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Project No. 18-06469

Romi Archer, Senior Project Manager
Circlepoint
2100 West Orangewood Avenue, Suite 165
Orange, CA 92868
Via email: r.archer@circlepoint.com

Subject: **Tapestry Hotel Project, Noise and Vibration Assessment Memorandum**
1570 Brookhollow Drive, Santa Ana, California 92705

Dear Ms. Archer:

Rincon Consultants, Inc. (Rincon) is pleased to provide this Noise and Vibration Assessment Memorandum analyzing the potential noise and vibration impacts of the proposed Tapestry Hotel Project (project) in the Santa Ana, California. Rincon prepared this study under contract to Circlepoint in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to analyze the project's noise and vibration impacts related to both temporary construction activity and long-term operation of the project.

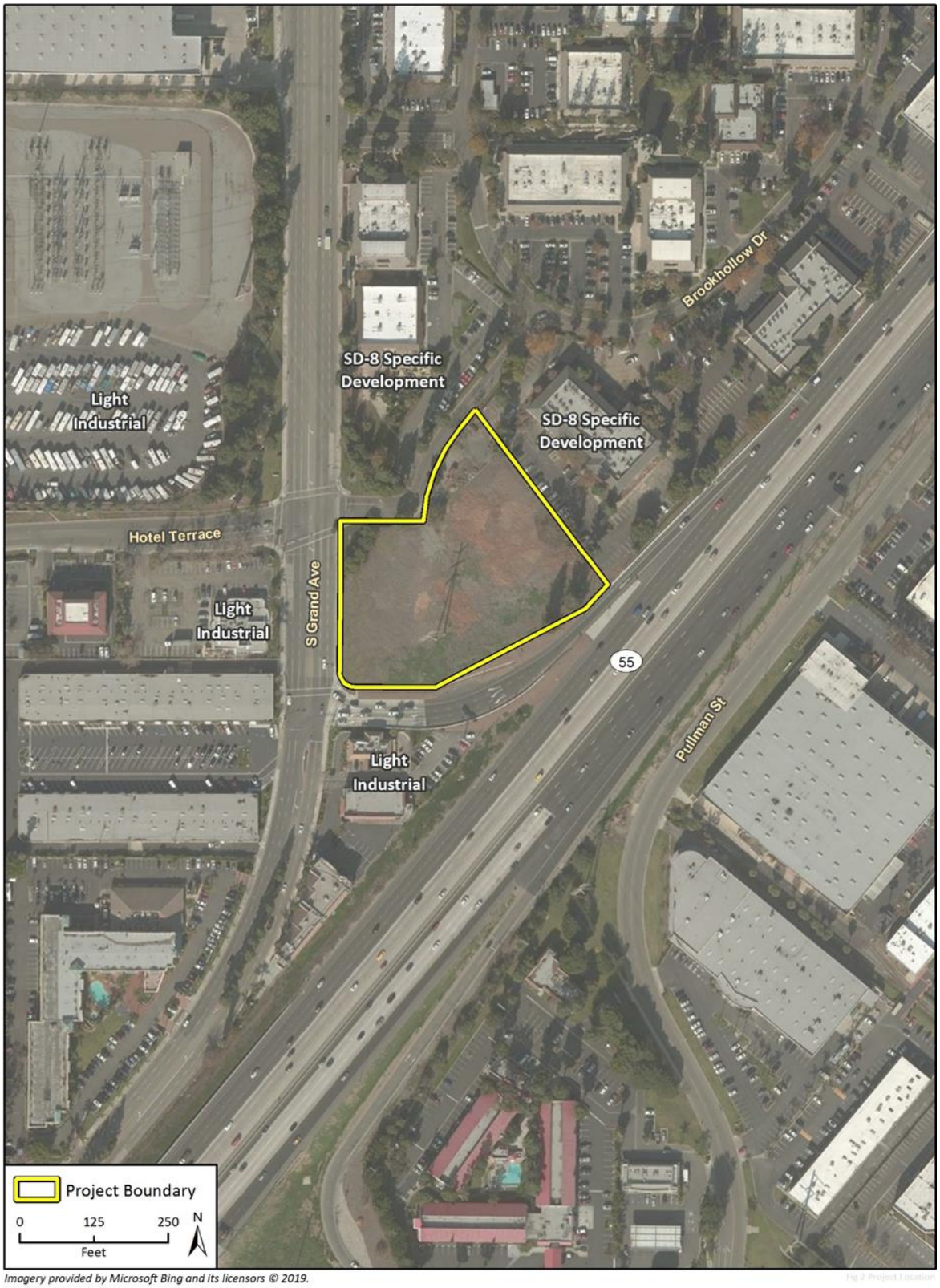
Project Location

The project site is a 2.8-acre property comprising three assessor's parcels, located at 1570 Brookhollow Drive in the City of Santa Ana (City), California (Assessor Parcel Numbers 016-221-27, 016-221-28, and 016-221-29). The project site is currently vacant but was previously developed as a restaurant/bar and parking area. The project site is bound by commercial, business park and light industrial properties to the north, south, and northwest, across South Grand Avenue. Directly across South Grand Avenue to the west are seven other hotels within an approximately one-mile radius. The Costa Mesa Freeway abuts the eastern portion of the project site. Figure 1 shows the project site and surrounding land uses.

Proposed Description

Development of the project would entail construction of a six-story, 79,375 square-foot hotel with 139 rooms, a pool, gym, roof deck and two natural gas fireplaces. A separate 2,000 square foot free-standing single-story restaurant would be constructed at the southwest corner of the lot next to Grand Avenue. The building footprint would be approximately 13,400 square feet. In addition, 142 parking spaces would be provided on-site in paved, surface lots. Of these spaces, six would be reserved for handicapped parking (two for the restaurant and four for the hotel). Ten bicycle spaces would be provided separate from the vehicle parking lot (four for the restaurant and six for the hotel). The total construction area would include 100,738 square feet of impervious surface composing 82 percent of the project site. Attachment A includes a site plan of the project.

Figure 1 Project Site Location



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Noise Background

The unit of measurement used to describe a noise level is the decibel (dB). However, the human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, a method called "A weighting" is used to adjust actual sound pressure levels so that they are consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz (Hz) and less sensitive to frequencies around and below 100 Hz, thus filtering out noise frequencies that are not audible to the human ear. A weighting approximates the frequency response of the average young ear when listening to most ordinary everyday sounds. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the "A-weighted" levels of those sounds. Therefore, the A-weighted noise scale is used for measurements and standards involving the human perception of noise. In this analysis, all noise levels are A-weighted, and "dBA" is understood to identify the A-weighted decibel.

Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. A doubling of the energy of a noise source, such as a doubling of traffic volume, would increase the noise level by 3 dB; similarly, dividing the energy in half would result in a decrease of 3 dB (Crocker 2007).

Human perception of noise has no simple correlation with sound energy: the perception of sound is not linear in terms of dBA or in terms of sound energy. Two sources do not "sound twice as loud" as one source. It is widely accepted that the average healthy ear can barely perceive an increase (or decrease) of up to 3 dBA in noise levels (i.e., twice [or half] the sound energy); that an increase (or decrease) of 5 dBA (8 times [or one eighth] the sound energy) is readily perceptible; and that an increase (or decrease) of 10 dBA (10.5 times [or approximately one tenth] the sound energy) sounds twice (or half) as loud (Crocker 2007).

Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs, and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this analysis are the one-hour equivalent noise level (L_{eq}) and the community noise equivalent level (CNEL).

The L_{eq} is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period. Typically, L_{eq} is equivalent to a one-hour period, even when measured for shorter durations as the noise level of a 10- to 30-minute period would be the same as the hour if the noise source is relatively steady. L_{max} is the highest Root Mean Squared (RMS) sound pressure level within the sampling period, and L_{min} is the lowest RMS sound pressure level within the measuring period (Crocker 2007).

The CNEL is a 24-hour equivalent sound level with an additional 5 dBA penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and an additional 10 dBA penalty to noise occurring during the night, between 10:00 p.m. and 7:00 a.m., to account for the added sensitivity of humans to noise during these hours (California Department of Transportation [Caltrans] 2013). Quiet suburban areas typically have a CNEL in the range of 40 to 50 dBA, while areas near arterial streets are in the 50 to 70+ CNEL range.

Propagation

Sound changes in both level and frequency spectrum as it travels from the source to the receiver. The most obvious change is the decrease in sound level as the distance from the source increases. The way sound reduces with distance depends on factors such as the type of source (e.g., point or line), the path the sound will travel, site conditions, and obstructions. Sound levels from a point source (e.g., construction, industrial machinery, ventilation units) typically attenuate, or drop off, at a rate of 6 dBA per doubling of distance. Sound from a line source (e.g., roadway, pipeline, railroad) typically attenuates at about 3 dBA per doubling of distance (Caltrans 2013).

Vibration Background

Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. Groundborne vibration of concern in environmental analysis consists of the oscillatory waves that move from a source through the ground to adjacent structures. The number of cycles per second of oscillation makes up the vibration frequency, described in terms of hertz (Hz). The vibration frequency of an object describes how rapidly it oscillates. The normal frequency range of most groundborne vibration that can be felt by the human body is from a low of less than 1 Hz up to a high of about 200 Hz (Crocker 2007).

While people have varying sensitivities to vibrations at different frequencies, in general they are most sensitive to low-frequency vibration. Vibration in buildings, such as from nearby construction activities, may cause windows, items on shelves, and pictures on walls to rattle. Vibration of building components can also take the form of an audible low-frequency rumbling noise, referred to as groundborne noise. Groundborne noise may result in adverse effects, such as building damage, when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz). Vibration may also damage infrastructure when foundations or utilities, such as sewer and water pipes, physically connect the structure and the vibration source (Federal Transit Administration [FTA] 2018). Although groundborne vibration is sometimes noticeable in outdoor environments, it is almost never annoying to people who are outdoors. The primary concern from vibration is that it can be intrusive and annoying to building occupants and vibration-sensitive land uses.

Descriptors

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second (in./sec.). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (Caltrans 2020).

Response to Vibration

Vibration associated with construction of the project has the potential to be an annoyance to nearby land uses. Caltrans has developed limits for the assessment of vibrations from transportation and construction sources. The Caltrans vibration limits are reflective of standard practice for analyzing vibration impacts on structures from continuous and intermittent sources. The Caltrans Transportation and Construction Vibration Guidance Manual (Caltrans 2020) identifies two impact criteria for buildings

and humans from transient and continuous/frequent sources: Table 1 presents the impact criteria for buildings, and Table 2 presents the impact criteria for humans.

Table 1 Vibration Damage Potential

Building Type	Maximum PPV (in./sec.)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
Historic and some old buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial/commercial buildings	2.00	0.50

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls (i.e., a loose steel ball that is dropped onto structures or rock to reduce them to a manageable size). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity; in./sec. = inches per second

Source: Caltrans 2020

Table 2 Vibration Annoyance Potential

Human Response	Maximum PPV (in./sec.)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Severe/Disturbing	2.00	0.700
Strongly perceptible	0.90	0.100
Distinctly perceptible	0.24	0.035
Barely perceptible	0.04	0.012

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls (i.e., a loose steel ball that is dropped onto structures or rock to reduce them to a manageable size). Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

PPV = peak particle velocity; in./sec. = inches per second

Source: Caltrans 2020

Propagation

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations diminish much more rapidly than low frequencies, so low frequencies tend to dominate the spectrum at large distances from the source. Variability in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances (Caltrans 2020). When a building is exposed to vibration, a ground-to-foundation coupling loss (the loss that occurs when energy is transferred from one medium to another) will usually reduce the overall vibration level. However, under rare circumstances, the ground-to-foundation coupling may amplify the vibration level due to structural resonances of the floors and walls.

Sensitive Receivers

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with each of these uses. According to the City of Santa Ana General Plan Noise Element (2010), noise-sensitive land uses include residential uses, institutional uses (i.e., hospitals, school classrooms/ playgrounds, churches, and libraries), and open space areas.

The nearest noise-sensitive receiver to the project site is the Ricca Children's Learning Center north of the site. While the Learning Center is located approximately 175 feet north of the site, its outdoor playground is located closer to the site at 125 feet north of the site. In addition, Holiday Inn hotel is located approximately 500 feet southwest of the site. Although not explicitly listed as a noise-sensitive use, Holiday Inn hotel is considered a sensitive receiver for this analysis due to its inclusion of living quarters and sleeping areas as a residential-type use. The nearest single- and multi-family residences are located approximately 0.3 mile to the west and would not be subject to substantial noise from project construction or operation due to their distance from the project site.

Project Area Noise Setting

The primary off-site noise sources in the project site vicinity are motor vehicles (e.g., automobiles, buses, and trucks), particularly along the State Route (SR)-55 and its southbound off-ramp south of the site and South Grand Avenue west of the site. Ambient noise levels would be expected to be highest during the daytime and rush hour unless congestion slows speeds substantially. To determine ambient noise levels at the project site, two 15-minute noise measurements were recorded during the morning peak hour on January 3, 2019 between 7:15 a.m. and 8:00 a.m. using an Extech (Model 407780A) ANSI Type 2 integrating sound level meter. Noise Measurement (NM) 1 was conducted at the western boundary along South Grand Avenue while NM 2 was conducted on the southern boundary of the site along SR-55. Figure 2 shows noise measurement locations and Table 3 summarizes the noise measurement results. Noise levels for the 15-minute measurements are provided in L_{eq} for the measurement period; L_{min} and L_{max} are also provided. Noise measurement data is included in Attachment B.

Table 3 Project Noise Monitoring Results

#	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)
1	South Grand Avenue; West of the project site	7:42 – 7:57 a.m.	55 feet to centerline of South Grand Avenue	70.0	62.5	84.0
2	SR-55 southbound off-ramp; South of the project site	7:16 – 7:31 a.m.	45 feet to centerline of SR-55 off-ramp	71.6	67.1	77.6

See Attachment B for noise measurement data.

Source: Rincon field measurements January 3, 2019.

Figure 2 Noise Measurement Locations

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Regulatory Setting

City of Santa Ana General Plan Noise Element

The goals and policies in the City of Santa Ana General Plan Noise Element (2010) focus on minimizing the negative impacts of noise, especially at sensitive receivers. In support of these goals and policies, the Noise Element includes standards for exterior and interior levels at various noise-sensitive land uses, which are shown in Table 4.

Table 4 Interior and Exterior Noise Standards in CNEL

Categories	Land Use Categories	Interior[1] (CNEL)	Exterior[2] (CNEL)
Residential	Single-family, duplex, multi-family	45[3]	65
Institutional	Hospital, school classroom/playgrounds	45	65
	Church, library	45	--
Open Space	Parks	--	65

[1] Interior areas include, but are not limited to: bedrooms, bathrooms, kitchens, living rooms, dining rooms, closets, corridors/hallways, private offices, and conference rooms.

[2] Exterior areas include: private yards of single-family homes, park picnic areas, school playgrounds, common areas, private open space, such as atriums or balconies, shall be excluded from exterior areas provided sufficient common area is included within the project.

[3] Interior noise level requirements contemplate a closed window condition. Mechanical ventilation system or other means of natural ventilation shall be provided per Chapter 12, Section 1305 of the Uniform Building Code.

Source: Santa Ana 2010

According to the Noise Element, all residential uses should be protected with sound insulation over and above that provided by normal building construction when constructed in areas exposed to greater than 60 CNEL.

The City's Noise Element does not explicitly characterize noise exposure levels or other standards for a hotel uses, but for the purpose of this analysis, the proposed hotel is considered a noise-sensitive residential use due to the hotel's inclusion of living quarters and sleeping areas.

Santa Ana Municipal Code

Article VI, *Noise Control*, of the Santa Ana Municipal Code (SAMC) establishes a series of regulations and standards to prevent unnecessary or excessive noise that may be detrimental to the health, welfare, and safety of the public or degrade their quality of life. According to Section 18-314(e) of the SAMC, noise associated with construction, repair, modeling, or grading of any property is exempt from the provisions of Article VI provided that such work only occurs between 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. In addition, Section 18-315 prohibits the generation of noise that causes the exterior noise level at any school, church, or hospital to exceed 55 dBA L_{eq} from 7:00 a.m. to 10:00 p.m. and 50 dBA L_{eq} from 10:00 p.m. to 7:00 a.m.

Significance Thresholds

To determine whether a project would have a significant noise impact, Appendix G of the *CEQA Guidelines* requires consideration of whether a project would result in:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
2. Generation of excessive groundborne vibration or groundborne noise levels
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels

Impact Analysis

CEQA Appendix G Noise Threshold 1 Would the proposed project generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

The project would involve construction of a six-story hotel with 139 rooms and a separate, one-story restaurant on a 2.8-acre site. The site is surrounded by commercial, business park, and light industrial uses that may be subject to increased noise levels from both temporary construction and long-term operations. Of these uses, the nearest noise-sensitive receivers include the Ricca Children's Learning Center playground located approximately 125 feet north of the site and the Holiday Inn hotel located approximately 500 feet southwest of the site. The following discussions address the potential noise level increases associated construction and operation of the project.

Construction Noise

Construction activity would result in temporary increases in ambient noise levels in the project area on an intermittent basis and, as such, would expose surrounding noise-sensitive receivers to increased noise levels. While the City does not have specific noise level criteria for assessing construction impacts, the FTA has developed criteria for determining whether construction of a project would result in a substantial temporary increase in noise levels. Based on FTA guidance, a significant impact would occur if project-generated construction noise exceeds a one-hour 90 dBA L_{eq} noise limit during the day or a one-hour 80 dBA L_{eq} noise limit at night at the nearest residences (FTA 2018). While the noise-sensitive receivers nearest to the project site are not residential uses, Ricca Children's Learning Center, i.e., both the Learning Center and its playground, and Holiday Inn hotel are considered as noise-sensitive as residential uses for the purpose of this analysis based on land uses the City characterizes as noise-sensitive, as discussed under *Sensitive Receivers* and *Regulatory Setting*. Therefore, the FTA thresholds are used to determine whether noise levels from construction would result in a substantial temporary increase in noise levels at nearby sensitive receivers.

Construction noise was estimated using the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) (2006). RCNM predicts construction noise levels for a variety of construction operations based on empirical data and the application of acoustical propagation formulas.

Using RCNM, construction noise levels were estimated at noise-sensitive receivers near the project site. RCNM provides reference noise levels for standard construction equipment, with an attenuation of 6 dBA per doubling of distance for stationary equipment.

Each phase of construction has a specific equipment mix, depending on the work to be accomplished during that phase. Each phase also has its own noise characteristics; some will have higher continuous noise levels than others, and some may have discontinuous high-impact noise levels. The maximum hourly L_{eq} of each phase is determined by combining the L_{eq} contributions from each piece of equipment used in that phase (FTA 2018). Project construction phases would include site preparation, grading, building construction, architectural coating, and paving of the project site. It is assumed that diesel engines would power all construction equipment. For assessment purposes, the loudest phases (i.e., grading, and building construction) have been used for this assessment and have been modeled under the conservative assumption that a dozer, an excavator, and a jackhammer would be operating simultaneously.

Construction equipment would be continuously moving across the site, coming near and then moving further away from individual receivers. Therefore, due to the dynamic nature of construction, maximum hourly noise levels are calculated at various distances from the center of on-site construction activity to the nearest receivers. Based on the configuration of the project site, the center area of the site is located, on average, about 100 feet from site boundaries. Therefore, using the FHWA RCNM, construction noise was modeled at 225 feet from the Ricca Children's Learning Center playground to the north and 600 feet from the Holiday Inn hotel to the southwest. For a conservative analysis, construction noise modeling does not account for noise reduction from existing noise barriers (e.g., masonry walls). Construction noise levels and distances to the nearest receivers are shown in Table 5. RCNM calculations are included in Attachment C.

Table 5 Construction Noise Levels at Receivers

	Approximate L_{eq}, dBA	
Construction Equipment	**225 Feet**	**600 Feet**
Bulldozer, Excavator, Jackhammer	71	63

See Attachment C for RCNM results.

As shown in Table 5, maximum hourly noise levels during project construction, which would occur during the grading and building phases of construction, were calculated at between 63 dBA L_{eq} and 71 dBA L_{eq} at the nearest noise-sensitive receivers. Therefore, construction noise levels would not exceed the FTA daytime noise criteria of 90 dBA L_{eq}, where off-site noise would be of disturbance to daytime school operations and hotel guests. In addition, construction work would occur during daytime hours and, therefore, construction noise levels would not exceed the FTA nighttime noise criteria of 80 dBA L_{eq}, where off-site noise would be of disturbance to sleeping hotel guests. Therefore, construction noise levels would not exceed applicable noise criteria at nearby noise-sensitive uses. Construction noise impacts would be less than significant.

Land Use Compatibility

Operation of the proposed project would also expose future residential development to ambient noise levels. However, agencies subject to CEQA generally are not required to analyze the impact of existing

environmental conditions on a project's future users or residents. In *California Building Industry Association v. Bay Area Air Quality Management District (2015) 62 Cal. 4th 369*, the California Supreme Court explained that an agency is only required to analyze the potential impacts to future residents if the project would exacerbate those existing environmental hazards or conditions. CEQA analysis is therefore concerned with a project's impact on the environment, rather than with the environment's impact on a project and its users or residents. Thus, bringing a new population into an area where noise currently exists is not a significant environmental impact under CEQA unless doing so would exacerbate noise conditions. Nonetheless, the following analysis of potential exposure to excessive noise is provided for informational purposes.

The most predominant source of noise on and around the project site is vehicular traffic from the SR-55 and its southbound off-ramp south of the site and South Grand Avenue west of the site. The City's Noise Element interior and exterior noise standards do not explicitly characterize noise exposure levels for a hotel use, but for the purpose of this analysis, the proposed hotel is considered a residential use and noise exposure levels for a residential land use is used to characterize compatible noise exposure levels due to the hotel's inclusion of living quarters and sleeping areas. Based on the City's interior and exterior noise standards shown in in Table 4 an exterior noise level up to 65 CNEL and an interior noise level up to 45 CNEL is acceptable for a residential land use (Santa Ana 2010).

The FHWA Traffic Noise Prediction Model was used to model traffic noise along the SR-55 and South Grand Avenue under Existing Plus Project traffic conditions to determine noise levels at the hotel upon implementation of the project in comparison to the City's interior and exterior noise standards shown in Table 4. According to the Traffic Impact Study (TIS) conducted by Jano Baghdanian & Associates (JBA) in March 2019, the segment of South Grand Avenue nearest to the project site carries average daily traffic (ADT) of approximately 25,000 vehicles (JBA 2019). Based on Caltrans traffic volumes, the segment of SR-55 between East Dyer Road and Edinger Avenue carries an ADT of approximately 288,600 (Caltrans 2017). According to the Traffic Analysis Update conducted by JBA in February 2020, the project would generate 761 ADT. Conservatively adding all 761 daily vehicle trips generated by the proposed project to each roadway under an Existing Plus Project traffic condition would increase daily traffic to 25,761 ADT along South Grand Avenue and 289,361 ADT along SR-55. Vehicle mixes of 95 percent automobile, three percent medium-duty trucks, and two percent heavy-duty trucks were assumed in the Traffic Noise Prediction Model for both SR-55 and South Grand Avenue. Traffic Noise Prediction Model results are included in Attachment D.

Based on noise contours calculated using the FHWA Traffic Noise Prediction Model for the Existing Plus Project traffic conditions scenario, the project's façades facing South Grand Avenue and SR-55 would be exposed to daily noise levels of approximately 65 CNEL and 81 CNEL, respectively. Based on the City's interior and exterior noise standards, the project's facades with direct line-of-sight to SR-55 would be exposed to noise levels in excess of the City's 65 CNEL exterior noise level. According to the City's Noise Element, all residential uses, and by extension the proposed hotel, should be protected with sound insulation over and above that provided by normal building construction when constructed in areas exposed to greater than 60 CNEL (Santa Ana 2010).

Generally, any large structure blocking the line of sight will provide at least a 5-dBA reduction in source noise levels at the receiver (FHWA 2011). Structures can substantially reduce occupants' exposure to noise as well. The FHWA's guidelines indicate that modern building construction generally provides an exterior-to-interior noise level reduction of 20 to 35 dBA with closed windows (FHWA 2011). Modern buildings are typically constructed with storm windows, single- or double-glazed, which provide an

exterior-to-interior noise level reduction of at least 25 dBA. Based on a noise exposure level of up to 81 CNEL and a noise attenuation of 25 dBA, the interior noise level at hotel guest rooms facing SR-55 would be 56 CNEL. Therefore, interior noise levels for the project could exceed the City's interior noise standard of 45 CNEL. The project would need to incorporate appropriate noise attenuation techniques, such as the sound insulation measures described below, to reduce exterior noise levels to 45 CNEL at interior spaces of guest rooms facing SR-55:

> **Sound Insulation:** To reduce potential noise impacts to future hotel guests, guest rooms with direct line-of-site to SR-55 should incorporate design measures for windows, walls, and doors that achieve a composite Sound Transmission Class (STC) rating of at least 40 and all exterior doors and windows shall be installed such that there are no air gaps or perforations. An acoustical analysis should be performed prior to the issuance of an occupancy permit to demonstrate that noise levels in the hotel rooms do not exceed the interior noise standard of 45 dBA CNEL in any habitable room as set forth by the City and California Code of Regulations, Title 24, Section 1207.4.

If implemented, the sound insulation measures described above would reduce exterior noise such that interior noise does not exceed 45 CNEL in any habitable room.

On-Site Operational Noise

Operation of the project would generate on-site noise from new heating, ventilation, and air conditioning (HVAC) equipment, delivery- and trash-hauling trucks, on-site vehicle circulation, and light outdoor recreation from lounging areas on the roof terrace.

Based on combined data from Trane, Carrier, and Rheem HVAC manufacturing companies, noise from HVAC equipment would typically generate a noise level in the range of 70 dBA L_{eq} at a reference distance of 3 feet from the source. The nearest noise-sensitive receiver, the Ricca Children's Learning Center to the north, would be located at least 216 feet from the nearest rooftop-mounted HVAC equipment based on the approximate 82-foot roof-level height of the hotel and approximate 200-foot setback between the hotel and Learning Center. Based on attenuation rate of approximately 6 dBA per doubling of distance from the source, rooftop-mounted HVAC equipment would generate an estimated noise level of 33 dBA L_{eq} at 216 feet. Furthermore, rooftop HVAC units are traditionally shielded from surrounding land uses with parapets and roofs that block line-of-sight to sensitive receivers would typically provide at least a 5-dBA noise reduction. Based on the City's exterior noise standards for schools, noise levels from on-site HVAC equipment would not exceed the noise level standards of 55 dBA L_{eq} from 7:00 a.m. to 10:00 p.m. and 50 dBA L_{eq} from 10:00 p.m. to 7:00 a.m. as regulated by SAMC Section 18-315. Therefore, operational noise impacts associated with HVAC equipment would be considered less than significant.

The proposed project would require delivery- and trash-hauling services and would include surface parking with a total of 142 parking spaces, which would introduce new on-site noise from arriving and departing trucks and vehicles. However, the project site is surrounded by commercial, business park, and light industrial uses to the north, northeast, south, and west across South Grand Avenue, which already generate these noise sources. Furthermore, primary off-site noise sources in the project area are vehicles (e.g., automobiles, buses, and trucks) along the SR-55 and its southbound off-ramp south of the site and South Grand Avenue west of the site. Therefore, due to existing ambient mobile noise, operational of the project would not generate a substantial increase in mobile noise above existing noise levels and impacts would be considered less than significant.

Outdoor recreational amenities, such as the hotel's lounging areas on the roof terrace, would also generate noise from human conservation. Noise from human conversation among a few people generates a noise level of approximately 55 dBA L_{eq} at a distance of three feet (Los Angeles 2014). However, due to existing ambient noise and the distance of the 82-foot-tall roof level to the nearest receiver (i.e., Ricca Children's Learning Center approximately 216 feet to the north), conversational noise would not generate a substantial increase in existing noise levels and impacts would be considered less than significant.

Operation of the project would not generate sources of noise that are new to the existing urban area. On-site operational noise generated by the project would not exceed the City's noise standards and impacts would be less than significant.

Off-Site Traffic Noise

The proposed project would generate new vehicle trips and incrementally increase traffic on area roadways, particularly on South Grande Avenue. As discussed under *Land Use Compatibility*, the segment of South Grand Avenue nearest to the project site carries an ADT of approximately 25,000 vehicles while the segment of SR-55 nearest to the project site carries an ADT of approximately 288,600 (JBA 2019; Caltrans 2017). According to the Traffic Analysis Update conducted by JBA in February 2020, the project would generate 761 ADT. As discussed under *Noise Background*, a doubling of traffic is required for an audible 3 dB increase in traffic noise levels. Conservatively adding all 761 daily vehicle trips generated by the proposed project to this segment of South Grand Avenue would increase daily traffic by approximately three percent to 25,761 ADT. A 3 percent increase in traffic along South Grand Avenue would generate a less than 0.5 CNEL increase in traffic noise. Similarly, adding all 761 daily vehicle trips to the SR-55 would increase daily traffic along this freeway by less than 0.5 percent to approximately 289,360 ADT. A less than 0.5-percent increase in traffic along SR-55 would also generate a less than 0.5 CNEL increase in traffic noise. Therefore, the project would not create a perceptible 3-dBA increase in traffic noise. Noise impacts associated with off-site traffic generated by the proposed project would be less than significant.

CEQA Appendix G Noise Threshold 2 Would the proposed project generate excessive groundborne vibration or groundborne noise levels?

Groundborne Vibration

Operation of the project would not include stationary sources of significant vibration, such as heavy equipment operations. Rather, construction activities have the greatest potential to generate groundborne vibration affecting nearby receivers. Certain types of construction equipment can generate high levels of groundborne vibration. Construction of the project would potentially utilize loaded trucks, jackhammers, and/or bulldozers during most construction phases.

The City has not adopted specific standards for vibration impacts during construction. Therefore, the Caltrans Transportation and Construction Vibration Guidance Manual (2020) is used to evaluate potential construction vibration impacts related to both potential building damage and human annoyance. Based on the Caltrans criteria shown in Table 1 and Table 2, construction vibration impacts would be significant if vibration levels exceed 0.5 in./sec. PPV for residential structures and 2.0 in./sec. PPV for commercial structures, which is the limit where minor cosmetic, i.e. non-structural, damage may occur to these buildings. For the purpose of this analysis, the Ricca Children's Learning Center is

analyzed as a residential use and vibration levels at the school building are compared against the Caltrans criteria of 0.5 in./sec. for residential structures. In addition, construction vibration impacts would cause human annoyance at nearby receivers if vibration levels exceed 0.24 in./sec. PPV, which is the limit above which temporary vibration activities become distinctly perceptible.

Because groundborne vibration could cause physical damage to structures, vibration impacts were modeled based on the distance from the location of vibration-intensive construction activities, conservatively assumed to be at edge of the project site, to the edge of nearby off-site structures. Therefore, the analysis of groundborne vibrations differs from the analysis of construction noise levels in that modeled distances for vibration impacts are those distances between the project site to nearest off-site structures (regardless of sensitivity) whereas modeled distances for construction noise impacts are based on the property line of the nearest off-site sensitive receivers. Based on the distance from the project site to nearby structures, equipment was modeled at 175 feet from Ricca Children's Learning Center to the north1, 75 feet from the commercial office building to the east and fast-food restaurant to the south across the SR-55 off-ramp, and 125 feet from the restaurant and commercial office building to the west across South Grand Avenue. Table 6 estimated groundborne vibration levels from project equipment. Vibration calculations are included in Attachment E.

Table 6 Vibration Levels at Structures

	in./sec. PPV		
Equipment	**75 Feet**	**125 Feet**	**175 Feet**
Large Bulldozer	0.027	0.015	0.011
Loaded Truck	0.023	0.013	0.009
Jack hammer	0.011	0.006	0.004
Small Bulldozer	0.001	0.001	0.001
Threshold for Building Damage[1]	**2.0**	**0.5**	**2.0**
Threshold for Human Annoyance[2]	**0.24**	**0.24**	**0.24**
Thresholds Exceeded?	No	No	No

See Attachment E for vibration analysis worksheets.

[1] See Table 1

[2] See Table 2.

As shown in Table 6 construction activities would generate peak vibration levels of approximately 0.03 in./sec. PPV at the nearest off-site commercial office building to the east. Therefore, according to the Caltrans vibration criteria, groundborne vibration from typical construction equipment would not exceed the exceed the applicable threshold of 2.0 in./sec. PPV for building damage at the nearby commercial buildings nor would it exceed the applicable threshold of 0.5 in/sec. PPV for building

[1] While the Learning Center's playground is located closer to the project site at 125 north of the site (compared to 175 feet for the building), the groundborne vibration differs from the construction noise analysis in that modeled distances for vibration impacts are those distances between the project site to nearest off-site structures, or buildings, to assess the potential for building damage.

damage at the Ricca Children's Learning Center. Furthermore, groundborne vibration would not exceed the threshold of 0.24 in./sec. PPV for human annoyance at any of the modeled distances. Project construction would not result in groundborne vibration that would cause building damage or human annoyance. Vibration impacts would be less than significant.

CEQA Appendix G Noise Threshold 3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the proposed project expose people residing or working in the project area to excessive noise levels?

Airport Noise

The airport closest to the project site is the John Wayne Airport (located approximately 2.15 miles southwest of the site. According to the Orange County Airport Land Use Commission (ALUC) Land Use Plan for the John Wayne Airport, the site is located within the airport's 60 CNEL noise contour (Orange County ALUC 2008). However, as discussed under *Land Use Compatibility*, an exterior noise level up to 65 CNEL is acceptable for residential[2] land uses. Although the project would potentially be subject to occasional aircraft overflight noise, such occurrences would be intermittent and temporary. In addition, there are no private airstrips in the vicinity of the project site. Therefore, the project would not expose people living or working in the project area to excessive noise levels associated with airports or airstrips and the project would not exacerbate existing noise conditions related to airports or airstrips. Impacts would be less than significant.

[2] The SAMC noise standards do not explicitly characterize noise exposure levels for hotel use. Therefore, for the purpose of this analysis, the proposed hotel is considered a residential use and noise exposure levels for a residential land use is used to characterize compatible noise exposure levels due to the hotel's inclusion of living quarters and sleeping areas.

Conclusions and Recommendations

Project construction would result in temporary noise and vibration; however, based on the analysis, construction-related noise and vibration levels would be below the Caltrans and FTA thresholds. Furthermore, the project does not include any substantial vibration sources associated with operation. Therefore, the project would not expose local receivers to excessive noise and vibration levels and impacts would be less than significant.

Off-site traffic noise impacts and on-site operational noise impacts would be less than significant. Therefore, the project would result in a less than significant permanent increase in ambient noise levels due to project operation. Furthermore, the project would not expose people residing or working in the project area to excessive noise levels from aircraft noise and the proposed project. While the project would be exposed to exterior noise exceeding City standards for residences, implementation of the identified sound insulation feature would achieve interior noise levels in habitable guest rooms that are consistent with state and City standards.

Sincerely,
Rincon Consultants, Inc.

Kari Zajac, MESM
Project Manager

Joe Power
Principal

Attachments

Attachment A – Project Site Plan

Attachment B – Noise Measurement Results

Attachment C – Roadway Construction Noise Model Results

Attachment D – Traffic Noise Prediction Model Results

Attachment E – Vibration Analysis

Reference List

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Attachment A

Project Site Plan

GENERAL NOTES

1. THIS SITE WILL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE CALIFORNIA REGIONAL QUALITY CONTROL BOARD SANTA ANA REGION ORDER NO. R8-2009-0030 DISCHARGE REQUIREMENTS (MS4 PERMIT)

2. TAKE CAREFUL NOTE OF ALL REQUIREMENTS UNDER DIVISION I - GENERAL REQUIREMENTS THAT ARE MADE A PART OF THE CONTRACT, INCLUDING PROJECT REQUIREMENTS, GENERAL REQUIREMENTS, PROJECTION AND SPECIAL PRECAUTIONS, AND THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION.

3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE AND TO CROSS-CHECK DETAILS AND DIMENSIONS ON THE CONSTRUCTION DOCUMENTS WITH RELATED DISCIPLINES SUCH AS ARCHITECTURAL, MECHANICAL AND ELECTRICAL CONSULTANTS. FLOOR OPENINGS, SLEEVES AND OTHER ARCHITECTURAL, MECHANICAL AND ELECTRICAL REQUIREMENTS MUST BE COORDINATED BEFORE THE CONTRACTOR PROCEEDS WITH CONSTRUCTION.

4. ALL WORK AND MATERIALS ARE TO COMPLY IN EVERY RESPECT WITH THE LATEST REQUIREMENTS OF ALL APPLICABLE CITY, COUNTY AND STATE CODES, LOCAL REGULATIONS AND THE DIRECTION OF THE BUILDING INSPECTOR FOR SUCH BUILDING LAWS. REGULATIONS AND DIRECTIONS ARE TO BE CONSIDERED AS PART OF THESE SPECIFICATIONS AND PLANS, EXCEPT WHERE EXCEEDED HEREIN.

5. ALL MATTERS OF COLOR, TEXTURE, DESIGN AND INTERPRETATION OF PLANS SHALL BE REFERRED BY THE CONTRACTOR TO THE ARCHITECT, IN THE EVENT SUCH MATTERS ARE NOT ADEQUATELY COVERED IN PLANS.

6. DRAWINGS ARE NOT TO BE SCALED. DIMENSIONAL DISCREPANCIES ARE TO BE CALLED TO THE ATTENTION OF THE OWNER.

7. NUMERICAL DIMENSIONS SHALL TAKE PRIORITY OVER SCALED.

8. THE CONTRACTOR SHALL FURNISH WATER, SEWER, GAS AND ELECTRIC SERVICE TO MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, OR AS NECESSARY TO COMPLETE THE WORK.

9. THE CONTRACTOR SHALL VERIFY LOCATION OF AFFECTED EXISTING MECHANICAL DUCTS AND ELECTRICAL SYSTEMS.

10. ALL SUBSTITUTIONS OF PRODUCTS SPECIFIED OR DEVIATIONS TO THE DRAWINGS OR SPECIFICATIONS MUST BE SUBMITTED TO THE OWNER FOR APPROVAL.

11. VERIFY EXACT LOCATION OF CEILING ACCESS PANELS WITH MECHANICAL CONTRACTOR. PROVIDE ACCESS PANELS WHERE REQUIRED.

12. PATCHING AND REPAIR SHALL BE PERFORMED TO CREATE A CONTINUOUS AND UNIFORM SURFACE.

13. CEILING HEIGHTS SHOWN ON REFLECTED CEILING PLANS ARE FROM FINISH FLOOR TO FINISH CEILING.

14. PROVIDE DRYWALL SCREED OR PLASTER GROUND ON ALL END WALL CONDITIONS AND MAINTAIN SEPARATION FROM NON-COMPATIBLE MATERIAL. INFORM OWNER IMMEDIATELY OF ANY DISCREPANCIES.

15. EXCEPT AS OTHERWISE NOTED ON THE DRAWINGS, PARTITIONS SHALL BE 2X4 STUDS AT 16" O.C. WITH SILL AND PLATES AS SHOWN IN THE APPLICABLE DETAILS, OR AS REQUIRED BY LOCAL GOVERNING REGULATIONS.

16. ALL DRYWALL SHALL BE 5/8" THICK TYPE 'X' GYPSUM BOARD, EXCEPT WHERE NOTED.

17. ALL CONSTRUCTION, WHERE APPLICABLE BY CODE, SHALL CONFORM TO THE MOST RESTRICTIVE REQUIREMENTS OF THE CITY OF SANTA ANA, BUILDING AND SAFETY DISABLED REQUIREMENTS, ALL STATE OF CALIFORNIA ACCESSIBILITY STANDARDS FOR THE PHYSICALLY HANDICAPPED, AND THE LATEST EDITION OF AMERICANS WITH DISABILITIES ACT.

18. FIRE EXTINGUISHERS SHALL BE INSTALLED IN LOCATIONS REQUIRED BY THE CITY OF SANTA ANA FIRE DEPARTMENT. THE CONTRACTOR SHALL ARRANGE FOR THE INSPECTION BY THE FIRE DEPARTMENT AND INSTALLATION IN ACCORDANCE WITH THE LOCATIONS AND SPECIFICATIONS, AS REQUIRED. ONLY APPROVED TYPE FIRE EXTINGUISHERS SHALL BE USED.

19. ALL INTERIOR FINISHES SHALL HAVE A FLAME SPREAD RATING OF 75 OR BETTER AND SHALL CONFORM TO SECTION 804 & TABLE 8-A & 8-B OF 2013 UBC

20. CONTRACTOR WARRANTS THAT ALL WORK AND MATERIALS SHALL CONFORM TO THE CONTRACT DOCUMENTS AND NO SUBSTITUTION SHALL BE PERMITTED UNLESS SUBMITTED TO THE ARCHITECT IN WRITING WITH THREE COPIES OF LITERATURE AND SPECIFICATIONS AND FORMALLY APPROVED BY THE ARCHITECT AND OWNER.

21. IF THE CONTRACTOR ENCOUNTERS ASBESTOS OR OTHER TOXIC MATERIALS, THE WORK SHALL IMMEDIATELY CEASE AND THE OWNER SHALL BE INFORMED OF THE PRESENCE OF THESE MATERIALS FOR IMMEDIATE ACTION.

22. LEVERS AND LOCK SETS (ALL HARDWARE) SHALL BE IN ACCORDANCE TO THE TITLE 24 OF THE STATE OF CALIFORNIA AND THE LATEST EDITION OF AMERICANS WITH DISABILITIES ACT FOR ALL COMMON AREAS.

23. VERIFY TITLE 24 REQUIREMENTS ENERGY CALCULATIONS PRIOR TO ORDERING LIGHT FIXTURES. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATION OF FIXTURES ONLY.

24. CONTRACTOR IS RESPONSIBLE FOR TITLE 24 ENERGY CALCULATIONS IF A DEVIATION IN DESIGN IS REQUESTED. SUBMIT ANY REQUESTS FOR DEVIATION TO THE ARCHITECT FOR APPROVAL.

25. PROVIDE APPROVED FIRE DAMPERS FOR ALL DUCTS PENETRATING FIRE RATED WALLS AND FLOORS.

26. ANY DECORATIONS USED SHALL BE NON-COMBUSTIBLE OR FLAME PROOFED IN APPROVED MANNER.

27. DOOR OPENINGS NOT LOCATED BY DIMENSION SHALL BE CENTERED IN WALL SHOWN OR LOCATED 5" FROM FINISH WALL TO FINISH JAMB.

28. ALL LEGAL EXIT DOORS SHALL BE OPEN ABLE FROM INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. SPECIAL LOCKING DEVICES SHALL BE OF AN APPROVED TYPE.

29. ALL WALL MOUNTED TELEPHONE AND ELECTRICAL OUTLETS SHALL BE INSTALLED AT 15" A.F.F., UNLESS OTHERWISE NOTED.

30. ALL LIGHT FIXTURES SHALL BE LOCATED EXACTLY AS INDICATED, CEILING SHALL BE CUT AND REWORKED AS REQUIRED TO ACCOMMODATE LIGHT FIXTURES AND OTHER ITEMS NOTED WITH A SPECIFIC LOCATION.

31. REFER TO THE ELECTRICAL DRAWINGS FOR LOCATION OF EXIT SIGNS, UNLESS OTHERWISE NOTED.

32. FOR PLUMBING ACCESS PANEL LOCATIONS REFER TO THE PLUMBING DRAWINGS.

33. FOR MECHANICAL ACCESS PANEL LOCATIONS REFER TO THE MECHANICAL DRAWINGS.

34. ONE HOUR FIRE-RESISTIVE PARTITIONS SHALL EXTEND FROM FLOOR SLAB TO UNDERSIDE OF FLOOR CONSTRUCTION ABOVE WITH 5/8" THICK TYPE 'X' GYPSUM BOARD ON BOTH SIDES AS REQUIRED FOR ONE HOUR FIRE-RESISTIVE CONSTRUCTION.

35. ALL ACCESSIBLE ENTRANCES, IN COMMON AREAS, SHALL BE IDENTIFIED WITH AT LEAST ONE STANDARD SIGN AND WITH ADDITIONAL DIRECTIONAL SIGNS, AS REQUIRED, VISIBLE FROM APPROACHING PEDESTRIAN WAYS.

36. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL, SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH-PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE.

37. HAND ACTIVATED DOOR OPENING HARDWARE SHALL BE CENTERED BETWEEN 33" AND 44" ABOVE THE FLOOR.

38. THE FLOOR OR LANDING ON EACH SIDE OF AN ENTRANCE OR PASSAGE DOOR IN COMMON AREAS SHALL BE LEVEL AND CLEAR. THE LEVEL AND CLEAR AREA SHALL HAVE A LENGTH IN THE DIRECTION OF THE DOOR SWING OF AT LEAST 60" AND THE LENGTH OPPOSITE THE DIRECTION OF THE DOOR SWING OF 44" AS MEASURED AT RIGHT ANGLES TO THE PLANE OF THE DOOR IN ITS CLOSED POSITION.

39. THE WIDTH OF THE LEVEL AND CLEAR AREA ON THE SIDE TO WHICH THE DOOR SWINGS, IN COMMON AREAS, SHALL EXTEND 24" PAST THE STRIKE EDGE OF THE DOOR FOR EXTERIOR DOORS AND 18" PAST THE STRIKE EDGE FOR INTERIOR DOORS.

40. THE FLOOR OR LANDING SHALL NOT BE MORE THAN 1/2" LOWER THAN THE THRESHOLD OF THE DOORWAY. CHANGE IN LEVEL BETWEEN 1/4" AND 1/2" SHALL BEVELED WITH A SLOPE NO GREATER THAN 1:2.

41. THE BOTTOM 10" OF ALL DOORS EXCEPT AUTOMATIC AND SLIDING SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. WHERE NARROW FRAME DOORS ARE USED, A 10" HIGH SMOOTH PANEL SHALL BE INSTALLED ON THE PUSH SIDE OF THE DOOR, WHICH WILL ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.

42. MAXIMUM EFFORT TO OPERATE DOORS SHALL NOT EXCEED 8-1/2 LBS FOR EXTERIOR DOORS AND 5 LB. FOR INTERIOR DOORS. SUCH PULL OR PUSH EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATING DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED NOT TO EXCEED 15 LB..

43. STREET ADDRESS MUST BE PROVIDED ON FRONT OF OF THE BUILDING. NUMBERS MUST BE VISIBLE FROM THE STREET, MUST BE OF A COLOR WHICH CONTRASTS WITH THE BACKGROUND AND MUST BE AT LEAST 4-INCHES IN HEIGHT AND 2-INCHES IN WIDTH. SEC. 502 AND P.A.C. CHAPTER 12.20.

44. PROVIDE EXIT SIGNS AND DIRECTIONAL EXIT SIGNS WITH MINIMUM 6" HEIGHT BY 3/4" STROKE BLOCK LETTERS ON A CONTRASTING BACKGROUND AT ALL REQUIRED COMMON AREAS PER PLAN.

45. EXIT SIGNS SHALL BE LIGHTED SO THAT THEY ARE CLEARLY VISIBLE.

46. THIS PROJECT IS REQUIRES TO HAVE AUTOMATIC FIRE SPRINKLERS THROUGHOUT ALL AREAS OF THE STRUCTURE PER PMC 14.25.050.

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1A:

PARCELS 6 AND 7, IN THE CITY OF SANTA ANA, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN BOOK 126, PAGES 46 AND 47 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY, CALIFORNIA.

EXCEPTING ALL OIL, GAS, HYDROCARBONS AND MINERALS IN, UNDER OR THAT MAY BE PRODUCED FROM SAID LAND WITH ALL RIGHTS INCIDENTAL THERETO, BUT NOT INCLUDING ANY RIGHT OF ENTRY UPON OR UNDER THE SURFACE OR SUBSURFACE OR ANY PART OF SAID LAND TO A DEPTH OF 500 FEET BELOW THE EXISTING SURFACE THEREOF, AS RESERVED IN THE DEED FROM TOSHIKI SAKIOKA, AKA JACK TOSHIKI SAKIOKA AND MARY SAKIOKA, HIS WIFE, AND JOHNNY KATSUI SAKIOKA AND GRACE SAKIOKA, HIS WIFE, RECORDED AUGUST 15, 1973 IN BOOK 10851. PAGE 662 OF OFFICIAL RECORDS.

PARCEL 1B:

A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND PUBLIC UTILITY PURPOSES OVER, ALONG AND ACROSS THOSE PORTIONS OF PARCELS 1, 3 AND 4, AS SHOWN ON A MAP FILED IN BOOK 126, PAGES 46 AND 47 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY, CALIFORNIA, INCLUDED WITHIN THAT CERTAIN STRIP OF LAND DELINEATED ON SAID MAP AS "EASEMENT FOR INGRESS, EGRESS AND PUBLIC UTILITY PURPOSES, KNOWN AS BROOKHOLLOW DRIVE (A PRIVATE STREET)".

PARCEL 1C:

A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND PUBLIC UTILITY PURPOSES OVER, ALONG AND ACROSS THAT PORTION OF PARCEL 3, AS SHOWN ON A MAP FILED IN BOOK 86, PAGES 30 AND 31 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF ORANGE COUNTY, CALIFORNIA, INCLUDED WITHIN THAT CERTAIN STRIP OF LAND DELINEATED ON SAID MAP AS "EASEMENT FOR INGRESS, EGRESS AND PUBLIC UTILITY PURPOSES".

PARCEL 2A:

PARCEL 5, IN THE CITY OF SANTA ANA, COUNTY OF ORANGE, STATE OF CALIFORNIA, AS SHOWN ON A MAP FILED IN BOOK 126. PAGES 46 AND 47 OF PARCEL MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING ALL OIL, GAS, HYDROCARBONS AND MINERALS IN, UNDER OR THAT MAY BE PRODUCED FROM SAID LAND WITH ALL RIGHTS INCIDENTAL THERETO, BUT NOT INCLUDING ANY RIGHT OF ENTRY UPON OR UNDER THE SURFACE OR SUBSURFACE OR ANY PART OF SAID LAND TO A DEPTH OF 500 FEET BELOW THE EXISTING SURFACE THEREOF, AS RESERVED IN THE DEED FROM TOSHIKI SAKIOKA , AKA JACK TOSHIKI SAKIOKA AND MARY SAKIOKA, HIS WIFE AND JOHNNY KATSUI SAKIOKA AND GRACE SAKIOKA, HIS WIFE, RECORDED AUGUST 15, 1973 IN BOOK 10851. PAGE 662 OF OFFICIAL RECORDS.

PARCEL 2B:

NON-EXCLUSIVE EASEMENT FOR USE AND ENJOYMENT OF THE COMMON AREA, AS SET FORTH IN THE DECLARATION OF ESTABLISHMENT OF COVENANTS, CONDITIONS AND RESTRICTIONS BROOKHOLLOW OFFICE PARK RECORDED JANUARY 12, 1977 IN BOOK 12032. PAGE 809 OF OFFICIAL RECORDS OF ORANGE COUNTY, CALIFORNIA.

APN: **016-221-27, 016-221-29, 016-221-28**

PROJECT SUMMARY

SCOPE OF WORKS:

CONSTRUCTION OF A NEW 82'-0" HEIGHT 6 STORY BUILDING WITH 139 SUITS AND ROOF TOP LOUNGE; CONSTRUCTION OF A NEW FREE STANDING FUTURE RESTAURANT.

CODE ANALYSIS:

USE:	HOTEL / COMMERCIAL
ZONE:	29-5-9: SD-8 - Specific Development
LOT SIZE:	123,042.5 SQ.FT. (2.82 ACRES)
OCCUPANCY GROUP :	R-1
CONSTRUCTION TYPE:	TYPE I-A 1ST FLOOR AND III-B 2ND TO 6TH FLOOR (FULLY SPRINKLER) 2HOUR EXTERIOR WALLS WITH NON-COMBOSTOBLE, FIRE TREATED WOOD
PROPOSED HEIGHT:	6 STORIES, 82'-0"
SPRINKLED:	YES

HOTEL - 139 KEYS

FIRST FLOOR - FLOOR AREA 13,355 SQ.FT.
2ND FLOOR - HOTEL GUEST ROOMS - 23 KEYS, FLOOR AREA 13,400 SQ.FT.
3RD FLOORS - HOTEL GUEST ROOMS -24 KEYS, FLOOR AREA 13,400 SQ.FT.
4TH FLOORS - HOTEL GUEST ROOMS - 24 KEYS, FLOOR AREA 13,400 SQ.FT.
5TH FLOORS - HOTEL GUEST ROOMS - 24 KEYS, FLOOR AREA 12,910 SQ.FT.
6TH FLOORS - HOTEL GUEST ROOMS - 24 KEYS, FLOOR AREA 12,910 SQ.FT.
TOTAL - 139 KEYS 79,375 SQ.FT

HOTEL PARKING:

REQUIRED PARKING: 139+14 (ONE ADDITIONAL PARKING FOR EVERY 10 ROOMS) =153 SPACES
PROVIDED PARKING: 126 SPACES
REQUIRED BICYCLE PARING: 5% OF THE TOTAL REQUIRED PARKING = 153 X .05 =7.65 SPACES
PROPOSED BICYCLE PARKING: 6 SPACES

FREE STANDING FUTURE RESTAURANT AREA: 2,000 SQ.FT.

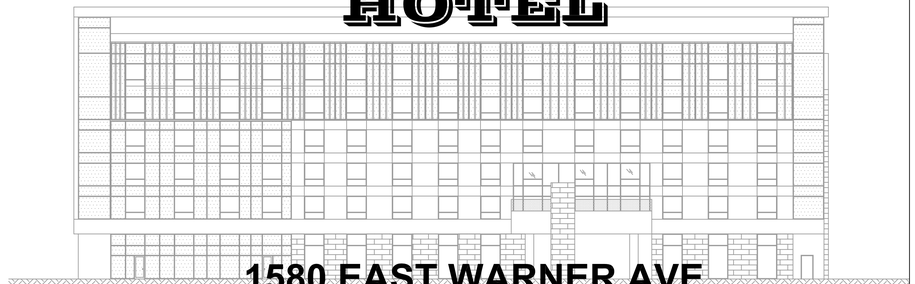
REQUIRED PARKING: 16 SPACE REQUIRED (8 PER 1,000 S.F.)
PROVIDED PARKING: 16 SPACES
REQUIRED BICYCLE PARING: 5% OF THE TOTAL REQUIRED PARKING = 16 X .05 =0.8 SPACES
PROPOSED BICYCLE PARKING: 4 SPACES

TOTAL PARKING SPACES REQUIRED FOR THE PROJECT: - 153+16 = 169 SPACES
PROVIDED STANDARD PARKING : - 136 SPACES
PROVIDED HANDICAPPED PARKING : - 6 SPACES
TOTAL PARKING SPACE PROVIDED FOR THE PROJECT: - 142 SPACES

FAR: HOTEL (79,375 S.F.) + RESTAURANT (2,000 S.F.) =81,375 SQ.FT.
81,375/123,042.5=.66

LOT COVERAGE: HOTEL (14,000 S.F.) + RESTAURANT (2,000 S.F.) =16,000 SQ.FT.
16,000/123,042.5=13.0%

TYPE OF SUITS	SQ.FT.	NUMBER OF KEYS ON EACH FLOOR					TOTAL KEYS
		2ND FLOOR	3RD FLOOR	4TH FLOOR	5TH FLOOR	6TH FLOOR	
KING STANDARD SUITE	312 S.F.	10	12	12	12	12	58
QQ STANDARD SUITE	312 S.F.	5	6	6	6	6	29
KING JUNIOR SUITE	346 S.F.	4	4	4	9	9	30
	367 S.F.	3	6	6	1	1	17
ADA SUITE	346 S.F.				1	1	2
	367 S.F.	1	1	1			3
TOTAL		23	29	29	29	29	139
					TOTAL KEYS		139



1580 EAST WARNER AVE.
SANTA ANA, CA 92705

STANDARD ABBREVIATIONS

@	AT	EXTR.	EXTRUDED	P. LAM.	PLASTIC LAMINATE		
A.B.	ANCHOR BOLT	F.D.	FLOOR DRAIN	P.B.L.	PAPER BACKED LATH		
A.D.	AREA DRAIN	FDN.	FOUNDATION	P.T.	PRESSURE TREATED		
ADDN'L.	ADDITIONAL	FIN.	FINISH	PART'N.	PARTITION		
ADJ.	ADJACENT	FL.	FLOOR	PLAST.	PLASTER		
A.F.F.	ABOVE FINISH FLOOR	FLASH'G.	FLASHING	PLY.	PLYWOOD		
ALUM.	ALUMINUM	F.O.C.	FACE OF CONCRETE	PR.	PAIR		
APPROX.	APPROXIMATELY	F.O.F.	FACE OF FINISH	PRPT.	PARAPET		
ARCH.	ARCHITECT	F.O.M.	FACE OF MASONRY	PTD.	PAINTED		
A.S.	ASPHALTIC CONCRETE	F.O.S.	FACE OF STUD	R.O.	ROUGH OPENING		
ASSY.	ASSEMBLY	FRM'G.	FRAMING	R.	RADIUS		
B.O.	BOTTOM OF	FT.	FOOT / FEET	R.C.P.	REFLECTED CEILING PLAN		
BD.	BOARD	FTG.	FOOTING	RD.	ROOF DRAIN		
BIT.	BITUMEN(OUS)	GA.	GAUGE	REF.	REFERENCE		
BLDG.	BUILDING	GALV.	GALVANIZED	REINF.	REINFORCEMENT		
BLKG.	BLOCKING	GYP.	GYPSUM	REQ'D.	REQUIRED		
BM.	BEAM	H.B.	HOSE BIBB	RF'G.	ROOFING		
CAB.	CABINET	H.C.	HOLLOW CORE	RM.	ROOM		
C.B.	CATCH BASIN	H.M.	HOLLOW METAL	S.B.	SANDBLASTED		
C.T.	CERAMIC TILE	HDR.	HEADER	S.D.	STORM DRAIN		
CEM.	CEMENT	HORIZ.	HORIZONTAL	S.C.	SOLID CORE		
CL.	CENTER LINE	HT.	HEIGHT	S.S.	STAINLESS STEEL		
CLG.	CEILING	I.D.	INSIDE DIAMETER	SCHED.	SCHEDULE		
CLR.	CLEAR	INFO.	INFORMATION	SHT.	SHEET		
COL.	COLUMN	INSUL.	INSULATION	SIM.	SIMILAR		
COMP.	COMPOSITION	INT.	INTERIOR	SPEC.	SPECIFICATION		
CONC.	CONCRETE	I.S.F.W.	INSIDE OF FINISH WALL	SPEC'D.	SPECIFIED		
CONSTR.	CONSTRUCTION	JT.	JOINT	SQ.	SQUARE		
CONT.	CONTINUOUS	M.O.	MASONRY OPENING	STD.	STANDARD		
CONTR.	CONTRACTOR	MAX.	MAXIMUM	STRUCT.	STRUCTURAL		
CPT.	CARPET	MBR.	MEMBER	SUSP.	SUSPENDED		
CTR.	CENTER	MECH.	MECHANICAL	T.	TEMPERED		
DBL.	DOUBLE	MEMB.	MEMBRANE	T.O.	TOP OF		
D.F.	DOUGLAS FIR	MFR.	MANUFACTURER	T.C.S.	TERNE COATED STEEL		
DIA.	DIAMETER	MIN.	MINIMUM	T.C.Z.	TERNE COATED ZINC		
DIM.	DIMENSION	MISC.	MISCELLANEOUS	TEMP.	TEMPERED		
DN.	DOWN	MTD.	MOUNTED	THK.	THICK		
DR.	DOOR	MTL.	METAL	TYP.	TYPICAL		
D.S.	DOWNSPOUT	N.I.C.	NOT IN CONTRACT	U.B.C.	UNIFORM BUILDING CODE		
DTL.	DETAIL	N.T.S.	NOT TO SCALE	U.O.N.	UNLESS OTHERWISE NOTED		
DWG.	DRAWING	NAT.	NATURAL	VERT.	VERTICAL		
EA.	EACH	NOM.	NOMINAL	V.G.D.F.	VERTICAL GRAIN DOUGLAS FIR		
ELEC.	ELECTRICAL	O/	OVER	W.C.	WATER CLOSET		
EL.	ELEVATION	O.C.	ON CENTER	W/O	WITHOUT		
ENCL.	ENCLOSURE	O.D.	OUTSIDE DIAMETER	W	WITH		
EQ.	EQUAL	O.H.	OVER HEAD	W/I	WITHIN		
EXIST.	EXISTING	OPEN'G.	OPENING	W.P.	WATER PROOF		
EXP.	EXPANSION	OPP.	OPPOSITE	W.R.	WATER RESISTANT		
EXT.	EXTERIOR	O.S.F.W.	OUTSIDE FACE OF FINISH WALL	WD.	WOOD		
		P.L.	PROPERTY LINE	W.T.	WALL THICKNESS		

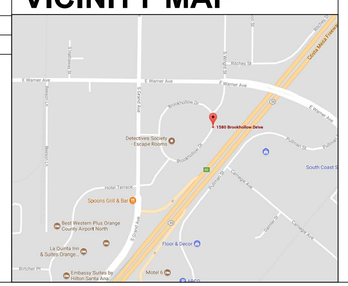
CODE COMPLIANCE:

THIS PROJECT SHALL COMPLY WITH THE LATEST ADOPTED EDITION OF THE FOLLOWING CODES:

A. **2013 CALIFORNIA BUILDING CODE AND ITS APPENDICES AND STANDARDS.**
B. **2013 CALIFORNIA PLUMBING CODE AND ITS APPENDICES AND STANDARDS.**
C. **2013 CALIFORNIA MECHANICAL CODE AND ITS APPENDICES AND STANDARDS.**
D. **2013 CALIFORNIA ELECTRICAL CODE.**
E. **2013 CALIFORNIA ENERGY CODE**
F. **2013 CALIFORNIA GREEN STANDARDS CODE (CALGreen) & THE SANTA ANA MUNICIPAL CODE (SAMC)**
G. **2013 CBC AND FEDERAL ACCESSIBILITY COMPLIANCE**
H. **TITLE 24, CALIFORNIA CODE OF REGULATIONS.**
I. **UNIFORM FIRE CODE AND ITS APPENDICES AND STANDARDS.**

1ST FLOOR AREA	13,400 SQ.FT	CEILING HEIGHT
LOBBY	1,200 SQ.FT	12'-0"
HOTEL RESTAURANT	1,900 SQ.FT	12'-0"
KITCHEN	1,080 SQ.FT	
BAR / LOUNGE	668 SQ.FT	12'-0"
MEETING ROOM #1	546 SQ.FT	12'-0"
MEETING ROOM #2	542 SQ.FT	12'-0"
MEETING ROOM #3	546 SQ.FT	12'-0"
MEETING / LOUNGE	633 SQ.FT	12'-0"
LAUNDRY	1,030 SQ.FT	
BREAK ROOM	302 SQ.FT	
B.O.H.	962 SQ.FT	
STORAGE	360 SQ.FT	
2ND FLOOR AREA	**13,400 SQ.FT**	
SPA	1,106 SQ.FT	
GYM	820 SQ.FT	
POOL DECK	2,400 SQ.FT	
ROOF DECK	**6,520 SQ.FT**	
LOBBY	133 SQ.FT	
STORAGE	854 SQ.FT	

VICINITY MAP



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SHEET INDEX

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Owner Address:
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Project Name:
TAPESTRY BY HILTON

Project Adress:
1580 EAST WARNER AVE. SANTA ANA

COVER SHEET

Scale: N/A

- APPROVED
- APPROVED
- REVISION
- REVISION
- REVISION
- DRAWN BY
- PRINT DATE 1-22-19
- JOB NO
- SHEET NO

A-0.1

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PROJECT SUMMARY

SCOPE OF WORK:

CONSTRUCTION OF A NEW 82'-0" HEIGHT 6 STORY BUILDING WITH 110 SUITS AND ROOF TOP LOUNGE.

CODE ANALYSIS:

USE:	HOTEL / COMMERCIAL
ZONE:	29-5-9: SD-8 - Specific Development
LOT SIZE:	123,042.5 SQ.FT. (2.82 ACRES)
OCCUPANCY GROUP :	R-1
CONSTRUCTION TYPE:	TYPE I-A 1ST FLOOR AND V-A 2ND TO 5YH FLOOR (FULLY SPRINKLER)
PROPOSED HEIGHT:	6 STORIES, 82'-0"
SPRINKLED:	YES

FAR: HOTEL (74,375 S.F.) + RESTAURANT (2,000 S.F.) =81,375 SQ.FT.
81,375/123,042.5=.66

LOT COVERAGE: HOTEL (14,000 S.F.) + RESTAURANT (2,000 S.F.) =16,000 SQ.FT.
16,000/123,042.5=13.0%

BUILDING AREAS		
	GUEST ROOMS	FLOOR AREA
1ST FLOOR	0 KEYS	13,355 SQ.FT.
2ND FLOOR	26 KEYS	13,400 SQ.FT.
3RD FLOORS	28 KEYS	13,400 SQ.FT.
4TH FLOORS	28 KEYS	13,400 SQ.FT.
5TH FLOORS	28 KEYS	12,910 SQ.FT.
6TH FLOORS	28 KEYS	12,910 SQ.FT.
TOTAL		79,375 SQ.FT
ROOF DECK AREA: 7,459 sq.ft.		

PARKING ANALYSIS:

SURFACE PARKING WITH TOTAL OF 176 PARKING SPACES AND 12 BICYCLE SPACE.

PARKING SPACES	H/C SPACE	STAN. SPACE	TOTAL
SURFACE	6	136	142
TOTAL PARKING			142

LANDSCAPE AREA:

GROUND FLOOR: = 33,923 S.F. / 123,042.5 SQ.FT. =.275 = 28%
2ND FLOOR: = 200 S.F.
ROOF DECK: = 422 S.F.
TOTAL LANDSCAPE AREA = 34,545 S.F.

CONSTRUCTION TYPE PER TABLE 503, 2016 CBC:

R-1 TYPE I-B (FULLY SPRINKLER)

OCCUPANCY SEPARATION PER TABLE 508.4, 2016 CBC

GROUP A-2 AND R-1 = 1 HR

OCCUPANCY LOAD PER TABLE 1004.1.2:

FIRST FLOOR		
LOBBY	1,200 SQ.FT / 100 =	12 OCCUPANTS
BAR / LOUNGE	668 SQ.FT / 15 =	45 OCCUPANTS
HOTEL RESTAURANT	1,900 SQ.FT / 15 =	126 OCCUPANTS
KITCHEN	1,080 SQ.FT / 200 =	5 OCCUPANTS
MEETING ROOM #1	546 SQ.FT / 15 =	36 OCCUPANTS
MEETING ROOM #2	542 SQ.FT / 15 =	34 OCCUPANTS
MEETING ROOM #3	546 SQ.FT / 15 =	36 OCCUPANTS
MEETING/LOUNGE	633 SQ.FT / 15 =	42 OCCUPANTS
OFFICES, LAUNDRY, STORAGE	5,843 SQ.FT / 200 =	29 OCCUPANTS
BREAK ROOM	302 SQ.FT / 15 =	20 OCCUPANTS
TOTAL	13,360 SQ.FT.	340 OCCUPANTS
SECOND FLOOR		
GYM	820 SQ.FT / 50 =	16 OCCUPANTS
SPA	1,106 SQ.FT/ 100 =	11 OCCUPANTS
POOL	486 SQ.FT / 50=	10 OCCUPANTS
POOL DECK	2,400 SQ.FT / 15 =	160 OCCUPANTS
TOTAL	4,812 SQ.FT	197 OCCUPANTS
GROUP "R-1"		
2ND FLOOR	10,626 SQ. FT. / 200 =	53 OCCUPANTS
3RD FLOOR	13,400 SQ. FT. / 200 =	67 OCCUPANTS
4TH FLOOR	13,400 SQ. FT. / 200 =	67 OCCUPANTS
5TH FLOOR	12,910 SQ. FT. / 200 =	65 OCCUPANTS
6TH FLOOR	12,910 SQ. FT. / 200 =	65 OCCUPANTS
TOTAL	63,246 SQ. FT.	317 OCCUPANTS
ROOF DECK FLOOR		
ROOF DECK	5564 SQ. FT. / 15 =	371 OCCUPANTS
HALLWAYS, STORAGE, RESTROOMS	1,845 SQ.FT. / 200 =	9 OCCUPANTS
TOTAL	7,459 SQ.FT.	380 OCCUPANTS

ALLOWABLE FLOOR AREA PER CHAPTER 5, 2016 CBC:

R-1 (1ST-6TH) TYPE I-B = UL / 12 STORIES > 79,375 SQ. FT.
A-2 (ROOF DECK) TYPE I-B = UL / 12 STORIES > 7,459 SQ. FT.

ALLOWABLE HEIGHT AND NUMBER OF STORIES PER CHAPTER 5, 2016 CBC:

EACH SEPARATED OCCUPANCY SHALL COMPLY WITH THE BUILDING HEIGHT LIMITATIONS BASED ON THE TYPE OF CONSTRUCTION OF THE BUILDING IN ACCORDANCE WITH SEC. 503.1 THEREFOR: 6 STORIES OCCUPANCY R-1 TYPE "I-B" AND ROOF DECK WITHIN ALLOWABLE LIMITS PER ANALYSIS PROVIDED ABOVE.

FIRE RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE PER TABLE 602, 2016 CBC

FSD	FOR R-1 IN TYPE I-B
X < 5'	1
5' < X < 10'	1
10' < X < 30'	1
X > 30'	0

EXIT ACCESS STAIRWAYS PER 2016 CBC

SEC. 1011.12 - ONE STAIRWAY SHALL EXTENDED TO THE ROOF SURFACE.

SEC. 1023.2 -EXIT ACCESS STAIRWAY ENCLOSURES SHALL HAVE A FIRE RESISTANCE RATING OF NOT LESS THAN 2HR.

EXIT ANALYSIS PER CHAPTER 10, 2016 CBC:

STAIR EGRESS CALCULATIONS								
	EXITS		EXIT			STAIR		
	#1 OCCUPANTS	#2 OCCUPANTS	WIDTH FACTOR	REQ'D WIDTH	PROVIDED WIDTH	WIDTH FACTOR	REQ'D WIDTH	PROVIDED WIDTH
1ST FLR.	40	40	0.15	6	60	0.2	8	48
2ND FLR.	40	40	0.15	6	60	0.2	8	48
3RD FLR.	33	34	0.15	5.1	48	0.2	6.8	48
4TH FLR.	33	34	0.15	5.1	48	0.2	6.8	48
5TH FLR.	32	33	0.15	4.95	36	0.2	6.6	48
6TH FLR.	32	33	0.15	4.95	36	0.2	6.6	48
ROOF FLR.	190	190	0.15	28.5	36	0.2	38	48

PLUMBING OCCUPANCY CALCULATIONS					
ROOM		USE	AREA	LOAD FACTOR	OCCUPANCY
FITNESS / GYM		A-2	820	30	27
COMMON	MEETING ROOM	A-2	2,317	30	77
	BAR / LOUNGE	A-2	668	30	22
	BUSINESS CENTER	A-2	319	30	10.6
EMPLOYEE	KITCHEN, SERVING AREA	B	1,080	200	5.4
	OFFICES	B	770	200	3.85
	EMPLOYEE ROOM	B	300	200	1.5

MINIMUM PLUMBING FACILITIES PER TABLE 422.1, CHAPTER 4, 2016 CPC

SPACE	OCCUPANCY		REQUIRED FIXTURES				PROPOSED FIXTURES			
			WATER CLOSET		LAV.	URINALS	WATER CLOSET		LAV.	URINALS
			M	F	M F	MALE	M	F	M F	MALE
FITNESS / GYM	16	M-9 F-9	1	1	1 1	0	1	1	1 1	0
COMMON AREA	12	M-22 F-22	1	1	1 1	0	1	1	1 1	0
EMPLOYEE	9		1		1	0	1		1	0

Table 11B-224.2 Guest Rooms with Mobility Features

Total Number of Guest Rooms Provided	Minimum Number of Required Rooms Without Roll-In Showers	Minimum Number of Required Rooms With Roll-in Showers	Total Number of Required Rooms
1 to 25	(begin underline) 0 (end underline) (begin strikeout) 1 (end strikeout)	(begin underline) 1 (end underline) (begin strikeout) 0 (end strikeout)	1
26 to 50	(begin underline) 1 (end underline) (begin strikeout) 2 (end strikeout)	(begin underline) 1 (end underline) (begin strikeout) 0 (end strikeout)	2
51 to 75	3	1	4
76 to 100	4	1	5
101 to 150	5	2	7
151 to 200	6	2	8
201 to 300	7	3	10
301 to 400	8	4	12
401 to 500	9	4	13
501 to 1000	2 percent of total	1 percent of total	3 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000	10, plus 1 for each 100, or fraction thereof, over 1000	30, plus 2 for each 100 or fraction thereof, over 1000

Table 11B-224.4 Guest Rooms with Communication Features

Total Number of Guest Rooms Provided With Communication Features	Minimum Number of Required Guest Rooms
2 to 25	2
26 to 50	4
51 to 75	7
76 to 100	9
101 to 150	12
151 to 200	14
201 to 300	17
301 to 400	20
401 to 500	22
501 to 1000	5 percent of total
1001 and over	50, plus 3 for each 100 over 1000

CALCULATION FOR PROVIDED ROOMS PER ADA STANDARDS FOR ACCESSIBLE DESIGN PER TABLE 224.2 AND 224.4

TOTAL NUMBER OF GUEST ROOMS = 85
TOTAL PROVIDED GUEST ROOMS WITH MOBILITY FEATURES = 5 > REQUIRED 5
4 WITHOUT ROLL IN SHOWER ONE WITH ROLL IN SHOWER
PROVIDED GUEST ROOMS WITH HEARING AID COMPATIBLE = 9 = REQUIRED 9

Table 11B-208.2 PARKING SPACES

Total Number of parking spaces provided in parking facility	Minimum Number of required accessible parking spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 percent of total
1001 and over	20, plus 1 of each 100, or fraction therote, over 1000

TABLE 601
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V	
	A	B	A[d]	B	A[d]	B	HT	A[d]	B
Primary structural frame[g] (see Section 202)	3[a]	2[a]	1	0	1	0	HT	1	0
Bearing walls Exterior[f, g] Interior	3 3[a]	2 2[a]	1 1	0 0	2 1	2 0	2 1/HT	1 1	0 0
Nonbearing walls and partitions Exterior	See Table 602								
Nonbearing walls and partitions Interior[e]	0	0	0	0	0	0	See Section 602.4.6	0	0
Floor construction and associated secondary members (see Section 202)	2	2	1	0	1	0	HT	1	0
Roof construction and associated secondary members (see Section 202)	1 1/2[b]	1[b,c]	1[b,c]	0[c]	1[b,c]	0	HT	1[b,c]	0

For SI: 1 foot = 304.8 mm.
a. Roof supports: Fire-resistance ratings of primary structural frame and bearing walls are permitted to be reduced by 1 hour where supporting a roof only.
b.1.Except in Group *A, E,* F-1, H, *I, L,* M, *R-1, R-2, R-2.1* and S-1 *occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal,* fire protection of structural members shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
b.2.For Group A, E, I, L, R-1, R-2 and R-2.1 occupancies, high-rise buildings, and other applications listed in Section 1.11 regulated by the Office of the State Fire Marshal, fire protection of members other than the structural frame shall not be required, including protection of roof framing and decking where every part of the roof construction is 20 feet or more above any floor immediately below. Fire-retardant-treated wood members shall be allowed to be used for such unprotected members.
b.3. For one-story portions of Group A and E assembly occupancies the roof-framing system of Type II A or Type III A construction may be of unprotected construction when such roof-framing system is open to the assembly area and does not contain concealed spaces.
c. In all occupancies, heavy timber shall be allowed where a 1-hour or less fire-resistance rating is required.
d. An approved automatic sprinkler system in accordance with Section 903.3.1.1 shall be allowed to be substituted for 1-hour fire-resistance-rated construction, provided such system is not otherwise required by other provisions of the code or used for an allowable area increase in accordance with Section 506.3 or an allowable height increase in accordance with Section 504.2. The 1-hour substitution for the fire resistance of exterior walls shall not be permitted.
e. Not less than the fire-resistance rating required by other sections of this code.
f. Not less than the fire-resistance rating based on fire separation distance (see Table 602).
g. Not less than the fire-resistance rating as referenced in Section 704.10

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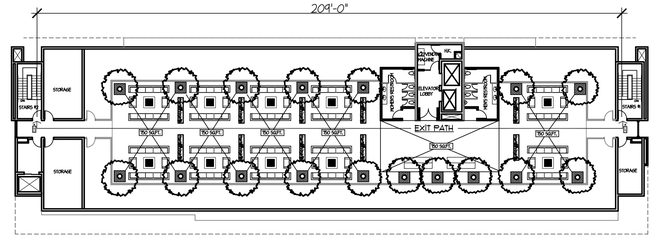
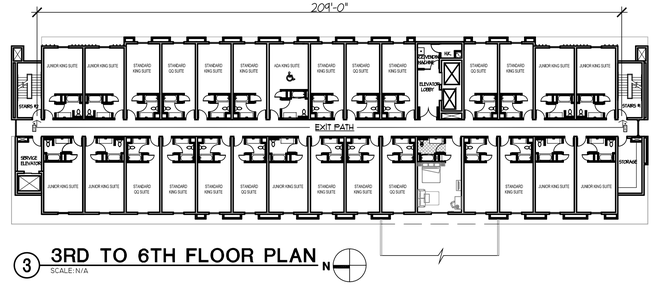


4 ROOF DECK PLAN
SCALE: N/A



3 3RD TO 6TH FLOOR PLAN
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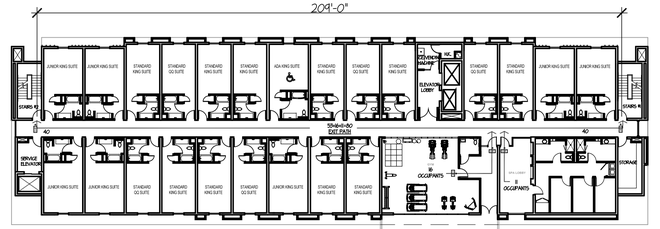

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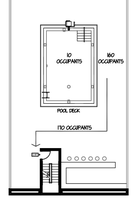

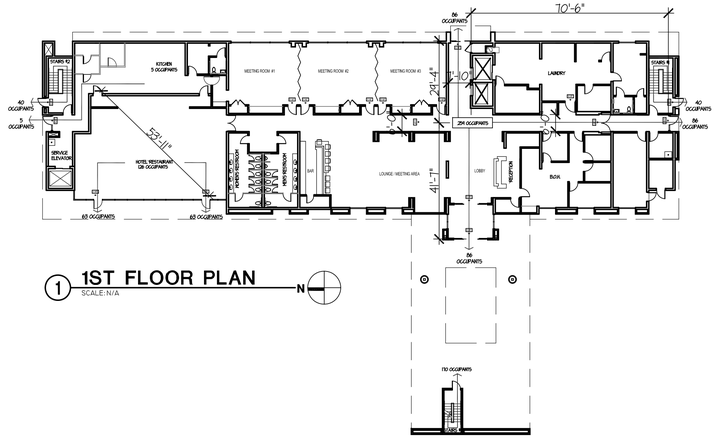

1 1ST FLOOR PLAN
SCALE: N/A

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Project Name:
TAPESTRY BY HILTON

Project Adress:
1580 EAST WARNER AVE. SANTA ANA

CODE ANALYSIS

Scale: N/A

- APPROVED
- APPROVED
- REVISION
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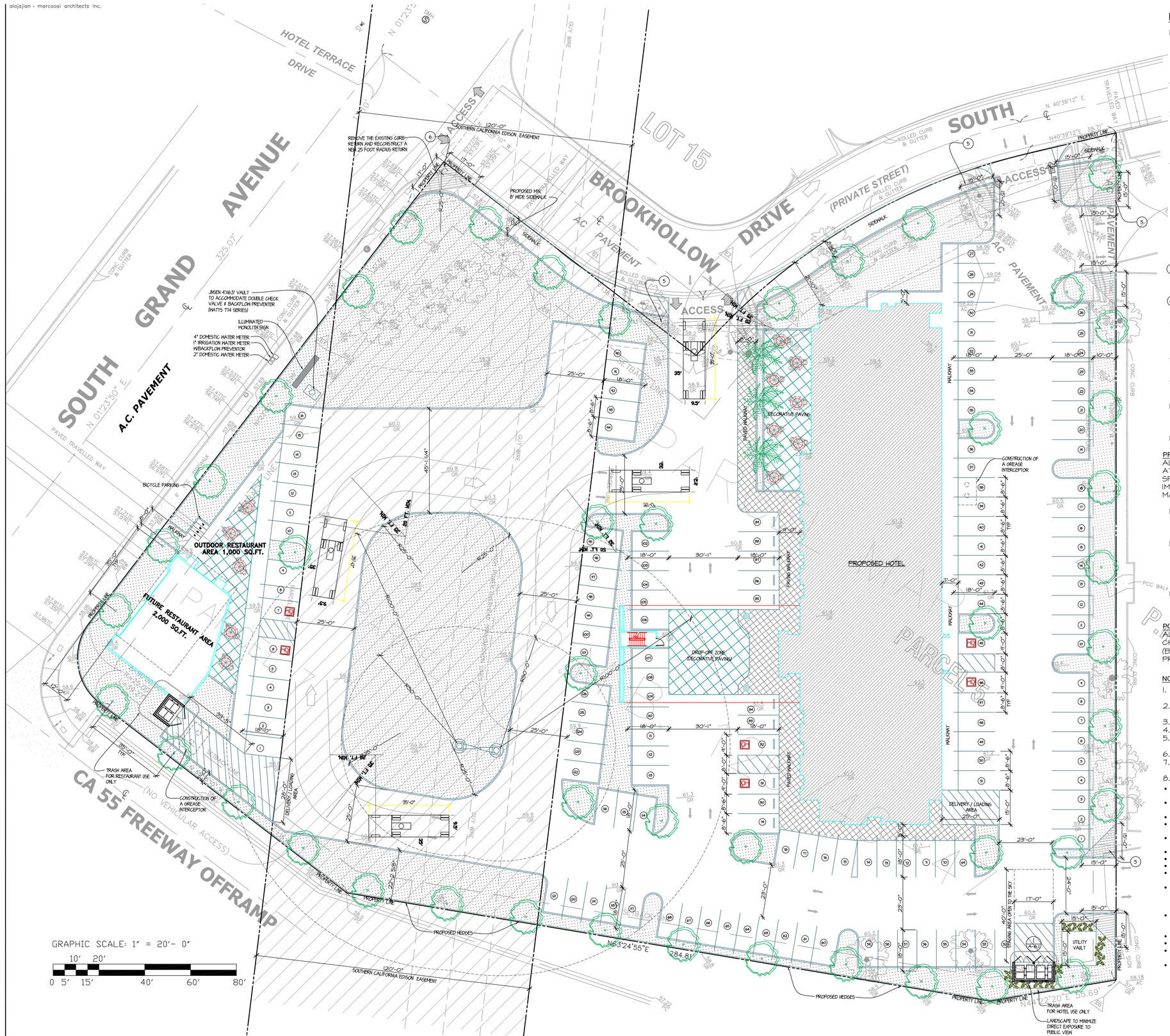

NOTE:

1. INSTALLATION OF 24" BOX STREET TREES AT 35' ON CENTER ON GRAND AVENUE, INCLUDING DEEP ROOT IRRIGATION SYSTEMS, PER CITY STANDARDS.
   a. INSTALL 24-INCH BOX STREET TREES PER THE CITY STANDARDS AND APPROVED PLAN, AS NEEDED.
2. THE INSTALLATION OF ALL PUBLIC UTILITIES REQUIRED TO SERVICE THE PROJECT SITE (I.E., NEW SEWER LATERAL, WATER LATERALS, AND STORM DRAIN).
3. THE PROPOSED PROJECT TO BE SERVED BY INDIVIDUAL PUBLIC WATER METERS FOR EACH AND EVERY SEPARATE COMMERCIAL/RETAIL AREAS, AND FOR THE LANDSCAPE AREA. PUBLIC METER TO BE PROPERLY SIZED AND TO BE PLACED AT THE PROJECT'S FRONTAGE IN PUBLIC RIGHT-OF-WAY.
4. GREASE INTERCEPTOR MUST COMPLY WITH THE CITY'S ORDINANCE NO. NS 26-70.

   NOTE: ALL NEW FOOD SERVICE ESTABLISHMENTS SHALL COMPLY WITH THE CITY'S ORDINANCE NO. NS-26-70, FOR FAT, OIL, AND GREASE (FOG) CONTROL PROGRAM, AND ITS SUBSEQUENT REQUIREMENT FOR CONSTRUCTION OF A GRAVITY GREASE INTERCEPTOR. DEVELOPER SHALL CONTACT CITY'S PLANNING AND BUILDING DEPARTMENT TO INCORPORATE DESIGN OF THE REQUIRED GREASE INTERCEPTOR OF ADEQUATE SIZE, INTO THE PROJECT'S PLUMBING PLANS, AND TO DETERMINE AN APPROPRIATE LOCATION FOR IT WITHIN THE PROJECT SITE

5. 15' X 15' SIGHT DISTANCE TRIANGLE AREA AT THE VEHICULAR SITE ACCESS LOCATIONS
   NO PROPOSED SIGNS ARE LOCATED WITHIN REQUIRED TRIANGLE VISIBILITY AREAS AT STREET AND/OR DRIVEWAY INTERSECTIONS.
6. 17'x17' CORNER CUT-OFF DEDICATION AT THE SOUTHEAST CORNER OF GRAND AVE. AND BROOKHOLLOW DRIVE.
7. REPLACEMENT OF THE CURB RAMP AT THE SOUTHEST CORNERS OF GRAND AVE. AND BROOKHOLLOW Dr. PER CITY OF SANTA ANA STANDARD PLAN #1 122.
8. THE CONSTRUCTION OF FULL DEPTH ASPHALT CONCERT FOR THE CURB LANE, NORTH BOUND, ALONG THE ENTIRE PROPERTY FRONTAGE.
9. GRINDING AND CAPPING MINIMUM OF 2 INCH OF THE EXISTING AC PAVEMENT LEFT TURN LANE, SOUTH BOUND, TO ENTER THE PROJECT SITE.
10. ALL TRAFFIC IMPACT ANALYSIS (TIA) RECOMMENDATIONS) WILL BE IMPLEMENTED PRIOR TO THE BUILDING PERMIT, SOLELY AT THE DEVELOPER'S EXPENSE.
11. A LOT MERGER APPLICATION WILL BE SUBMITTED FOR REVIEW.

PROPOSED IMPROVEMENTS:
ALL IMPROVEMENT AS SHOWN HEREON TO BE CONSTRUCTED AND INSTALLED AT EXPENSE IN ACCORDANCE WITH THE CITY DESIGN STANDARDS AND SPECIFICATIONS, THE SANTA ANA MUNICIPAL CODE, APPROVED STREET IMPROVEMENT PLANS AND THE REQUIREMENTS OF THE STATE SUBDIVISION MAP ACT.

11. ALL TRAFFIC IMPACT ANALYSIS (TIA) RECOMMENDATION(S) WILL BE IMPLEMENTED PRIOR TO THE BUILDING PERMIT, SOLELY AT THE DEVELOPER'S EXPENSE.
12. THIS SITE WILL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SANTA ANA REGION ORDER NO. R8-2009-0030 DISCHARGE REQUIREMENTS (MS4 PERMIT).A CONTACT MINDY LY (714) 647-5665 FOR ADDITIONAL INFORMATION.
13. ANY EXISTING SEWER LATERAL(S) SERVING THE PROJECT SITE SHALL BE PROPERLY CAPPED AND ABANDONED AT THE PROPERTY LINE. CONTACT MIR FATTAHI, AT (714) 647-5038 FOR ASSISTANCE.

POLICE DEPARTMENT:
ALL STRUCTURES AND PARKING LOTS COMPLY WITH THE PROVISIONS OF CHAPTER 8, ARTICLE II, DIVISION 3 OF THE SANTA ANA MUNICIPAL CODE (BUILDING SECURITY ORDINANCE). ALL APPLICABLE SECTIONS MUST BE PRINTED VERBATIM ON THE SET OF PLANS.

NOTES FOR EFFICIENT ACCESS OF TRASH VEHICLES TO TRASH RECEPTACLES:

1. MINIMUM 40FOOT BY 16 FOOT WIDE STAGING AREA SHALL BE AVAILABLE ON SERVICE DAYS FROM 6 A.M. TO 6 P.M.
2. MINIMUM VERTICAL CLEARANCE OF 25 FEET AT THE STAGING AREA FOR BIN SERVICE CLEARANCE.
3. MINIMUM 13 FEET VERTICAL CLEARANCE FOR SCOUT TRUCK
4. ALL STAGING AREAS TO BE ONSITE. NO STREET STAGING IS PERMITTED
5. ALL DRIVEWAY AND STAGING AREAS MUST BE ABLE TO SUSTAIN A MINIMUM GROSS WEIGHT OF 60,000 LBS. PER VEHICLE.
6. MAXIMUM SIZE BIN SHALL BE 4 CUBIC YARDS.
7. MAXIMUM NUMBER OF PICK-UPS IS 2 TIMES PER WEEK FOR RESIDENTIAL PROJECTS ONLY.
8. BACKING UP INTO THE STREET IS NOT ALLOWED FOR SAFETY REASONS.

- MINIMUM 40' X 16' WIDE STAGING AREA AVAILABLE ON SERVICE DAYS FROM 6AM TO 6PM
- MINIMUM VERTICAL CLEARANCE OF 25' AT STAGING AREA FOR BIN SERVICE CLEARANCE
- MINIMUM 8'.2A VERTICAL CLEARANCE FOR SCOUT TRUCK (IF APPLICABLE)
- ELIMINATE ALL BACKING. 3 POINT TURNS MAY BE PERMITTABLE AT THE DISCRETION OF THE CITY
- ALL DRIVEWAY AND STAGING AREAS MUST BE ABLE TO CARRY A MINIMUM OF 60,000-POUND GROSS VEHICLE WEIGHT.
- DEPICT TRASH TRUCKS TURNING RADIUS ON THE ALL PROPOSED INTERNAL CORNERS
- 42' ON A 90-DEGREE TURN RADIUS
- MINIMUM 11'6A LANE WIDTH FOR TURN RADIUS
- FOR ROLL OUT SERVICE THE DESIRED PATH OF TRAVEL FOR THE BIN MUST BE LEVEL WITH NO "LIPS" OR MAJOR ELEVATION CHANGES
- (COMMERCIAL) MINIMUM ONE TIME A WEEK SERVICE ADEQUATE FOR ALL WASTE TO BE CONTAINED WITHIN THE BINS, ADJUSTMENTS TO THE NUMBER OF YARDS REQUIRED FOR SERVICE ARE AT THE DISCRETION OF THE CITY AND WASTE MANAGEMENT
- ENCLOSURE MUST BE BIG ENOUGH TO HOLD MINIMUM NUMBER OF REQUIRED BINS THAT ARE 7' X 4'.X 4'EACH PLUS ENOUGH ROOM TO MANEUVER BIN
- MAX SIZE BIN 4 CUBIC YARDS.
- MAX NUMBER OF PICKUP IS 2 TIMES PER WEEK
- (RESIDENTIAL MULTI FAMILY) 0.5 YARDS OF COMBINED SOLID WASTE AND RECYCLE BIN SERVICE PER WEEK PER RESIDENCE
- (RESIDENTIAL) EACH HOME WILL BE REQUIRED TO HAVE A MINIMUM OF 1 96GALLON CART FOR EACH COMMODITY; TRASH, RECYCLE, AND GREEN WASTE

1 SITE PLAN
SCALE: 1"=20'-0"

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Owner:
MODA HOTELS, LLC

Owner Address:
17510 PIONEER BLVD. #221-A ARTESIA,CA 90701

Project Name:
TAPESTRY BY HILTON

Project Adress:
1580 EAST WARNER AVE. SANTA ANA

SITE PLAN

Scale: 1"=20'-0"

- APPROVED
- APPROVED
- REVISION
- REVISION
- REVISION
- DRAWN BY
- PRINT DATE
- JOB NO
- SHEET NO

A-1.1

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Attachment B

Noise Measurement Results

- Freq Weight : A
- Time Weight : FAST
- Level Range : 40-100
- Max dB : 79.6 - 2019/01/03 07:16:43
- Level Range : 40-100
- SEL : 99.5
- Leq : 70.0
-

No.s	Date Time	(dB)
1	2019/01/03 07:15:13	74.2
2	2019/01/03 07:15:14	75.5
3	2019/01/03 07:15:15	76.9
4	2019/01/03 07:15:16	76.5
5	2019/01/03 07:15:17	77.3
6	2019/01/03 07:15:18	77.4
7	2019/01/03 07:15:19	77.8
8	2019/01/03 07:15:20	76.7
9	2019/01/03 07:15:21	77.1
10	2019/01/03 07:15:22	74.3
11	2019/01/03 07:15:23	74.2
12	2019/01/03 07:15:24	73.5
13	2019/01/03 07:15:25	72.8
14	2019/01/03 07:15:26	72.8
15	2019/01/03 07:15:27	72.1
16	2019/01/03 07:15:28	71.5
17	2019/01/03 07:15:29	71.6
18	2019/01/03 07:15:30	71.5
19	2019/01/03 07:15:31	71.5
20	2019/01/03 07:15:32	70.9
21	2019/01/03 07:15:33	70.8
22	2019/01/03 07:15:34	71.9
23	2019/01/03 07:15:35	71.1
24	2019/01/03 07:15:36	71.0
25	2019/01/03 07:15:37	71.6
26	2019/01/03 07:15:38	71.5
27	2019/01/03 07:15:39	71.4
28	2019/01/03 07:15:40	71.3
29	2019/01/03 07:15:41	71.9
30	2019/01/03 07:15:42	73.1
31	2019/01/03 07:15:43	72.8
32	2019/01/03 07:15:44	72.9
33	2019/01/03 07:15:45	72.6
34	2019/01/03 07:15:46	71.5
35	2019/01/03 07:15:47	70.8
36	2019/01/03 07:15:48	71.4
37	2019/01/03 07:15:49	71.8
38	2019/01/03 07:15:50	71.1
39	2019/01/03 07:15:51	70.5
40	2019/01/03 07:15:52	70.5
41	2019/01/03 07:15:53	70.2
42	2019/01/03 07:15:54	70.8
43	2019/01/03 07:15:55	72.9
44	2019/01/03 07:15:56	78.0
45	2019/01/03 07:15:57	71.6
46	2019/01/03 07:15:58	71.4
47	2019/01/03 07:15:59	70.5
48	2019/01/03 07:16:00	70.7
49	2019/01/03 07:16:01	70.5
50	2019/01/03 07:16:02	71.0
51	2019/01/03 07:16:03	71.3
52	2019/01/03 07:16:04	70.9
53	2019/01/03 07:16:05	71.6
54	2019/01/03 07:16:06	70.9
55	2019/01/03 07:16:07	71.1
56	2019/01/03 07:16:08	71.5
57	2019/01/03 07:16:09	71.2
58	2019/01/03 07:16:10	71.8
59	2019/01/03 07:16:11	70.9
60	2019/01/03 07:16:12	71.0
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72	2019/01/03 07:16:24	70.8
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83	2019/01/03 07:16:35	74.7
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86	2019/01/03	07:16:38	75.7
87	2019/01/03	07:16:39	76.2
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141	2019/01/03	07:17:33	68.4
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- Time Weight : FAST
- Level Range : 40-100
- Max dB : 84.0 - 2019/01/03 07:43:08
- Level Range : 40-100
- SEL : 99.5
- Leq : 70.0
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755	2019/01/03	07:54:55	66.2
756	2019/01/03	07:54:56	67.0
757	2019/01/03	07:54:57	67.1
758	2019/01/03	07:54:58	66.6
759	2019/01/03	07:54:59	66.0
760	2019/01/03	07:55:00	64.8
761	2019/01/03	07:55:01	64.9
762	2019/01/03	07:55:02	65.1
763	2019/01/03	07:55:03	64.7
764	2019/01/03	07:55:04	65.8
765	2019/01/03	07:55:05	66.1
766	2019/01/03	07:55:06	65.8
767	2019/01/03	07:55:07	65.7
768	2019/01/03	07:55:08	66.2
769	2019/01/03	07:55:09	66.7
770	2019/01/03	07:55:10	65.3
771	2019/01/03	07:55:11	65.4
772	2019/01/03	07:55:12	66.4
773	2019/01/03	07:55:13	66.4
774	2019/01/03	07:55:14	66.3
775	2019/01/03	07:55:15	66.6
776	2019/01/03	07:55:16	67.1
777	2019/01/03	07:55:17	66.2
778	2019/01/03	07:55:18	66.7

779	2019/01/03	07:55:19	65.8
780	2019/01/03	07:55:20	66.5
781	2019/01/03	07:55:21	67.9
782	2019/01/03	07:55:22	67.0
783	2019/01/03	07:55:23	67.6
784	2019/01/03	07:55:24	68.1
785	2019/01/03	07:55:25	68.1
786	2019/01/03	07:55:26	67.7
787	2019/01/03	07:55:27	67.7
788	2019/01/03	07:55:28	66.6
789	2019/01/03	07:55:29	66.0
790	2019/01/03	07:55:30	67.1
791	2019/01/03	07:55:31	69.3
792	2019/01/03	07:55:32	68.2
793	2019/01/03	07:55:33	68.0
794	2019/01/03	07:55:34	67.0
795	2019/01/03	07:55:35	67.9
796	2019/01/03	07:55:36	69.5
797	2019/01/03	07:55:37	71.8
798	2019/01/03	07:55:38	73.4
799	2019/01/03	07:55:39	73.2
800	2019/01/03	07:55:40	74.1
801	2019/01/03	07:55:41	71.7
802	2019/01/03	07:55:42	72.3
803	2019/01/03	07:55:43	72.4
804	2019/01/03	07:55:44	70.6
805	2019/01/03	07:55:45	71.1
806	2019/01/03	07:55:46	70.1
807	2019/01/03	07:55:47	70.3
808	2019/01/03	07:55:48	70.2
809	2019/01/03	07:55:49	71.0
810	2019/01/03	07:55:50	71.9
811	2019/01/03	07:55:51	71.3
812	2019/01/03	07:55:52	71.1
813	2019/01/03	07:55:53	72.3
814	2019/01/03	07:55:54	71.8
815	2019/01/03	07:55:55	74.0
816	2019/01/03	07:55:56	74.0
817	2019/01/03	07:55:57	73.9
818	2019/01/03	07:55:58	74.1
819	2019/01/03	07:55:59	73.2
820	2019/01/03	07:56:00	70.8
821	2019/01/03	07:56:01	69.7
822	2019/01/03	07:56:02	69.2
823	2019/01/03	07:56:03	72.1
824	2019/01/03	07:56:04	72.5
825	2019/01/03	07:56:05	71.6
826	2019/01/03	07:56:06	69.1
827	2019/01/03	07:56:07	68.9
828	2019/01/03	07:56:08	69.6
829	2019/01/03	07:56:09	70.0
830	2019/01/03	07:56:10	70.1
831	2019/01/03	07:56:11	69.8
832	2019/01/03	07:56:12	70.4
833	2019/01/03	07:56:13	69.5
834	2019/01/03	07:56:14	68.3
835	2019/01/03	07:56:15	68.8
836	2019/01/03	07:56:16	68.7
837	2019/01/03	07:56:17	70.8
838	2019/01/03	07:56:18	72.5
839	2019/01/03	07:56:19	66.7
840	2019/01/03	07:56:20	66.6
841	2019/01/03	07:56:21	66.5
842	2019/01/03	07:56:22	66.7
843	2019/01/03	07:56:23	66.8
844	2019/01/03	07:56:24	66.2
845	2019/01/03	07:56:25	65.8
846	2019/01/03	07:56:26	66.7
847	2019/01/03	07:56:27	65.5
848	2019/01/03	07:56:28	65.5
849	2019/01/03	07:56:29	64.7
850	2019/01/03	07:56:30	64.4
851	2019/01/03	07:56:31	64.2
852	2019/01/03	07:56:32	64.8
853	2019/01/03	07:56:33	64.5
854	2019/01/03	07:56:34	64.7
855	2019/01/03	07:56:35	65.5
856	2019/01/03	07:56:36	65.1
857	2019/01/03	07:56:37	64.3
858	2019/01/03	07:56:38	64.3
859	2019/01/03	07:56:39	65.0
860	2019/01/03	07:56:40	64.6
861	2019/01/03	07:56:41	64.9
862	2019/01/03	07:56:42	65.2
863	2019/01/03	07:56:43	65.5
864	2019/01/03	07:56:44	66.3
865	2019/01/03	07:56:45	67.4
866	2019/01/03	07:56:46	68.9
867	2019/01/03	07:56:47	69.1
868	2019/01/03	07:56:48	68.6
869	2019/01/03	07:56:49	67.6
870	2019/01/03	07:56:50	67.9
871	2019/01/03	07:56:51	72.3
872	2019/01/03	07:56:52	73.5
873	2019/01/03	07:56:53	77.6
874	2019/01/03	07:56:54	73.9
875	2019/01/03	07:56:55	73.9
876	2019/01/03	07:56:56	74.1
877	2019/01/03	07:56:57	73.5

878	2019/01/03	07:56:58	74.1
879	2019/01/03	07:56:59	73.4
880	2019/01/03	07:57:00	73.3
881	2019/01/03	07:57:01	72.6
882	2019/01/03	07:57:02	72.6
883	2019/01/03	07:57:03	72.1
884	2019/01/03	07:57:04	71.8
885	2019/01/03	07:57:05	71.6
886	2019/01/03	07:57:06	71.4
887	2019/01/03	07:57:07	69.8
888	2019/01/03	07:57:08	71.0
889	2019/01/03	07:57:09	72.6
890	2019/01/03	07:57:10	71.5
891	2019/01/03	07:57:11	71.1
892	2019/01/03	07:57:12	69.6
893	2019/01/03	07:57:13	67.7
894	2019/01/03	07:57:14	67.8
895	2019/01/03	07:57:15	69.5
896	2019/01/03	07:57:16	68.8
897	2019/01/03	07:57:17	68.4
898	2019/01/03	07:57:18	66.0
899	2019/01/03	07:57:19	64.9
900	2019/01/03	07:57:20	64.0

Attachment C

Roadway Construction Noise Model Results

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 05/11/2020
Case Description: Tapestry Hotel Project

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Ricca Children's Learning Center	Residential	65.0	65.0	65.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	225.0	0.0
Excavator	No	40		80.7	225.0	0.0
Jackhammer	Yes	20		88.9	225.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Dozer	68.6	64.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	67.6	63.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Jackhammer	75.8	68.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	75.8	71.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**** Receptor #2 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Holiday Inn Hotel	Residential	65.0	65.0	65.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	600.0	0.0
Excavator	No	40		80.7	600.0	0.0
Jackhammer	Yes	20		88.9	600.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Calculated (dBA)

Equipment	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Dozer	60.1	56.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	59.1	55.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Jackhammer	67.3	60.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	67.3	62.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Attachment D

Traffic Noise Prediction Model Results

FHWA RD-77-108

Traffic Noise Prediction Model

Data Input Sheet

Project Name : Tapestry Hotel Project
Project Number : 18-06469
Modeled Condition : Existing plus Project

Surface Reflection: CNEL
Assessment Metric: Hard
Peak ratio to ADT: 10.00
Traffic Desc. (Peak or ADT) : ADT

Segment	Roadway	Segment From	Segment To	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
1	SR-55	Dyer Road	Edinger Avenue	289,361	65	215	95.00	3.00	2.00	80.00	10.00	10.00	
2	South Grand Avenue	SR-55 SB Off-Ramp	Brookhollow Drive	25,761	45	300	95.00	3.00	2.00	80.00	10.00	10.00	

FHWA RD-77-108

Traffic Noise Prediction Model

Predicted Noise Levels

Project Name : Tapestry Hotel Project
Project Number : 18-06469
Modeled Condition : Existing plus Project
Assessment Metric: Hard

		Segment		Noise Levels, dBA Hard				Distance to Traffic Noise Level Contours, Feet					
Segment	Roadway	From	To	Auto	MT	HT	Total	75 dB	70 dB	65 dB	60 dB	55 dB	50 dB
1	SR-55	Dyer Road	Edinger Avenue	79.9	71.0	72.8	81	876	2,770	8,759	27,697	87,587	276,974
2	South Grand Avenue	SR-55 SB Off-Ramp	Brookhollow Drive	63.4	56.6	59.3	65	33	104	329	1,040	3,289	10,402

Attachment E

Vibration Analysis

Groundborne Noise and Vibration Modeling

Notes
The reference distance is measured from the nearest anticipated point of construction equipment to the nearest structure.

	Reference Level Inputs			
Equipment	**PPV_{ref} (in/sec)**	**Lv_{ref} (VdB)**	**RMS_{ref} (in/sec)**	**Reference Distance**
Large bulldozer	0.089	87	0.022	25
Loaded trucks	0.076	83	0.014	25
Jack hammer	0.035	79	0.009	25
Small bulldozer	0.003	58	0.001	25

	Vibration Level at Receiver			
Equipment	**Distance (feet)**	**PPV_x (in/sec)**	**Lv_x (VdB)**	**RMS_x (in/sec)**
Large bulldozer	75	0.0266	77	0.007
Loaded trucks	75	0.0227	73	0.004
Jack hammer	75	0.0105	69	0.003
Small bulldozer	75	0.0009	48	0.000

Source
California Department of Transportation (Caltrans). 2020. Transportation and Construction Vibration Guidance Manual. April 2020. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf Last Updated: 4/24/2020

Groundborne Noise and Vibration Modeling

Notes
The reference distance is measured from the nearest anticipated point of construction equipment to the nearest structure.

	Reference Level Inputs			
Equipment	**PPV_{ref} (in/sec)**	**Lv_{ref} (VdB)**	**RMS_{ref} (in/sec)**	**Reference Distance**
Large bulldozer	0.089	87	0.022	25
Loaded trucks	0.076	83	0.014	25
Jack hammer	0.035	79	0.009	25
Small bulldozer	0.003	58	0.001	25

	Vibration Level at Receiver			
Equipment	**Distance (feet)**	**PPV_x (in/sec)**	**Lv_x (VdB)**	**RMS_x (in/sec)**
Large bulldozer	125	0.0152	72	0.004
Loaded trucks	125	0.0129	68	0.002
Jack hammer	125	0.0060	64	0.002
Small bulldozer	125	0.0005	43	0.000

Source
California Department of Transportation (Caltrans). 2020. Transportation and Construction Vibration Guidance Manual. April 2020. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf Last Updated: 4/24/2020

Groundborne Noise and Vibration Modeling

Notes
The reference distance is measured from the nearest anticipated point of construction equipment to the nearest structure.

	Reference Level Inputs			
Equipment	**PPV_{ref} (in/sec)**	**Lv_{ref} (VdB)**	**RMS_{ref} (in/sec)**	**Reference Distance**
Large bulldozer	0.089	87	0.022	25
Loaded trucks	0.076	83	0.014	25
Jack hammer	0.035	79	0.009	25
Small bulldozer	0.003	58	0.001	25

	Vibration Level at Receiver			
Equipment	**Distance (feet)**	**PPV_x (in/sec)**	**Lv_x (VdB)**	**RMS_x (in/sec)**
Large bulldozer	175	0.0105	68	0.003
Loaded trucks	175	0.0089	64	0.002
Jack hammer	175	0.0041	60	0.001
Small bulldozer	175	0.0004	39	0.000

Source
California Department of Transportation (Caltrans). 2020. Transportation and Construction Vibration Guidance Manual. April 2020. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf Last Updated: 4/24/2020