



**RECEIVED**  
NOV 24 2008

CITY OF SANTA BARBARA  
PLANNING DIVISION

## **El Encanto Hotel**

**1900 Lasuen Road  
Santa Barbara, CA 93103**

### **Sound Impact Analysis Report**

**Report Number: 06156/CP2-02**

**Prepared By:**

---

Ian Boorer MEng  
email: [ian@newsonacoustics.com](mailto:ian@newsonacoustics.com)

**Prepared For:**

El Encanto, Inc.  
  
c/o Project Solutions, LLC  
1900 Lasuen Road  
Santa Barbara, CA 93103

20 November 2008

© 2008 Newson Brown Acoustics, LLC. All rights reserved.  
For more information, visit [www.newsonbrown.com](http://www.newsonbrown.com)

## 1.0 INTRODUCTION

Orient-Express Hotels, Trains and Cruises propose to construct an underground operations facility, surface valet parking lot and an underground utility distribution facility at the north west corner of the El Encanto Hotel site and a partially subterranean podium parking structure in the north east corner of the site. The site is located in the City of Santa Barbara and is bounded by Mission Ridge Road, Alvarado Place and Lasuen Road. This report presents an analysis of potential noise impacts of the following project components:

- The underground utility distribution facility;
- Surface valet parking lot;
- Mission Village, partially subterranean podium parking structure;
- Construction noise; and,
- The potential increase in noise due to road traffic associated with the valet parking lots and taking into consideration the additional 9 guest rooms that were approved with the 2004 Master Plan.

The report reviews the mitigation measures to reduce potential impacts to the onsite hotel use and surrounding residential uses. The analysis, review of the incorporated mitigation measures and the recommended mitigation measures included in the following report have been based upon the following considerations:

- Section 9.16 of the City of Santa Barbara's Municipal Code, which relates to noise.
- The Noise Element, adopted August 1979 and amended November 1983, included in the City of Santa Barbara's General Plan.
- The existing noise environment at the neighboring residential property lines.
- Underground utility distribution facility architectural drawings (attachment A).
- Underground utility distribution facility mechanical drawings (attachment B).
- Condensed water cooling equipment noise data (attachments C1 and C2) and condensed water cooling equipment load profile (attachment D).
- Supply fan noise data (attachment E).
- The mark-up (attachment F) and air ventilation fan noise data (attachment G) for the partially subterranean podium parking structure air ventilation system.
- The traffic classification data (twenty four hour traffic flow data for Mission Ridge Road and Alvarado Place that differentiates vehicle types and reports separately the current traffic, additional traffic due to the El Encanto Hotel prior to redevelopment and additional traffic due to the hotel subsequent to the addition of nine guest rooms as part of the 2004 approved Master Plan) received on the 30<sup>th</sup> of October 2008 (attachment H).
- The construction phasing plan (attachment I).

Figure 1, below, is an aerial photograph of the project vicinity, showing the approximate locations of the measurement positions used during the noise survey and the underground operations facility, surface valet parking lot, underground utility distribution facility and partially subterranean podium parking structure.

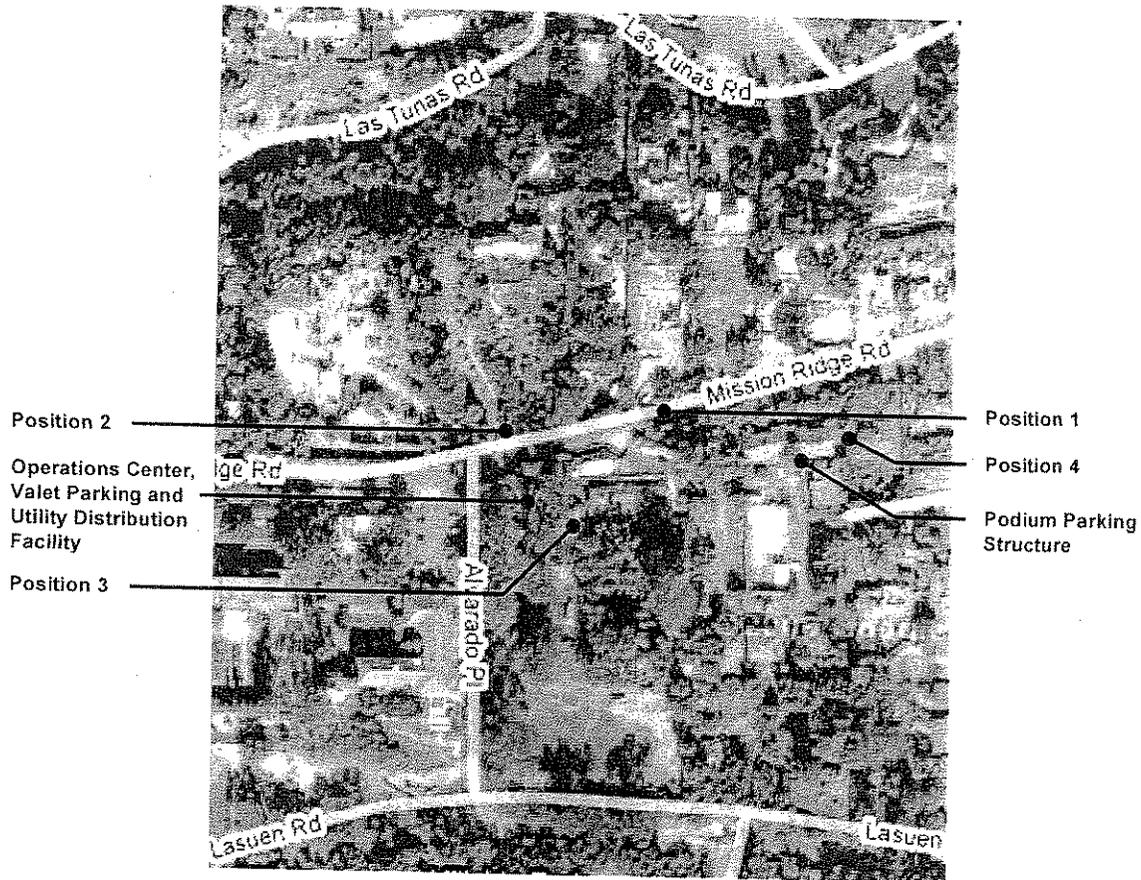


Figure 1 - Site/Vicinity Plan Showing Noise Measurement Positions (not to scale)

## 2.0 NOISE MEASUREMENTS

### 2.1 Existing Ambient Background Noise Levels

Acoustical measurements were conducted on Sunday the 7<sup>th</sup> and Monday the 8<sup>th</sup> of September 2008 at four locations on and around the project site in order to document the existing day, evening, nighttime and weekend exterior ambient background noise environment at the site.

- Measurement position 1 was located on Mission Ridge Road north east of the secondary entrance to the El Encanto Hotel site.
- Measurement position 2 was located at the property line of 1978 Mission Ridge Road, which is the residential property boundary closest to the location of the proposed underground operations facility, surface valet parking lot and underground utility distribution facility.
- Measurement position 3 was located at west end of Building 16 on the El Encanto Hotel site.
- Measurement position 4 was located at the northeasterly corner of the El Encanto Hotel site.

Measurements were taken utilizing a Bruel & Kjaer (B&K) type 2260 Investigator, Precision Sound Analyzer (certification 31 December 2007). The measurement microphone was supported approximately 5 ft above the ground and was fitted with a B&K foam windscreen. Immediately prior to the measurements the analyzer was calibrated utilizing a B&K type 4231 acoustic calibrator (certification 2 January 2008).

The results of the measurements are summarized in Tables 1 and 2, below. Data shown in the tables are for linear octave band spectra over the frequency range from 63 Hz to 8000 Hz and the overall A-weighted level. These are reported in terms of  $L_{90}$  which is the noise level exceeded 90 percent of the time within the measurement time interval and is typically used as a measure of the 'background' noise level. It should be noted that the 0.1 dB precision shown in the table is the resolution of the numerical display on the analyzer and is only retained for illustration. The absolute calibration accuracy of the measurement system is approximately  $\pm 0.5$  dB. For reference, a change in sound level of 1 dB or less is typically not noticeable to an 'average' listener, a 3 dB change is noticeable to most listeners, and a difference in level of 10 dB is necessary for the sound to be judged to be half or twice as loud.

It was not possible to measure background noise levels in and around the EL Encanto Hotel site on the 7<sup>th</sup> of September 2008 in the early afternoon due to a live open air concert taking place in the Riviera Park Research and Communications Center which is located directly west of the El Encanto Hotel Site. These levels, if measured, would not have provided an accurate representation of the existing exterior ambient background noise environment at the site. In addition, background noise levels were not measured between 7:00 am and 4:00 pm on the 8<sup>th</sup> of September 2008 due to construction activity at the El Encanto Hotel site.

During daytime hours the main source of noise was observed to be vehicular traffic traveling along Mission Ridge Road and, at measurement position 2 and 3, Alvarado Place. Other noise sources observed during the measurements included aircraft (light aircraft, jet aircraft and helicopters) and noises caused by activities in neighboring residences. At measurement position 2, noise from mechanical equipment located adjacent to the surface parking lot of the Riviera Park Research and Communications Center at the corner of Mission Ridge Road and Alvarado Place was audible. At measurement position 4, noise was audible due to mechanical equipment which was assumed to be located on the property of 1935 Mission Ridge Road. Freeway noise was occasionally faintly audible.

During the evening and early nighttime periods, noise sources included road traffic traveling along Mission Ridge Road and, at measurement position 2, Alvarado Place, aircraft, chirping insects such as crickets and, during the evening period only, birds. Again, at measurement position 2 noise from mechanical equipment was audible. At measurement position 4 activity noise from the adjacent property, 1935 Mission Ridge Road, was audible.

During the 3:00 am to 4:00 am nighttime period, noise sources included chirping insects such as crickets. At measurement positions 2 and 3 noise from mechanical equipment was audible due to equipment located adjacent to the surface parking lot of the Riviera Park Research and Communications Center. Again, at measurement position 4 activity noise from the adjacent property, 1935 Mission Ridge Road, was audible.

Table 1 – Sunday the 7<sup>th</sup> of September 2008 Exterior Noise Measurement Results

Meas. Posn.	Start Time		Octave Band Center Frequency – Hz								A-wtd
			63	125	250	500	1000	2000	4000	8000	
1	4:15 pm	$L_{90}$	46	45	35	30	26	21	18	16	35.2
2	4:36 pm	$L_{90}$	50	47	39	33	32	27	23	19	38.6
3	4:57 pm	$L_{90}$	49	46	36	31	30	26	21	16	38.6
4	5:29 pm	$L_{90}$	48	40	33	29	28	23	19	14	34.0
1	7:25 pm	$L_{90}$	45	41	36	29	25	20	14	13	33.6
2	7:10 pm	$L_{90}$	48	45	38	32	31	25	23	15	37.4
4	7:41 pm	$L_{90}$	43	39	32	29	24	25	16	13	33.0
1	10:00 pm	$L_{90}$	41	40	31	23	23	41	32	23	43.6
2	10:10 pm	$L_{90}$	44	40	32	27	28	40	24	15	42.2
4	10:23 pm	$L_{90}$	38	33	25	24	18	27	15	12	31.0

Table 2 – Monday the 8<sup>th</sup> of September 2008 Exterior Noise Measurement Results

Meas. Posn.	Start Time		Octave Band Center Frequency – Hz								A-wtd
			63	125	250	500	1000	2000	4000	8000	
1	3:04 am	L <sub>90</sub>	34	31	24	19	16	27	28	18	33.4
2	3:11 am	L <sub>90</sub>	37	34	27	25	27	28	19	15	33.4
3	3:20 am	L <sub>90</sub>	35	30	22	18	18	23	15	13	27.8
4	3:28 am	L <sub>90</sub>	30	28	20	18	14	15	14	13	23.6
1	4:12 pm	L <sub>90</sub>	48	43	38	32	29	24	20	17	36.4
2	4:30 pm	L <sub>90</sub>	50	47	40	36	34	29	24	20	40.4
3	4:52 pm	L <sub>90</sub>	50	47	37	33	31	26	20	16	38.2
4	5:35 pm	L <sub>90</sub>	45	40	30	26	24	19	18	14	31.4
1	7:05 pm	L <sub>90</sub>	42	43	36	29	25	19	19	14	34.0
2	7:21 pm	L <sub>90</sub>	45	43	34	29	28	25	21	17	35.0
4	7:40 pm	L <sub>90</sub>	40	35	24	22	19	24	15	12	30.4
1	10:00 pm	L <sub>90</sub>	35	33	26	20	17	40	18	17	42.0
2	10:06 pm	L <sub>90</sub>	39	36	28	26	27	39	21	14	41.6
4	10:28 pm	L <sub>90</sub>	37	30	22	20	16	28	12	12	31.4

During the nighttime period the measured noise levels were higher compared to those measured during the evening and the daytime. For example, at measurement position 1 on the 7<sup>th</sup> of September 2008 a background noise level of 43.6 dB(A) L<sub>90</sub> was measured at 10:00 pm compared to background noise levels of 35.2 dB(A) L<sub>90</sub> 33.6 dB(A) L<sub>90</sub> measured at 4:15 pm and 7:25 pm, respectively, at the same location. The elevated background noise levels during the nighttime period were presumably due to chirping insects such as crickets. Please note that during other times of the year the nighttime background noise levels may be lower since crickets are not considered to be a constant background noise source.

## 2.2 Surface Valet Parking Lot Simulations

Acoustical measurements were conducted at the site of the El Encanto Hotel on the 7<sup>th</sup> of September 2008 of two cars entering and leaving via Alvarado Place the existing surface parking lot on site, in the location of the proposed surface valet parking lot. The acoustical measurements were taken at a distance of approximately 80' from where the cars parked, which is approximately equal to the distance from the northerly most parking spaces of the proposed surface valet parking lot to the property line of 1978 Mission Ridge Road, the closest residential property line. The following events were measured:

- Event 1      Cars enter the hotel site from Alvarado Place, accelerate up the short drive aisle into the existing surface parking lot, park, switch off the car engines, drivers open doors, exit the vehicle and close the car doors.
- Event 2      Drivers open the car doors, enter the vehicles, close the car doors, start the car engines, reverse to exit the existing surface parking lot and leave the hotel site.
- Event 3      Events 1 and 2 in series.

The results of the measurements are summarized in Table 3, below. Data shown in the table is for linear octave band spectra over the frequency range from 63 Hz to 8000 Hz and the overall A-weighted level. These are reported in terms of L<sub>eq</sub>, which is the equivalent or energy average level for the sample period. The measurement results are intended to be representative of the noise levels that would occur at the closest residential property line due to two vehicles maneuvering in the proposed surface valet parking lot.

**Table 3 – Sunday the 7<sup>th</sup> of September 2008 Surface Valet Parking Lot Simulations**

Event No.		Octave Band Center Frequency – Hz								A-wtd
		63	125	250	500	1000	2000	4000	8000	
1	L <sub>eq</sub>	54.9	53	44.8	38.1	37.8	33.6	28.1	22.3	43.2
2	L <sub>eq</sub>	55.6	51.9	40.7	35	32.7	28.4	24.4	19.7	40.0
3	L <sub>eq</sub>	55.8	53.2	45.7	40.5	34.8	30.7	26.8	20.4	43.0

Please note that during the measurement of events 1 through 3, other noise sources contributed to the measured noise levels such as road traffic along Mission Ridge Road and Alvarado Place. As such, the above measurement results are slightly higher than the noise levels generated by the vehicles alone.

For comparison, below are the L<sub>eq</sub> spectra measured at measurement position 2 prior to the surface valet parking lot simulations and during the nighttime period.

**Table 4 – Sunday the 7<sup>th</sup> of September 2008 Exterior Noise Measurements**

Meas. Posn.	Start Time		Octave Band Center Frequency – Hz								A-wtd
			63	125	250	500	1000	2000	4000	8000	
2	4:36pm	L <sub>eq</sub>	58.2	57.7	48.7	47.9	43.8	39.2	35.2	32	49.6
2	10:10pm	L <sub>eq</sub>	48	46.5	41	35.6	34	42.3	27.3	19.9	44.8

From comparing Table 3 and Table 4 above, please note that the A-weighted L<sub>eq</sub> noise levels measured during the surface valet parking lot simulations are lower than the existing ambient A-weighted L<sub>eq</sub> noise levels measured at measurement position 2, due to vehicles on Alvarado Place, Mission Ridge Road and other noise sources, prior to the surface valet parking lot simulations and during the nighttime period.

### 3.0 STANDARDS

#### 3.1 Criteria Required by the City of Santa Barbara

Section 9.16.025 paragraph C of the Municipal Code states that, "All mechanical equipment other than vehicles shall be insulated and sound at the property line of any adjacent parcel used or zoned for residential, institutional or park purposes shall not exceed sixty A-weighted decibels using the Community Noise Equivalent Level (60dB(A) CNEL)."

The CNEL descriptor is a time of day weighted average noise metric that imposes a 5 dB penalty on noise occurring during evening hours between 7:00 pm and 10:00 pm and a 10 dB penalty on noise during night hours between 10:00 pm and 7:00 am the following morning. These penalties are to adjust for the increased human sensitivity to noise during periods of relaxation and sleep.

With regards to construction noise, section 9.16.015 of the Municipal Code (Construction Work at Night) states that, "It shall be unlawful for any person, between the hours of 8:00 pm of any day and 7:00 am of the following day to erect, construct, demolish, excavate for, alter or repair any building or structure if the noise level created thereby is in excess of the ambient noise level by 5 dB(A) at the nearest property line of a property used for residential purposes unless a special permit therefore has been applied for and granted by the Chief of Building and Zoning."

The Land Use Compatibility Guidelines included in the Noise Element show that for residential land use (single family, duplex, mobile homes) an exterior noise level lower than 55 dB(A) L<sub>dn</sub> is "clearly acceptable" and that an exterior noise level in the range of 55 dB(A) L<sub>dn</sub> to 60 dB(A) L<sub>dn</sub> is "normally acceptable". As a result, in a residential area 60 dB(A) L<sub>dn</sub> is the upper limit for a normally acceptable exterior noise level.

The  $L_{dn}$  is a descriptor of noise level based on the dB(A)  $L_{eq}$  over a 24 hour period that imposes a 10 dB penalty on noise occurring during night hours between 10:00 pm and 7:00 am the following morning. Again, these penalties are to adjust for the increased human sensitivity to noise during periods of relaxation and sleep.

For reference Figure 2, below, shows a range of A-weighted noise levels at various distances from common indoor and outdoor noise sources. It should be noted that since CNEL and  $L_{dn}$  are time-of-day weighted, 24 hour average noise levels. There are no simple relationships between the A-weighted sound level produced by a given noise source and the resulting CNEL or  $L_{dn}$ . The duration of the noise, and the time-of-day of the occurrence are both necessary in addition to the A-weighted sound level produced by the noise source in order to calculate the CNEL or  $L_{dn}$ .

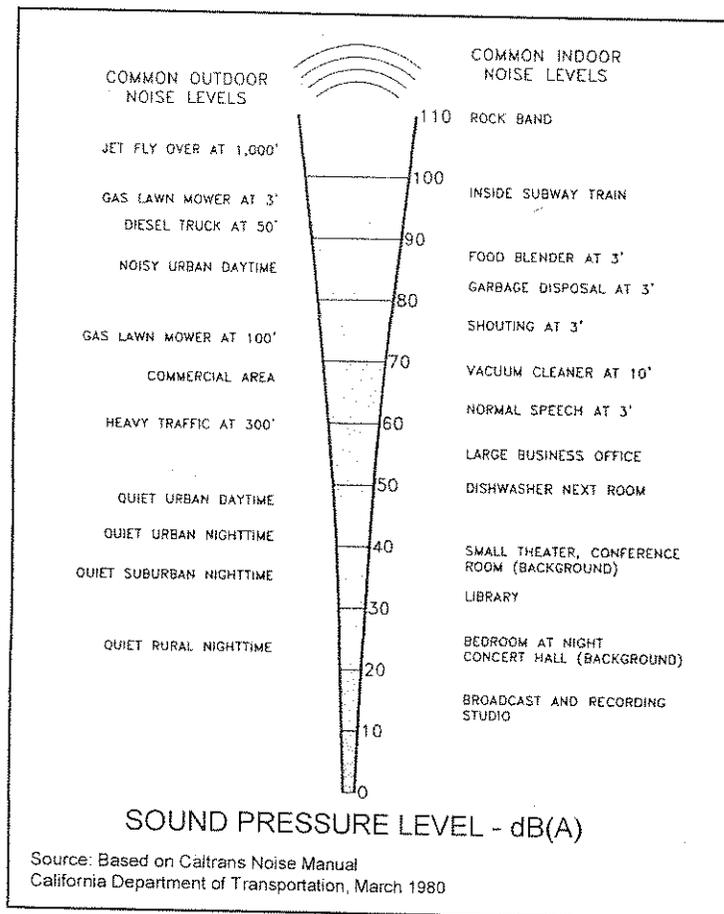


Figure 2 - Common Indoor and Outdoor Noise levels - dB(A)

### 3.2 Criteria Based Upon Existing Ambient Background Noise Levels

Mechanical equipment could generate a constant average noise level of 53dB(A)  $L_{eq}$  over a twenty four hour period at the closest neighboring residential property line and still achieve the limit of 60dB(A) CNEL required by the City of Santa Barbara Municipal Code. This average noise level is clearly greater than the ambient background noise levels measured at site and, as a result, simply abiding to the required limit of 60dB(A) CNEL would result in the noise generated by mechanical equipment causing disturbance at the neighboring residential property lines. The noise control for the mechanical equipment located in both the underground utility distribution facility and the partially subterranean podium parking structure has therefore been selected in order to reduce the noise generated by the mechanical equipment at the closest residential property lines such that it is comparable to the lowest ambient background noise levels

measured at site. This will result in the noise control been designed to a dramatically more stringent standard than required in the City of Santa Barbara Municipal Code and as a result the noise levels at the closest residential property lines due to the mechanical equipment would be dramatically lower than the required limit of 60dB(A) CNEL. Since a limit defined in terms of CNEL is slightly more stringent than the same limit defined in terms of  $L_{dn}$ , this methodology will also satisfy the normally acceptable exterior noise level of 60 dB(A)  $L_{dn}$  given for residential land use by the Land Use Compatibility Guidelines included in the Noise Element.

#### 4.0 UNDERGROUND UTILITY DISTRIBUTION FACILITY SOUND IMPACT ANALYSIS

From the project drawings (attachments A and B) it is understood that the underground utility distribution facility will contain water heating and cooling equipment, which is located approximately 22' feet below grade. With the water heating equipment located in a separate subterranean mechanical room it is anticipated that the condensed water cooling equipment will be the loudest item of mechanical equipment in the underground utility distribution facility.

Since the El Encanto Hotel wishes to prevent disturbance to hotel guests and local residences located adjacent to the hotel site, the following noise control has been incorporated into the project drawings (attachments A and B):

- i) 10 foot long silencers in both the intake and ventilation ductwork serving the condensed water cooling equipment. Based upon the condensed water cooling equipment noise data (attachments C1 and C2) provided by the manufacturer, the silencers shall be specified as IAC type 10LFL or equivalent.
- ii) 2" thick internal acoustical lining in both the intake and ventilation ductwork serving the condensed water cooling equipment.
- iii) Acoustical lining of all available wall and ceiling surfaces within the room which houses the condensed water cooling equipment. This shall be specified similar to detail TR/1 (attached J).

From the condensed water cooling equipment load profile (attachment D) and Guttman & Blaevoet Consulting Engineers it is understood that under a worst case scenario (during inclement weather when the hotel is at high occupancy and there is a high demand for cooling) at a maximum the condensed water cooling equipment, which is located approximately 22' feet below grade, will operate at approximately 65% of full duty during the nighttime period of 10:00 pm to 7:00 am. Based upon the noise data for the condensed water cooling equipment (attachments C1 and C2) operating at 72% of full duty it is anticipated that the above noise control will result in a noise level of approximately 25 dB(A) at the closest residential property line due to the combined noise levels generated at the intake and ventilation openings which serve the condensed water cooling equipment. This is lower than the quietest ambient background noise level (33.4 dB(A)  $L_{90}$ ) measured at 1978 Mission Ridge Road, which is the residential property boundary closest to the location of the proposed underground utility distribution facility.

It should be noted that the analysis discussed above is based on noise data for the condensed water cooling equipment operating at 72% of full duty. However, it is understood that at a maximum the condensed water cooling equipment will operate at approximately 65% of full duty during the nighttime period of 10:00 pm to 7:00 am. As a result, the above noise control may result in a noise level slightly lower than 25 dB(A) at the closest residential property line due to the combined noise levels generated at the intake and ventilation openings which serve the condensed water cooling equipment.

During the daytime period under a worst case scenario (during inclement weather when the hotel is at high occupancy and there is a high demand for cooling) when the condensed water cooling equipment is operating at full duty it is anticipated that the above noise control will result in a noise level of 26 dB(A) at the closest residential property line due to the combined noise levels generated at the intake and ventilation openings which serve the condensed water cooling equipment. This is lower than the quietest

ambient background noise levels measured at site during the daytime and evening periods (30.4 dB(A)  $L_{90}$ ).

It is understood that the worst case scenario discussed above would occur relatively infrequently and that the condensed water cooling equipment would only operate for a short period until demand is satisfied. During other times when the weather is more temperate, heating and cooling requirements will be satisfied by equipment located within or beneath the main building and cottages.

Noise control, such as IAC type 3L silencers, shall be incorporated into the ventilation system serving the subterranean area housing the water heating equipment to reduce the transfer of noise from this equipment to the closest residential property line.

Please note that since the residences themselves are set back from the property line the noise level at the residences due to the condensed water cooling equipment will be further reduced compared to the noise level at the property line. For a small localized sound source (approximating a point source), sound radiates uniformly outward as it travels away from the source in a hemispherical pattern and the sound pressure level reduces by 6 dB(A) per doubling of distance from the source (the sound becomes quieter as the distance from the sound source is increased). This reduction is due to the geometric spreading of the energy over an ever-increasing area. Atmospheric absorption, ground attenuation, turbulence, wind gradients, temperature, humidity, intervening topography and structures also have an effect on the noise levels experienced at the receiver location. These factors typically cause the noise level at the receiver location to be reduced even further and these factors have a greater effect as the distance between the noise source and the receiver increases. There are some uncharacteristic cases where the factors discussed above may cause the sound pressure level to reduce by slightly less than 6 dB(A) per doubling of distance from the source. However, the sound pressure level is not increased or amplified as the distance from the sound source is increased. During the acoustical survey of the El Encanto Hotel site it was noted that there were landscape features, such as trees, that would screen the intake and ventilation louvers of the proposed underground utility distribution facility from the neighboring residential properties and may provide some additional sound reduction. In addition, residences located between the project site and outdoor areas will provide acoustic screening. Such features and beneficial sound reductions were not taken into account in the analysis.

With the noise control discussed above, the noise level due to the condensed water cooling equipment at the closest residential property line should be comparable to the lowest ambient background noise level measured during the acoustical survey of the El Encanto Hotel site and surrounding area. The noise control has been designed to a dramatically more stringent standard than required in the City of Santa Barbara Municipal Code and as a result the noise level due to the condensed water cooling equipment at the closest residential property line would be dramatically lower than the required limit of 60 dB(A) CNEL.

#### **5.0 PARTIALLY SUBTERRANEAN PODIUM PARKING STRUCTURE AIR VENTILATION FAN SOUND IMPACT ANALYSIS**

From the mark-up (attachment F) it is understood that the partially subterranean podium parking structure will contain a single air ventilation fan. Since the El Encanto Hotel wishes to prevent disturbance to hotel guests and local residences located adjacent to the hotel site, an IAC type 7MS silencer has been incorporated into the air ventilation ductwork connected to the air ventilation fan.

Based upon the noise data for the air ventilation fan (attachment G) it is anticipated that the above noise control will result in a noise level of approximately 23 dB(A) at the closest residential property line due to the air ventilation fan. This is comparable to the quietest ambient background noise level (23.6 dB(A)  $L_{90}$ ) measured at 1935 Mission Ridge Road, which is the residential property boundary closest to the location of the proposed partially subterranean podium parking structure.

With the noise control discussed above, the noise level due to the air ventilation fan at the closest residential property line should be comparable to the lowest ambient background noise level measured

during the acoustical survey of the El Encanto Hotel site and surrounding area. The noise control has been designed to a dramatically more stringent standard than required in the City of Santa Barbara Municipal Code and as a result the noise level due to the air ventilation fan at the closest residential property line would be dramatically lower than the required limit of 60dB(A) CNEL.

## 6.0 ON SITE TRAFFIC SOUND IMPACT ANALYSIS

The Land Use Compatibility Guidelines included in the Noise Element show that for residential land use (single family, duplex, mobile homes) an exterior noise level lower than 55 dB(A)  $L_{dn}$  is "clearly acceptable" and that an exterior noise level of 60 dB(A)  $L_{dn}$  is "normally acceptable".

### 6.1 Surface Valet Parking Lot Sound Impact Analysis

Based upon the traffic classification data (attachment H), a computer model was created to calculate the traffic noise from the vehicles entering and exiting the hotel site from Alvarado Place and utilizing the surface valet parking lot. The model was created using the Traffic Noise Model (TNM), version 2.5 released by the Federal Highway Administration (FHWA) and showed that for vehicles traveling at 10 mph within the surface parking lot, the noise level at the closest residential property line would be 43.2 dB(A)  $L_{dn}$ . This is lower than the "clearly acceptable" exterior noise level of 55 dB(A)  $L_{dn}$  and the normally acceptable exterior noise level of 60 dB(A)  $L_{dn}$  given for residential land use by the Land Use Compatibility Guidelines included in the Noise Element.

The same computer model was used to calculate the traffic noise from the vehicles entering and exiting the hotel site from Alvarado Place and utilizing the surface valet parking lot during the daytime and nighttime hours when the surface parking lot is most active. The results are presented in Table 5, below.

Table 5 – Estimated Noise Level at Closest Residential Property Line

	Maximum Trip Generation Estimates Per Hour	Speed	Estimated Noise Level at Closest Residential Property Line
Daytime	123 (11:00 am – 12:00 noon)	10 mph	41.9 dB(A) $L_{eq}$
Nighttime	65 (10:00 pm – 11:00pm)	10 mph	39.1 dB(A) $L_{eq}$

These measurement results are generally consistent with those measured during the surface valet parking lot simulations as discussed above.

It is understood from Associated Transportation Engineers that (at a maximum) approximately 3-4 cars will be accessing the surface valet parking lot at the El Encanto Hotel site during the daytime and evening periods at any given time. Based upon the noise measurements taken during the surface valet parking lot simulations it is anticipated that a noise level of approximately 46 dB(A)  $L_{eq}$  will be generated at the closest residential property line during the daytime and evening periods. It is also understood from Associated Transportation Engineers that at a maximum approximately 2-3 cars will be accessing the surface valet parking lot at the El Encanto Hotel site during the nighttime period at any given time. Based upon the noise measurements taken during the surface valet parking lot simulations it is anticipated that a noise level of approximately 44 dB(A)  $L_{eq}$  will be generated at the closest residential property line during the nighttime period.

### 6.2 Partially Subterranean Podium Parking Structure Sound Impact Analysis

It is understood that the partially subterranean podium parking structure will be enclosed on all sides with the exception of an entrance for vehicles and an entrance for pedestrians. Both of these entrances face into the El Encanto Hotel site. With the proposed location of the entrances and the relatively substantial structure, which is anticipated due to the partially subterranean construction and to support the cottages above, it is anticipated that minimal noise due to vehicular movement within podium parking structure will be transferred to the neighboring residential property lines. As a result, it is anticipated that the main source of noise transfer to the adjacent community due to vehicular movement associated with the

partially subterranean podium parking structure will be caused by vehicles traveling on the driveway off of Mission Ridge Road.

Based upon the traffic classification data (attachment H), a computer model was created to calculate the traffic noise from the vehicles entering and exiting the hotel site from Mission Ridge Road. The model was created using the Traffic Noise Model (TNM), version 2.5 released by the Federal Highway Administration (FHWA) and showed that for vehicles traveling at 10 mph on the driveway off of Mission Ridge Road, the noise level at the residential property line directly opposite the secondary entrance (close to measurement position 1) would be 44.3 dB(A)  $L_{dn}$  and that the noise level at 1935 Mission Ridge Road, which is the residential property boundary closest to the location of the proposed partially subterranean podium parking structure (measurement position 4), would be 33.8 dB(A)  $L_{dn}$ . These noise levels are lower than the "clearly acceptable" exterior noise level of 55 dB(A)  $L_{dn}$  and the normally acceptable exterior noise level of 60 dB(A)  $L_{dn}$  given for residential land use by the Land Use Compatibility Guidelines included in the Noise Element.

The same computer model was used to calculate the traffic noise from the vehicles entering and exiting the hotel site from Mission Ridge Road during the daytime and nighttime hours when the partially subterranean podium parking structure is most active. The results are presented in Tables 6 and 7, below.

**Table 6 – Estimated Noise Level at Property Line Opposite Secondary Entrance (Close to Measurement Position 1)**

	Maximum Trip Generation Estimates Per Hour	Speed	Estimated Noise Level at Closest Residential Property Line
Daytime	42 (11:00 am – 12:00 noon)	10 mph	46.1 dB(A) $L_{eq}$
Nighttime	22 (10:00 pm – 11:00pm)	10 mph	40.2 dB(A) $L_{eq}$

**Table 7 – Estimated Noise Level at the Property Line of 1935 Mission Ridge Road (Measurement Position 4)**

	Maximum Trip Generation Estimates Per Hour	Speed	Estimated Noise Level at Closest Residential Property Line
Daytime	42 (11:00 am – 12:00 noon)	10 mph	35.6 dB(A) $L_{eq}$
Nighttime	22 (10:00 pm – 11:00pm)	10 mph	29.7 dB(A) $L_{eq}$

For comparison, below are the  $L_{eq}$  spectra measured at measurement positions 1 and 4 during the daytime and nighttime periods. Data shown in the table is for linear octave band spectra over the frequency range from 63 Hz to 8000 Hz and the overall A-weighted level.

**Table 8 – Sunday the 7<sup>th</sup> of September 2008 Exterior Noise Measurements**

Meas. Posn.	Start Time		Octave Band Center Frequency – Hz								A-wtd
			63	125	250	500	1000	2000	4000	8000	
1	4:15 pm	$L_{eq}$	58	57	50	48	49	45	40	32	52.5
4	5:29 pm	$L_{eq}$	51	45	39	35	32	29	26	22	38.0
1	10:00 pm	$L_{eq}$	46	43	35	27	29	43	35	29	45.4
4	10:23 pm	$L_{eq}$	42	37	28	27	22	30	20	16	33.1

From comparing Tables 6, 7 and 8 above, please note that the estimated A-weighted  $L_{eq}$  noise levels due to traffic traveling on the driveway off of Mission Ridge Road, with the exception of the noise level measured at position 4 at 5:29pm, are lower than the existing ambient A-weighted  $L_{eq}$  noise levels measured at positions 1 and 4, due to vehicles on Mission Ridge Road and other noise sources.

### 6.3 Discussion

The noise levels from the surface valet parking lot at the closest residential property line predicted using both the computer model and the analysis based upon the noise levels generated during the surface valet parking lot simulations are comparable to or lower than the average  $L_{eq}$  ambient noise levels measured during the visit to site. These average  $L_{eq}$  levels at the closest residential property line in addition to the ambient background  $L_{90}$  noise levels measured at the closest residential property line during the acoustical survey of the hotel site are summarized in Table 9, below.

**Table 9 – Summary of Analysis and Exterior Noise Measurement Results**

Source of Data	Description	A-weighted Sound Level
Corrected Surface Valet Parking Lot Simulation Noise Measurements	Approximate noise level generated during the daytime and evening periods	46 $L_{eq}$
	Approximate noise level generated during the nighttime and evening periods	44 $L_{eq}$
Computer Model	Maximum daytime trip generation estimates per hour (123 between 11:00 am – 12:00 noon)	41.9 $L_{eq}$
	Maximum nighttime trip generation estimates per hour (65 between 10:00 pm – 11:00pm)	39.1 $L_{eq}$
	Vehicles traveling at 10 mph within the surface parking lot	43.2 $L_{dn}$
Sunday the 7 <sup>th</sup> of September 2008 Exterior Noise Measurements	Average $L_{eq}$ noise level measured at 4:36pm	49.6 $L_{eq}$
	Average $L_{eq}$ noise level measured at 10:10pm	44.8 $L_{eq}$
	Ambient background $L_{90}$ noise levels measured at 4:36 pm	38.6 $L_{90}$
	Ambient background $L_{90}$ noise levels measured at 7:10 pm	37.4 $L_{90}$
	Ambient background $L_{90}$ noise levels measured at 10:10 pm	42.2 $L_{90}$
Monday the 8 <sup>th</sup> of September 2008 Exterior Noise Measurement Results	Ambient background $L_{90}$ noise levels measured at 4:30 pm	40.4 $L_{90}$
	Ambient background $L_{90}$ noise levels measured at 7:21 pm	35.0 $L_{90}$
	Ambient background $L_{90}$ noise levels measured at 10:06 pm	41.6 $L_{90}$

The noise levels from the vehicles traveling on the driveway off of Mission Ridge Road at the closest residential property lines, predicted using the computer model, are mostly comparable to the average  $L_{eq}$  ambient noise levels measured during the visit to site. In addition, noise levels due to vehicular movement on the site of the EL Encanto Hotel will be below the "clearly acceptable" exterior noise level of 55 dB(A)  $L_{dn}$  and the normally acceptable exterior noise level of 60 dB(A)  $L_{dn}$  given for residential land use by the Land Use Compatibility Guidelines included in the Noise Element.

As discussed above for the condensed water cooling equipment, please note that since the residences themselves, with the exception of 1935 Mission Ridge Road, are set back from the property line the noise level at the residences caused by vehicle movement on site will be further reduced compared to the noise level at the property line. Sound radiates uniformly outward as it travels away from the source and the sound pressure level reduces (the sound becomes quieter) as the distance from the source is increased. This reduction is due to the geometric spreading of the energy over an ever-increasing area. Atmospheric absorption, ground attenuation, turbulence, wind gradients, temperature, humidity, intervening topography and structures also have an effect on the noise levels experienced at the receiver location. These factors typically cause the noise level at the receiver location to be reduced even further and these factors have a

greater effect as the distance between the noise source and the receiver increases. There are some uncharacteristic cases where the factors discussed above may cause the sound pressure level to reduce by slightly less than expected. However, the sound pressure level is not increased or amplified as the distance from the sound source is increased. The completed construction of the underground utility distribution facility building, cottages, partially subterranean podium parking structure and other architectural features will screen the surface valet parking lot and the driveway off of Mission Ridge Road from the neighboring residential property lines and provide some additional sound reduction. The depressed surface of the valet parking lot, the surrounding walls which are up to 7' high and existing and proposed landscape features, such as trees, that would screen the proposed surface valet parking lot from the neighboring residential properties should also provide additional sound reduction. In addition, residences located between the project site and outdoor areas will provide acoustic screening. Such features and beneficial sound reductions were not taken into account in the analysis.

### 7.0 PROJECT RELATED TRAFFIC SOUND IMPACT ANALYSIS

Based upon the traffic classification data (attachment H), a computer model was created to calculate the increase in traffic noise along Mission Ridge Road and Alvarado Place due to the addition of nine guest rooms as part of the 2004 approved Master Plan and the associated increase in traffic. As discussed above for the surface valet parking lot, the model was created using Traffic Noise Model (TNM), version 2.5 released by the Federal Highway Administration (FHWA). It is understood that the speed limits on both Mission Ridge Road and Alvarado Place are 25 mph. However, Associated Transportation Engineers observed that traffic on Mission Ridge Road and Alvarado Place was traveling at approximately 25 to 35 mph. In order to simulate a worst case scenario, for the purpose of the analysis it was assumed that all traffic along Mission Ridge Road and Alvarado Place was traveling at 35 mph.

The following three receiver locations were selected:

- Receiver Location 1      Along Mission Ridge Road at the north east corner of the El Encanto Hotel site.
- Receiver Location 2      The intersection of Mission Ridge Road and Alvarado Place at the north west corner of the El Encanto Hotel site.
- Receiver Location 3      Along Alvarado Place at the south west corner of the El Encanto Hotel site.

The results of the computer model are provided in Table 10, below.

**Table 10 – Estimated Noise Levels Due to Increased Hotel Traffic**

Receiver Location	Noise Level Increase Due to Road Traffic Subsequent to Hotel Redevelopment
1	0.2 dB(A) $L_{dn}$
2	0.2 dB(A) $L_{dn}$
3	0.3 dB(A) $L_{dn}$

Table 10 shows that the increase in vehicular traffic along Mission Ridge Road and Alvarado Place due to the addition of nine guest rooms as part of the 2004 approved Master Plan will result in an increase in traffic noise levels of approximately 0.3 dB(A)  $L_{dn}$ . As discussed above, a change in sound level of 1 dB or less is typically not noticeable to an 'average' listener.

### 8.0 CONSTRUCTION NOISE

Construction of the of the partially subterranean podium parking structure is anticipated to take approximately seven months and the construction of the underground utility distribution facility and the underground operations facility area is anticipated to take approximately nine months. We understand

that the site typically operates between the hours of 8:00 am and 5:00 pm Monday through Friday and that the site is closed on weekends and holidays. This is within the hours stated in the Municipal Code and Planning Commission Resolution 057-04.

The main construction activity is expected to occur within the footprint of the proposed buildings. At a distance of approximately 30', 1935 Mission Ridge Road is the closest noise sensitive property to the location of the proposed partially subterranean podium parking structure. In addition, 1978 Mission Ridge Road is the closest noise sensitive property (at a distance of approximately 80' to the property line) from the proposed underground operations facility, surface valet parking lot and underground utility distribution facility.

Construction noise impacts would be expected to vary markedly because the noise level of construction equipment ranges widely as a function of the quantity and type of equipment used (see Table 11).

Construction noise also tends to vary over time, corresponding to the various discrete phases of the construction program, typically starting with demolition of existing structures, followed by rough grading of the site, trenching for utilities, grading and finally erection and finishing of the buildings (see Table 12).

**Table 11 – Noise Level Ranges of Typical Construction Equipment**

Equipment	Noise Level (dBA) at 50 ft.*
Front Loader	73-86
Trucks	82-95
Cranes (moveable)	75-88
Vibrator	68-82
Saws	72-82
Pneumatic Impact Equipment	83-88
Pumps	68-72
Generators	71-83
Compressors	75-87
Concrete Mixers	75-88
Concrete Pumps	81-85
Back Hoe	73-95
Paver	85-88

\* Machinery equipped with noise control devices or other noise-reducing design features does not generate the same level of emissions as that shown in this table.

Source: EPA, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, PB 206717, 1971.

**Table 12 – Outdoor Construction Noise Levels**

Construction Phase	Noise Levels at 50 feet (dBA Leq)	Noise Levels at 50 feet with Mufflers (dBA Leq)
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

Source: EPA, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, PB 206717, 1971.

From Tables 11 and 12 it can be concluded that the noise levels due to project construction at the closest noise sensitive locations will temporarily exceed the ambient background noise levels measured at site. In order to minimize daytime noise disturbance to neighboring residents the following measures are recommended:

- i) All equipment operating on site shall have properly operating mufflers.
- ii) Siting of cranes, hoists, or other semi-stationary heavy equipment shall be as far from noise-sensitive uses as is practical, consistent with construction requirements.
- iii) Electrically powered equipment shall be used instead of equipment driven by internal combustion engines where feasible.
- iv) Equipment should not be left idling for long periods, instead, it should be switched off.
- v) An area should be designated for delivery of materials and equipment to site. This area shall be located as far from residential properties as is practical, consistent with construction requirements. This area shall be protected by a temporary barrier blocking the line of sight from the source to any operable residential window.

Prior to the issuance of a grading/excavation/shoring permit, the applicant shall submit a sound control plan, prepared by a qualified noise consultant, that identifies noise attenuation measures, such as the use of noise shields, to reduce noise impacts to the residential properties located to the east of the project site. If such measures are recommended, they shall be maintained on the project site throughout demolition, grading and foundation preparation.

## 9.0 CONCLUSIONS

### 9.1 Underground Utility Distribution Facility Sound Impact Analysis

Since the El Encanto Hotel wishes to prevent disturbance to hotel guests and local residences located adjacent to the hotel site, the following noise control has been incorporated into the project drawings (attachments A and B):

- i) 10 foot long silencers in both the intake and ventilation ductwork serving the condensed water cooling equipment.
- ii) 2" thick internal acoustical lining in both the intake and ventilation air ductwork serving the condensed water cooling equipment.
- iii) Acoustical lining of all available wall and ceiling surfaces within the room which houses the condensed water cooling equipment.

Noise control such as IAC type 3L silencers shall be incorporated into the ventilation system serving the subterranean area housing the water heating equipment to reduce the transfer of noise from this equipment to the closest residential property line.

It is anticipated that the above noise control will at most result in a noise level of 26 dB(A) at the closest residential property line due to the combined noise levels generated at the intake and ventilation openings which serve the condensed water cooling equipment. This is lower than the quietest ambient background noise levels measured at site during the daytime and evening periods (30.4 dB(A)  $L_{90}$ ). The noise control has been designed to a dramatically more stringent standard than required in the City of Santa Barbara Municipal Code and as a result the noise level due to the condensed water cooling equipment at the closest residential property line would be dramatically lower than the required limit of 60dB(A) CNEL.

### 9.2 Partially Subterranean Podium Parking Structure Air Ventilation Fan Sound Impact Analysis

An IAC type 7MS silencer has been incorporated into the air ventilation ductwork connected to the air ventilation fan located in the partially subterranean podium parking structure. It is anticipated that the above noise control will result in a noise level of approximately 23 dB(A) at the closest residential property line due to the air ventilation fan. This is comparable to the quietest ambient background noise level (23.6 dB(A)  $L_{90}$ ) measured at 1935 Mission Ridge Road, which is the residential property boundary closest

to the location of the proposed partially subterranean podium parking structure. The noise control has been designed to a dramatically more stringent standard than required in the City of Santa Barbara Municipal Code and as a result the noise level due to the air ventilation fan at the closest residential property line would be dramatically lower than the required limit of 60 dB(A) CNEL.

### 9.3 Surface Valet Parking Lot Sound Impact Analysis

For vehicles traveling at 10 mph within the surface parking lot, the noise level at the closest residential property line would be 43.2 dB(A)  $L_{dn}$ . This is lower than the "clearly acceptable" exterior noise level of 55 dB(A)  $L_{dn}$  and the normally acceptable exterior noise level of 60 dB(A)  $L_{dn}$  given for residential land use by the Land Use Compatibility Guidelines included in the Noise Element. In addition, noise levels due to vehicular movement on the site of the EL Encanto Hotel will be mostly comparable to the average  $L_{eq}$  ambient noise levels measured at site.

### 9.4 Partially Subterranean Podium Parking Structure Sound Impact Analysis

For vehicles traveling at 10 mph on the driveway off of Mission Ridge Road, the noise level at the residential property line directly opposite the secondary entrance (close to measurement position 1) would be 44.3 dB(A)  $L_{dn}$  and that the noise level at 1935 Mission Ridge Road, which is the residential property boundary closest to the location of the proposed partially subterranean podium parking structure (measurement position 4), would be 33.8 dB(A)  $L_{dn}$ . These noise levels are lower than the "clearly acceptable" exterior noise level of 55 dB(A)  $L_{dn}$  and the normally acceptable exterior noise level of 60 dB(A)  $L_{dn}$  given for residential land use by the Land Use Compatibility Guidelines included in the Noise Element. In addition, noise levels due to vehicular movement on the site of the EL Encanto Hotel will be mostly comparable to the average  $L_{eq}$  ambient noise levels measured at site.

### 9.5 Project Related Traffic Sound Impact Analysis

The increase in vehicular traffic along Mission Ridge Road and Alvarado Place due to the addition of nine guest rooms as part of the 2004 approved Master Plan will result in an increase in traffic noise levels of approximately 0.3 dB(A)  $L_{dn}$ . As discussed above, a change in sound level of 1 dB or less is typically not noticeable to an 'average' listener.

### 9.6 Construction Noise

Noise levels due to project construction at the closest noise sensitive locations will temporarily exceed the ambient background noise levels measured at site. In order to minimize daytime noise disturbance to neighboring residents the following measures are recommended:

- i) All equipment operating on site shall have properly operating mufflers.
- ii) Siting of cranes, hoists, or other semi-stationary heavy equipment shall be as far from noise-sensitive uses as is practical, consistent with construction requirements.
- iii) Electrically powered equipment shall be used instead of equipment driven by internal combustion engines where feasible.
- iv) Equipment should not be left idling for long periods, instead, it should be switched off.
- v) An area should be designated for delivery of materials and equipment to site. This area shall be located as far from residential properties as is practical, consistent with construction requirements. This area shall be protected by a temporary barrier blocking the line of sight from the source to any operable residential window.

Prior to the issuance of a grading/excavation/shoring permit, the applicant shall submit a sound control plan, prepared by a qualified noise consultant, that identifies noise attenuation measures, such as the use of noise shields, to reduce noise impacts to the residential properties located to the east of the project site. If such measures are recommended, they shall be maintained on the project site throughout demolition, grading and foundation preparation.

### 9.7 Combined Noise Sources

Regarding the combined transfer of noise from the condensed water cooling equipment and vehicles maneuvering on site to the closest residential property line, due to the extensive noise control proposed for the condensed water cooling equipment noise from the condensed water cooling equipment will not add measurably to the noise levels generated by vehicles maneuvering on site. As stated in the Technical Report included in the Noise Element, "Another important feature of the decibel scale is that sound levels are not directly combined when they are added. For example, if one truck emits 65 dB while idling, parking another truck producing 65 dB next to it does not generate a total noise level of 130 dB. Rather, the total noise level would be 68 dB. The basis of this is the logarithmic nature of the decibel scale, and it is an important feature to remember when considering an area exposed to more than one source of noise". As illustrated in Figure 2 of the Technical Report included in the Noise Element, when the sound level of two sources differs by 15dB the combination of these two sound sources will cause the sound level of the louder source to increase by less than 0.2dB. As discussed above, a change in sound level of 1 dB or less is typically not noticeable to an 'average' listener.



**El Encanto Hotel**  
 ORIENT EXPRESS  
 HOTELS, TRAINS AND  
 CRUISES  
 1960 LYSEN ROAD  
 SANTA BARBARA, CA 93103  
 UTILITY DISTRIBUTION FACILITY,  
 OPERATIONS FACILITY &  
 VALET PARKING

**Genstef**  
 1000 W. SANTA ANA AVENUE  
 SANTA ANA, CA 92701  
 PHONE: 714 441-1100  
 FAX: 714 441-1101

**HENRY LENTZ**  
 LICENSED ARCHITECT  
 1000 W. SANTA ANA AVENUE  
 SANTA ANA, CA 92701  
 PHONE: 714 441-1100  
 FAX: 714 441-1101

NO.	DATE	DESCRIPTION	BY	CHK.
1	08/11/08	ISSUED FOR PERMIT	HL	HL
2	08/11/08	ISSUED FOR PERMIT	HL	HL
3	08/11/08	ISSUED FOR PERMIT	HL	HL
4	08/11/08	ISSUED FOR PERMIT	HL	HL
5	08/11/08	ISSUED FOR PERMIT	HL	HL
6	08/11/08	ISSUED FOR PERMIT	HL	HL
7	08/11/08	ISSUED FOR PERMIT	HL	HL
8	08/11/08	ISSUED FOR PERMIT	HL	HL
9	08/11/08	ISSUED FOR PERMIT	HL	HL
10	08/11/08	ISSUED FOR PERMIT	HL	HL
11	08/11/08	ISSUED FOR PERMIT	HL	HL
12	08/11/08	ISSUED FOR PERMIT	HL	HL
13	08/11/08	ISSUED FOR PERMIT	HL	HL
14	08/11/08	ISSUED FOR PERMIT	HL	HL
15	08/11/08	ISSUED FOR PERMIT	HL	HL
16	08/11/08	ISSUED FOR PERMIT	HL	HL
17	08/11/08	ISSUED FOR PERMIT	HL	HL
18	08/11/08	ISSUED FOR PERMIT	HL	HL
19	08/11/08	ISSUED FOR PERMIT	HL	HL
20	08/11/08	ISSUED FOR PERMIT	HL	HL

**KEY PLAN**

EL ENCANTO HOTEL  
 OPERATIONS FACILITY & VALET PARKING  
 LBOH.02

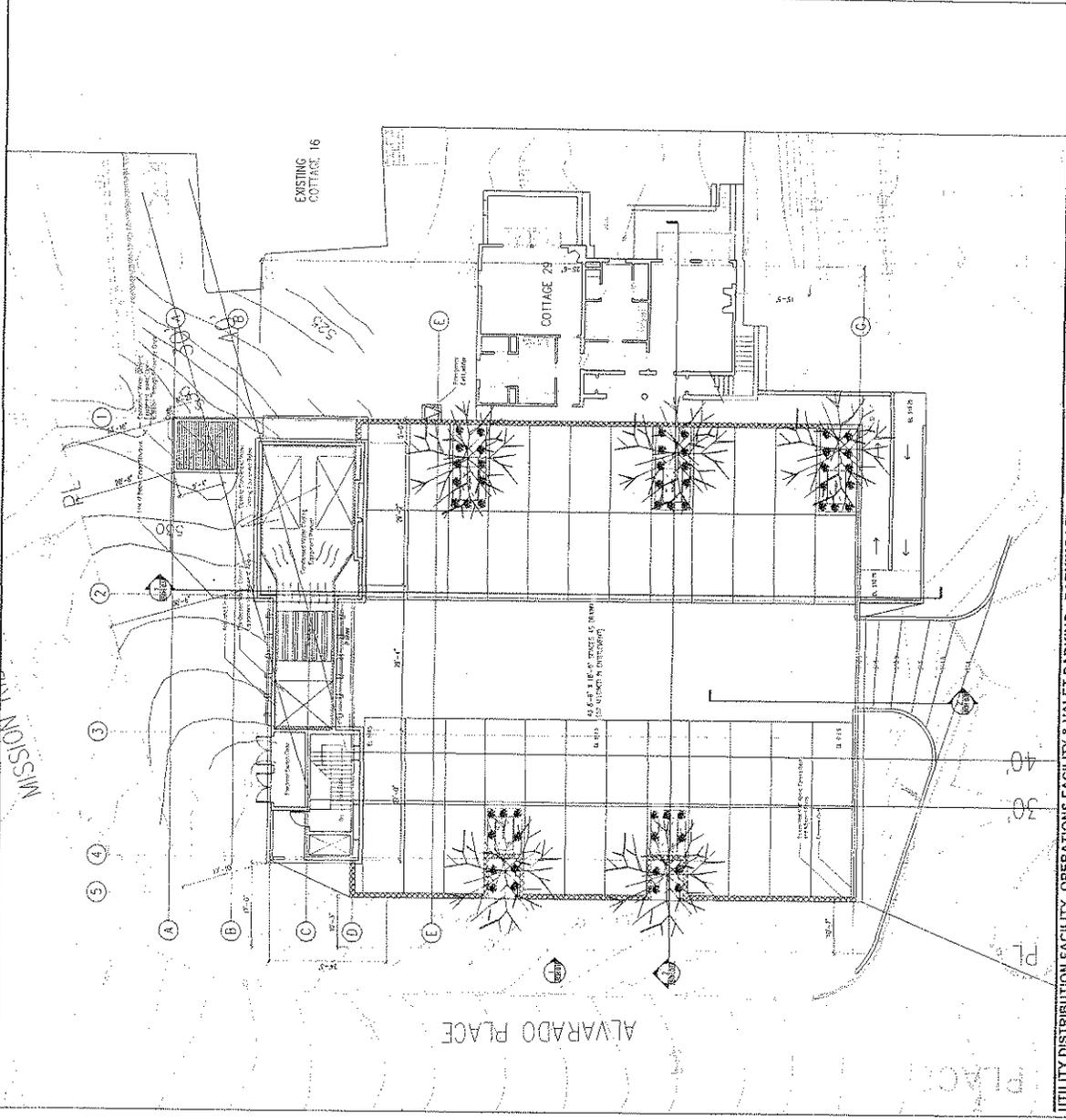
**KEY NOTES**

**LEGEND**

XXXXXXXXXX SEE WALLS AROUND VALET  
 PARKING  
 WALLS OF VALET EXPANSION  
 FACILITY

**GENERAL NOTES**

**KEY PLAN**



UTILITY DISTRIBUTION FACILITY, OPERATIONS FACILITY & VALET PARKING - PARKING LEVEL PLAN  
 SCALE: 1/8" = 1'-0"

El Encanto

Hotel  
ORIENT EXPRESS  
HOTELS, TRAINS AND  
CRUISES

1500 LA BURN ROAD  
SANTA ANA, CA 92705  
TEL: 714.241.1100

UTILITY DISTRIBUTION FACILITY,  
OPERATIONS FACILITY &  
VALET PARKING

Gensler



HENRY LEMAY  
Principal  
1500 La Burn Road  
Santa Ana, CA 92705  
Tel: 714.241.1100  
Fax: 714.241.1101

DATE: 08/11/11

PROJECT: EL ENCANTO HOTEL

LOCATION: 1500 LA BURN ROAD, SANTA ANA, CA

SCALE: AS SHOWN

DESIGNED BY: HENRY LEMAY

CHECKED BY: [Signature]

APPROVED BY: [Signature]

DATE: 08/11/11

PROJECT: EL ENCANTO HOTEL

LOCATION: 1500 LA BURN ROAD, SANTA ANA, CA

SCALE: AS SHOWN

DESIGNED BY: HENRY LEMAY

CHECKED BY: [Signature]

APPROVED BY: [Signature]

DATE: 08/11/11

PROJECT: EL ENCANTO HOTEL

LOCATION: 1500 LA BURN ROAD, SANTA ANA, CA

SCALE: AS SHOWN

DESIGNED BY: HENRY LEMAY

CHECKED BY: [Signature]

APPROVED BY: [Signature]

DATE: 08/11/11

PROJECT: EL ENCANTO HOTEL

LOCATION: 1500 LA BURN ROAD, SANTA ANA, CA

SCALE: AS SHOWN

DESIGNED BY: HENRY LEMAY

CHECKED BY: [Signature]

APPROVED BY: [Signature]

DATE: 08/11/11

PROJECT: EL ENCANTO HOTEL

LOCATION: 1500 LA BURN ROAD, SANTA ANA, CA

SCALE: AS SHOWN

DESIGNED BY: HENRY LEMAY

CHECKED BY: [Signature]

APPROVED BY: [Signature]

DATE: 08/11/11

PROJECT: EL ENCANTO HOTEL

LOCATION: 1500 LA BURN ROAD, SANTA ANA, CA

SCALE: AS SHOWN

DESIGNED BY: HENRY LEMAY

CHECKED BY: [Signature]

APPROVED BY: [Signature]

DATE: 08/11/11

PROJECT: EL ENCANTO HOTEL

LOCATION: 1500 LA BURN ROAD, SANTA ANA, CA

SCALE: AS SHOWN

DESIGNED BY: HENRY LEMAY

CHECKED BY: [Signature]

APPROVED BY: [Signature]

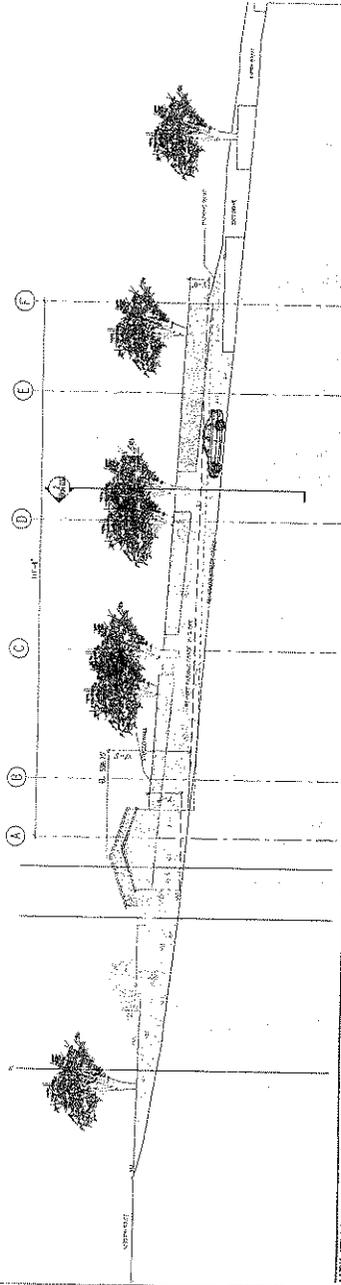
DATE: 08/11/11

PROJECT: EL ENCANTO HOTEL

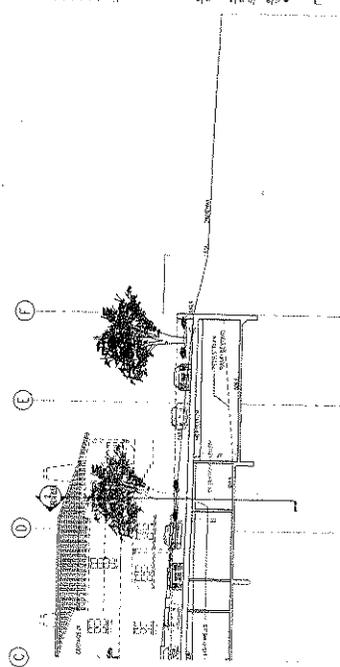
LOCATION: 1500 LA BURN ROAD, SANTA ANA, CA

SCALE: AS SHOWN

DESIGNED BY: HENRY LEMAY



UTILITY DISTRIBUTION FACILITY, OPERATIONS FACILITY & VALET PARKING - WEST ELEVATION



OPERATIONS FACILITY & VALET PARKING - RAMP SECTION

LBOH.03B



**EI Encanto Hotel**  
**ORIENT EXPRESS HOTELS, TRAINS AND CRUISES**  
 1900 LASTEN ROAD  
 SANTA BARBARA, CA 93103

REVISED MASTER PLAN

**Genstler**

**G** CONSULTING ENGINEERS  
**B** CONSULTING ENGINEERS  
 1000 W. SANTA ANITA AVENUE  
 SANTA BARBARA, CA 93101  
 PHONE: 805/965-1100  
 FAX: 805/965-1101

John J. Genstler, Licensed PE  
 License No. 10000  
 License Exp. 12/31/02  
 License No. 10000  
 License Exp. 12/31/02

1. All work shall be in accordance with the latest editions of the California Electrical Code, the California Mechanical Code, and the California Fire Code, as amended.

2. All work shall be in accordance with the latest editions of the National Electrical Code, the National Mechanical Code, and the National Fire Code, as amended.

3. All work shall be in accordance with the latest editions of the International Building Code, the International Fire Code, and the International Mechanical Code, as amended.

4. All work shall be in accordance with the latest editions of the International Electrical Code, the International Mechanical Code, and the International Fire Code, as amended.

5. All work shall be in accordance with the latest editions of the International Building Code, the International Fire Code, and the International Mechanical Code, as amended.

6. All work shall be in accordance with the latest editions of the International Electrical Code, the International Mechanical Code, and the International Fire Code, as amended.

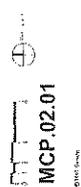
7. All work shall be in accordance with the latest editions of the International Building Code, the International Fire Code, and the International Mechanical Code, as amended.

8. All work shall be in accordance with the latest editions of the International Electrical Code, the International Mechanical Code, and the International Fire Code, as amended.

9. All work shall be in accordance with the latest editions of the International Building Code, the International Fire Code, and the International Mechanical Code, as amended.

10. All work shall be in accordance with the latest editions of the International Electrical Code, the International Mechanical Code, and the International Fire Code, as amended.

PROJECT: EI ENCANTO HOTEL  
 SHEET: MCP.02.01  
 DATE: 11/11/01  
 DRAWN BY: J. GENSTLER  
 CHECKED BY: J. GENSTLER  
 APPROVED BY: J. GENSTLER



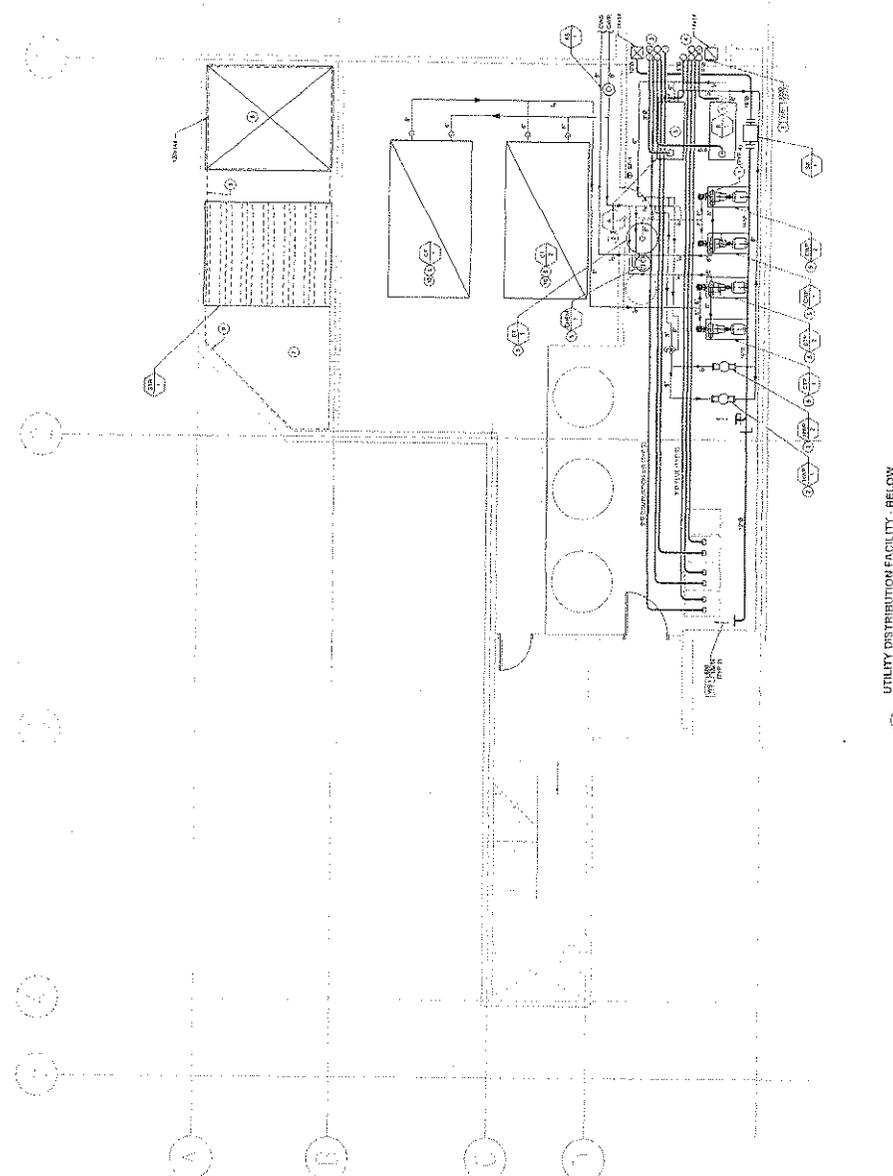
MCP.02.01

**SHEET NOTES**

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE CALIFORNIA ELECTRICAL CODE, THE CALIFORNIA MECHANICAL CODE, AND THE CALIFORNIA FIRE CODE, AS AMENDED.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE, THE NATIONAL MECHANICAL CODE, AND THE NATIONAL FIRE CODE, AS AMENDED.
3. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE, THE INTERNATIONAL FIRE CODE, AND THE INTERNATIONAL MECHANICAL CODE, AS AMENDED.
4. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL ELECTRICAL CODE, THE INTERNATIONAL MECHANICAL CODE, AND THE INTERNATIONAL FIRE CODE, AS AMENDED.
5. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE, THE INTERNATIONAL FIRE CODE, AND THE INTERNATIONAL MECHANICAL CODE, AS AMENDED.
6. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL ELECTRICAL CODE, THE INTERNATIONAL MECHANICAL CODE, AND THE INTERNATIONAL FIRE CODE, AS AMENDED.
7. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE, THE INTERNATIONAL FIRE CODE, AND THE INTERNATIONAL MECHANICAL CODE, AS AMENDED.
8. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL ELECTRICAL CODE, THE INTERNATIONAL MECHANICAL CODE, AND THE INTERNATIONAL FIRE CODE, AS AMENDED.
9. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL BUILDING CODE, THE INTERNATIONAL FIRE CODE, AND THE INTERNATIONAL MECHANICAL CODE, AS AMENDED.
10. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL ELECTRICAL CODE, THE INTERNATIONAL MECHANICAL CODE, AND THE INTERNATIONAL FIRE CODE, AS AMENDED.

**GENERAL NOTES**

**KEY PLAN**



UTILITY DISTRIBUTION FACILITY - BELOW GRADE PLAN  
 SCALE: 1/8" = 1'-0"

**El Encanto Hotel**  
**ORIENT EXPRESS**  
**HOTELS, TRAINS AND**  
**CRUISES**  
 4900 LASIJEN ROAD  
 SANTA BARBARA CA 93103

REVISED MASTER PLAN

**Gensler**

**Gensler Architecture**  
 1000 15th Street, Suite 200  
 San Francisco, CA 94103  
 Phone: 415.774.2500  
 Fax: 415.774.2501  
 Website: www.gensler.com

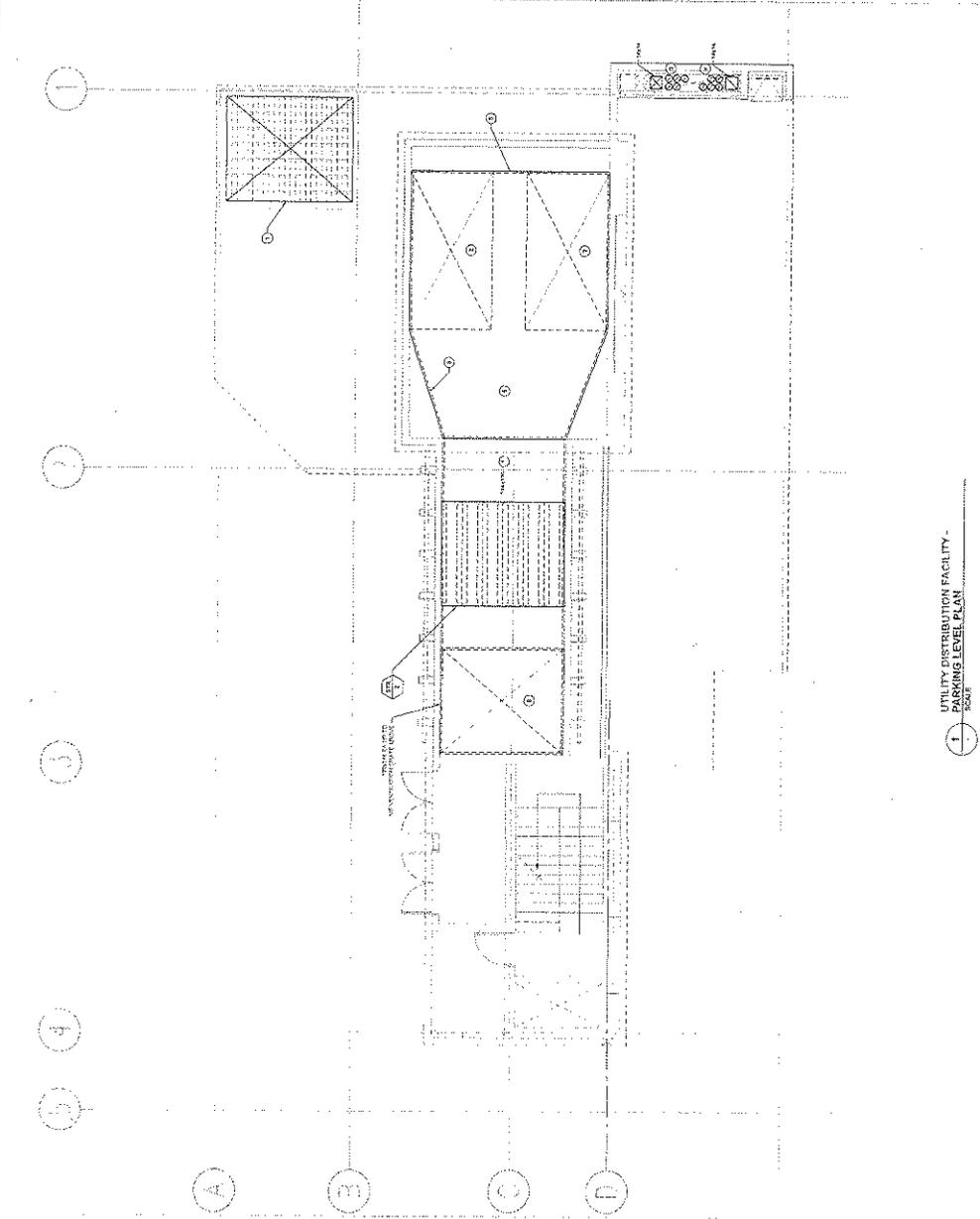
Elmer Hendrick, Architect, LLC  
 1000 15th Street, Suite 200  
 San Francisco, CA 94103  
 Phone: 415.774.2500  
 Fax: 415.774.2501  
 Website: www.elmerhendrick.com

**SHEET NOTES**

1. SEE EXISTING MASTER PLAN FOR EXISTING CONDITIONS AND UTILITIES.
2. EXISTING UTILITIES ARE SHOWN IN RED.
3. EXISTING UTILITIES ARE TO BE REMOVED OR RELOCATED AS SHOWN.
4. EXISTING UTILITIES ARE TO BE MAINTAINED AS SHOWN.
5. EXISTING UTILITIES ARE TO BE RELOCATED AS SHOWN.
6. EXISTING UTILITIES ARE TO BE MAINTAINED AS SHOWN.
7. EXISTING UTILITIES ARE TO BE RELOCATED AS SHOWN.
8. EXISTING UTILITIES ARE TO BE MAINTAINED AS SHOWN.
9. EXISTING UTILITIES ARE TO BE RELOCATED AS SHOWN.
10. EXISTING UTILITIES ARE TO BE MAINTAINED AS SHOWN.

**GENERAL NOTES**

**KEY PLAN**



UTILITY DISTRIBUTION FACILITY -  
 PARKING LEVEL PLAN  
 SCALE: 1/8" = 1'-0"

DATE: 02/02/02  
 PROJECT: EL ENCANTO HOTEL  
 DRAWING NO.: MCP.02.02  
 SHEET NO.: 02.02.02  
 SCALE: AS SHOWN  
 PROJECT MANAGER: [Name]  
 ARCHITECT: [Name]  
 ENGINEER: [Name]



**El Encanto  
Hotel**  
ORIENT EXPRESS  
HOTELS, TRAINS AND  
CRUISES  
1900 LASUN ROAD  
SANTA BARBARA CA 93101

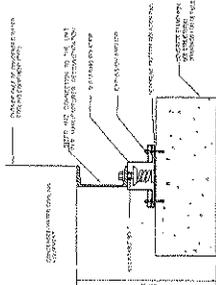
**REVISED MASTER PLAN**

DATE: 10/15/02  
BY: JGK  
PROJECT: 02-01-0000  
SHEET: 02-01-0000

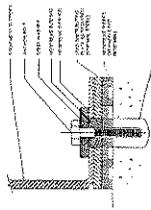
**Gensler**

**G** QUITYMANN & BLAVOST  
CONSULTING ENGINEERS  
1000 W. BROADWAY, SUITE 1000  
SAN FRANCISCO, CA 94111  
TEL: 415.774.2200 FAX: 415.774.2201

Jensler Gensler International LLC  
590 California Street  
San Francisco, CA 94102  
Tel: 415.774.2200



1 SUPPORT FOR CONDENSED WATER AND RELATED EQUIPMENT



4 ISOLATOR TYPE NSA, NEGOTIABLE P.D.

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMITTING	10/15/02
2	ISSUED FOR PERMITTING	10/15/02
3	ISSUED FOR PERMITTING	10/15/02
4	ISSUED FOR PERMITTING	10/15/02
5	ISSUED FOR PERMITTING	10/15/02
6	ISSUED FOR PERMITTING	10/15/02
7	ISSUED FOR PERMITTING	10/15/02
8	ISSUED FOR PERMITTING	10/15/02
9	ISSUED FOR PERMITTING	10/15/02
10	ISSUED FOR PERMITTING	10/15/02
11	ISSUED FOR PERMITTING	10/15/02
12	ISSUED FOR PERMITTING	10/15/02
13	ISSUED FOR PERMITTING	10/15/02
14	ISSUED FOR PERMITTING	10/15/02
15	ISSUED FOR PERMITTING	10/15/02
16	ISSUED FOR PERMITTING	10/15/02
17	ISSUED FOR PERMITTING	10/15/02
18	ISSUED FOR PERMITTING	10/15/02
19	ISSUED FOR PERMITTING	10/15/02
20	ISSUED FOR PERMITTING	10/15/02
21	ISSUED FOR PERMITTING	10/15/02
22	ISSUED FOR PERMITTING	10/15/02
23	ISSUED FOR PERMITTING	10/15/02
24	ISSUED FOR PERMITTING	10/15/02
25	ISSUED FOR PERMITTING	10/15/02
26	ISSUED FOR PERMITTING	10/15/02
27	ISSUED FOR PERMITTING	10/15/02
28	ISSUED FOR PERMITTING	10/15/02
29	ISSUED FOR PERMITTING	10/15/02
30	ISSUED FOR PERMITTING	10/15/02
31	ISSUED FOR PERMITTING	10/15/02
32	ISSUED FOR PERMITTING	10/15/02
33	ISSUED FOR PERMITTING	10/15/02
34	ISSUED FOR PERMITTING	10/15/02
35	ISSUED FOR PERMITTING	10/15/02
36	ISSUED FOR PERMITTING	10/15/02
37	ISSUED FOR PERMITTING	10/15/02
38	ISSUED FOR PERMITTING	10/15/02
39	ISSUED FOR PERMITTING	10/15/02
40	ISSUED FOR PERMITTING	10/15/02
41	ISSUED FOR PERMITTING	10/15/02
42	ISSUED FOR PERMITTING	10/15/02
43	ISSUED FOR PERMITTING	10/15/02
44	ISSUED FOR PERMITTING	10/15/02
45	ISSUED FOR PERMITTING	10/15/02
46	ISSUED FOR PERMITTING	10/15/02
47	ISSUED FOR PERMITTING	10/15/02
48	ISSUED FOR PERMITTING	10/15/02
49	ISSUED FOR PERMITTING	10/15/02
50	ISSUED FOR PERMITTING	10/15/02
51	ISSUED FOR PERMITTING	10/15/02
52	ISSUED FOR PERMITTING	10/15/02
53	ISSUED FOR PERMITTING	10/15/02
54	ISSUED FOR PERMITTING	10/15/02
55	ISSUED FOR PERMITTING	10/15/02
56	ISSUED FOR PERMITTING	10/15/02
57	ISSUED FOR PERMITTING	10/15/02
58	ISSUED FOR PERMITTING	10/15/02
59	ISSUED FOR PERMITTING	10/15/02
60	ISSUED FOR PERMITTING	10/15/02
61	ISSUED FOR PERMITTING	10/15/02
62	ISSUED FOR PERMITTING	10/15/02
63	ISSUED FOR PERMITTING	10/15/02
64	ISSUED FOR PERMITTING	10/15/02
65	ISSUED FOR PERMITTING	10/15/02
66	ISSUED FOR PERMITTING	10/15/02
67	ISSUED FOR PERMITTING	10/15/02
68	ISSUED FOR PERMITTING	10/15/02
69	ISSUED FOR PERMITTING	10/15/02
70	ISSUED FOR PERMITTING	10/15/02
71	ISSUED FOR PERMITTING	10/15/02
72	ISSUED FOR PERMITTING	10/15/02
73	ISSUED FOR PERMITTING	10/15/02
74	ISSUED FOR PERMITTING	10/15/02
75	ISSUED FOR PERMITTING	10/15/02
76	ISSUED FOR PERMITTING	10/15/02
77	ISSUED FOR PERMITTING	10/15/02
78	ISSUED FOR PERMITTING	10/15/02
79	ISSUED FOR PERMITTING	10/15/02
80	ISSUED FOR PERMITTING	10/15/02
81	ISSUED FOR PERMITTING	10/15/02
82	ISSUED FOR PERMITTING	10/15/02
83	ISSUED FOR PERMITTING	10/15/02
84	ISSUED FOR PERMITTING	10/15/02
85	ISSUED FOR PERMITTING	10/15/02
86	ISSUED FOR PERMITTING	10/15/02
87	ISSUED FOR PERMITTING	10/15/02
88	ISSUED FOR PERMITTING	10/15/02
89	ISSUED FOR PERMITTING	10/15/02
90	ISSUED FOR PERMITTING	10/15/02
91	ISSUED FOR PERMITTING	10/15/02
92	ISSUED FOR PERMITTING	10/15/02
93	ISSUED FOR PERMITTING	10/15/02
94	ISSUED FOR PERMITTING	10/15/02
95	ISSUED FOR PERMITTING	10/15/02
96	ISSUED FOR PERMITTING	10/15/02
97	ISSUED FOR PERMITTING	10/15/02
98	ISSUED FOR PERMITTING	10/15/02
99	ISSUED FOR PERMITTING	10/15/02
100	ISSUED FOR PERMITTING	10/15/02

DATE: 10/15/02  
BY: JGK  
PROJECT: 02-01-0000  
SHEET: 02-01-0000

**MCP.04.02**



**El Encanto Hotel**  
**ORIENT EXPRESS**  
**HOTELS, TRAINS AND**  
**CRUISES**

3900 LASUEN ROAD  
 SANTA BARBARA, CA 93103

**REVISED MASTER PLAN**

Project No. 1000  
 Date: 10/15/00  
 Rev. 10/15/00  
 Rev. 10/15/00

**Genster**

**B** ENGINEERING & ARCHITECTURE  
 1000 W. SANTA ANA AVENUE  
 SANTA ANA, CA 92701  
 TEL: 714/241-1100  
 FAX: 714/241-1101

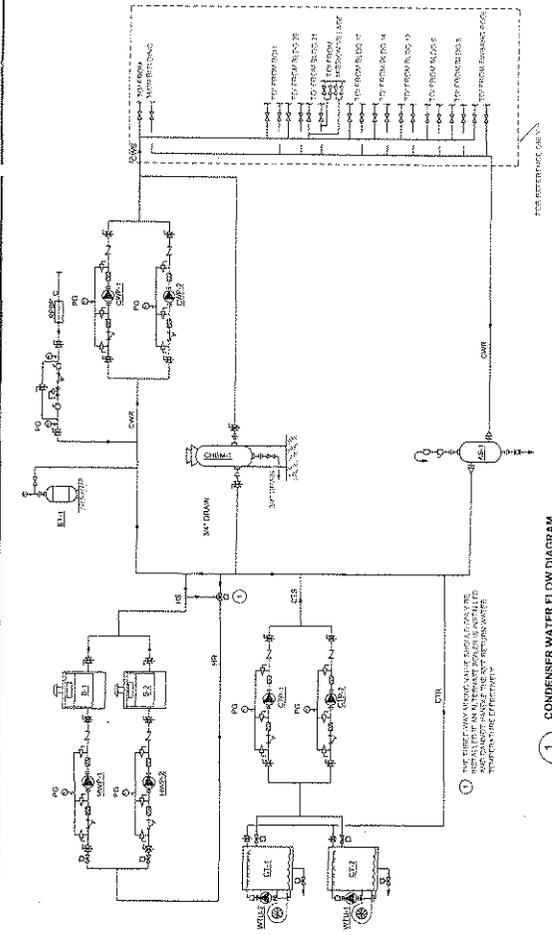
Owner: Orient Express Hotel  
 3900 Lasuen Road  
 Santa Barbara, CA 93103

NO.	DESCRIPTION	DATE
1	ISSUED FOR PERMITS	10/15/00
2	REVISED FOR COMMENTS	10/15/00
3	REVISED FOR COMMENTS	10/15/00
4	REVISED FOR COMMENTS	10/15/00
5	REVISED FOR COMMENTS	10/15/00
6	REVISED FOR COMMENTS	10/15/00
7	REVISED FOR COMMENTS	10/15/00
8	REVISED FOR COMMENTS	10/15/00
9	REVISED FOR COMMENTS	10/15/00
10	REVISED FOR COMMENTS	10/15/00
11	REVISED FOR COMMENTS	10/15/00
12	REVISED FOR COMMENTS	10/15/00
13	REVISED FOR COMMENTS	10/15/00
14	REVISED FOR COMMENTS	10/15/00
15	REVISED FOR COMMENTS	10/15/00
16	REVISED FOR COMMENTS	10/15/00
17	REVISED FOR COMMENTS	10/15/00
18	REVISED FOR COMMENTS	10/15/00
19	REVISED FOR COMMENTS	10/15/00
20	REVISED FOR COMMENTS	10/15/00
21	REVISED FOR COMMENTS	10/15/00
22	REVISED FOR COMMENTS	10/15/00
23	REVISED FOR COMMENTS	10/15/00
24	REVISED FOR COMMENTS	10/15/00
25	REVISED FOR COMMENTS	10/15/00
26	REVISED FOR COMMENTS	10/15/00
27	REVISED FOR COMMENTS	10/15/00
28	REVISED FOR COMMENTS	10/15/00
29	REVISED FOR COMMENTS	10/15/00
30	REVISED FOR COMMENTS	10/15/00
31	REVISED FOR COMMENTS	10/15/00
32	REVISED FOR COMMENTS	10/15/00
33	REVISED FOR COMMENTS	10/15/00
34	REVISED FOR COMMENTS	10/15/00
35	REVISED FOR COMMENTS	10/15/00
36	REVISED FOR COMMENTS	10/15/00
37	REVISED FOR COMMENTS	10/15/00
38	REVISED FOR COMMENTS	10/15/00
39	REVISED FOR COMMENTS	10/15/00
40	REVISED FOR COMMENTS	10/15/00
41	REVISED FOR COMMENTS	10/15/00
42	REVISED FOR COMMENTS	10/15/00
43	REVISED FOR COMMENTS	10/15/00
44	REVISED FOR COMMENTS	10/15/00
45	REVISED FOR COMMENTS	10/15/00
46	REVISED FOR COMMENTS	10/15/00
47	REVISED FOR COMMENTS	10/15/00
48	REVISED FOR COMMENTS	10/15/00
49	REVISED FOR COMMENTS	10/15/00
50	REVISED FOR COMMENTS	10/15/00
51	REVISED FOR COMMENTS	10/15/00
52	REVISED FOR COMMENTS	10/15/00
53	REVISED FOR COMMENTS	10/15/00
54	REVISED FOR COMMENTS	10/15/00
55	REVISED FOR COMMENTS	10/15/00
56	REVISED FOR COMMENTS	10/15/00
57	REVISED FOR COMMENTS	10/15/00
58	REVISED FOR COMMENTS	10/15/00
59	REVISED FOR COMMENTS	10/15/00
60	REVISED FOR COMMENTS	10/15/00
61	REVISED FOR COMMENTS	10/15/00
62	REVISED FOR COMMENTS	10/15/00
63	REVISED FOR COMMENTS	10/15/00
64	REVISED FOR COMMENTS	10/15/00
65	REVISED FOR COMMENTS	10/15/00
66	REVISED FOR COMMENTS	10/15/00
67	REVISED FOR COMMENTS	10/15/00
68	REVISED FOR COMMENTS	10/15/00
69	REVISED FOR COMMENTS	10/15/00
70	REVISED FOR COMMENTS	10/15/00
71	REVISED FOR COMMENTS	10/15/00
72	REVISED FOR COMMENTS	10/15/00
73	REVISED FOR COMMENTS	10/15/00
74	REVISED FOR COMMENTS	10/15/00
75	REVISED FOR COMMENTS	10/15/00
76	REVISED FOR COMMENTS	10/15/00
77	REVISED FOR COMMENTS	10/15/00
78	REVISED FOR COMMENTS	10/15/00
79	REVISED FOR COMMENTS	10/15/00
80	REVISED FOR COMMENTS	10/15/00
81	REVISED FOR COMMENTS	10/15/00
82	REVISED FOR COMMENTS	10/15/00
83	REVISED FOR COMMENTS	10/15/00
84	REVISED FOR COMMENTS	10/15/00
85	REVISED FOR COMMENTS	10/15/00
86	REVISED FOR COMMENTS	10/15/00
87	REVISED FOR COMMENTS	10/15/00
88	REVISED FOR COMMENTS	10/15/00
89	REVISED FOR COMMENTS	10/15/00
90	REVISED FOR COMMENTS	10/15/00
91	REVISED FOR COMMENTS	10/15/00
92	REVISED FOR COMMENTS	10/15/00
93	REVISED FOR COMMENTS	10/15/00
94	REVISED FOR COMMENTS	10/15/00
95	REVISED FOR COMMENTS	10/15/00
96	REVISED FOR COMMENTS	10/15/00
97	REVISED FOR COMMENTS	10/15/00
98	REVISED FOR COMMENTS	10/15/00
99	REVISED FOR COMMENTS	10/15/00
100	REVISED FOR COMMENTS	10/15/00

PROJECT NO. 1000  
 DATE: 10/15/00  
 REV. 10/15/00  
 REV. 10/15/00

**MCP.06.01**

CONDENSER WATER FLOW DIAGRAM



**CONDENSER WATER FLOW DIAGRAM**  
 SCALE

1. THE CONDENSER WATER FLOW DIAGRAM IS FOR REFERENCE ONLY. THE CONDENSER WATER FLOW DIAGRAM IS NOT TO BE USED FOR CONSTRUCTION PURPOSES.



# Baltimore Aircoil Company

Sound Rating Program, 4/27/2007 Release, 10/2/2000 Data  
Series V VFL

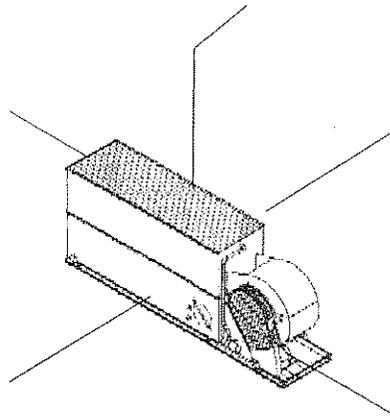
**Model : VFL-096-41P**  
**Total Fan Motor Horse Power : 40 HP**

Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

Top Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	81	68
2	82	67
3	80	64
4	80	66
5	78	65
6	77	62
7	75	59
8	71	53
A-wgtd	<b>84</b>	<b>69</b>

Back Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	78	72
2	76	68
3	74	63
4	69	57
5	64	58
6	59	53
7	58	51
8	53	44
A-wgtd	<b>71</b>	<b>63</b>

End Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	80	69
2	75	71
3	76	67
4	77	63
5	77	63
6	75	62
7	73	60
8	69	55
A-wgtd	<b>82</b>	<b>69</b>



End Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	80	69
2	75	71
3	76	67
4	77	63
5	77	63
6	75	62
7	73	60
8	69	55
A-wgtd	<b>82</b>	<b>69</b>

Fan Side Lp Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	82	71
2	77	67
3	77	65
4	78	60
5	76	61
6	75	60
7	72	57
8	67	51
A-wgtd	<b>82</b>	<b>66</b>

Sound Power (dB)		
Octave Band	Center Frequency (Hertz)	Lw
1	63	102
2	125	101
3	250	97
4	500	95
5	1000	95
6	2000	93
7	4000	90
8	8000	85



# BAC Closed Circuit Cooling Tower Selection Program

Release 6.4 NA

Program data and calculations are correct as of Mar. 18, 2008.

Copyright © 2006 Baltimore Aircoil Company, Inc. All rights reserved.



To: G+B  
Attn: Ryan  
From: Scott

Inquiry No.:  
Project Name: Elcanto Hotel  
Date: Sep. 10, 2008

## Selection Parameters

### Model & Fan Motor

Product Line: Low Profile Series VFL  
Number of Units: 1  
Model: VFL-096-41P  
Coil Type: Standard Coil  
Standard Total Fan Motor  
Power Per Unit: 40.0 HP  
Fan Motor: VFD Operation @ 72% of full speed  
Total Pump Motor  
Power Per Unit: 2.0 HP

### Model Accessories

Unit Intake Option: (None)  
Unit Internal Option: (None)  
Unit Discharge Option: (None)  
Unit Access Option: (None)  
External Static Pressure: 0.00 in. of H2O

## Maximized Capability, per Unit, Wet Operation

Thermal performance for this selection is certified by the Cooling Technology Institute (CTI).

Flow Rate: 277.67 GPM  
Fluid: Water  
Heat Rejection: 1,387,795 BTUH  
Fluid Pressure Drop: 1.59 psi  
Entering Fluid Temperature: 90.97° F  
Leaving Fluid Temperature: 80.97° F  
Wet Bulb Temperature: 70.00° F  
Range: 10.00° F

# Baltimore Aircoil Company

## Sound Rating Program, 4/27/2007 Release

### Series V VFL

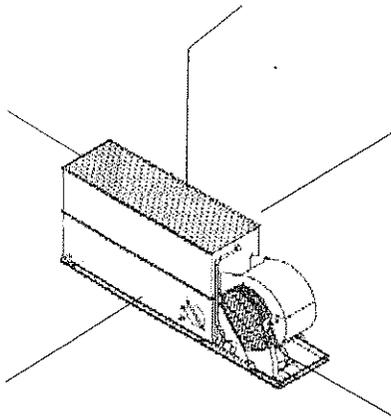
**Model : VFL-096-41P**  
**Total Fan Motor Horse Power : 40 HP**  
**Fan Speed & Total Fan Power Used : 72 % of full speed, 14.9 BHP**  
**Accessories : None**

Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

<b>Top Lp</b> Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	77	64
2	78	63
3	76	60
4	76	62
5	74	61
6	73	58
7	71	55
8	67	49
A-wgtd	<b>80</b>	<b>65</b>

<b>Back Lp</b> Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	74	68
2	72	64
3	70	59
4	65	53
5	60	54
6	55	49
7	54	47
8	49	40
A-wgtd	<b>67</b>	<b>59</b>

<b>End Lp</b> Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	76	65
2	71	67
3	72	63
4	73	59
5	73	59
6	71	58
7	69	56
8	65	51
A-wgtd	<b>78</b>	<b>65</b>



<b>End Lp</b> Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	76	65
2	71	67
3	72	63
4	73	59
5	73	59
6	71	58
7	69	56
8	65	51
A-wgtd	<b>78</b>	<b>65</b>

<b>Fan Side Lp</b> Sound Pressure (dB)		
Octave Band	Distance	
	5 ft	50 ft
1	78	67
2	73	63
3	73	61
4	74	56
5	72	57
6	71	56
7	68	53
8	63	47
A-wgtd	<b>78</b>	<b>62</b>

<b>Sound Power (dB)</b>		
Octave Band	Center Frequency (Hertz)	Lw
1	63	98
2	125	97
3	250	93
4	500	91
5	1000	91
6	2000	89
7	4000	86
8	8000	81



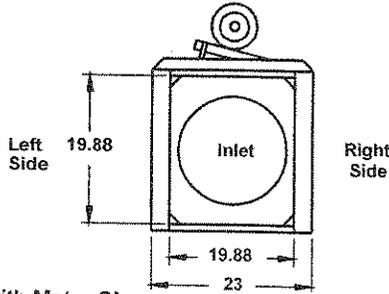
### Building Load Profiles

Bldg.(G)	August	September	October	November	December	January
Hour	Net Load					
1am	1,573,359	1,583,833	1,579,105	1,565,267	1,186,329	1,117,546
2am	1,426,843	1,435,231	1,430,588	1,417,615	1,049,461	987,369
3am	1,383,356	1,387,744	1,381,303	1,367,817	1,003,997	942,233
4am	1,328,069	1,330,796	1,324,567	1,311,059	949,353	887,307
5am	1,321,963	1,324,805	1,318,148	1,306,137	944,963	882,574
6am	1,455,022	1,457,941	1,442,844	1,420,385	1,043,498	986,186
7am	1,640,846	1,646,726	1,631,884	1,602,188	1,212,230	1,160,266
8am	1,859,682	1,872,825	1,859,618	1,835,833	1,428,390	1,376,536
9am	1,982,199	2,000,150	1,999,557	1,991,025	1,601,661	1,539,039
10am	2,163,106	2,199,686	2,212,470	2,215,325	1,826,871	1,760,360
11am	2,290,368	2,344,951	2,373,239	2,392,475	2,031,145	1,950,346
12pm	2,508,189	2,679,871	2,618,146	2,644,566	2,280,426	2,208,094
1pm	2,685,020	2,764,760	2,810,612	2,845,675	2,472,718	2,397,167
2pm	2,754,159	2,837,816	2,889,894	2,932,863	2,569,674	2,491,741
3pm	2,825,277	2,903,889	2,957,725	3,006,623	2,649,880	2,574,626
4pm	2,842,461	2,922,696	2,968,827	2,995,767	2,609,840	2,554,083
5pm	2,864,601	2,910,777	2,951,484	2,935,935	2,533,144	2,485,855
6pm	2,732,476	2,797,004	2,795,264	2,768,609	2,378,266	2,330,602
7pm	2,517,205	2,564,899	2,566,812	2,545,242	2,145,604	2,090,198
8pm	2,263,006	2,300,795	2,302,330	2,282,122	1,896,478	1,838,138
9pm	2,113,783	2,143,278	2,144,856	2,128,526	1,732,197	1,669,603
10pm	1,926,690	1,950,695	1,950,509	1,936,464	1,551,973	1,488,605
11pm	1,820,044	1,837,167	1,835,134	1,821,264	1,425,616	1,355,662
12am	1,666,565	1,680,965	1,677,994	1,664,595	1,287,857	1,217,521
Bldg.(G)	February	March	April	May	June	July
Hour	Net Load					
1am	1,248,800	1,492,544	1,459,159	1,564,957	1,560,316	1,562,711
2am	1,101,442	1,339,934	1,316,756	1,416,282	1,416,048	1,416,013
3am	1,054,233	1,294,168	1,273,544	1,375,518	1,376,459	1,377,600
4am	995,441	1,238,720	1,219,947	1,319,846	1,323,122	1,323,877
5am	989,186	1,232,625	1,213,918	1,313,747	1,317,145	1,317,898
6am	1,108,323	1,365,195	1,346,646	1,445,432	1,446,887	1,447,699
7am	1,297,762	1,558,942	1,535,400	1,629,042	1,624,714	1,627,473
8am	1,517,779	1,783,897	1,753,134	1,836,411	1,824,343	1,829,753
9am	1,673,665	1,919,130	1,872,351	1,966,277	1,958,355	1,960,902
10am	1,882,589	2,113,905	2,050,241	2,140,859	2,130,156	2,136,116
11am	2,064,978	2,274,890	2,177,352	2,256,647	2,247,016	2,252,354
12pm	2,309,172	2,512,313	2,396,519	2,465,176	2,450,240	2,453,888
1pm	2,488,459	2,686,293	2,568,841	2,635,809	2,621,285	2,630,525
2pm	2,576,159	2,768,272	2,639,218	2,703,548	2,687,667	2,697,643
3pm	2,653,965	2,842,892	2,714,110	2,777,436	2,760,131	2,770,311
4pm	2,661,230	2,860,079	2,733,052	2,805,792	2,772,312	2,794,313
5pm	2,635,470	2,842,108	2,758,932	2,805,315	2,773,159	2,792,776
6pm	2,488,099	2,731,410	2,627,165	2,686,703	2,661,559	2,675,720
7pm	2,239,810	2,482,219	2,407,531	2,481,169	2,463,034	2,473,292
8pm	1,983,769	2,222,609	2,152,597	2,236,236	2,222,228	2,230,111
9pm	1,810,158	2,051,014	2,001,239	2,092,104	2,080,778	2,087,147
10pm	1,624,948	1,862,809	1,815,137	1,908,912	1,899,669	1,904,854
11pm	1,494,610	1,742,972	1,707,038	1,806,234	1,798,922	1,802,946
12am	1,353,331	1,553,966	1,555,076	1,655,355	1,649,413	1,652,674

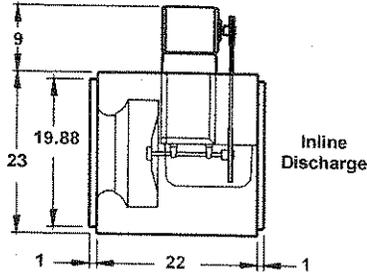
# BSQ

Now this is SF-1.

## Belt Drive Centrifugal Inline Fan



\* Varies with Motor Size



Tag: Mark 1

### STANDARD CONSTRUCTION FEATURES

- Galvanized steel housing
- Backward inclined aluminum wheel
- Two bolted access panels
- Integral duct connection flanges
- Ball bearing motors
- Adjustable motor pulley
- Adjustable motor plate
- Fan shaft mounted in ball bearing pillow blocks
- Static free belts
- Corrosion resistant fasteners

### SELECTED OPTIONS & ACCESSORIES

Switch - Nema-1, Toggle, Mounted & Wired

NOTES: All dimensions shown are in units of inches  
Fan weight is without accessories

### DIMENSIONS

Approx. Fan Weight (lb)
111

### PERFORMANCE (Elevation ft = 0, Airstream Temperature F = 70)

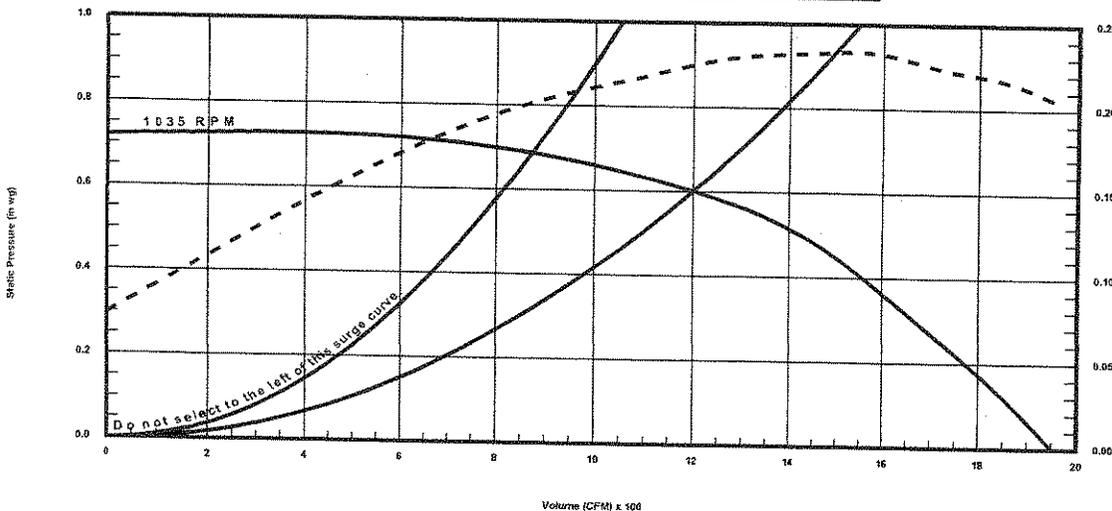
Qty	Model	Volume (CFM)	SP (in wg)	FRPM	Operating Power (hp)	Motor Information					
						Size (hp)	V/C/P	Encl.	Motor RPM:	Windings	FLA (A)
1	BSQ-140-4	1,200	0.6	1,035	0.22	1/4	115/60/1	ODP	1725	1	5.8

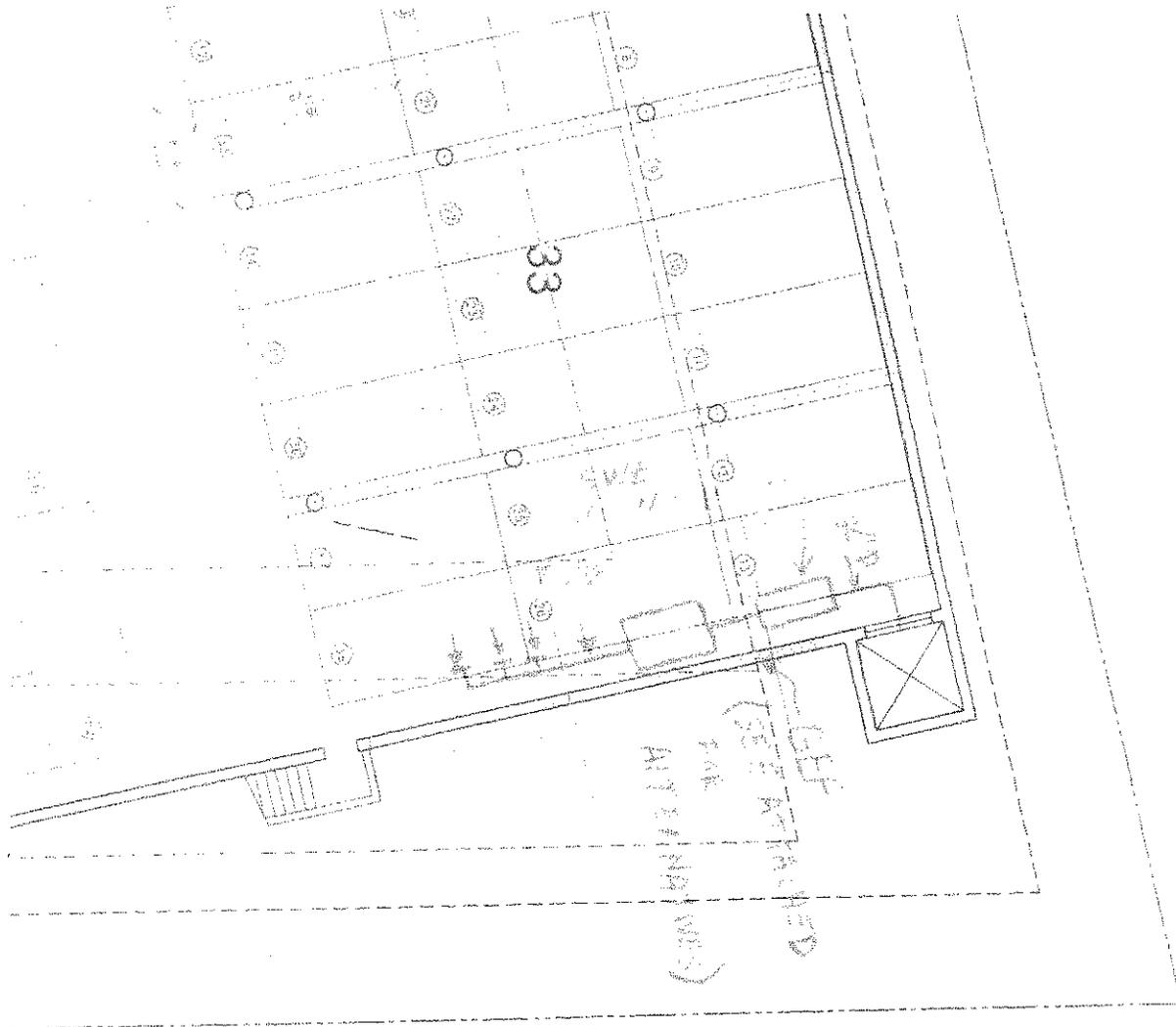
### SOUND

Inlet / Radiated Sound Power by Octave Band									LwA	dBA	Sones
63	125	250	500	1000	2000	4000	8000				
75	74	70	62	43	43	51	45	65	62	54	6.9
78	75	66	56	35	28	33	29	62	51	5.6	

FLA - Based on tables 150 or 148 of National Electrical Code 2002.

LwA - A weighted sound power level, based on ANSI S1.4.  
dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5.0 ft. Sones calculated using AMCA 301 at 5.0 ft.





tel Parking  
Tennis Court  
CALIFORNIA

**WARRY DESIGN, INC.**  
1700 Sycamore Blvd. Suite 700  
Redwood City, CA 94061  
Tel: 650.298.8150  
Fax: 650.298.8151  
E-mail: warry@warrydesign.com  
www.warrydesign.com

**ENGINEERING DATA**

Approx. Fan Weight (lb)	Class	Max. T Motor Frame Size	WR (lb-ft <sup>2</sup> )
1,000	II	324	150

\*\*Weight does NOT include motor, drives, or accessories.

Motor Location	Drive Type
A	Constant

**CONFIGURATION**

Arrangement	Discharge Position	Material Type
9	Horizontal	Steel

**INSTALLATION**

Inlet Conditions	Outlet Conditions
Standard	Standard

**MOTOR SPECS**

Size (hp)	RPM	V/C/P	Enclosure	Motor Frame...
5	1725	460/60/3	ODP	184

**QEI Mixed Flow Fan**

Tag: EF-1 Alt B

**STANDARD CONSTRUCTION FEATURES**

**HOUSING:** Continuously welded steel housing • Welded steel air straightening vanes • Lifting lugs • Slip-fit inlet and outlet collars • Heavy duty, steel motor supports with adjustment screws for belt tensioning • Structural parts are phosphatized and coated with Permatector  
**BEARINGS, SHAFT, AND WHEEL:** Heavy duty, self-aligning ball or roller face mounted bearings with extended lubrication lines • Fully welded mixed flow wheel

**SELECTED OPTIONS & ACCESSORIES**

Mounting Support - Base  
Access Door - Bored, Flush  
Bearings, L(10) 80k hrs = L(50) 400,000 hrs  
Belt Guard, Totally Enclosed, Steel  
Permatector Coating on Steel Components  
Motor Service Factor of 1.15 or greater  
Class B Motor Insulation or Greater  
Drive Service Factor of 1.5 - Standard  
Energy Efficient Motor meets EPACK and NEMA 1210

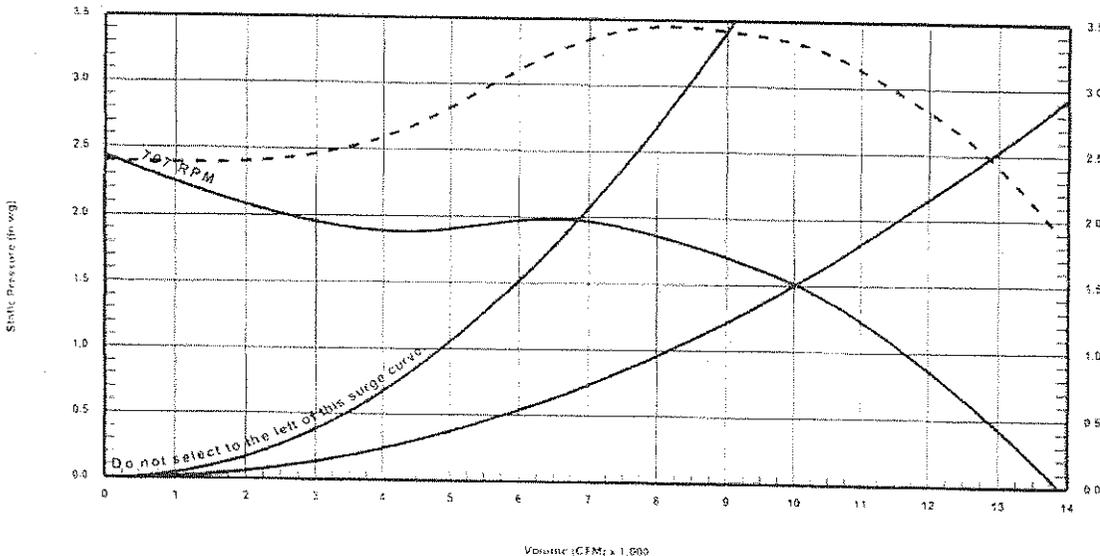
**PERFORMANCE** (Elevation ft = 0, Airstream Temperature F = 70, Start Up Temperature F = 70)

Qty	Model	Volume (CFM)	SP (in wg)	TS (ft/min)	OV (ft/min)	FRPM	Max Class FRPM	Operating Power (hp)	Drive Loss (%)	SE %
1	QEI-30-II	10,000	1.5	7,616.0	1,085.0	797	1,670	3.33	3	73

**SOUND**

Inlet / Outlet Sound Power by Octave Band										LWA	dBA
63	125	250	500	1000	2000	4000	8000				
71	79	74	72	72	66	60	54	75	64		
79	79	78	80	75	70	64	56	80	69		

LwA - A weighted sound power level, based on ANSI S1.4. dBA - A weighted sound pressure level, based on 11.5 dB attenuation per octave band at 5.0 ft.

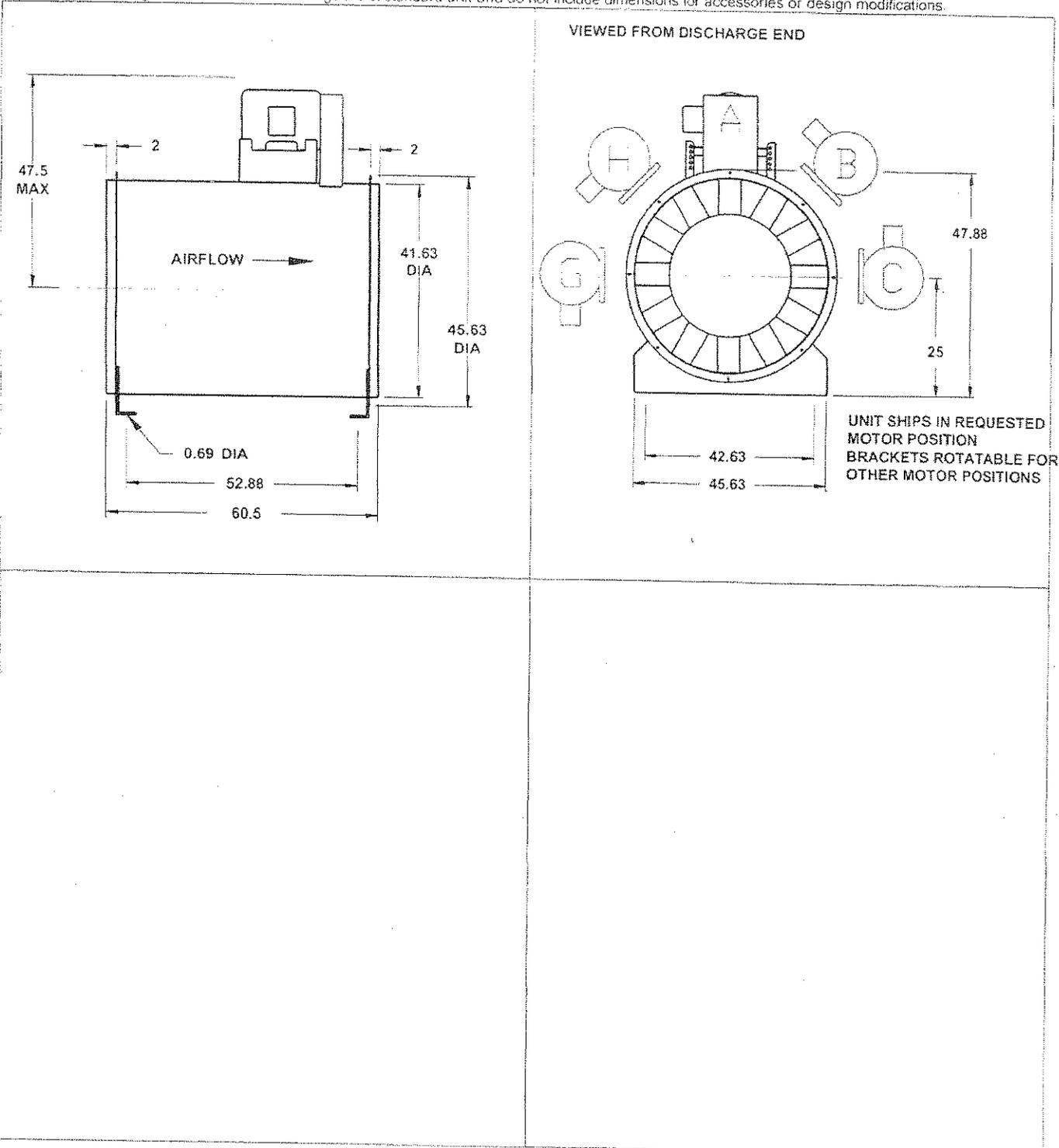


Size: 30  
Arrangement: 9  
Class: II

# QEI Mixed Flow Fan

NOTES: All dimensions shown are in units of inches.

Drawings are not to scale. Drawings are of standard unit and do not include dimensions for accessories or design modifications.



# Associated Transportation Engineers

## October 30, 2008

Existing Vehicle Classification

Alvarado Street

Hour	Cars	Light Trucks	Heavy Trucks
12:00 a.m.	4	0	0
1:00 a.m.	3	0	0
2:00 a.m.	2	0	0
3:00 a.m.	0	0	0
4:00 a.m.	3	0	0
5:00 a.m.	2	0	0
6:00 a.m.	77	4	0
7:00 a.m.	218	15	1
8:00 a.m.	404	19	3
9:00 a.m.	156	15	2
10:00 a.m.	159	9	2
11:00 a.m.	173	12	1
12:00 Noon	188	4	0
1:00 p.m.	190	5	0
2:00 p.m.	261	11	2
3:00 p.m.	135	14	2
4:00 p.m.	270	8	2
5:00 p.m.	261	6	2
6:00 p.m.	135	4	0
7:00 p.m.	102	0	0
8:00 p.m.	60	1	0
9:00 p.m.	68	0	0
10:00 p.m.	27	0	0
11:00 p.m.	15	0	0

Mission Ridge

Hour	Cars	Light Trucks	Heavy Trucks
12:00 a.m.	2	0	0
1:00 a.m.	2	0	0
2:00 a.m.	0	0	0
3:00 a.m.	1	0	0
4:00 a.m.	5	0	0
5:00 a.m.	1	0	0
6:00 a.m.	42	1	1
7:00 a.m.	56	2	0
8:00 a.m.	75	7	0
9:00 a.m.	75	10	1
10:00 a.m.	64	7	0
11:00 a.m.	72	2	1
12:00 Noon	74	2	0
1:00 p.m.	74	4	0
2:00 p.m.	105	7	0
3:00 p.m.	104	7	0
4:00 p.m.	75	3	1
5:00 p.m.	79	2	0
6:00 p.m.	74	0	0
7:00 p.m.	45	0	0
8:00 p.m.	29	1	0
9:00 p.m.	33	0	0
10:00 p.m.	26	0	0
11:00 p.m.	7	0	0

Existing + Existing Hotel Vehicle Classification

Alvarado Street

Hour	Cars	Light Trucks	Heavy Trucks
12:00 a.m.	31	0	0
1:00 a.m.	20	0	0
2:00 a.m.	15	0	0
3:00 a.m.	8	0	0
4:00 a.m.	3	0	0
5:00 a.m.	28	0	0
6:00 a.m.	118	4	0
7:00 a.m.	299	15	1
8:00 a.m.	487	19	3
9:00 a.m.	211	17	2
10:00 a.m.	255	11	2
11:00 a.m.	275	13	1
12:00 Noon	252	6	0
1:00 p.m.	259	7	0
2:00 p.m.	325	13	2
3:00 p.m.	186	16	2
4:00 p.m.	350	10	2
5:00 p.m.	323	6	2
6:00 p.m.	187	4	0
7:00 p.m.	163	0	0
8:00 p.m.	125	1	0
9:00 p.m.	142	0	0
10:00 p.m.	81	0	0
11:00 p.m.	58	0	0

Mission Ridge

Hour	Cars	Light Trucks	Heavy Trucks
12:00 a.m.	10	0	0
1:00 a.m.	7	0	0
2:00 a.m.	4	0	0
3:00 a.m.	3	0	0
4:00 a.m.	5	0	0
5:00 a.m.	8	0	0
6:00 a.m.	54	1	1
7:00 a.m.	79	2	0
8:00 a.m.	99	7	0
9:00 a.m.	91	10	1
10:00 a.m.	92	7	0
11:00 a.m.	102	2	1
12:00 Noon	92	2	0
1:00 p.m.	94	4	0
2:00 p.m.	123	7	0
3:00 p.m.	119	7	0
4:00 p.m.	98	3	1
5:00 p.m.	97	2	0
6:00 p.m.	89	0	0
7:00 p.m.	62	0	0
8:00 p.m.	47	1	0
9:00 p.m.	54	0	0
10:00 p.m.	42	0	0
11:00 p.m.	19	0	0

Land Use	Size	Units	Rate	Trips
Existing Hotel	88	Rooms	10.5	924

Begin Hour	HOTEL TGEN	
	% of Day	Trips
12:00 a.m.	2.1%	19
1:00 a.m.	1.3%	12
2:00 a.m.	1.0%	9
3:00 a.m.	0.6%	6
4:00 a.m.	0.0%	0
5:00 a.m.	2.0%	18
6:00 a.m.	3.2%	30
7:00 a.m.	6.3%	58
8:00 a.m.	6.5%	60
9:00 a.m.	4.3%	40
10:00 a.m.	7.5%	69
11:00 a.m.	8.0%	74
12:00 Noon	5.0%	46
1:00 p.m.	5.4%	50
2:00 p.m.	5.0%	46
3:00 p.m.	4.0%	37
4:00 p.m.	6.3%	58
5:00 p.m.	4.8%	44
6:00 p.m.	4.0%	37
7:00 p.m.	4.7%	43
8:00 p.m.	5.0%	46
9:00 p.m.	6.7%	53
10:00 p.m.	4.2%	39
11:00 p.m.	3.3%	30

TRIP DISTRIBUTION (a)	
140% VIA ALVARADO	40% VIA MISSION RIDGE
27	8
17	5
13	4
8	2
0	0
26	7
41	12
81	23
84	24
56	16
97	28
103	30
65	18
70	20
65	18
52	15
81	23
62	18
52	15
61	17
65	18
74	21
54	16
43	12

(a) Distribution based on previous parking supply located on Mission Ridge and previous valet/self-park operations.

Existing + Future Hotel Vehicle Classification

Alvarado Street

Hour	Cars	Light Trucks	Heavy Trucks
12:00 a.m.	36	0	0
1:00 a.m.	23	0	0
2:00 a.m.	17	0	0
3:00 a.m.	9	0	0
4:00 a.m.	3	0	0
5:00 a.m.	33	0	0
6:00 a.m.	126	4	0
7:00 a.m.	315	15	1
8:00 a.m.	504	19	3
9:00 a.m.	221	17	2
10:00 a.m.	273	11	2
11:00 a.m.	295	13	1
12:00 Noon	264	6	0
1:00 p.m.	272	7	0
2:00 p.m.	337	13	2
3:00 p.m.	196	16	2
4:00 p.m.	366	10	2
5:00 p.m.	335	6	2
6:00 p.m.	197	4	0
7:00 p.m.	174	0	0
8:00 p.m.	137	1	0
9:00 p.m.	156	0	0
10:00 p.m.	92	0	0
11:00 p.m.	66	0	0

Mission Ridge

Hour	Cars	Light Trucks	Heavy Trucks
12:00 a.m.	13	0	0
1:00 a.m.	9	0	0
2:00 a.m.	5	0	0
3:00 a.m.	4	0	0
4:00 a.m.	5	0	0
5:00 a.m.	11	0	0
6:00 a.m.	59	1	1
7:00 a.m.	89	2	0
8:00 a.m.	109	7	0
9:00 a.m.	97	10	1
10:00 a.m.	103	7	0
11:00 a.m.	114	2	1
12:00 Noon	100	2	0
1:00 p.m.	102	4	0
2:00 p.m.	131	7	0
3:00 p.m.	125	7	0
4:00 p.m.	108	3	1
5:00 p.m.	104	2	0
6:00 p.m.	95	0	0
7:00 p.m.	69	0	0
8:00 p.m.	55	1	0
9:00 p.m.	63	0	0
10:00 p.m.	48	0	0
11:00 p.m.	24	0	0

Land Use	Size	Units	Rate	Trips
Future Hot	97	Rooms	10.5	1,019

Begin Hour	HOTEL TGEN	
	% of Day	Trips
12:00 a.m.	2.1%	21
1:00 a.m.	1.3%	13
2:00 a.m.	1.0%	10
3:00 a.m.	0.6%	6
4:00 a.m.	0.0%	0
5:00 a.m.	2.0%	20
6:00 a.m.	3.2%	33
7:00 a.m.	6.3%	64
8:00 a.m.	6.5%	66
9:00 a.m.	4.3%	44
10:00 a.m.	7.5%	76
11:00 a.m.	8.0%	81
12:00 Noon	5.0%	51
1:00 p.m.	5.4%	55
2:00 p.m.	5.0%	51
3:00 p.m.	4.0%	41
4:00 p.m.	5.3%	54
5:00 p.m.	4.8%	49
6:00 p.m.	4.0%	41
7:00 p.m.	4.7%	48
8:00 p.m.	5.0%	51
9:00 p.m.	5.7%	58
10:00 p.m.	4.2%	43
11:00 p.m.	3.3%	34

TRIP DISTRIBUTION (a)	
151% VIA ALVARADO	51% VIA MISSION RIDGE
32	11
20	7
15	5
9	3
0	0
31	10
49	17
97	33
100	34
66	22
115	39
123	42
77	26
83	26
77	26
62	21
97	33
74	25
62	21
72	24
77	26
88	30
65	22
51	17

(a) Distribution based on future parking supply located on Mission Ridge and proposed valet operations.

Net Change (Future Hotel - Existing Hotel)

Alvarado Street

Hour	Cars	Light Trucks	Heavy Trucks
12:00 a.m.	5	0	0
1:00 a.m.	3	0	0
2:00 a.m.	2	0	0
3:00 a.m.	1	0	0
4:00 a.m.	0	0	0
5:00 a.m.	5	0	0
6:00 a.m.	8	0	0
7:00 a.m.	15	0	0
8:00 a.m.	17	0	0
9:00 a.m.	10	0	0
10:00 a.m.	18	0	0
11:00 a.m.	20	0	0
12:00 Noon	12	0	0
1:00 p.m.	13	0	0
2:00 p.m.	12	0	0
3:00 p.m.	10	0	0
4:00 p.m.	16	0	0
5:00 p.m.	12	0	0
6:00 p.m.	10	0	0
7:00 p.m.	11	0	0
8:00 p.m.	12	0	0
9:00 p.m.	14	0	0
10:00 p.m.	10	0	0
11:00 p.m.	8	0	0

Mission Ridge

Hour	Cars	Light Trucks	Heavy Trucks
12:00 a.m.	3	0	0
1:00 a.m.	2	0	0
2:00 a.m.	1	0	0
3:00 a.m.	1	0	0
4:00 a.m.	0	0	0
5:00 a.m.	3	0	0
6:00 a.m.	5	0	0
7:00 a.m.	9	0	0
8:00 a.m.	10	0	0
9:00 a.m.	6	0	0
10:00 a.m.	11	0	0
11:00 a.m.	12	0	0
12:00 Noon	7	0	0
1:00 p.m.	8	0	0
2:00 p.m.	7	0	0
3:00 p.m.	6	0	0
4:00 p.m.	9	0	0
5:00 p.m.	7	0	0
6:00 p.m.	6	0	0
7:00 p.m.	7	0	0
8:00 p.m.	7	0	0
9:00 p.m.	9	0	0
10:00 p.m.	6	0	0
11:00 p.m.	5	0	0

	A	B	C	D	E	F	G	H
	Phase	Duration	Estimated Required Equipment	Estimated Trips	# of workers	Parking	Staging	Estimated start
1								
2								
3								
4	Main Building	12 months	material delivery trucks	400	45 max./day	onsite	Alvarado Place entry drive & adjacent to work area	Work in process, construction slow down anticipated Q1 of 2009 thru Q3 of 2009.
5	Pool/Fitness	10 months	backhoe, loader, material delivery trucks, screen plant, dump trucks	200	20 max./day	onsite/remote w/ organized carpool	Alvarado Place entry drive & adjacent to work area	Building Permit anticipated for October 2009 to start construction
6	Arbor Renovation	6 months	material delivery trucks	50	8 max./day	onsite/remote w/ organized carpool	Alvarado Place entry drive & adjacent to work area	Building Permit anticipated for April 2009 to start construction
7	Civil Site work (incl. Landscape)	16 months	Backhoe, loader, dump trucks, skid steer, compactors	350	35 max./day	onsite/remote w/ organized carpool	site wide	Building Permit anticipated for May 2009 to start construction
8	Public Improvements	5 months	Backhoe, loader, dump trucks, skid steer	50	5 max./day	onsite/remote w/ organized carpool	Alvarado Place entry drive & adjacent to work area	Building Permit anticipated for July 2009 to start construction
9	Back of House/Valet Parking/UDF	9 months	Crane, track hoe, dump trucks, material delivery trucks, screen plant, concrete trucks	300	35 max./day	onsite/remote w/ organized carpool	Alvarado Place entry drive & adjacent to work area	Building Permit anticipated for August 2009 to start construction
10	Demolition-Court Cottages	1 month	track hoe, dump trucks	30	6 max./day	onsite/remote w/ organized carpool	n/a	Building Permit received anticipate August 2009 to start construction
11	Mission Village Parking Structure	7 months	Track hoe, dump trucks, material delivery trucks, screen plant, concrete trucks	250	20 max./day	onsite/remote w/ organized carpool	Mission Ridge drive & adjacent to work area	Building Permit anticipated for September 2009 to start construction
12	Renovated cottages	12 months	material delivery trucks, front loader	80	50 max./day	onsite	Mission Ridge drive & adjacent to work area	Work in process, construction slow down anticipated Q1 of 2009 thru Q3 of 2009.

A	B	C	D	E	F	G	H
13 New Cottages (4,25,26)	4 months	material delivery trucks, front loader	50	15 max./day	onsite	Mission Ridge drive & adjacent to work area	Work in process, construction slow down anticipated Q1 of 2009 thru Q3 of 2009.
14 New Cottages (27-29)	7 months	backhoe, loader, material delivery trucks	100	20 max./day	onsite/remote w/ organized carpool	Mission Ridge drive & adjacent to work area	Building Permit anticipated for October 2009 to start construction
15 Mission Village Cottages	9 months	backhoe, loader, material delivery trucks	200	45 max./day	onsite/remote w/ organized carpool	Mission Ridge drive & adjacent to work area	Building Permit anticipated for February 2010 to start construction