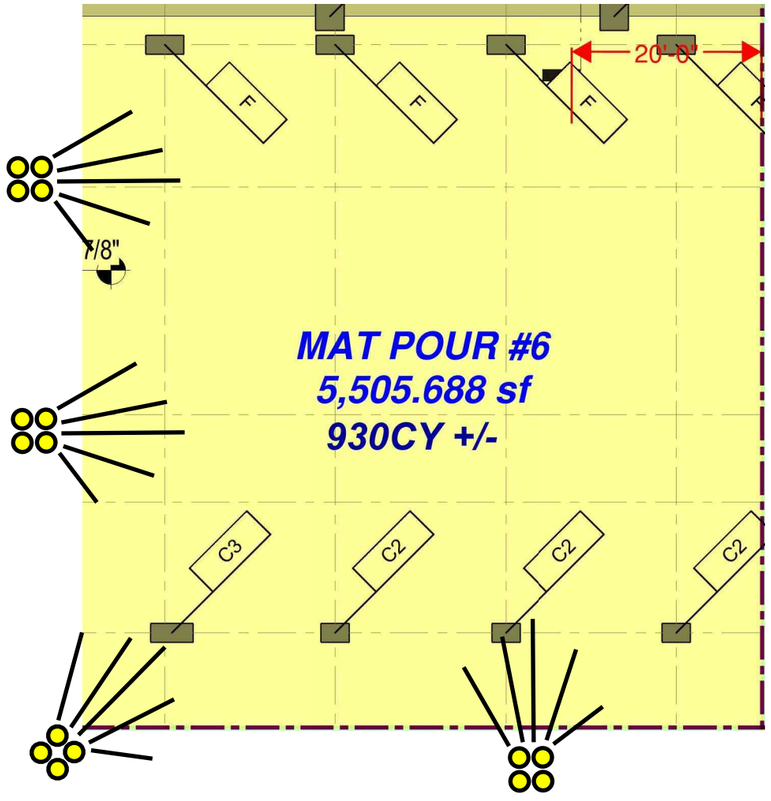
>> Wacker Neuson's variable speed trowels will get the job done.....fast. A variable transmission system provides wide speed range (20-200 rpm) for low-speed, high torque floating through high-speed burnishing all in one machine. The large pitch-control range offers complete control over finishing and floating for application versatility during operation. <<

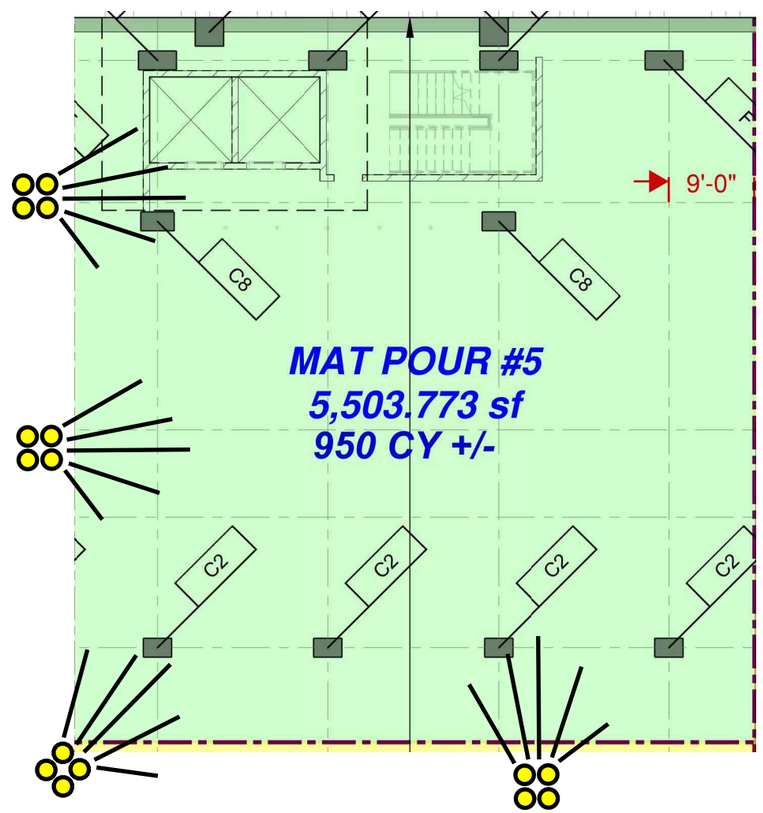
Description	Metric	Imperial
Length x width x height	2005 x 915 x 1040 mm	79 x 36 x 41 in
Base model weight (without handle)	9 kg	199 lb
Shipping weight (without handle)	108 kg	238 lb
Shipping size (without handle) (L x W x H)	1040 x 1015 x 740 mm	41 x 40 x 29 in
Trowel diameter	915 mm	36 in
Number of blades	4	4
Speed range	25-200 1/min	25-200 rpm
Pitch range	0-30°	0-30°
Engine Type	air-cooled, 4 cycle, single cylinder, gasoline engine	
Model	Wacker Neuson WM270	
Operating speed	3800 1/min	3800 rpm
Piston displacement	265 cm^3	16.2 in^3
Max. Rated Power at Rated Speed*	6.6 kW at 4000 rpm	9 hp at 4000 rpm
Power Rating Specification	SAE J1349	SAE J1349
Fuel tank capacity	6,0 l	6.4 US qt
Fuel consumption	2,5 l/h	2.6 US qt/h

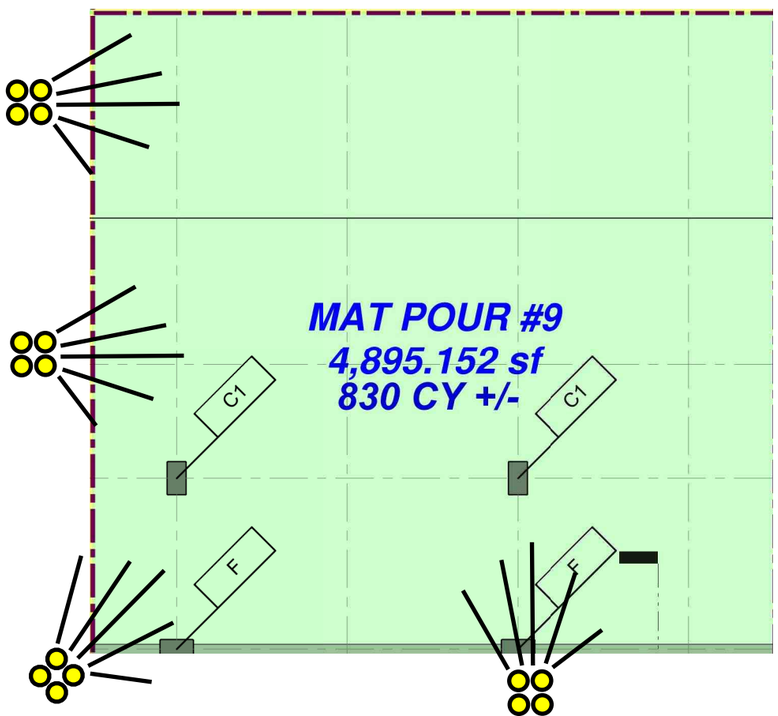
	LTN 6L-V S (60 Hz)	LTN 6K-V S	LTN 8K-V S	LTN 6L-V S (50 Hz)
Operating data				
L x W x H in	125 x 48 x 98	125 x 48 x 98	125 x 48 x 98	125 x 48 x 98
Operating weight lb	1,895	1,935	1,985	1,940
Shipping weight lb	1,673	1,713	1,763	1,718
Illumination coverage @ 5 fc(54 lux) ft²	12,960	12,960	12,960	12,960
Lamp type	Metal Halide	Metal Halide	Metal Halide	Metal Halide
Mast height ft	25	25	25	25
Sound level (LwA) dB(A)	67	68	70	67
Power kW	6	6	8	6
Frequency Hz	60	60	60	50
Voltage V	120	120 / 240	120 / 240	230
Power factor cos Φ 1~	1	1	1	1
Engine / Motor				
Generator model	Brushless w/ capacitor	Brushless w/ capacitor	Brushless w/ capacitor	Brushless w/ capacitor
Generator insulation (class)	H	H	H	H
Idle to full load %	10	10	10	10
Voltage control %	6	6	6	6
Engine / Motor manufacturer	Kohler	Kubota	Kubota	Kohler
Engine / Motor type	3 Cylinder Liquid Cooled	3 Cylinder Liquid Cooled	3 Cylinder Liquid Cooled	3 Cylinder Liquid Cooled
Fuel type	Diesel #2 - ULSD	Diesel #2 - ULSD	Diesel #2 - ULSD	Diesel #2 - ULSD
Displacement in³	62.7	61.1	68.5	62.7

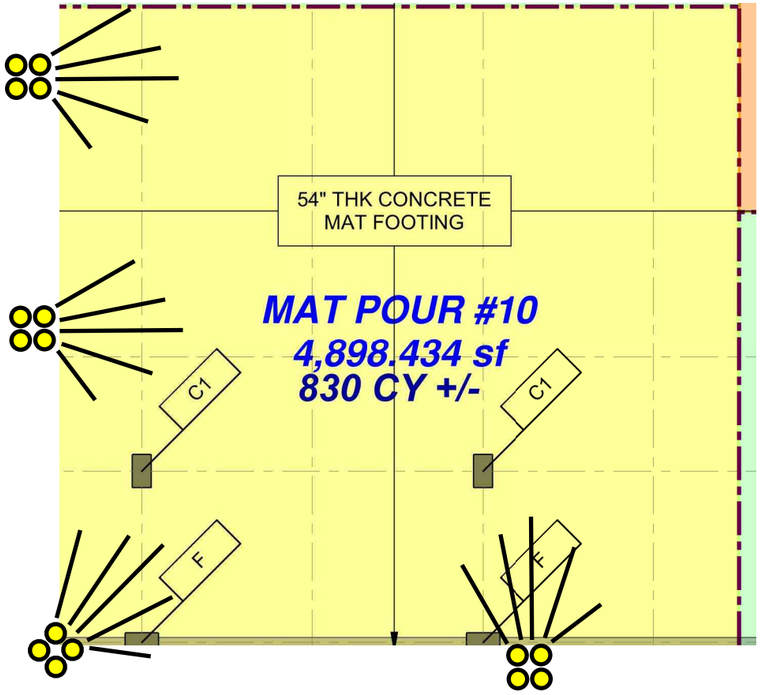
Anticipated Work Light Locations Based on Mat Slab Pour. Work is Roughly 45' Below Grade. Light Mast Height = 18'.

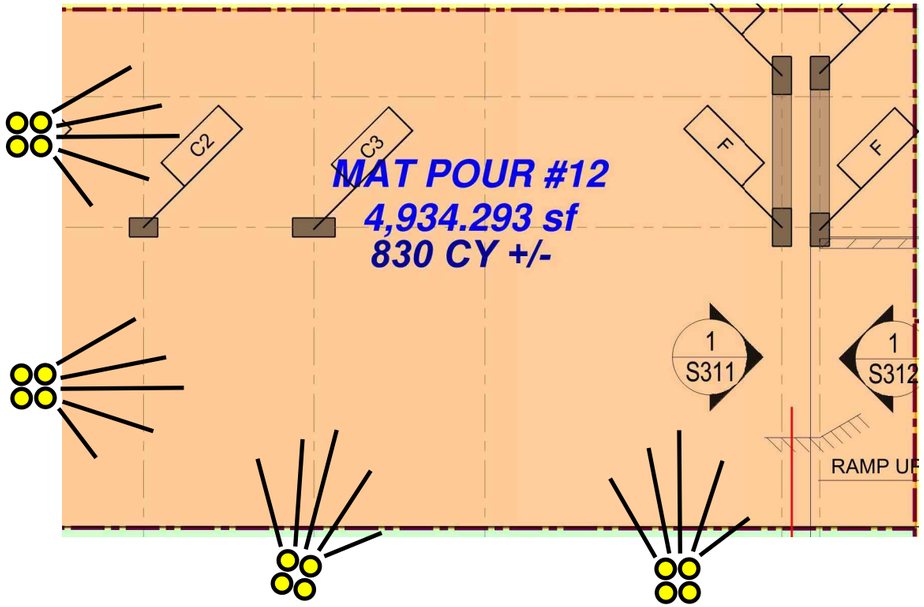




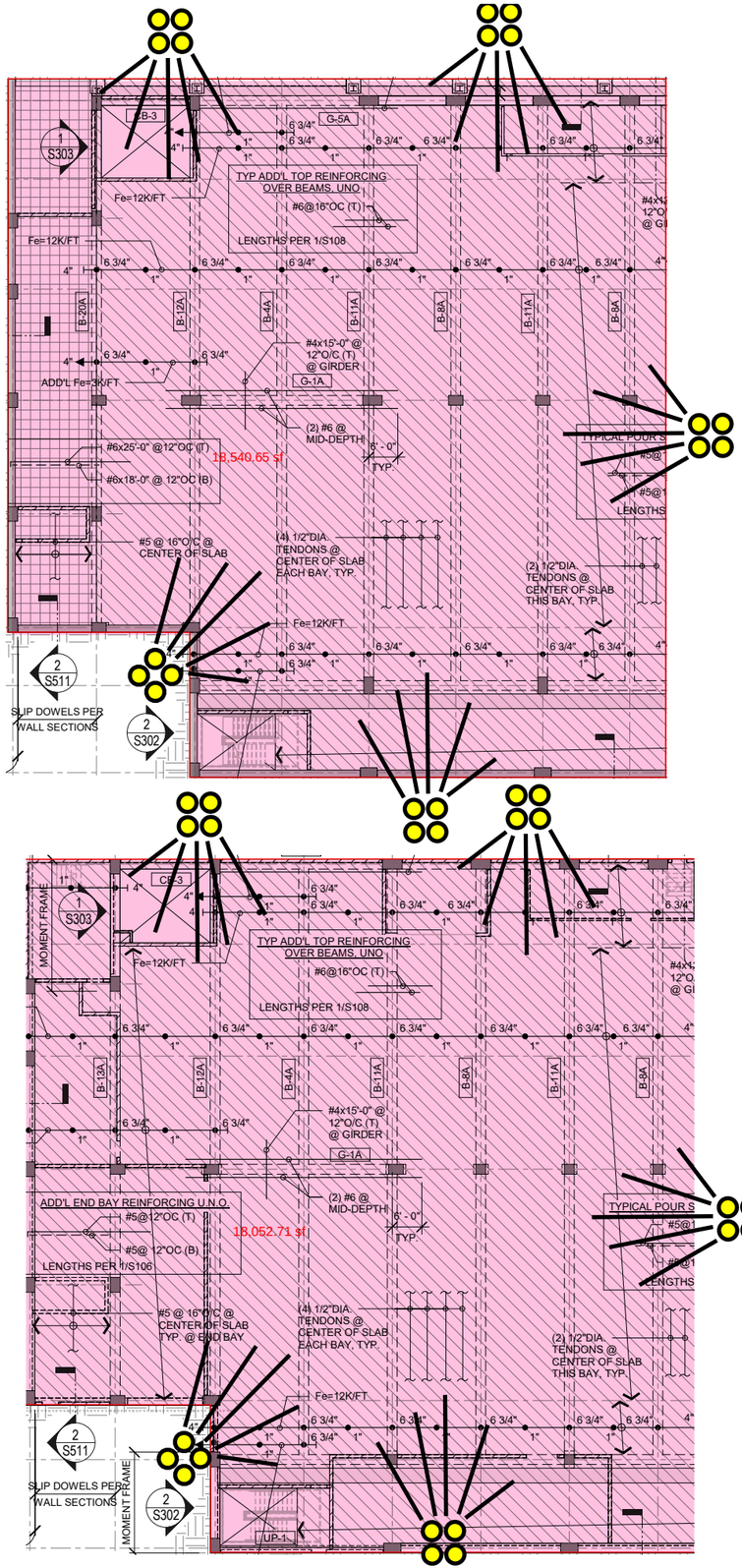




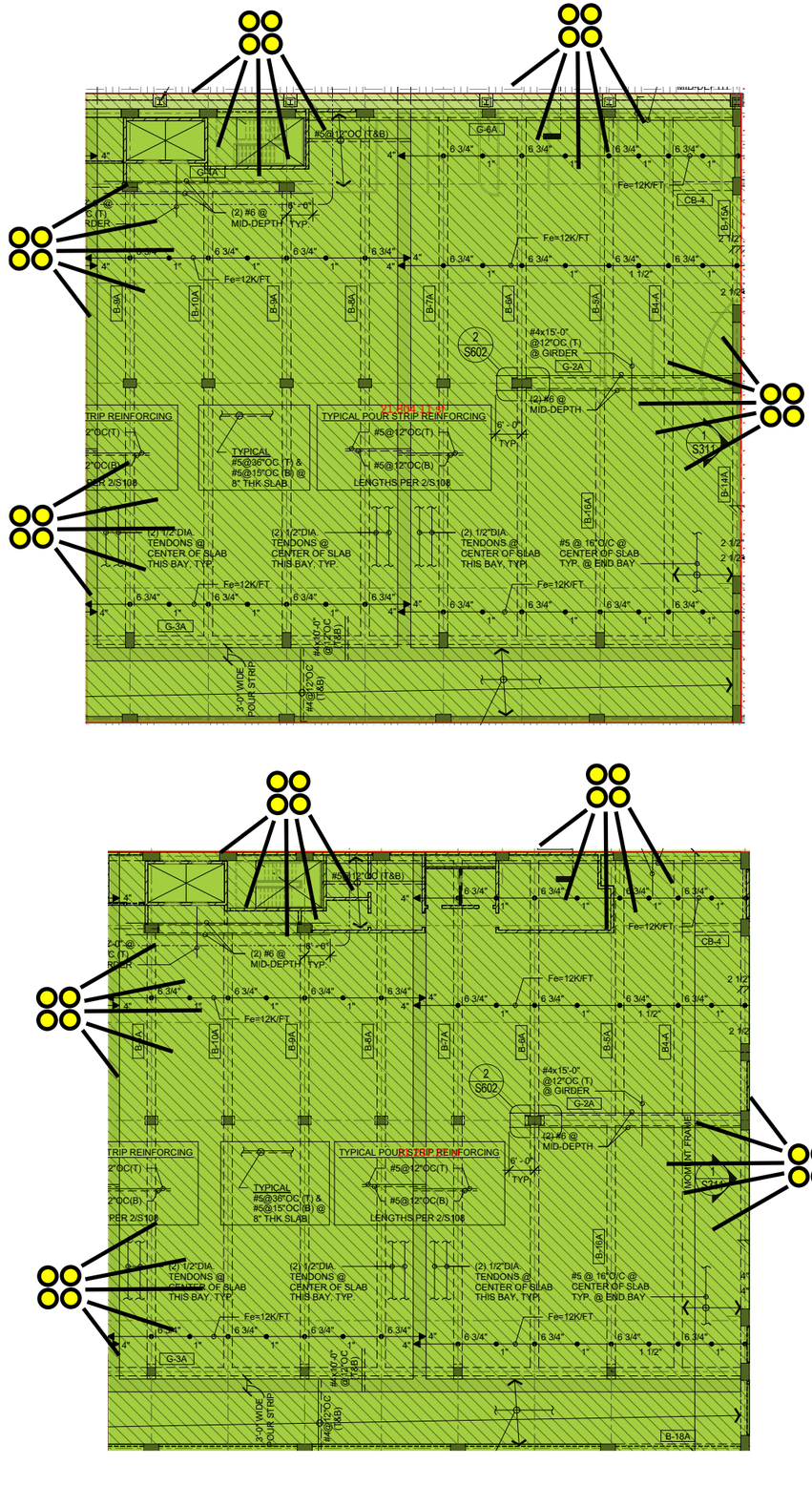




Anticipated Work Light Locations Based on Mat Slab Pour.



Work is Roughly 18' Below Grade. Light Mast Height = 18'.



Work is at Grade. Light Mast Height = 18'.

Appendix C
Project Off-Hours Noise Calculations

Project: Culver Studios Concrete Pour

Construction Noise Impact on Sensitive Receptors

Parameters

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

				R1				
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 Pour					**58**	***56.0***		
Power Vibrating Screeds	1	25	50%	40	7	4	7	20
Concrete Backpack Vibrators	1	75	50%	40	57	54	57	20
Walk Behind Finish Trowel	1	65	50%	40	47	44	47	20
Concrete Pump Trucks	8	81	20%	200	58	51	54	20

Source for Ref. Noise Levels: FHWA RCNM, 2005; Swinerton Concrete Pour Memo, 2019.