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Noise Analysis for the Harmony Grove Industrial Project Escondido, California

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Acronyms

ADT	average daily traffic
AHU	Air Handling Unit
CEQA	California Environmental Quality Act
City	City of Escondido
CNEL	community noise equivalent level
dB	decibel
dB(A)	A-weighted Decibel
FHWA	Federal Highway Administration
HVAC	heating, ventilating, and air conditioning
L_{eq}	one-hour equivalent noise level
L_{pw}	sound power level

Executive Summary

The proposed Harmony Grove Industrial (project) site is located at 1925 and 2005 Harmony Grove Road in Escondido, California. The 11.04-acre site is currently undeveloped. The project would construct 215,275 square feet of industrial uses in one building. The light industrial use would consist of 204,775 square feet of warehouse space and 10,500 square feet of office space. The project would include surface parking and truck loading docks.

This report discusses potential noise impacts from the construction and operation of the project. As part of this assessment, noise levels due to vehicle traffic were calculated and evaluated against City of Escondido (City) noise and land use compatibility guidelines. In addition to compatibility, the potential for noise to impact adjacent uses from future on-site sources and construction activity was assessed. A summary of the findings is provided below.

Construction Noise

There are residential uses located to the north, east, and south of the project site. Hourly equivalent construction noise levels at the nearest residential property uses would range from 56 to 71 A-weighted decibels [dB(A) L_{eq}] at the nearest residential uses. Since construction activities associated with the project would comply with the applicable noise level limit for construction, 75 dB(A) L_{eq}, temporary increases in noise levels from construction activities would be less than significant.

Traffic Noise

The project would result in a less than 1 decibel (dB) increase in traffic noise over the existing condition along all affected roadway segments. Since 1 dB is not an audible increase in noise levels, the project would result in a less than significant impact related to traffic noise. Additionally, while the cumulative plus project traffic would increase noise along Harmony Grove Road west of Enterprise Street by more than 3 dB, the project's contribution to this increase would be less than 1 dB. Therefore, the project's contribution to the cumulative increase is less than cumulatively considerable.

On-site Generated Noise

The noise sources on the project site after completion of construction are anticipated to be those that would be typical of any industrial use, such as mechanical ventilation equipment, vehicles arriving and leaving, including truck loading and unloading, and landscape maintenance. The primary noise sources on-site would be heating, ventilation, and air conditioning (HVAC) equipment and the loading docks. As calculated in this analysis, daytime on-site generated noise levels would range from 26 to 45 dB(A) L_{eq} at the residential property lines and 37 to 59 dB(A) L_{eq} at the industrial property lines, and nighttime noise levels would range from 25 to 42 dB(A) L_{eq} at the residential property lines and 37 to 59 dB(A) L_{eq} at the industrial property lines. Noise levels would not exceed the applicable Noise Ordinance limits at the property lines.

1.0 Introduction

1.1 Project Description

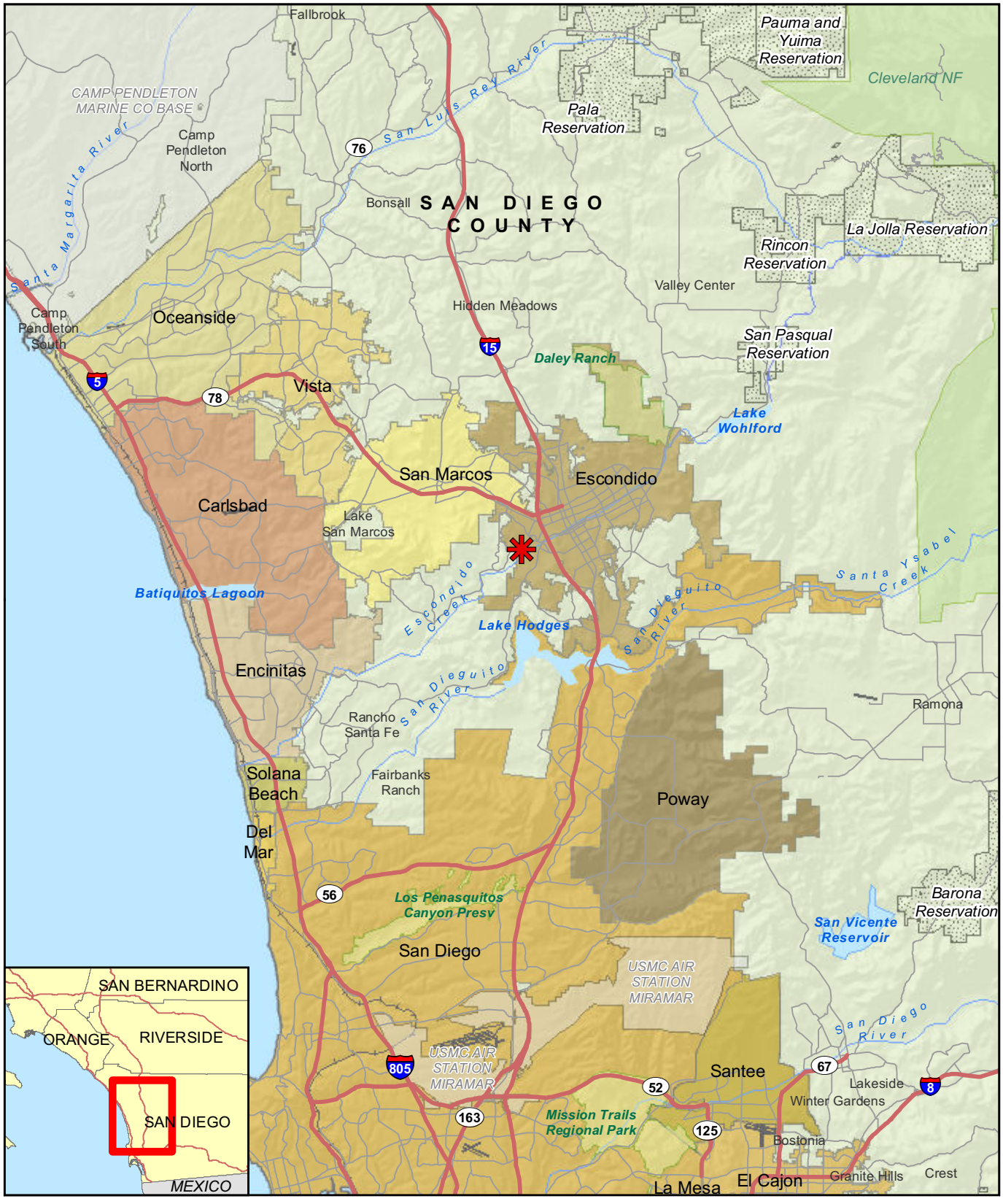
The Harmony Grove Industrial Project (project) site is located at 1925 and 2005 Harmony Grove Road in Escondido, California. Figure 1 shows the regional location of the project site. Figure 2 shows an aerial photograph of the project vicinity. As shown, the 11.04-acre site is currently undeveloped; however, the southern portion of the project site has been graded in preparation of development associated with the approved Victory Industrial Park project. Site grading is visible in Figure 2.

The project would construct 215,275 square feet of industrial uses in one building. The light industrial use would consist of 204,775 square feet of warehouse space and 10,500 square feet of office space. The project would include surface parking and truck loading docks. The project design includes installation of signage at loading docks requiring that engines be turned off when loading and unloading. Additionally, an 8-foot-high wall would be constructed between the project site and the adjacent residences to the north. Figure 3 shows the proposed site plan.

1.2 Fundamentals of Noise

Sound levels are described in units called the decibel (dB). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease. However, human perception of noise has no simple correlation with acoustical energy. A change in noise levels is generally perceived as follows: 3 A-weighted dB [dB(A)] barely perceptible, 5 dB(A) readily perceptible, and 10 dB(A) perceived as a doubling or halving of noise (California Department of Transportation 2013).

In technical terms, sound levels are described as either a “sound power level” or a “sound pressure level,” which while commonly confused are two distinct characteristics of sound. Both share the same unit of measure, the dB. However, sound power, expressed as L_{pw}, is the energy converted into sound by the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers such as an ear drum or microphone, the sound pressure level. Sound measurement instruments only measure sound pressure, and limits used in standards are generally sound pressure levels.



Project Location

FIGURE 1
Regional Location

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Image Source: Nearmaps (flown June 2017)

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Project Boundary

FIGURE 2

Project Location on Aerial Photograph

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Map Source: WARE MALCOMB

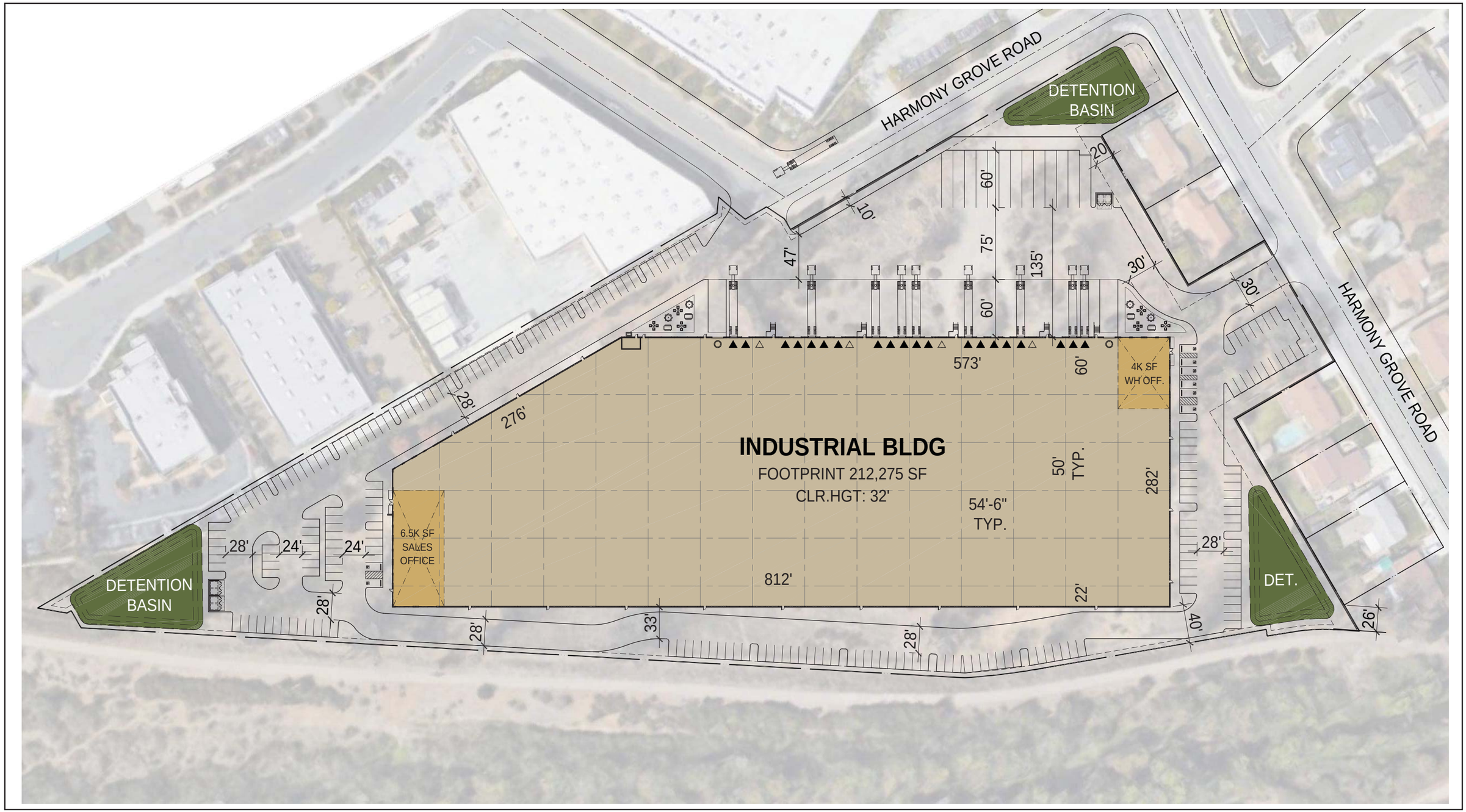

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FIGURE 3
Site Plan

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The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-scale, which approximates the frequency response of the average young ear when listening to most ordinary everyday sounds, was devised. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Therefore, the "A-weighted" noise scale is used for measurements and standards involving the human perception of noise. Noise levels using A-weighted measurements are designated with the notation dB(A).

1.2.1 Descriptors

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

The L_{eq} is the equivalent steady-state noise level in a stated period of time that is calculated by averaging the acoustic energy over a time period; when no period is specified, a 1-hour period is assumed.

The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies an additional 5 dB(A) penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and a 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night.

1.2.2 Propagation

Sound from a localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern, known as geometric spreading. The sound level decreases or drops off at a rate of 6 dB(A) for each doubling of the distance.

Traffic noise is not a single, stationary point source of sound. The movement of vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. The drop-off rate for a line source is 3 dB(A) for each doubling of distance.

The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site (such as parking lots or smooth bodies of water) receives no additional ground attenuation, and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the source. A soft site (such as soft dirt, grass, or scattered bushes and trees) provides an additional ground attenuation value of 1.5 dB(A) per doubling of distance. Thus, a point source over a soft site would drop off at 7.5 dB(A) per doubling of distance.

2.0 Applicable Noise Standards City of Escondido

2.1 General Plan

The Community Protection Element of the City of Escondido General Plan establishes noise and land use compatibility standards and outlines goals and policies to achieve these standards. Table 1 summarizes the land use compatibility standards.

The Community Protection Element also provides standards for projects that could significantly alter existing noise levels. It states that "noise impacts of proposed projects on existing land uses should be evaluated in terms of potential for adverse community response based on a significant increase in existing noise levels. For example, if an area is currently below the maximum normally acceptable noise level, an increase in noise up to the maximum allowable level should not necessarily be allowed. Projects increasing noise levels by 5 dB or greater should be considered as generating a significant impact and should require mitigation." Table 2 summarizes the exterior incremental environmental noise impact standards for noise-sensitive uses.

2.2 Municipal Code

2.2.1 Chapter 17, Article 12, Noise Abatement and Control (Noise Ordinance)

The Noise Ordinance establishes prohibitions for disturbing, excessive, or offensive noise, and provisions such as sound level limits for the purpose of securing and promoting the public health, comfort, safety, peace, and quiet for its citizens. Table 3, City of Escondido Exterior Sound Limit Levels, shows the allowable noise levels at any point on or beyond the boundaries of the property on which the sound is produced, and corresponding times of day for each zoning designation. The noise standards apply to each property or portion of property substantially used for a particular type of land use reasonably similar to the land use types shown in Table 3. Where two or more dissimilar land uses occur on a single property, the more restrictive noise limits apply.

Environmental noise is measured by the L_{eq} for the hours as specified in Table 3. If the noise is continuous, the L_{eq} for any hour will be represented by any lesser period within that hour. If the noise is intermittent, the L_{eq} for any hour may be represented by a time period typical of the operating cycle, but the measurement period must be 15 minutes or longer. If the measured ambient level exceeds the permissible noise level, the allowable noise exposure standard is the ambient noise level. Noise restrictions are listed in Sections 17-230 through 17-241 of the Noise Ordinance, such as specific regulations pertaining to motor vehicles and burglar alarms. Additional sections of the Noise Ordinance applicable to this analysis include Sections 17-234 and 17-238.

Table 1
Land Use Compatibility Standards

Land Use Category	CNEL 55	60	65	70	75	80	85
Residential – Single Family, Duplex, Mobile Home							
Residential – Multi-Family, Residential Mixed Use							
Transient Lodging, Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Home							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial, Professional							
Industrial, Manufacturing, Utilities, Agriculture							

	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will usually suffice.
	Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made with noise insulation features included in the design.
	Clearly Unacceptable	New construction or development should generally not be undertaken.

SOURCE: City of Escondido 2012.

Table 2 Exterior Incremental Environmental Noise Impact Standards for Noise-Sensitive Uses			
Residences and Buildings where People Normally Sleep[a]		Institutional Land Uses with Primarily Daytime and Evening Uses[b]	
Existing L_{dn}	Allowable Noise Increment	Existing Peak Hour L_{eq}	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0
SOURCE: Federal Transit Administration 2006; City of Escondido 2012 NOTE: Noise levels are measured at the property line of the noise-sensitive use. [a]This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance. [b]This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.			

Table 3 City of Escondido Exterior Sound Limit Levels		
Zone	Time	Applicable Limit 1-hour Average Sound Level (Decibels)
Residential zones	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
Multi-residential zones	7:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial zones	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55
Light Industrial/Industrial Park zones	Anytime	70
General Industrial zones	Anytime	75
SOURCE: City of Escondido Municipal Code.		

2.2.2 Chapter 17, Article 12, Construction Equipment and Grading

Sections 17-234 and 17-238 provide regulations for construction equipment and grading activities.

Section 17-234

Except for emergency work, the following applies to all construction equipment operating in the City:

a) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site, except on Monday through Friday

during a week between the hours of 7:00 a.m. and 6:00 p.m. and on Saturdays between the hours of 9:00 a.m. and 5:00 p.m., and provided that the operation of such construction equipment complies with the requirements of subsection (c) of this section.

b) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site on Sundays and on days designated by the President, Governor, or City Council as public holidays.

c) No construction equipment or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise in excess of a one-hour average sound level limit of 75 dB at any time, unless a variance has been obtained in advance from the City Manager.

Section 17-238

a) It shall be unlawful for any person, including the City of Escondido, to do any authorized grading at any construction site, except on Mondays through Fridays during a week between the hours of 7:00 a.m. and 6:00 p.m. and, provided a variance has been obtained in advance from the City Manager, on Saturdays from 10:00 a.m. to 5:00 p.m.

b) For the purpose of this section, "grading" shall include, but not be limited to, compacting, drilling, rock crushing or splitting, bulldozing, clearing, dredging, digging, filling and blasting.

c) In addition, any equipment used for grading shall not be operated so as to cause noise in excess of a one-hour sound level limit of 75 dB at any time when measured at or within the property lines of any property which is developed and used in whole or in part for residential purposes, unless a variance has been obtained in advance from the City Manager.

2.2.3 Chapter 33, Article 47, Environmental Quality Regulations

The Environmental Quality Regulations implement the California Environmental Quality Act (CEQA) and the CEQA Guidelines by applying the provisions and procedures contained in CEQA to development projects proposed within the City of Escondido. Section (a)(2) pertains to noise impacts, specifically noise impacts related to the widening of Mobility and Infrastructure Element streets. According to this section, the following incremental noise increases are generally not considered significant:

a) Short- or long-term increases, regardless of the extent, that do not result in noise increases in excess of general plan standards,

b) Short- or long-term increases that result in a 3 dB(A) or less incremental increase in noise beyond the general plan's noise standards.

3.0 Existing Conditions

Existing noise levels in the vicinity of the project site were measured on February 18, 2016, using a Larson-Davis Model LxT, Type 1 Integrating Sound Level Meter, serial number 3827. The following parameters were used:

Filter:	A-weighted
Response:	Slow
Interval Period	1 minute
Time History Period:	5 seconds

The meter was calibrated before and after each measurement. The meter was set 5 feet above the ground level for each measurement.

Noise measurements were taken to obtain typical ambient noise levels at the project site and in the vicinity. The weather was cool and cloudy with a slight breeze, one to two miles per hour on average. Four 15-minute measurements were taken, as described below. The primary sources of on-site noise were due to traffic on Harmony Grove Road and industrial activity beyond Escondido Creek. Secondary sources of noise were activity in parking lots west and southwest of the project site, air traffic, and regular bird vocalization. The measurement locations are shown on Figure 4, and detailed data is contained in Attachment 1.

Measurement 1 was located south of the project site, approximately 20 feet west of the levee for Escondido Creek. The main noise source at this location was industrial activity beyond the creek. Secondary sources of noise were activity in parking lots southwest of the project site, air traffic, and regular bird vocalization.

Measurement 2 was located near the southern project boundary, in the center of the levee road along Escondido Creek. The main noise source at this location was industrial activity beyond the creek. Secondary sources of noise were Harmony Grove Road, approximately 600 feet north, air traffic, and regular bird vocalization.

Measurement 3 was located at the western project boundary, approximately 50 feet east of Harmony Grove Road, in line with the center of the east-west segment of the road. The main noise source at this location was vehicle traffic on Harmony Grove Road with regular bird vocalization as a significant secondary source. During the measurement period, traffic was moving freely on Harmony Grove Road.

Measurement 4 was located at the northern project boundary, 50 feet south of Harmony Grove Road, and approximately 500 feet east of Enterprise Street. The main noise source at this location was vehicle traffic on Harmony Grove Road with air traffic and regular bird vocalization as significant secondary sources. During the measurement period, traffic was moving freely on Harmony Grove Road.

Image Source: Nearmaps (flown June 2017)

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FIGURE 4

Noise Measurement Locations

Noise measurements are summarized in Table 4. Traffic counts conducted during Measurements 3 and 4 are summarized in Table 5.

Table 4
Noise Measurements

Measurement	Location	Time	Noise Sources	L_{eq}	L_{90}
1	South of project site, 20 feet west of Escondido Creek levee	10:52 a.m. – 11:07 a.m.	Industrial activity, parking lots, air traffic, and bird vocalizations	43.1	37.4
2	Near southern project boundary, center of levee road	11:20 a.m. – 11:35 a.m.	Industrial activity, Harmony Grove Road, air traffic, and bird vocalizations	47.1	45.4
3	Near western project boundary, 50 feet east of Harmony Grove Road	11:50 a.m. – 12:05 p.m.	Harmony Grove Road and bird vocalizations	57.1	48.2
4	Near northern project boundary, 50 feet south of Harmony Grove Road	12:28 p.m. – 12:43 p.m.	Harmony Grove Road, air traffic, and bird vocalizations	61.4	51.2

NOTE: Noise measurement data is contained in Attachment 1.
L_{eq} = one-hour equivalent noise level; L_{90} = noise level exceeded 90 percent of the time

Table 5
15-minute Traffic Counts

Measurement	Roadway	Direction	Vehicle Type				
			Autos	Medium Trucks	Heavy Trucks	Buses	Motorcycles
3	Harmony Grove Road, south of Enterprise Street	Northeast-bound	47	3	0	0	0
		Southwest-bound	31	0	0	0	1
4	Harmony Grove Road, east of Enterprise Street	Eastbound	66	4	0	0	0
		Westbound	81	4	0	0	0

Note: Traffic counts were not conducted during Measurements 1 and 2.

4.0 Analysis Methodology

4.1 Construction Noise Analysis

Noise level predictions and contour mapping were developed using noise modeling software, SoundPlan Essential, version 3.0 (Navcon Engineering 2015). SoundPLAN calculates noise propagation based on the International Organization for Standardization method (ISO 9613-2 – Acoustics, Attenuation of Sound during Propagation Outdoors). The model calculates noise levels at selected receiver locations using input parameter estimates such as total noise generated by each noise source; distances between sources, barriers, and receivers; and shielding provided by intervening terrain, barriers, and structures. The model outputs can be developed as noise level contour maps or noise levels at specific receivers. In all cases, receivers were modeled at 5 feet above ground elevation, which represents the average height of the human ear.

Project construction noise would be generated by diesel engine-driven construction equipment used for site preparation and grading, building construction, loading, unloading, and placing materials and paving. Diesel engine-driven trucks also would bring materials to the site and remove the soils from excavation.

A variety of noise-generating equipment would be used during the construction phase of the project, such as excavators, backhoes, front-end loaders, and concrete saws, along with others. Construction equipment with a diesel engine typically generates maximum noise levels from 80 to 90 dB(A) L_{eq} at a distance of 50 feet (Federal Highway Administration [FHWA] 2006). Table 6 summarizes typical construction equipment noise levels.

Table 6
Typical Construction Equipment Noise Levels

Equipment	Noise Level at 50 Feet [dB(A) L_{eq}]	Typical Duty Cycle
Auger Drill Rig	85	20%
Backhoe	80	40%
Blasting	94	1%
Chain Saw	85	20%
Clam Shovel	93	20%
Compactor (ground)	80	20%
Compressor (air)	80	40%
Concrete Mixer Truck	85	40%
Concrete Pump	82	20%
Concrete Saw	90	20%
Crane (mobile or stationary)	85	20%
Dozer	85	40%
Dump Truck	84	40%
Excavator	85	40%
Front End Loader	80	40%
Generator (25 kilovolt amps or less)	70	50%
Generator (more than 25 kilovolt amps)	82	50%
Grader	85	40%
Hydra Break Ram	90	10%
Impact Pile Driver (diesel or drop)	95	20%
Insitu Soil Sampling Rig	84	20%
Jackhammer	85	20%
Mounted Impact Hammer (hoe ram)	90	20%
Paver	85	50%
Pneumatic Tools	85	50%
Pumps	77	50%
Rock Drill	85	20%
Roller	74	40%
Scraper	85	40%
Tractor	84	40%
Vacuum Excavator (vac-truck)	85	40%
Vibratory Concrete Mixer	80	20%
Vibratory Pile Driver	95	20%

SOURCE: Federal Highway Administration 2006.
dB(A) L_{eq} = A-weighted decibel one-hour equivalent noise level

During excavation, grading, and paving operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks, such as measurement. Although maximum noise levels may be 85 to 90 dB(A) at a distance of 50 feet, hourly average noise levels would be lower when taking into account the equipment usage factors. For the project, the loudest phase of construction would be the excavation phase and would include dozers, loaders, and excavators.

Construction noise levels were calculated based on all three pieces of equipment being active simultaneously. Hourly average noise levels associated with the grading phase of construction would be 85 dB(A) L_{eq} at 50 feet, or a sound power level of approximately 117 dB(A) from the center of construction activity when assessing the loudest pieces of equipment working simultaneously.

Construction noise is considered a point source and would attenuate at approximately 6 dB(A) for every doubling of distance. To reflect the nature of grading and construction activities, equipment was modeled as an area source distributed over the project footprint.

4.2 Operation Noise Analysis

4.2.1 Traffic Noise

Off-site traffic noise was modeled using the FHWA's Traffic Noise Prediction Model algorithms and reference levels. Traffic noise levels were calculated at 50 feet from the centerline of the affected roadways to determine the noise level increase associated with the project. The model uses various input parameters, such as traffic volumes; vehicle mix, distribution, and speed.

The main source of traffic noise from the project site would be vehicle traffic on Harmony Grove Road, Hale Avenue, Enterprise Street, and Andreasen Drive. Traffic noise levels were calculated based on the total average daily traffic (ADT) volume on each roadway segment. For modeling purposes, "pavement" ground conditions were used for the analysis of future conditions, since off-site conditions differ and the hard site provides the most conservative impact assessment.

Existing and future (year 2035) traffic volumes on Harmony Grove Road, Hale Avenue, Enterprise Street, and Andreasen Drive were obtained from the project traffic report (Linscott, Law & Greenspan 2017). For existing and cumulative traffic not associated with the project, a vehicle classification mix of 95 percent automobiles, 3.5 percent medium trucks, and 1.5 percent heavy trucks was modeled. Based on the field traffic counts, this is a conservative vehicle mix. The proposed warehouse would include 8 percent heavy trucks. For project-only traffic, a vehicle classification mix of 88.5 percent automobiles, 3.5 percent medium trucks, and 8.0 percent heavy trucks was modeled. This project-generated traffic was added to the existing and cumulative traffic volumes to determine the project-related increase in vehicle traffic noise. Table 7 summarizes the future traffic volumes and speeds for the adjacent roadways. Modeled noise levels do not account for shielding provided by intervening barriers and structures.

Table 7 Future Vehicle Traffic Parameters					
Roadway and Segment	Existing	Existing Plus Project	Cumulative	Cumulative Plus Project	Speed (mph)
Harmony Grove Road					
West of Enterprise Street	5,760	6,140	11,965	12,345	40
Enterprise Street to Hale Avenue	9,310	9,830	14,270	14,790	40
Hale Avenue					
Harmony Grove Road to 9th Avenue	7,950	8,232	11,010	11,292	35
Enterprise Street					
Andreasen Drive to Harmony Grove Road	6,100	6,447	8,780	9,127	35
ADT = average daily traffic SOURCE: Linscott, Law & Greenspan 2017.					

4.2.2 Heating, Ventilation, and Air Conditioning Units

The project would include roof-mounted heating, ventilation, and air conditioning (HVAC) units. Property line noise levels due to HVAC equipment were calculated. The equipment would be shielded from view by building parapets that extend 6 inches above the top of the mechanical equipment.

It is not known at this time which manufacturer, brand, or model of unit or units will be selected for use in the project. HVAC units would be located on the rooftop of the building. Typically, a capacity of 1-ton per 340 square feet would be required for large office buildings. Based on this ratio, the 10,500 square feet of office space would require three 10-ton HVAC units. Based on review of manufacturer specifications for a sample unit (Trane Mode T/YSCE120ED), a representative noise level for a 10-ton unit would be a sound power level of 79 dB. Noise specifications are contained in Attachment 2. For the daytime hours, all units were modeled at full capacity. For the nighttime hours, it was assumed that the units would operate a maximum of 50 percent of the time, i.e., an average of 30 minutes an hour.

The warehouse portion of the building would require an air handler unit (AHU) for ventilation. According to the American Society of Heating, Refrigeration, and Air-Conditioning Engineers standards, the proposed building would require a ventilation rate of 0.06 cubic feet per minute per square foot. The 204,775 square feet of warehouse space would, therefore, require air handlers with a capacity of approximately 12,300 cubic feet per minute. For modeling purposes, the air handler unit was conservatively modeled based on noise level data for a unit with a capacity of 93,900 cubic feet per minute. Noise specifications are contained in Attachment 2. The unit was modeled at full capacity during the daytime and nighttime hours.

4.2.3 Loading Dock

The site plan identifies 20 dock high doors and two grade level doors at the northwest side of the building. The site plan also identifies four knock-out panels, which could be knocked out to operate as future loading docks if needed. Property line noise levels due to loading

dock activities (including the 4 potential future loading docks) were calculated using SoundPLAN. In order to evaluate the truck delivery noise impacts, the analysis utilized reference noise level measurements taken at an Albertson's Shopping Center in San Diego, California in 2011. The measurements include truck drive-by noise, truck loading/unloading, and truck engine noise. The unmitigated exterior noise levels for truck drive-by noise and truck engine noise were measured at 66.5 dB(A) L_{eq} at a distance of 25 feet from the loading dock. This is equivalent to a sound power level of 92.1 dB(A).

The on-site maneuvering associated with the delivery trucks consists of the truck entering the site and backing into the loading dock, idling, loading and unloading, and leaving the site. The proposed operation would have a maximum of one truck per dock per hour, or 22 trucks per hour during daytime hours (7:00 a.m. to 10:00 p.m.) and nighttime hours (10:00 p.m. to 7:00 a.m.). It was assumed that it would take 5 minutes for a truck to enter and leave the project site. During the loading/unloading of the truck, the engine can only idle for a maximum of 5 minutes in compliance with state regulations for air quality. However, the project design (as noted on the project plans) includes installation of signage at truck docks that requires engines to be turned off when unloading and unloading. Installation of signage and enforcement of these idling restrictions would limit idling at truck docks. However, to be conservative, the analysis assumes a maximum of 5 minutes of daytime idling consistent with existing state air quality regulations and assumes 1 minute of idling during the nighttime hours of 10:00 p.m. and 7:00 a.m. To calculate property line noise levels, trucks were modeled as a line source while entering and leaving the site, and as a point source at each loading dock (including knock-out panel locations) while idling.

5.0 Future Acoustical Environment and Impacts

5.1 Construction Noise

Noise associated with the grading, building, and paving for the project would potentially result in short-term impacts to surrounding residential properties. There are residential uses located to the north, east, and south of the project site. A variety of noise-generating equipment would be used during the construction phase of the project, such as excavators, backhoes, front-end loaders, and concrete saws, along with others. The exact number and pieces of construction equipment required are not known at this time. Although maximum noise levels may be 85 to 90 dB(A) at a distance of 50 feet during most construction activities, hourly average noise levels would be lower when taking into account the equipment usage factors. The loudest phase of construction would be the excavation phase and would include dozers, loaders, and excavators. Construction noise levels were calculated based on all three pieces of equipment being active simultaneously.

Construction noise is considered a point source and would attenuate at approximately 6 dB(A) for every doubling of distance. An excavator generates a maximum noise level of 85 dB(A) at 50 feet, a front-end loader generates a maximum noise level of 80 dB(A) at 50 feet, and a dozer generates a maximum noise level of 85 dB(A) at 50 feet. All three pieces

of equipment generally operate with a usage factor, the ration of an hour spent at full power, of 40 percent (FHWA 2006). Average hourly noise levels due to simultaneous activity would be 85 dB(A) L_{eq} at 50 feet, or a sound power level of approximately 117 dB(A). To reflect the nature of grading and construction activities, equipment was modeled as an area source distributed over the project footprint. The total sound energy of the area source was modeled with all pieces of equipment operating simultaneously. Noise levels were modeled at a series of 16 receivers located at the adjacent residential uses. The results are summarized in Table 8. Modeled receiver locations and construction noise contours are shown in Figure 5. SoundPLAN data is contained in Attachment 3.

Table 8
Construction Noise Levels at Residential Uses

Receiver	Noise Level [dB(A) L_{eq}]
1	71
2	71
3	70
4	70
5	69
6	68
7	64
8	63
9	64
10	62
11	59
12	56
13	58
14	59
15	58
16	58
dB(A) L_{eq} = A-weighted decibels one-hour equivalent level	

As shown, construction noise levels would range from 56 to 71 dB(A) L_{eq} at the nearest residential uses. Construction activities would generally occur over the 8-hour period between 7:00 a.m. and 5:00 p.m. on weekdays. Although the existing adjacent residences would be exposed to construction noise levels that may be heard above ambient conditions, the exposure would be temporary and would not exceed the City's standards. As construction activities would comply with the City Municipal Code Sections 17-234 and 117-238, temporary increases in noise levels from construction activities would be less than significant.

Image Source: Nearmaps (flown June 2017)

Project Boundary

Construction Noise Receivers

Construction Noise Contours

60 dB(A) Leq

65 dB(A) Leq

70 dB(A) Leq

75 dB(A) Leq

0 Feet 250

FIGURE 5
Construction Noise Contours and Modeled Receivers

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5.2 Traffic Noise

The project would increase traffic volumes on local roadways. However, the project would not substantially alter the vehicle classifications mix on local or regional roadways, nor would the project alter the speed on an existing roadway or create a new roadway. Thus, the primary factor affecting off-site noise levels would be increased traffic volumes. While changes in noise levels would occur along any roadway where project-related traffic occurs, for noise assessment purposes, noise level increases are assumed to be greatest nearest the project site, as this location would represent the greatest concentration of project-related traffic. Additionally, surrounding streets affected by the project carry greater volumes of traffic and the relative increase would be less along those segments. The project would generate traffic on nearby roadways. Based on the traffic report, the project would result in the generation of 1,085 trips (Linscott, Law & Greenspan 2017). The vehicles associated with project trips would utilize the surrounding roadway network.

As discussed in Section 1.2, doubling of the energy of a noise source, such as traffic volumes on a roadway, would result in a 3 dB(A) increase in noise levels (California Department of Transportation 2013). As stated in Section 2.2.3, noise increases, regardless of the extent, that do not result in noise increases in excess of General Plan standards are not considered significant, and noise increases that result in a 3 dB(A) or less incremental increase in noise beyond the General Plan's noise standards are not considered significant.

Table 9 presents a conservative assessment of traffic noise levels based on the Existing, Existing plus Project, Cumulative (cumulative projects and existing), and Cumulative plus Project noise levels generated by traffic. Table 9 also summarizes the direct traffic noise level increases due to the project, the cumulative noise increase in the future, and the project's contribution to any cumulative increases in traffic noise. Traffic noise calculations are contained in Attachment 4.

Table 9
Traffic Noise Impacts - CNEL at 50 Feet

Roadway and Segment	Existing	Existing Plus Project	Increase	Cumulative	Cumulative Plus Project	Cumulative Increase	Project Contribution to Cumulative Increase
Harmony Grove Road							
West of Enterprise St.	65	66	<1	69	69	3	<1
Enterprise Street to Hale Avenue	67	68	<1	69	70	2	<1
Hale Avenue							
Harmony Grove Road to 9th Avenue	66	66	<1	67	67	2	<1
Enterprise Street							
Andreasen Drive to Harmony Grove Road	64	65	<1	66	66	2	<1

NOTE: Differences may vary due to independent rounding.

As shown in Table 9, the project would result in a less than 1 dB increase in traffic noise over the existing condition along all affected roadway segments. Therefore, the project

would result in less than significant direct impact related to traffic noise. Additionally, while the cumulative plus project traffic would result in a potentially cumulative impact noise along Harmony Grove Road west of Enterprise Street, the project's contribution to that increase would be less than 1 dB. Therefore, the project's contribution to the cumulative increase is less than cumulatively considerable.

5.3 On-site Noise

The primary noise sources on-site would be HVAC equipment and the loading docks. Using the on-site noise source parameters discussed in Section 4.2, Operation Noise Analysis, noise levels were modeled at a series of 26 receivers located at the property line. Modeled noise levels took into account shielding provided by the proposed building as well as the proposed 8-foot-high wall located adjacent to the residences to the north.

Modeled receivers and the locations of the modeled on-site noise sources are shown in Figure 6. Modeled data is included in Attachment 5. Future projected noise levels are summarized in Table 10. Daytime noise contours for on-site noise sources are shown in Figure 7 and nighttime noise contours are shown in Figure 8.

As shown in Table 10, daytime on-site generated noise levels would range from 26 to 45 dB(A) L_{eq} at the residential property lines and 37 to 59 dB(A) L_{eq} at the industrial property lines, and nighttime noise levels would range from 25 to 42 dB(A) L_{eq} at the residential property lines and 37 to 59 dB(A) L_{eq} at the industrial property lines. Noise levels would not exceed the applicable Noise Ordinance limits at the property lines.

Image Source: Nearmaps (flown June 2017)

Project Boundary
Proposed Building
Receivers
Proposed 8-ft Wall
AHU Location
HVAC Unit
Loading Docks
Truck Routes

0 Feet 250

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FIGURE 6
On-Site Noise Sources and Modeled Receivers

Image Source: Nearmaps (flown June 2017)

0 Feet 250

Project Boundary
Proposed Building
Receivers
Proposed 8-ft Wall
AHU Location
HVAC Unit
Loading Docks
Truck Routes

Daytime Noise Contours
40 dB(A) Leq
45 dB(A) Leq
50 dB(A) Leq
55 dB(A) Leq
60 dB(A) Leq
65 dB(A) Leq

FIGURE 7

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Daytime On-Site Noise Contours

Image Source: Nearmaps (flown June 2017)

0 Feet 250

Project Boundary
Proposed Building
Receivers
Proposed 8-ft Wall
AHU Location
HVAC Unit
Loading Docks
Truck Routes

Nighttime Noise Contours
40 dB(A) Leq
45 dB(A) Leq
50 dB(A) Leq
55 dB(A) Leq
60 dB(A) Leq
65 dB(A) Leq

FIGURE 8

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Nighttime On-Site Noise Contours

Table 10 On-Site Generated Noise Levels				
Receiver	Land Use	Daytime Noise Level [dB(A) L_{eq}]	Nighttime Noise Level [dB(A) L_{eq}]	Noise Ordinance Limit [Daytime/Nighttime dB(A) L_{eq}]
1	Residential	30	28	50/45
2	Residential	31	28	50/45
3	Residential	32	30	50/45
4	Residential	45	42	50/45
5	Residential	45	42	50/45
6	Residential	45	42	50/45
7	Residential	45	42	50/45
8	Industrial Park	48	46	70/70
9	Industrial Park	51	49	70/70
10	Industrial Park	58	58	70/70
11	Industrial Park	59	59	70/70
12	Industrial Park	52	50	70/70
13	Industrial Park	48	45	70/70
14	Industrial Park	42	41	70/70
15	Industrial Park	39	39	70/70
16	Industrial Park	37	37	70/70
17	Residential	34	33	50/45
18	Residential	30	28	50/45
19	Residential	29	27	50/45
20	Residential	28	27	50/45
21	Residential	29	28	50/45
22	Residential	30	29	50/45
23	Residential	29	28	50/45
24	Residential	26	25	50/45
25	Residential	29	27	50/45
26	Residential	29	27	50/45

6.0 Conclusions and Noise Abatement Measures

6.1 Construction Noise

Construction activities would generally occur between 7:00 a.m. and 5:00 p.m. on weekdays. As demonstrated, construction noise levels would range from 56 to 71 dB(A) L_{eq} at the nearest residential uses. While construction may be heard over other noise sources in the area, the exposure would be temporary and would not exceed the applicable regulation of 75 dB(A) L_{eq} at the nearest residential property. Therefore, temporary increases in noise levels from construction activities would be less than significant.

6.2 Traffic Noise

The project would result in a less than 1 dB increase in traffic noise over the existing condition along all affected roadway segments. Therefore, the project would result in a less than significant impact. Additionally, while the cumulative plus project traffic would increase noise along Harmony Grove Road west of Enterprise Street by more than 3 dB, the

project's contribution to this increase would be less than 1 dB. Therefore, the project's contribution to the cumulative increase would be less than cumulatively considerable.

6.3 On-site Generated Noise

The primary noise sources on-site would be HVAC and ventilation equipment and the loading docks. As shown in Table 10, daytime on-site generated noise levels would range from 26 to 45 dB(A) L_{eq} at the residential property lines and 37 to 59 dB(A) L_{eq} at the industrial property lines, and nighttime noise levels would range from 25 to 42 dB(A) L_{eq} at the residential property lines and 37 to 59 dB(A) L_{eq} at the industrial property lines. Noise levels would not exceed the applicable Noise Ordinance limits at the property lines.

7.0 References Cited

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2017 Victory Industrial Park/Escondido Innovation Center: Warehouse. Prepared for Exeter Property Group. LLG Ref. 3-17-2780. August 7, 2017.

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2005 SoundPlan Essential, version 3.0.

ATTACHMENTS

ATTACHMENT 1

Noise Measurement Data

Summary				
Filename	LxT_Data.102			
Serial Number	3827			
Model	SoundExpert™ LxT			
Firmware Version	2.206			
User				
Location	**MS1**			
Job Description				
Note				
Measurement Description				
Start	2016/02/18 10:52:31			
Stop	2016/02/18 11:07:32			
Duration	0:15:00.6			
Run Time	0:15:00.6			
Pause	0:00:00.0			
Pre Calibration	2016/02/18 10:52:01			
Post Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	PRMLxT1L			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Normal			
OBA Bandwidth	1/1 and 1/3			
OBA Freq. Weighting	A Weighting			
OBA Max Spectrum	At Lmax			
Overload	121.6 dB			
		A	**C**	**Z**
Under Range Peak		**77.8**	74.8	79.8 dB
Under Range Limit		**25.9**	25.2	31.9 dB
Noise Floor		16.2	16.0	21.9 dB
Results				
LAeq		43.1 dB		
LAE		72.7 dB		
EA		2.060 µPa²h		
LApeak (max)	2016/02/18 10:54:20		102.5 dB	
LASmax	2016/02/18 10:54:20		66.7 dB	
LASmin	2016/02/18 11:04:26		36.4 dB	
SEA		-99.9 dB		
LAS > 85.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LAS > 115.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 135.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 137.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 140.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LCeq		55.9 dB		
LAeq		43.1 dB		
LCeq - LAeq		12.8 dB		
LAIeq		53.5 dB		
LAeq		43.1 dB		
LAIeq - LAeq		10.4 dB		
# Overloads		0		
Overload Duration		0.0 s		
# OBA Overloads		0		
OBA Overload Duration		0.0 s		
Statistics				
LAS5.00		46.2 dB		
LAS10.00		44.6 dB		
LAS33.30		41.2 dB		
LAS50.00		39.9 dB		
LAS66.60		39.0 dB		
LAS90.00		37.4 dB		

Summary				
Filename	LxT_Data.103			
Serial Number	3827			
Model	SoundExpert™ LxT			
Firmware Version	2.206			
User				
Location	**MS2**			
Job Description				
Note				
Measurement Description				
Start	2016/02/18 11:20:22			
Stop	2016/02/18 11:35:23			
Duration	0:15:00.6			
Run Time	0:15:00.6			
Pause	0:00:00.0			
Pre Calibration	2016/02/18 11:19:57			
Post Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	PRMLxT1L			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Normal			
OBA Bandwidth	1/1 and 1/3			
OBA Freq. Weighting	A Weighting			
OBA Max Spectrum	At Lmax			
Overload	121.6 dB			
		A	**C**	**Z**
Under Range Peak		**77.9**	74.9	79.9 dB
Under Range Limit		**25.9**	25.2	31.9 dB
Noise Floor		16.2	16.0	21.9 dB
Results				
LAeq		47.1 dB		
LAE		76.6 dB		
EA		5.104 µPa²h		
LApeak (max)	2016/02/18 11:26:32		87.6 dB	
LASmax	2016/02/18 11:33:59		57.7 dB	
LASmin	2016/02/18 11:35:19		44.1 dB	
SEA		-99.9 dB		
LAS > 85.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LAS > 115.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 135.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 137.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 140.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LCeq		59.2 dB		
LAeq		47.1 dB		
LCeq - LAeq		12.1 dB		
LAIeq		51.2 dB		
LAeq		47.1 dB		
LAIeq - LAeq		4.1 dB		
# Overloads		0		
Overload Duration		0.0 s		
# OBA Overloads		0		
OBA Overload Duration		0.0 s		
Statistics				
LAS5.00		49.4 dB		
LAS10.00		48.4 dB		
LAS33.30		47.0 dB		
LAS50.00		46.4 dB		
LAS66.60		46.1 dB		
LAS90.00		45.4 dB		

Summary				
Filename	LxT_Data.104			
Serial Number	3827			
Model	SoundExpert™ LxT			
Firmware Version	2.206			
User				
Location	**MS3**			
Job Description				
Note				
Measurement Description				
Start	2016/02/18 11:50:12			
Stop	2016/02/18 12:05:12			
Duration	0:15:00.5			
Run Time	0:15:00.5			
Pause	0:00:00.0			
Pre Calibration	2016/02/18 11:49:27			
Post Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	PRMLxT1L			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Normal			
OBA Bandwidth	1/1 and 1/3			
OBA Freq. Weighting	A Weighting			
OBA Max Spectrum	At Lmax			
Overload	121.6 dB			
		A	**C**	**Z**
Under Range Peak		**77.9**	74.9	79.9 dB
Under Range Limit		**25.9**	25.2	31.9 dB
Noise Floor		16.2	16.0	21.9 dB
Results				
LAeq		57.1 dB		
LAE		86.7 dB		
EA		51.605 µPa²h		
LApeak (max)	2016/02/18 11:56:28		98.4 dB	
LASmax	2016/02/18 12:04:54		73.0 dB	
LASmin	2016/02/18 11:57:01		42.9 dB	
SEA		-99.9 dB		
LAS > 85.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LAS > 115.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 135.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 137.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 140.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LCeq		67.0 dB		
LAeq		57.1 dB		
LCeq - LAeq		9.9 dB		
LAIeq		59.4 dB		
LAeq		57.1 dB		
LAIeq - LAeq		2.3 dB		
# Overloads		0		
Overload Duration		0.0 s		
# OBA Overloads		0		
OBA Overload Duration		0.0 s		
Statistics				
LAS5.00		61.5 dB		
LAS10.00		60.2 dB		
LAS33.30		57.3 dB		
LAS50.00		55.3 dB		
LAS66.60		53.0 dB		
LAS90.00		48.2 dB		

Summary				
Filename	LxT_Data.105			
Serial Number	3827			
Model	SoundExpert™ LxT			
Firmware Version	2.206			
User				
Location	**MS4**			
Job Description				
Note				
Measurement Description				
Start	2016/02/18 12:27:48			
Stop	2016/02/18 12:42:49			
Duration	0:15:00.7			
Run Time	0:15:00.7			
Pause	0:00:00.0			
Pre Calibration	2016/02/18 12:27:08			
Post Calibration	None			
Calibration Deviation	---			
Overall Settings				
RMS Weight	A Weighting			
Peak Weight	A Weighting			
Detector	Slow			
Preamp	PRMLxT1L			
Microphone Correction	Off			
Integration Method	Linear			
OBA Range	Normal			
OBA Bandwidth	1/1 and 1/3			
OBA Freq. Weighting	A Weighting			
OBA Max Spectrum	At Lmax			
Overload	121.6 dB			
		A	**C**	**Z**
Under Range Peak		**77.9**	74.9	79.9 dB
Under Range Limit		**25.9**	25.2	31.9 dB
Noise Floor		16.2	16.0	21.9 dB
Results				
LAeq		61.4 dB		
LAE		90.9 dB		
EA		137.083 µPa²h		
LApeak (max)	2016/02/18 12:35:20		97.6 dB	
LASmax	2016/02/18 12:40:03		71.2 dB	
LASmin	2016/02/18 12:27:49		46.4 dB	
SEA		-99.9 dB		
LAS > 85.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LAS > 115.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 135.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 137.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LApeak > 140.0 dB (Exceedence Counts / Duration)		0	0.0 s	
LCeq		69.4 dB		
LAeq		61.4 dB		
LCeq - LAeq		8.0 dB		
LAleq		62.8 dB		
LAeq		61.4 dB		
LAleq - LAeq		1.4 dB		
# Overloads		0		
Overload Duration		0.0 s		
# OBA Overloads		0		
OBA Overload Duration		0.0 s		
Statistics				
LAS5.00		66.3 dB		
LAS10.00		64.8 dB		
LAS33.30		61.5 dB		
LAS50.00		59.5 dB		
LAS66.60		57.1 dB		
LAS90.00		51.2 dB		

ATTACHMENT 2

HVAC Example Specifications

Fan Performance

Table 6. Standard motor & low static drive accessory sheave/fan speed (rpm)

Tons	Unit Model Number	Fan Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
5	WSC060ED	AK44x3/4"	N/A	720	791	861	931	1002	1072
6	WSC072ED	AK56x1"	N/A	558	612	665	718	772	825
7½	WSC090ED	AK57x1"	N/A	688	737	787	837	887	N/A
10	WSC120ED	AK105X1"	N/A	724	776	828	880	932	984

Note: Factory set at 3 turns open.

Table 7. Standard motor & high static drive accessory sheave/fan speed (rpm)

Tons	Unit Model Number	Fan Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
6	WSC072ED	AK56x1"	N/A	968	1018	1068	1118	1169	1219
7½	WSC090ED	AK57x1"	1053	1091	1129	1166	1204	1242	N/A
10	WSC120ED	AK105X1"	1110	1159	1209	1258	1308	1357	N/A

Note: Factory set at 3 turns open.

Table 8. Oversized motor & high static drive accessory sheave/fan speed (rpm)

Tons	Unit Model Number	Fan Sheave	6 Turns Open	5 Turns Open	4 Turns Open	3 Turns Open	2 Turns Open	1 Turn Open	Closed
7½	WSC090ED	AK85x1"	1186	1249	1311	1373	1436	N/A	N/A

Note: Factory set at 3 turns open.

Table 9. Outdoor sound power level—dB (ref. 10—2 W)

Tons	Unit Model Number	Octave Center Frequency								Overall dBA
		63	125	250	500	1000	2000	4000	8000	
5	T/YSC060ED	84	91	79	77	74	71	68	63	80
6	T/YSC072ED	83	90	86	82	79	75	70	63	85
7½	T/YSC090ED	83	90	86	83	80	75	71	64	85
8.5	T/YSC102ED	83	89	84	81	77	72	69	62	83
10	T/YSC120ED	83	86	80	77	73	69	66	60	79

Note: Tests follow ARI270-95.

Table 10. Outdoor sound power level—dB (ref. 10—12 W)

Tons	Unit Model Number	Octave Center Frequency								Overall dBA
		63	125	250	500	1000	2000	4000	8000	
5	WSC060ED	84	91	79	77	74	71	68	63	80
6	WSC072ED	83	90	86	82	79	75	70	63	85
7½	WSC090ED	83	90	86	83	80	75	71	64	85
10	WSC120ED	83	86	80	77	73	69	66	60	79

Note: Tests follow ARI270-95.

SOUND ATTENUATORS (JMC TOWER)

SA

UNIT NO.	MANUFACTURER & MODEL NO.	SERVICE	LOCATION	CFM (MAX)	SIZE (IN)			APD (IN WG)	FACE VELOCITY (FPM)	AIR FLOW REV/FWD	DYNAMIC INSERTION LOSS (DB)								OPER. WT. (LBS)	REMARKS
					H	W	L				63 (MZ)	125 (MZ)	250 (MZ)	500 (MZ)	1000 (MZ)	2000 (MZ)	4000 (MZ)	8000 (MZ)		
B.1S	VIBRO-ACOUSTIC RFL-MV-FA	AH-B.1 SA	LEVEL B1	75,300	96	84	84	0.29	1345	FWD	8	17	21	16	18	14	13	9	1465	
B.1R	VIBRO-ACOUSTIC RFL-MV-FJ	AH-B.1 RA	LEVEL B1	51,400	72	96	84	0.16	1071	REV	10	18	20	15	14	9	9	6	1058	
B.2S	VIBRO-ACOUSTIC RFL-MHV-FC	AH-B.2 SA	LEVEL B1	73,000	112	72	60	0.23	1304	FWD	7	14	16	12	11	10	9	7	869	
B.2R	VIBRO-ACOUSTIC RFL-MHV-F3	AH-B.2 RA	LEVEL B1	48,200	50	110	84	0.18	1262	REV	9	17	18	19	17	13	11	8	1000	
B.3S	VIBRO-ACOUSTIC RFL-MHV-FG	AH-B.3 SA	LEVEL B1	93,900	86	108	84	0.18	1456	FWD	8	16	18	13	12	9	9	6	1475	
B.3R	VIBRO-ACOUSTIC RFL-MV-FG	AH-B.3 RA	LEVEL B1	80,000	88	102	84	0.23	1283	REV	10	18	21	15	15	11	9	7	1479	
B.4S	VIBRO-ACOUSTIC RFL-MHV-FC	AH-B.4 SA	LEVEL B1	64,400	108	60	84	0.19	1431	FWD	7	16	18	14	14	12	11	8	1196	
B.4R	VIBRO-ACOUSTIC RFL-MHV-FF	AH-B.4 RA	LEVEL B1	61,700	84	60	84	0.27	1763	REV	9	17	19	14	13	10	9	7	830	
7.1S	VIBRO-ACOUSTIC RFL-MHV-FD	AH-7.1 SA	LEVEL 7	57,500	76	78	84	0.17	1397	FWD	7	16	18	14	14	11	11	8	969	
7.1R	VIBRO-ACOUSTIC RFL-MV-FJ	AH-7.1 RA	LEVEL 7	41,200	48	106	84	0.19	1166	REV	10	18	20	15	14	9	9	6	784	
7.2S.1	VIBRO-ACOUSTIC RFL-MV-FC	AH-7.2 SA	LEVEL 7	52,400	72	90	84	0.19	1162	FWD	8	17	21	16	17	13	12	8	1095	
7.2S.2	VIBRO-ACOUSTIC RFL-MV-F3	AH-7.2 SA	LEVEL 7	8,000	26	40	84	0.22	1108	FWD	9	15	18	20	20	17	13	9	216	
7.2R	VIBRO-ACOUSTIC RFL-MHV-F2	AH-7.2 RA	LEVEL 7	38,700	56	86	84	0.16	1157	REV	8	17	19	17	16	13	12	9	775	
7.3S	VIBRO-ACOUSTIC RFL-MV-FC	AH-7.3 SA	LEVEL 7	71,400	44	214	72	0.17	1092	FWD	8	15	18	14	15	12	11	8	1393	
7.3R1	VIBRO-ACOUSTIC RFL-MHV-FD	AH-7.3 RA	LEVEL 7	52,500	76	96	84	0.10	1036	REV	8	17	19	15	14	12	11	8	1125	
7.3R2	VIBRO-ACOUSTIC RFL-MHV-F7	AH-7.3 RA	LEVEL 7	8,000	50	24	42	0.07	960	REV	4	5	10	17	21	21	15	7	156	
7.4S	VIBRO-ACOUSTIC RFL-MHV-FA	AH-7.4 SA	LEVEL 7	29,500	62	58	84	0.14	1181	FWD	7	15	18	15	15	12	12	9	686	
7.4R	VIBRO-ACOUSTIC RFL-MHV-F1	AH-7.4 RA	LEVEL 7	23,200	58	54	84	0.15	1067	REV	8	17	20	16	15	13	12	10	543	
7.5S	VIBRO-ACOUSTIC RFL-MHV-FB	AH-7.5 SA	LEVEL 7	36,400	66	66	84	0.14	1203	FWD	7	15	18	15	14	12	11	8	786	
7.5R	VIBRO-ACOUSTIC RFL-MV-FE	AH-7.5 RA	LEVEL 7	29,000	40	98	84	0.16	1065	REV	10	19	22	16	16	13	10	8	650	
7.6S	VIBRO-ACOUSTIC RFL-MHV-FA	AH-7.6 SA	LEVEL 7	26,300	32	84	84	0.20	1409	FWD	7	15	18	15	15	12	12	9	470	
7.6R	VIBRO-ACOUSTIC RFL-MV-FC	AH-7.6 RA	LEVEL 7	19,000	36	84	84	0.11	905	REV	10	19	22	17	17	14	11	9	520	
7.7S	VIBRO-ACOUSTIC RFL-MV-FG	AH-7.7 SA	LEVEL 7	15,100	44	64	84	0.08	772	FWD	9	17	19	14	15	10	9	7	455	
7.7R	VIBRO-ACOUSTIC RFL-MLV-FE	AH-7.7 RA	LEVEL 7	13,000	40	62	84	0.12	755	REV	12	20	25	17	19	14	11	9	421	
01A.E	NOT USED	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
01B.E	NOT USED	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
02.E	NOT USED	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
03.E	NOT USED	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
04.E	NOT USED	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
07.E	NOT USED	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
08.E	VIBRO-ACOUSTIC RFL-MHV-F3	EF-08	ROOF	27,800	58	58	84	0.29	1190	REV	9	17	18	19	17	13	11	8	601	
09.E	VIBRO-ACOUSTIC RFL-MV-FB	EF-09	ROOF	12,900	34	48	84	0.19	1138	REV	10	19	22	17	18	14	12	10	274	
10.E	VIBRO-ACOUSTIC RFL-MV-FE	EF-10	ROOF	10,000	40	40	84	0.11	900	REV	10	19	22	16	16	13	10	8	260	
11.E	VIBRO-ACOUSTIC RFL-MHV-F3	EF-11	ROOF	26,800	52	70	84	0.15	1060	REV	9	17	18	19	17	13	11	8	654	
12/13.E	VIBRO-ACOUSTIC RFL-MV-FF	EF-12/13	ROOF	15,400	42	42	84	0.22	1257	REV	10	19	22	15	16	12	10	8	273	
14/15.E	VIBRO-ACOUSTIC RFL-MHV-F2	EF-14/15	ROOF	7,400	28	32	84	0.17	1189	REV	8	17	19	17	16	13	12	9	177	
B.2-1.11	VIBRO-ACOUSTIC 24 RBF-QR	VAV-S B.2-1.11	LEVEL 01	675	16	16	60	0.01	380	FWD	4	8	14	21	25	13	13	7	64	
B.2-1.12	VIBRO-ACOUSTIC 24 RBF-QR	VAV-S B.2-1.12	LEVEL 01	525	14	14	60	0.01	386	FWD	4	8	14	21	25	13	13	7	57	
B.1-1.13	VIBRO-ACOUSTIC 24 RBF-QR	VAV-S B.2-1.13	LEVEL 01	485	14	14	60	0.01	356	FWD	4	8	14	21	25	13	13	7	57	
B.1-1.14	VIBRO-ACOUSTIC 24 RBF-QR	VAV-S B.2-1.14	LEVEL 01	890	16	16	60	0.02	501	FWD	4	8	14	21	25	13	13	7	64	
B.1-1.15	VIBRO-ACOUSTIC 24 RBF-QR	VAV-S B.2-1.15	LEVEL 01	905	16	16	60	0.02	509	FWD	4	8	14	21	25	13	13	7	64	
B.1-1.16	VIBRO-ACOUSTIC 24 RBF-QR	VAV-S B.2-1.16	LEVEL 01	795	16	16	60	0.01	380	FWD	4	8	14	21	25	13	13	7	64	

MECHANICAL EQUIPMENT SOUND DATA SCHEDULE

UNIT NO.	MANUFACTURER	LOCATION	EQUIPMENT TYPE	NOISE TYPE	DB ATTENUATION BY OCTAVE BAND								REMARKS
					63	125	250	500	1000	2000	4000	8000	
AHU B.1 75,300 CFM	HUNTAIR	LEVEL B1	OUTSIDE AIR	INLET	99	100	101	98	92	92	88	82	
			RELIEF AIR	OUTLET	96	98	103	98	92	94	89	80	
			RETURN FANS	INLET	102	101	99	96	90	87	86	81	
			SUPPLY FANS	OUTLET	93	90	96	94	88	85	85	79	
			AIR HANDLING UNIT	CABINET RADIATED	81	73	71	73	62	54	52	45	
AHU B.2 73,100 CFM	HUNTAIR	LEVEL B1	OUTSIDE AIR	INLET	100	100	101	98	91	91	88	80	
			RELIEF AIR	OUTLET	98	98	102	98	91	92	88	79	
			RETURN FANS	INLET	101	100	98	95	87	85	84	79	
			SUPPLY FANS	OUTLET	92	89	97	93	87	85	85	79	
			AIR HANDLING UNIT	CABINET RADIATED	80	72	72	72	60	53	51	44	
AHU B.3 93,900 CFM	HUNTAIR	LEVEL B1	OUTSIDE AIR	INLET	103	100	99	97	89	88	88	82	
			RELIEF AIR	OUTLET	100	97	97	94	86	85	84	78	
			RETURN FANS	INLET	101	98	98	99	92	92	91	86	
			SUPPLY FANS	OUTLET	94	91	101	94	87	86	84	78	
			AIR HANDLING UNIT	CABINET RADIATED	81	73	75	72	60	54	50	43	
AHU B.4 64,400 CFM	HUNTAIR	LEVEL B1	OUTSIDE AIR	INLET	96	96	95	94	89	89	87	82	
			RELIEF AIR	OUTLET	95	94	91	91	85	84	83	80	
			RETURN FANS	INLET	96	96	93	93	87	86	85	82	
			SUPPLY FANS	OUTLET	89	86	92	88	81	79	79	75	
			AIR HANDLING UNIT	CABINET RADIATED	80	72	72	72	60	53	51	44	
AHU 7.1 57,500 CFM	HUNTAIR	LEVEL 7	OUTSIDE AIR	INLET	93	97	100	96	92	92	90	83	
			RELIEF AIR	OUTLET	92	96	96	95	92	92	89	83	
			RETURN FANS	INLET	90	95	94	93	90	89	87	83	
			SUPPLY FANS	OUTLET	92	89	93	86	82	81	80	75	
			AIR HANDLING UNIT	CABINET RADIATED	80	72	68	65	56	50	47	41	
AHU 7.2 52,400 CFM	HUNTAIR	LEVEL 7	OUTSIDE AIR	INLET	93	94	99	95	89	91	86	80	
			RELIEF AIR	OUTLET	93	94	96	94	89	91	86	79	
			RETURN FANS	INLET	97	95	95	92	86	85	84	79	
			SUPPLY FANS	OUTLET	92	89	94	87	84	83	82	77	
			AIR HANDLING UNIT	CABINET RADIATED	80	72	69	66	58	52	49	43	
AHU 7.3 71,400 CFM	HUNTAIR	LEVEL 7	OUTSIDE AIR	INLET	97	97	104	101	95	95	92	84	
			RELIEF AIR	OUTLET	96	96	96	100	95	95	92	84	
			RETURN FANS	INLET	100	99	98	96	89	89	88	82	
			SUPPLY FANS	OUTLET	94	91	95	89	87	85	84	79	
			AIR HANDLING UNIT	CABINET RADIATED	81	73	69	67	60	53	50	44	
AHU 7.4 29,500 CFM	HUNTAIR	LEVEL 7	OUTSIDE AIR	INLET	95	94	96	92	85	86	82	74	
			RELIEF AIR	OUTLET	95	93	92	90	81	79	78	73	
			RETURN FANS	INLET	95	93	92	90	81	79	78	73	
			SUPPLY FANS	OUTLET	86	84	93	87	79	79	77	71	
			AIR HANDLING UNIT	CABINET RADIATED	77	70	71	69	56	51	47	40	
AHU 7.5 36,400 CFM	HUNTAIR	LEVEL 7	OUTSIDE AIR	INLET	97	97	98	93	88	87	83	76	
			RELIEF AIR	OUTLET	96	97	96	93	90	88	84	75	
			RETURN FANS	INLET	97	96	94	91	83	81	79	75	
			SUPPLY FANS	OUTLET	90	87	94	90	83	81	81	75	
			AIR HANDLING UNIT	CABINET RADIATED	79	71	70	70	58	51	49	42	
AHU 7.6 26,300 CFM	HUNTAIR	LEVEL 7	OUTSIDE AIR	INLET	90	92	95	91	86	87	83	77	
			RELIEF AIR	OUTLET	90	93	96	91	88	88	83	76	
			RETURN FANS	INLET	94	93	93	88	83	82	80	76	
			SUPPLY FANS	OUTLET	88	85	89	83	81	79	78	73	
			AIR HANDLING UNIT	CABINET RADIATED	79	71	67	65	58	51	48	42	
AHU 7.7 15,100 CFM	HUNTAIR	LEVEL 7	OUTSIDE AIR	INLET	94	94	96	92	86	87	82	74	
			RELIEF AIR	OUTLET	92	92	96	92	86	87	82	74	
			RETURN FANS	INLET	95	93	92	88	80	78	76	72	
			SUPPLY FANS	OUTLET	85	82	88	84	78	76	75	70	
			AIR HANDLING UNIT	CABINET RADIATED	80	72	70	70	59	52	49	43	
EF-01A	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	91	97	92	93	91	87	86	79	
EF-01B	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	90	96	96	94	89	88	86	79	
EF-02	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	91	96	97	94	89	89	87	80	
EF-03	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	99	99	96	90	86	83	80	74	
EF-04	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	88	95	97	91	85	82	77	72	
EF-05A	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	92	97	93	93	90	87	85	78	
EF-05B	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	92	97	93	93	90	87	85	78	
EF-07	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	99	100	96	91	88	85	81	75	
EF-08	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	99	102	99	93	90	87	83	78	
EF-09	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	92	97	97	89	86	84	82	76	
EF-10	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	95	100	97	91	87	85	81	76	
EF-11	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	102	102	96	91	89	86	81	76	
EF-12	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	104	104	97	92	88	85	80	74	
EF-13	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	104	104	97	92	88	85	80	74	
EF-14	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	102	101	93	92	88	85	81	74	
EF-15	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	102	101	93	92	88	85	81	74	
EF-17	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	85	93	97	90	88	86	78	75	
EF-20	COOK	LEVEL LR (ROOF)	EXHAUST FAN	DUCT TRANSMITTED	85	93	97	90	88	86	78	75	
FCU B1.1	TRANE BCHC018	VARIOUS	FAN COIL UNIT	SA OUTLET	83	87	78	73	71	69	66	61	
				RA INLET	82	77	70	58	48	47	44	39	
				CABINET RADIATED	77	71	65	60	55	47	40	35	
FCU B1.2	TRANE CSAA012	VARIOUS	FAN COIL UNIT	SA OUTLET	89	82	82	80	80	74	71	66	
				RA INLET	73	67	63	67	60	56	51	47	
				CABINET RADIATED	77	73	72	81	82	54	34	35	
FCU B1.3, B1.5, B1.11, LL.5, 2.2, 7.2, 8.1	TRANE BCHC072	VARIOUS	FAN COIL UNIT	SA OUTLET	87	84	75	73	71	68	65	59	
				RA INLET	80	79	68	55	53	52	49	43	
				CABINET RADIATED	75	69	62	56	51	43	36	31	
FCU B1.6	TRANE CSAA014	VARIOUS	FAN COIL UNIT	SA OUTLET	87	82	78	79	81	75	73	68	
				RA INLET	84	68	58	66	66	61	59	53	
				CABINET RADIATED	84	70	67	76	83	55	37	38	
FCU B1.7, LR.1	TRANE CSAA017	VARIOUS	FAN COIL UNIT	SA OUTLET	93	86	86	84	84	78	75	70	
				RA INLET	76	69	63	68	64	58	54	50	
				CABINET RADIATED	80	75	73	82	84	56	37	37	
FCU B1.8, LL.2, LL.3, LL.4, 1.3, 1.4, 2.3, 2.4, 2.5, 3.1, 3.3, 4.1, 4.3, 5.1, 5.3, 6.2, 6.3, 8.2, 9.1, 10.1, LR.4	TRANE BCHC090	VARIOUS	FAN COIL UNIT	SA OUTLET	91	89	81	81	79	75	73	68	
				RA INLET	82	85	72	61	62	58	54	49	
				CABINET RADIATED	79	75	69	63	58	50	43	37	
FCU B1.9	TRANE CSAA008	VARIOUS	FAN COIL UNIT	SA OUTLET	88	85	83	81	83	80	77	70	
				RA INLET	74	67	61	50	54	58	53	39	
				CABINET RADIATED	78	74	70	67	77	56	36	27	
FCU B1.10	TRANE CSAA025	VARIOUS	FAN COIL UNIT	SA OUTLET	91	86	82	83	85	79	77	72	
				RA INLET	87	73	62	69	68	64	62	55	
				CABINET RADIATED	87	75	71	79	85	58	40	40	
FCU LL.1, 1.1, 2.1, 3.2, 4.2, 5.2, 6.1, 7.1, 8.3, 9.2, 10.2, LR.2, LR.3	TRANE BCHC036	VARIOUS	FAN COIL UNIT	SA OUTLET	90	87	77	73	71	69	68	62	
				RA INLET	87	81	70	55	48	48	47	42	
				CABINET RADIATED	79	74	68	61	52	45	38	28	
FCU B1.4	TRANE BCHC054	VARIOUS	FAN COIL UNIT	SA OUTLET	89	87	80	77	76	73	71	66	
				RA INLET	82	82	71	58	56	55	53	47	
				CABINET RADIATED	76	71	65	58	55	47	40	34	
FCU 1.2	TRANE BCHC012	VARIOUS	FAN COIL UNIT	SA OUTLET	84	88	77	72	70	67	64	58	
				RA INLET	82	77	69	58	47	46	42	36	
				CABINET RADIATED	77	72	64	59	53	46	38	34	

UC San Diego
JACOBS MEDICAL CENTER

BED TOWER

UCSD FD&C PROJECT NUMBER 4153

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REVISIONS

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1	CO #0175	04/17/2014

AGENCY APPROVAL

OSPHD #: IL-092778-6

INCREMENT 6

KEY PLAN

ARCHITECT SEAL

CONSULTANT SEAL

REGISTERED PROFESSIONAL ENGINEER
DOUGLAS STEWART
MECHANICAL
STATE OF CALIFORNIA

Drawing Title:

MECHANICAL EQUIPMENT SCHEDULES

Issue Date: JUNE 4, 2013
Drawn by: -
Checked by: -
CD Project No.: 003043.00
Scale: AS NOTED

M0008

ATTACHMENT 3

SoundPLAN Data – Construction Noise

8811 Escondido Harmony Grove Industrial
SoundPLAN Data - Construction

Source name	Reference	Level Leq1 dB(A)	Corrections Kwall dB(A)	CI dB(A)	CT dB(A)
Construction	Unit	117	-	-	-

8811 Escondido Harmony Grove Industrial
SoundPLAN Data - Construction

No.	Receiver name	Coordinates X	Coordinates Y	Floor	Height	Limit Leq1	Level w/o NP Leq1	Level w. NP Leq1	Difference Leq1	Conflict Leq1
		in meter			m	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
1	1	489361.22	3663487.14	1.Fl	1.5	-	70.9	0	-70.9	-
2	2	489387.00	3663474.90	1.Fl	1.5	-	71.1	0	-71.1	-
3	3	489443.13	3663455.52	1.Fl	1.5	-	69.7	0	-69.7	-
4	4	489444.23	3663436.50	1.Fl	1.5	-	70.4	0	-70.4	-
5	5	489464.52	3663426.81	1.Fl	1.5	-	69.1	0	-69.1	-
6	6	489484.45	3663416.76	1.Fl	1.5	-	67.7	0	-67.7	-
7	7	489502.91	3663407.62	1.Fl	1.5	-	64.3	0	-64.3	-
8	8	489411.68	3663516.40	1.Fl	1.5	-	62.8	0	-62.8	-
9	9	489449.71	3663493.36	1.Fl	1.5	-	64.3	0	-64.3	-
10	10	489484.81	3663476.91	1.Fl	1.5	-	61.6	0	-61.6	-
11	11	489531.98	3663454.24	1.Fl	1.5	-	59.2	0	-59.2	-
12	12	489613.19	3663416.49	1.Fl	1.5	-	55.6	0	-55.6	-
13	13	489558.29	3663356.96	1.Fl	1.5	-	58.1	0	-58.1	-
14	14	489488.17	3663258.40	1.Fl	1.5	-	58.8	0	-58.8	-
15	15	489424.01	3663192.26	1.Fl	1.5	-	58.3	0	-58.3	-
16	16	489355.66	3663136.29	1.Fl	1.5	-	57.5	0	-57.5	-

ATTACHMENT 4

FHWA RD-77-108 Traffic Noise Calculations

FHWA RD-77-108

Traffic Noise Prediction Model

Data Input Sheet

Project Name : Escondido Harmony Grove Industrial
Project Number : 8324
Modeled Condition : Existing, Existing + Project, Existing + Cumulative, Existing + Cumulative + Project

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

Segment	Roadway	Segment	Traffic Vol.	Speed (Mph)	Distance to CL	% Autos	%MT	% HT	Day %	Eve %	Night %	K-Factor
EXISTING												
1	Harmony Grove Road	West of Enterprise Street	5,760	40	50	95.00	3.50	1.50	80.00	10.00	10.00	
2	Harmony Grove Road	Enterprise Street to Hale Avenue	9,310	40	50	95.00	3.50	1.50	80.00	10.00	10.00	
3	Hale Avenue	Harmony Grove Road to 9th Avenue	7,950	35	50	95.00	3.50	1.50	80.00	10.00	10.00	
4	Enterprise Street	Andreasen Drive to Harmony Grove Road	6,100	35	50	95.00	3.50	1.50	80.00	10.00	10.00	
EXISTING + PROJECT												
1	Harmony Grove Road	West of Enterprise Street	6,140	40	50	94.60	3.50	1.90	80.00	10.00	10.00	
2	Harmony Grove Road	Enterprise Street to Hale Avenue	9,830	40	50	94.60	3.50	1.90	80.00	10.00	10.00	
3	Hale Avenue	Harmony Grove Road to 9th Avenue	8,232	35	50	94.60	3.50	1.90	80.00	10.00	10.00	
4	Enterprise Street	Andreasen Drive to Harmony Grove Road	6,447	35	50	94.60	3.50	1.90	80.00	10.00	10.00	
EXISTING + CUMULATIVE												
1	Harmony Grove Road	West of Enterprise Street	11,965	40	50	95.00	3.50	1.50	80.00	10.00	10.00	
2	Harmony Grove Road	Enterprise Street to Hale Avenue	14,270	40	50	95.00	3.50	1.50	80.00	10.00	10.00	
3	Hale Avenue	Harmony Grove Road to 9th Avenue	11,010	35	50	95.00	3.50	1.50	80.00	10.00	10.00	
4	Enterprise Street	Andreasen Drive to Harmony Grove Road	8,780	35	50	95.00	3.50	1.50	80.00	10.00	10.00	
EXISTING + CUMULATIVE + PROJECT												
1	Harmony Grove Road	West of Enterprise Street	12,345	40	50	94.80	3.50	1.70	80.00	10.00	10.00	
2	Harmony Grove Road	Enterprise Street to Hale Avenue	14,790	40	50	94.80	3.50	1.70	80.00	10.00	10.00	
3	Hale Avenue	Harmony Grove Road to 9th Avenue	11,292	35	50	94.80	3.50	1.70	80.00	10.00	10.00	
4	Enterprise Street	Andreasen Drive to Harmony Grove Road	9,127	35	50	94.80	3.50	1.70	80.00	10.00	10.00	

FHWA RD-77-108

Traffic Noise Prediction Model

Predicted Noise Levels

Project Name : Escondido Harmony Grove Industrial
Project Number : 8324
Modeled Condition : Existing, Existing + Project, Existing + Cumulative, Existing + Cumulative + Project
Assessment Metric: Hard

			Noise Levels, dBA Hard				Distance to Traffic Noise Level Contours, Feet					
Segment	Roadway	Segment	Auto	MT	HT	Total	75 dB	70 dB	65 dB	60 dB	55 dB	50 dB
EXISTING												
1	Harmony Grove Road	West of Enterprise Street	63.2	57.7	58.9	65.4	5	17	55	173	548	1,734
2	Harmony Grove Road	Enterprise Street to Hale Avenue	65.2	59.8	61.0	67.4	9	27	87	275	869	2,748
3	Hale Avenue	Harmony Grove Road to 9th Avenue	62.9	58.2	59.8	65.5	6	18	56	177	561	1,774
4	Enterprise Street	Andreasen Drive to Harmony Grove Road	61.7	57.1	58.6	64.4	4	14	44	138	435	1,377
EXISTING + PROJECT												
1	Harmony Grove Road	West of Enterprise Street	63.4	58.0	60.2	65.9	6	19	62	195	615	1,945
2	Harmony Grove Road	Enterprise Street to Hale Avenue	65.5	60.1	62.2	67.9	10	31	97	308	975	3,083
3	Hale Avenue	Harmony Grove Road to 9th Avenue	63.0	58.4	60.9	65.9	6	19	62	195	615	1,945
4	Enterprise Street	Andreasen Drive to Harmony Grove Road	62.0	57.3	59.9	64.9	5	15	49	155	489	1,545
EXISTING + CUMULATIVE												
1	Harmony Grove Road	West of Enterprise Street	66.3	60.9	62.1	68.5	11	35	112	354	1,119	3,540
2	Harmony Grove Road	Enterprise Street to Hale Avenue	67.1	61.7	62.8	69.3	13	43	135	426	1,346	4,256
3	Hale Avenue	Harmony Grove Road to 9th Avenue	64.3	59.7	61.2	66.9	8	24	77	245	774	2,449
4	Enterprise Street	Andreasen Drive to Harmony Grove Road	63.3	58.7	60.2	65.9	6	19	62	195	615	1,945
EXISTING + CUMULATIVE + PROJE												
1	Harmony Grove Road	West of Enterprise Street	66.5	61.1	62.7	68.8	12	38	120	379	1,199	3,793
2	Harmony Grove Road	Enterprise Street to Hale Avenue	67.2	61.8	63.5	69.6	14	46	144	456	1,442	4,560
3	Hale Avenue	Harmony Grove Road to 9th Avenue	64.4	59.8	61.8	67.2	8	26	83	262	830	2,624
4	Enterprise Street	Andreasen Drive to Harmony Grove Road	63.5	58.8	60.9	66.3	7	21	67	213	674	2,133

Classification Mix

			Existing	Auto (95%)	MT (3.5%)	HT (1.5%)	Project Only	Auto (88.5%)	MT (3.5%)	HT (8%)	Existing + Project	Auto	MT	HT
1	Harmony Grove Road	West of Enterprise Street	5760	5472	201.6	86.4	380	336.3	13.3	30.4	6140	5808.3	214.9	116.8
2	Harmony Grove Road	Enterprise Street to Hale Avenue	9310	8844.5	325.85	139.65	520	460.2	18.2	41.6	9830	9304.7	344.05	181.25
3	Hale Avenue	Escondido Harmony Grove Industrial	7950	7552.5	278.25	119.25	282	249.57	9.87	22.56	8232	7802.07	288.12	141.81
4	Enterprise Street	Andreasen Drive to Harmony Grove Road	6100	5795	213.5	91.5	347	307.095	12.145	27.76	6447	6102.095	225.645	119.26
												94.6%	3.5%	1.9%

			Cumulative + Existing	Auto (95%)	MT (3.5%)	HT (1.5%)	Project Only	Auto (88.5%)	MT (3.5%)	HT (8%)	Cumulative + Existing + Project	Auto	MT	HT
1	Harmony Grove Road	West of Enterprise Street	11,965	11366.75	418.775	179.475	380	336.3	13.3	30.4	12345	11703.05	432.075	209.875
2	Harmony Grove Road	Enterprise Street to Hale Avenue	14,270	13556.5	499.45	214.05	520	460.2	18.2	41.6	14790	14016.7	517.65	255.65
3	Hale Avenue	Harmony Grove Road to 9th Avenue	11,010	10459.5	385.35	165.15	282	249.57	9.87	22.56	11292	10709.07	395.22	187.71
4	Enterprise Street	Andreasen Drive to Harmony Grove Road	8,780	8341	307.3	131.7	347	307.095	12.145	27.76	9127	8648.095	319.445	159.46
												94.8%	3.5%	1.7%

ATTACHMENT 5

SoundPLAN Data – On-Site Generated Noise

8811 Escondido Harmony Grove Industrial
SoundPLAN Data - On-Site

Source name	Reference	Level		Frequency spectrum [dB(A)]								Corrections		
				63	125	250	500	1	2	4	8	Kwall	CI	CT
			dB(A)	Hz	Hz	Hz	Hz	kHz	kHz	kHz	kHz	dB(A)	dB(A)	dB(A)
AHU	Unit	Leq1	86.5	69.8	71.8	81.3	83.8	75	70.2	66	56.9	-	-	-
AHU	Unit	Leq2	86.5	69.8	71.8	81.3	83.8	75	70.2	66	56.9	-	-	-
HVAC - Sales Office	Unit	Leq1	76.2	53.8	66.8	68.3	70.8	70	67.2	64	55.9	-	-	-
HVAC - Sales Office	Unit	Leq2	79.2	56.8	69.8	71.3	73.8	73	70.2	67	58.9	-	-	-
HVAC - Warehouse Office	Unit	Leq1	79.2	56.8	69.8	71.3	73.8	73	70.2	67	58.9	-	-	-
HVAC - Warehouse Office	Unit	Leq2	82.2	59.8	72.8	74.3	76.8	76	73.2	70	61.9	-	-	-
Loading Dock 1	Unit	Leq1	74.3									-	-	-
Loading Dock 1	Unit	Leq2	81.3									-	-	-
Loading Dock 2	Unit	Leq1	74.3									-	-	-
Loading Dock 2	Unit	Leq2	81.3									-	-	-
Loading Dock 3	Unit	Leq1	74.3									-	-	-
Loading Dock 3	Unit	Leq2	81.3									-	-	-
Loading Dock 4	Unit	Leq1	74.3									-	-	-
Loading Dock 4	Unit	Leq2	81.3									-	-	-
Loading Dock 5	Unit	Leq1	74.3									-	-	-
Loading Dock 5	Unit	Leq2	81.3									-	-	-
Loading Dock 6	Unit	Leq1	74.3									-	-	-
Loading Dock 6	Unit	Leq2	81.3									-	-	-
Loading Dock 7	Unit	Leq1	74.3									-	-	-
Loading Dock 7	Unit	Leq2	81.3									-	-	-
Loading Dock 8	Unit	Leq1	74.3									-	-	-
Loading Dock 8	Unit	Leq2	81.3									-	-	-
Loading Dock 9	Unit	Leq1	74.3									-	-	-
Loading Dock 9	Unit	Leq2	81.3									-	-	-
Loading Dock 10	Unit	Leq1	74.3									-	-	-
Loading Dock 10	Unit	Leq2	81.3									-	-	-
Loading Dock 11	Unit	Leq1	74.3									-	-	-
Loading Dock 11	Unit	Leq2	81.3									-	-	-
Loading Dock 12	Unit	Leq1	74.3									-	-	-
Loading Dock 12	Unit	Leq2	81.3									-	-	-
Loading Dock 13	Unit	Leq1	74.3									-	-	-
Loading Dock 13	Unit	Leq2	81.3									-	-	-
Loading Dock 14	Unit	Leq1	74.3									-	-	-
Loading Dock 14	Unit	Leq2	81.3									-	-	-
Loading Dock 15	Unit	Leq1	74.3									-	-	-
Loading Dock 15	Unit	Leq2	81.3									-	-	-
Loading Dock 16	Unit	Leq1	74.3									-	-	-
Loading Dock 16	Unit	Leq2	81.3									-	-	-
Loading Dock 17	Unit	Leq1	74.3									-	-	-
Loading Dock 17	Unit	Leq2	81.3									-	-	-
Loading Dock 18	Unit	Leq1	74.3									-	-	-
Loading Dock 18	Unit	Leq2	81.3									-	-	-
Loading Dock 19	Unit	Leq1	74.3									-	-	-
Loading Dock 19	Unit	Leq2	81.3									-	-	-
Loading Dock 20	Unit	Leq1	74.3									-	-	-
Loading Dock 20	Unit	Leq2	81.3									-	-	-
Loading Dock 21	Unit	Leq1	74.3									-	-	-
Loading Dock 21	Unit	Leq2	81.3									-	-	-
Loading Dock 22	Unit	Leq1	74.3									-	-	-
Loading Dock 22	Unit	Leq2	81.3									-	-	-
Knock Out Door 1	Unit	Leq1	74.3									-	-	-
Knock Out Door 1	Unit	Leq2	81.3									-	-	-
Knock Out Door 2	Unit	Leq1	74.3									-	-	-
Knock Out Door 2	Unit	Leq2	81.3									-	-	-
Knock Out Door 3	Unit	Leq1	74.3									-	-	-
Knock Out Door 3	Unit	Leq2	81.3									-	-	-
Knock Out Door 4	Unit	Leq1	74.3									-	-	-
Knock Out Door 4	Unit	Leq2	81.3									-	-	-
Truck Route 1	Unit	Leq1	87.3									-	-	-
Truck Route 1	Unit	Leq2	87.3									-	-	-
Truck Route 2	Unit	Leq1	89.1									-	-	-
Truck Route 2	Unit	Leq2	89.1									-	-	-
Truck Route 3	Unit	Leq1	89.1									-	-	-
Truck Route 3	Unit	Leq2	89.1									-	-	-
Truck Route 4	Unit	Leq1	89.1									-	-	-
Truck Route 4	Unit	Leq2	89.1									-	-	-
Truck Route 5	Unit	Leq1	87.3									-	-	-
Truck Route 5	Unit	Leq2	87.3									-	-	-

8811 Escondido Harmony Grove Industrial
SoundPLAN Data - On-Site

No.	Coordinates X	Coordinates Y	Floor	Height	Limit Leq1	Limit Leq2	Level w/o NP Leq1	Level w/o NP Leq2	Level w. NP Leq1	Level w. NP Leq2	Difference Leq1	Difference Leq2	Conflict Leq1	Conflict Leq2
	in meter			m	dB(A)		dB(A)		dB(A)		dB(A)		dB(A)	
1	489486.91	3663418.80	1.Fl	1.5	50	45	27.6	29.7	0	0	-27.6	-29.7	-	-
2	489466.62	3663428.19	1.Fl	1.5	50	45	28.3	30.7	0	0	-28.3	-30.7	-	-
3	489447.18	3663437.72	1.Fl	1.5	50	45	29.7	32.2	0	0	-29.7	-32.2	-	-
4	489439.07	3663500.24	1.Fl	1.5	50	45	41.8	45.1	0	0	-41.8	-45.1	-	-
5	489388.87	3663477.92	1.Fl	1.5	50	45	42.2	45.4	0	0	-42.2	-45.4	-	-
6	489362.86	3663490.25	1.Fl	1.5	50	45	41.9	44.8	0	0	-41.9	-44.8	-	-
7	489360.48	3663542.98	1.Fl	1.5	50	45	42.1	44.6	0	0	-42.1	-44.6	-	-
8	489326.10	3663505.61	1.Fl	1.5	70	70	46.0	48.3	0	0	-46.0	-48.3	-	-
9	489312.49	3663477.49	1.Fl	1.5	70	70	49.4	51.2	0	0	-49.4	-51.2	-	-
10	489295.40	3663442.20	1.Fl	1.5	70	70	57.9	58.4	0	0	-57.9	-58.4	-	-
11	489259.64	3663396.24	1.Fl	1.5	70	70	58.5	59.2	0	0	-58.5	-59.2	-	-
12	489243.41	3663369.73	1.Fl	1.5	70	70	50.3	52.3	0	0	-50.3	-52.3	-	-
13	489228.95	3663338.18	1.Fl	1.5	70	70	44.9	47.6	0	0	-44.9	-47.6	-	-
14	489210.99	3663302.25	1.Fl	1.5	70	70	40.6	41.6	0	0	-40.6	-41.6	-	-
15	489194.78	3663269.17	1.Fl	1.5	70	70	39.0	39.3	0	0	-39.0	-39.3	-	-
16	489176.81	3663233.02	1.Fl	1.5	70	70	37.1	37.4	0	0	-37.1	-37.4	-	-
17	489162.87	3663182.49	1.Fl	1.5	50	45	33.3	33.7	0	0	-33.3	-33.7	-	-
18	489208.63	3663203.80	1.Fl	1.5	50	45	28.4	29.9	0	0	-28.4	-29.9	-	-
19	489248.45	3663225.79	1.Fl	1.5	50	45	26.9	29.1	0	0	-26.9	-29.1	-	-
20	489293.14	3663252.30	1.Fl	1.5	50	45	26.9	28.4	0	0	-26.9	-28.4	-	-
21	489325.35	3663270.70	1.Fl	1.5	50	45	28.1	29.1	0	0	-28.1	-29.1	-	-
22	489363.68	3663292.17	1.Fl	1.5	50	45	29.1	29.9	0	0	-29.1	-29.9	-	-
23	489409.69	3663320.65	1.Fl	1.5	50	45	28.2	29.2	0	0	-28.2	-29.2	-	-
24	489446.36	3663358.67	1.Fl	1.5	50	45	24.8	26.4	0	0	-24.8	-26.4	-	-
25	489481.45	3663388.25	1.Fl	1.5	50	45	27.4	29.3	0	0	-27.4	-29.3	-	-
26	489503.66	3663410.28	1.Fl	1.5	50	45	26.9	28.8	0	0	-26.9	-28.8	-	-

Receivers

8811 Escondido Harmony Grove Industrial
SoundPLAN Data - On-Site

Source name				Level w/o NP Leq1	Level w/o NP Leq2	Level w. NP Leq1	Level w. NP Leq2
				dB(A)		dB(A)	
1	1.Fl	27.6	29.7	0.0	0.0		
AHU				18.7	18.7	0	0
HVAC - Sales Office				3.0	6.0	0	0
HVAC - Warehouse Office				23.9	26.9	0	0
Knock Out Door 1				1.4	8.4	0	0
Knock Out Door 2				0.3	7.3	0	0
Knock Out Door 3				-0.9	6.1	0	0
Knock Out Door 4				-1.8	5.2	0	0
Loading Dock 1				2.4	9.4	0	0
Loading Dock 2				2.5	9.5	0	0
Loading Dock 3				2.3	9.3	0	0
Loading Dock 4				2.1	9.1	0	0
Loading Dock 5				1.4	8.4	0	0
Loading Dock 6				1.2	8.2	0	0
Loading Dock 7				1.0	8.0	0	0
Loading Dock 8				0.9	7.9	0	0
Loading Dock 9				0.7	7.7	0	0
Loading Dock 10				0.2	7.2	0	0
Loading Dock 11				0.1	7.1	0	0
Loading Dock 12				0.0	7.0	0	0
Loading Dock 13				-0.2	6.8	0	0
Loading Dock 14				-0.4	6.6	0	0
Loading Dock 15				-1.0	6.0	0	0
Loading Dock 16				-1.1	5.9	0	0
Loading Dock 17				-1.3	5.7	0	0
Loading Dock 18				-1.4	5.6	0	0
Loading Dock 19				-1.5	5.5	0	0
Loading Dock 20				-1.7	5.3	0	0
Loading Dock 21				-1.8	5.2	0	0
Loading Dock 22				-2.4	4.6	0	0
Truck Route 1				16.0	16.0	0	0
Truck Route 2				17.3	17.3	0	0
Truck Route 3				17.0	17.0	0	0
Truck Route 4				16.9	16.9	0	0
Truck Route 5				15.0	15.0	0	0
2	1.Fl	28.3	30.7	0.0	0.0		
AHU				18.2	18.2	0	0
HVAC - Sales Office				2.3	5.3	0	0
HVAC - Warehouse Office				25.3	28.3	0	0
Knock Out Door 1				2.9	9.9	0	0
Knock Out Door 2				1.5	8.5	0	0
Knock Out Door 3				0.1	7.1	0	0
Knock Out Door 4				-0.9	6.1	0	0
Loading Dock 1				4.3	11.3	0	0
Loading Dock 2				4.3	11.3	0	0
Loading Dock 3				4.0	11.0	0	0
Loading Dock 4				3.7	10.7	0	0
Loading Dock 5				2.8	9.8	0	0
Loading Dock 6				2.6	9.6	0	0
Loading Dock 7				2.4	9.4	0	0
Loading Dock 8				2.2	9.2	0	0
Loading Dock 9				2.0	9.0	0	0

Loading Dock 10				1.4		8.4	0	0
Loading Dock 11				1.3		8.3	0	0
Loading Dock 12				1.1		8.1	0	0
Loading Dock 13				0.9		7.9	0	0
Loading Dock 14				0.6		7.6	0	0
Loading Dock 15				0.0		7.0	0	0
Loading Dock 16				-0.2		6.8	0	0
Loading Dock 17				-0.3		6.7	0	0
Loading Dock 18				-0.5		6.5	0	0
Loading Dock 19				-0.6		6.4	0	0
Loading Dock 20				-0.9		6.1	0	0
Loading Dock 21				-1.1		5.9	0	0
Loading Dock 22				-1.6		5.4	0	0
Truck Route 1				16.5		16.5	0	0
Truck Route 2				17.6		17.6	0	0
Truck Route 3				17.1		17.1	0	0
Truck Route 4				16.8		16.8	0	0
Truck Route 5				15.0		15.0	0	0
3	1.Fl	29.7	32.2	0.0	0.0			
AHU				21.7		21.7	0	0
HVAC - Sales Office				6.0		9.0	0	0
HVAC - Warehouse Office				27.0		30.0	0	0
Knock Out Door 1				4.6		11.6	0	0
Knock Out Door 2				2.7		9.7	0	0
Knock Out Door 3				1.0		8.0	0	0
Knock Out Door 4				-0.3		6.7	0	0
Loading Dock 1				6.6		13.6	0	0
Loading Dock 2				6.4		13.4	0	0
Loading Dock 3				5.9		12.9	0	0
Loading Dock 4				5.6		12.6	0	0
Loading Dock 5				4.4		11.4	0	0
Loading Dock 6				4.1		11.1	0	0
Loading Dock 7				3.8		10.8	0	0
Loading Dock 8				3.5		10.5	0	0
Loading Dock 9				3.3		10.3	0	0
Loading Dock 10				2.5		9.5	0	0
Loading Dock 11				2.3		9.3	0	0
Loading Dock 12				2.1		9.1	0	0
Loading Dock 13				1.9		8.9	0	0
Loading Dock 14				1.5		8.5	0	0
Loading Dock 15				0.8		7.8	0	0
Loading Dock 16				0.6		7.6	0	0
Loading Dock 17				0.4		7.4	0	0
Loading Dock 18				0.3		7.3	0	0
Loading Dock 19				0.1		7.1	0	0
Loading Dock 20				-0.3		6.7	0	0
Loading Dock 21				-0.5		6.5	0	0
Loading Dock 22				-1.0		6.0	0	0
Truck Route 1				17.3		17.3	0	0
Truck Route 2				17.8		17.8	0	0
Truck Route 3				17.1		17.1	0	0
Truck Route 4				16.7		16.7	0	0
Truck Route 5				14.7		14.7	0	0
4	1.Fl	41.8	45.1	0.0	0.0			
AHU				24.1		24.1	0	0

HVAC - Sales Office			9.7		12.7	0	0
HVAC - Warehouse Office			24.4		27.4	0	0
Knock Out Door 1			24.1		31.1	0	0
Knock Out Door 2			21.8		28.8	0	0
Knock Out Door 3			19.9		26.9	0	0
Knock Out Door 4			18.4		25.4	0	0
Loading Dock 1			26.3		33.3	0	0
Loading Dock 2			25.9		32.9	0	0
Loading Dock 3			25.4		32.4	0	0
Loading Dock 4			25.0		32.0	0	0
Loading Dock 5			23.7		30.7	0	0
Loading Dock 6			23.3		30.3	0	0
Loading Dock 7			23.0		30.0	0	0
Loading Dock 8			22.7		29.7	0	0
Loading Dock 9			22.4		29.4	0	0
Loading Dock 10			21.4		28.4	0	0
Loading Dock 11			21.2		28.2	0	0
Loading Dock 12			20.9		27.9	0	0
Loading Dock 13			20.7		27.7	0	0
Loading Dock 14			20.4		27.4	0	0
Loading Dock 15			19.7		26.7	0	0
Loading Dock 16			19.5		26.5	0	0
Loading Dock 17			19.2		26.2	0	0
Loading Dock 18			19.0		26.0	0	0
Loading Dock 19			18.8		25.8	0	0
Loading Dock 20			18.2		25.2	0	0
Loading Dock 21			18.0		25.0	0	0
Loading Dock 22			17.7		24.7	0	0
Truck Route 1			33.1		33.1	0	0
Truck Route 2			34.5		34.5	0	0
Truck Route 3			33.7		33.7	0	0
Truck Route 4			32.8		32.8	0	0
Truck Route 5			30.5		30.5	0	0
5	1.Fl	42.2	45.4	0.0	0.0		
AHU			20.5		20.5	0	0
HVAC - Sales Office			4.7		7.7	0	0
HVAC - Warehouse Office			22.4		25.4	0	0
Knock Out Door 1			24.6		31.6	0	0
Knock Out Door 2			21.4		28.4	0	0
Knock Out Door 3			19.0		26.0	0	0
Knock Out Door 4			17.2		24.2	0	0
Loading Dock 1			27.8		34.8	0	0
Loading Dock 2			27.2		34.2	0	0
Loading Dock 3			26.5		33.5	0	0
Loading Dock 4			25.9		32.9	0	0
Loading Dock 5			24.0		31.0	0	0
Loading Dock 6			23.5		30.5	0	0
Loading Dock 7			23.0		30.0	0	0
Loading Dock 8			22.7		29.7	0	0
Loading Dock 9			22.2		29.2	0	0
Loading Dock 10			20.9		27.9	0	0
Loading Dock 11			20.7		27.7	0	0
Loading Dock 12			20.3		27.3	0	0
Loading Dock 13			20.0		27.0	0	0
Loading Dock 14			19.6		26.6	0	0

Loading Dock 15			18.7	25.7	0	0
Loading Dock 16			18.5	25.5	0	0
Loading Dock 17			18.2	25.2	0	0
Loading Dock 18			18.0	25.0	0	0
Loading Dock 19			17.7	24.7	0	0
Loading Dock 20			17.0	24.0	0	0
Loading Dock 21			16.8	23.8	0	0
Loading Dock 22			16.4	23.4	0	0
Truck Route 1			35.2	35.2	0	0
Truck Route 2			34.8	34.8	0	0
Truck Route 3			33.5	33.5	0	0
Truck Route 4			32.7	32.7	0	0
Truck Route 5			30.6	30.6	0	0
6	1.Fl	41.9	44.8	0.0	0.0	
AHU			21.2	21.2	0	0
HVAC - Sales Office			5.4	8.4	0	0
HVAC - Warehouse Office			21.0	24.0	0	0
Knock Out Door 1			23.6	30.6	0	0
Knock Out Door 2			21.1	28.1	0	0
Knock Out Door 3			18.9	25.9	0	0
Knock Out Door 4			17.2	24.2	0	0
Loading Dock 1			25.5	32.5	0	0
Loading Dock 2			25.2	32.2	0	0
Loading Dock 3			24.8	31.8	0	0
Loading Dock 4			24.5	31.5	0	0
Loading Dock 5			23.2	30.2	0	0
Loading Dock 6			22.9	29.9	0	0
Loading Dock 7			22.5	29.5	0	0
Loading Dock 8			22.2	29.2	0	0
Loading Dock 9			21.8	28.8	0	0
Loading Dock 10			20.7	27.7	0	0
Loading Dock 11			20.5	27.5	0	0
Loading Dock 12			20.1	27.1	0	0
Loading Dock 13			19.9	26.9	0	0
Loading Dock 14			19.6	26.6	0	0
Loading Dock 15			18.7	25.7	0	0
Loading Dock 16			18.4	25.4	0	0
Loading Dock 17			18.1	25.1	0	0
Loading Dock 18			17.9	24.9	0	0
Loading Dock 19			17.7	24.7	0	0
Loading Dock 20			17.0	24.0	0	0
Loading Dock 21			16.8	23.8	0	0
Loading Dock 22			16.4	23.4	0	0
Truck Route 1			34.8	34.8	0	0
Truck Route 2			34.9	34.9	0	0
Truck Route 3			33.7	33.7	0	0
Truck Route 4			33.0	33.0	0	0
Truck Route 5			30.9	30.9	0	0
7	1.Fl	42.1	44.6	0.0	0.0	
AHU			26.2	26.2	0	0
HVAC - Sales Office			12.0	15.0	0	0
HVAC - Warehouse Office			21.8	24.8	0	0
Knock Out Door 1			22.1	29.1	0	0
Knock Out Door 2			20.7	27.7	0	0
Knock Out Door 3			19.7	26.7	0	0

Knock Out Door 4				18.5		25.5	0	0
Loading Dock 1				23.1		30.1	0	0
Loading Dock 2				23.0		30.0	0	0
Loading Dock 3				22.8		29.8	0	0
Loading Dock 4				22.7		29.7	0	0
Loading Dock 5				21.9		28.9	0	0
Loading Dock 6				21.6		28.6	0	0
Loading Dock 7				21.4		28.4	0	0
Loading Dock 8				21.3		28.3	0	0
Loading Dock 9				21.1		28.1	0	0
Loading Dock 10				20.7		27.7	0	0
Loading Dock 11				20.6		27.6	0	0
Loading Dock 12				20.4		27.4	0	0
Loading Dock 13				20.2		27.2	0	0
Loading Dock 14				20.0		27.0	0	0
Loading Dock 15				19.5		26.5	0	0
Loading Dock 16				19.4		26.4	0	0
Loading Dock 17				19.2		26.2	0	0
Loading Dock 18				19.0		26.0	0	0
Loading Dock 19				18.9		25.9	0	0
Loading Dock 20				18.4		25.4	0	0
Loading Dock 21				18.3		25.3	0	0
Loading Dock 22				18.0		25.0	0	0
Truck Route 1				33.8		33.8	0	0
Truck Route 2				35.0		35.0	0	0
Truck Route 3				34.5		34.5	0	0
Truck Route 4				34.1		34.1	0	0
Truck Route 5				32.1		32.1	0	0
8	1.Fl	46.0	48.3	0.0	0.0			
AHU				27.4		27.4	0	0
HVAC - Sales Office				13.2		16.2	0	0
HVAC - Warehouse Office				22.4		25.4	0	0
Knock Out Door 1				25.5		32.5	0	0
Knock Out Door 2				24.7		31.7	0	0
Knock Out Door 3				23.3		30.3	0	0
Knock Out Door 4				21.7		28.7	0	0
Loading Dock 1				25.5		32.5	0	0
Loading Dock 2				25.6		32.6	0	0
Loading Dock 3				25.7		32.7	0	0
Loading Dock 4				25.7		32.7	0	0
Loading Dock 5				25.5		32.5	0	0
Loading Dock 6				25.4		32.4	0	0
Loading Dock 7				25.3		32.3	0	0
Loading Dock 8				25.2		32.2	0	0
Loading Dock 9				25.0		32.0	0	0
Loading Dock 10				24.5		31.5	0	0
Loading Dock 11				24.3		31.3	0	0
Loading Dock 12				24.1		31.1	0	0
Loading Dock 13				23.9		30.9	0	0
Loading Dock 14				23.7		30.7	0	0
Loading Dock 15				23.1		30.1	0	0
Loading Dock 16				22.8		29.8	0	0
Loading Dock 17				22.6		29.6	0	0
Loading Dock 18				22.4		29.4	0	0
Loading Dock 19				22.2		29.2	0	0

Loading Dock 20				21.6		28.6	0	0
Loading Dock 21				21.4		28.4	0	0
Loading Dock 22				21.0		28.0	0	0
Truck Route 1				38.0		38.0	0	0
Truck Route 2				39.2		39.2	0	0
Truck Route 3				38.6		38.6	0	0
Truck Route 4				38.1		38.1	0	0
Truck Route 5				36.2		36.2	0	0
9	1.Fl	49.4	51.2	0.0	0.0			
AHU				28.0		28.0	0	0
HVAC - Sales Office				13.6		16.6	0	0
HVAC - Warehouse Office				22.6		25.6	0	0
Knock Out Door 1				27.4		34.4	0	0
Knock Out Door 2				27.4		34.4	0	0
Knock Out Door 3				26.0		33.0	0	0
Knock Out Door 4				24.2		31.2	0	0
Loading Dock 1				26.2		33.2	0	0
Loading Dock 2				26.7		33.7	0	0
Loading Dock 3				26.9		33.9	0	0
Loading Dock 4				27.1		34.1	0	0
Loading Dock 5				27.5		34.5	0	0
Loading Dock 6				27.6		34.6	0	0
Loading Dock 7				27.6		34.6	0	0
Loading Dock 8				27.6		34.6	0	0
Loading Dock 9				27.6		34.6	0	0
Loading Dock 10				27.3		34.3	0	0
Loading Dock 11				27.2		34.2	0	0
Loading Dock 12				27.0		34.0	0	0
Loading Dock 13				26.8		33.8	0	0
Loading Dock 14				26.6		33.6	0	0
Loading Dock 15				25.8		32.8	0	0
Loading Dock 16				25.5		32.5	0	0
Loading Dock 17				25.3		32.3	0	0
Loading Dock 18				25.0		32.0	0	0
Loading Dock 19				24.8		31.8	0	0
Loading Dock 20				24.0		31.0	0	0
Loading Dock 21				23.7		30.7	0	0
Loading Dock 22				23.2		30.2	0	0
Truck Route 1				41.2		41.2	0	0
Truck Route 2				42.9		42.9	0	0
Truck Route 3				42.3		42.3	0	0
Truck Route 4				41.9		41.9	0	0
Truck Route 5				40.1		40.1	0	0
10	1.Fl	57.9	58.4	0.0	0.0			
AHU				28.7		28.7	0	0
HVAC - Sales Office				13.6		16.6	0	0
HVAC - Warehouse Office				22.1		25.1	0	0
Knock Out Door 1				27.6		34.6	0	0
Knock Out Door 2				30.3		37.3	0	0
Knock Out Door 3				30.7		37.7	0	0
Knock Out Door 4				28.6		35.6	0	0
Loading Dock 1				25.4		32.4	0	0
Loading Dock 2				26.0		33.0	0	0
Loading Dock 3				26.4		33.4	0	0
Loading Dock 4				26.8		33.8	0	0

Loading Dock 5				28.1		35.1	0	0
Loading Dock 6				28.5		35.5	0	0
Loading Dock 7				28.9		35.9	0	0
Loading Dock 8				29.2		36.2	0	0
Loading Dock 9				29.6		36.6	0	0
Loading Dock 10				30.6		37.6	0	0
Loading Dock 11				30.7		37.7	0	0
Loading Dock 12				30.9		37.9	0	0
Loading Dock 13				31.0		38.0	0	0
Loading Dock 14				31.0		38.0	0	0
Loading Dock 15				30.5		37.5	0	0
Loading Dock 16				30.3		37.3	0	0
Loading Dock 17				30.0		37.0	0	0
Loading Dock 18				29.7		36.7	0	0
Loading Dock 19				29.4		36.4	0	0
Loading Dock 20				28.3		35.3	0	0
Loading Dock 21				28.0		35.0	0	0
Loading Dock 22				27.2		34.2	0	0
Truck Route 1				48.5		48.5	0	0
Truck Route 2				50.9		50.9	0	0
Truck Route 3				51.5		51.5	0	0
Truck Route 4				51.7		51.7	0	0
Truck Route 5				50.3		50.3	0	0
11	1.Fl	58.5	59.2	0.0	0.0			
AHU				28.7		28.7	0	0
HVAC - Sales Office				14.0		17.0	0	0
HVAC - Warehouse Office				20.2		23.2	0	0
Knock Out Door 1				23.6		30.6	0	0
Knock Out Door 2				26.4		33.4	0	0
Knock Out Door 3				30.1		37.1	0	0
Knock Out Door 4				34.6		41.6	0	0
Loading Dock 1				21.8		28.8	0	0
Loading Dock 2				22.2		29.2	0	0
Loading Dock 3				22.6		29.6	0	0
Loading Dock 4				22.8		29.8	0	0
Loading Dock 5				24.0		31.0	0	0
Loading Dock 6				24.4		31.4	0	0
Loading Dock 7				24.8		31.8	0	0
Loading Dock 8				25.1		32.1	0	0
Loading Dock 9				25.5		32.5	0	0
Loading Dock 10				26.9		33.9	0	0
Loading Dock 11				27.3		34.3	0	0
Loading Dock 12				27.8		34.8	0	0
Loading Dock 13				28.3		35.3	0	0
Loading Dock 14				28.9		35.9	0	0
Loading Dock 15				30.7		37.7	0	0
Loading Dock 16				31.3		38.3	0	0
Loading Dock 17				32.0		39.0	0	0
Loading Dock 18				32.5		39.5	0	0
Loading Dock 19				33.3		40.3	0	0
Loading Dock 20				35.2		42.2	0	0
Loading Dock 21				35.7		42.7	0	0
Loading Dock 22				35.6		42.6	0	0
Truck Route 1				48.2		48.2	0	0
Truck Route 2				50.7		50.7	0	0

Truck Route 3				51.5		51.5	0	0
Truck Route 4				52.6		52.6	0	0
Truck Route 5				52.3		52.3	0	0
12	1.Fl	50.3	52.3	0.0	0.0			
AHU				27.4		27.4	0	0
HVAC - Sales Office				15.2		18.2	0	0
HVAC - Warehouse Office				19.0		22.0	0	0
Knock Out Door 1				21.7		28.7	0	0
Knock Out Door 2				24.1		31.1	0	0
Knock Out Door 3				27.1		34.1	0	0
Knock Out Door 4				31.5		38.5	0	0
Loading Dock 1				20.2		27.2	0	0
Loading Dock 2				20.6		27.6	0	0
Loading Dock 3				20.8		27.8	0	0
Loading Dock 4				21.1		28.1	0	0
Loading Dock 5				22.1		29.1	0	0
Loading Dock 6				22.4		29.4	0	0
Loading Dock 7				22.7		29.7	0	0
Loading Dock 8				23.0		30.0	0	0
Loading Dock 9				23.3		30.3	0	0
Loading Dock 10				24.5		31.5	0	0
Loading Dock 11				24.8		31.8	0	0
Loading Dock 12				25.3		32.3	0	0
Loading Dock 13				25.7		32.7	0	0
Loading Dock 14				26.1		33.1	0	0
Loading Dock 15				27.6		34.6	0	0
Loading Dock 16				28.2		35.2	0	0
Loading Dock 17				28.8		35.8	0	0
Loading Dock 18				29.3		36.3	0	0
Loading Dock 19				30.0		37.0	0	0
Loading Dock 20				32.2		39.2	0	0
Loading Dock 21				33.0		40.0	0	0
Loading Dock 22				34.2		41.2	0	0
Truck Route 1				40.0		40.0	0	0
Truck Route 2				42.3		42.3	0	0
Truck Route 3				43.0		43.0	0	0
Truck Route 4				43.7		43.7	0	0
Truck Route 5				43.1		43.1	0	0
13	1.Fl	44.9	47.6	0.0	0.0			
AHU				25.0		25.0	0	0
HVAC - Sales Office				16.4		19.4	0	0
HVAC - Warehouse Office				16.0		19.0	0	0
Knock Out Door 1				20.0		27.0	0	0
Knock Out Door 2				21.9		28.9	0	0
Knock Out Door 3				24.3		31.3	0	0
Knock Out Door 4				27.5		34.5	0	0
Loading Dock 1				18.6		25.6	0	0
Loading Dock 2				19.0		26.0	0	0
Loading Dock 3				19.2		26.2	0	0
Loading Dock 4				19.4		26.4	0	0
Loading Dock 5				20.3		27.3	0	0
Loading Dock 6				20.5		27.5	0	0
Loading Dock 7				20.8		27.8	0	0
Loading Dock 8				21.0		28.0	0	0
Loading Dock 9				21.3		28.3	0	0

Loading Dock 10				22.2		29.2	0	0
Loading Dock 11				22.5		29.5	0	0
Loading Dock 12				22.8		29.8	0	0
Loading Dock 13				23.2		30.2	0	0
Loading Dock 14				23.5		30.5	0	0
Loading Dock 15				24.7		31.7	0	0
Loading Dock 16				25.1		32.1	0	0
Loading Dock 17				25.5		32.5	0	0
Loading Dock 18				25.9		32.9	0	0
Loading Dock 19				26.4		33.4	0	0
Loading Dock 20				27.9		34.9	0	0
Loading Dock 21				28.5		35.5	0	0
Loading Dock 22				26.9		33.9	0	0
Truck Route 1				34.8		34.8	0	0
Truck Route 2				36.9		36.9	0	0
Truck Route 3				37.4		37.4	0	0
Truck Route 4				37.9		37.9	0	0
Truck Route 5				36.7		36.7	0	0
14	1.Fl	40.6	41.6	0.0	0.0			
AHU				24.3		24.3	0	0
HVAC - Sales Office				18.1		21.1	0	0
HVAC - Warehouse Office				12.1		15.1	0	0
Knock Out Door 1				6.2		13.2	0	0
Knock Out Door 2				8.7		15.7	0	0
Knock Out Door 3				12.0		19.0	0	0
Knock Out Door 4				17.1		24.1	0	0
Loading Dock 1				5.0		12.0	0	0
Loading Dock 2				5.4		12.4	0	0
Loading Dock 3				5.7		12.7	0	0
Loading Dock 4				5.9		12.9	0	0
Loading Dock 5				6.8		13.8	0	0
Loading Dock 6				7.0		14.0	0	0
Loading Dock 7				7.4		14.4	0	0
Loading Dock 8				7.6		14.6	0	0
Loading Dock 9				8.0		15.0	0	0
Loading Dock 10				9.3		16.3	0	0
Loading Dock 11				9.6		16.6	0	0
Loading Dock 12				10.1		17.1	0	0
Loading Dock 13				10.6		17.6	0	0
Loading Dock 14				11.1		18.1	0	0
Loading Dock 15				12.6		19.6	0	0
Loading Dock 16				13.2		20.2	0	0
Loading Dock 17				14.0		21.0	0	0
Loading Dock 18				14.6		21.6	0	0
Loading Dock 19				15.4		22.4	0	0
Loading Dock 20				21.4		28.4	0	0
Loading Dock 21				21.7		28.7	0	0
Loading Dock 22				22.2		29.2	0	0
Truck Route 1				31.0		31.0	0	0
Truck Route 2				33.2		33.2	0	0
Truck Route 3				33.8		33.8	0	0
Truck Route 4				34.2		34.2	0	0
Truck Route 5				32.8		32.8	0	0
15	1.Fl	39.0	39.3	0.0	0.0			
AHU				23.4		23.4	0	0

HVAC - Sales Office				22.8		25.8	0	0
HVAC - Warehouse Office				11.8		14.8	0	0
Knock Out Door 1				1.4		8.4	0	0
Knock Out Door 2				3.0		10.0	0	0
Knock Out Door 3				5.1		12.1	0	0
Knock Out Door 4				9.3		16.3	0	0
Loading Dock 1				0.5		7.5	0	0
Loading Dock 2				1.0		8.0	0	0
Loading Dock 3				1.1		8.1	0	0
Loading Dock 4				1.3		8.3	0	0
Loading Dock 5				1.8		8.8	0	0
Loading Dock 6				2.0		9.0	0	0
Loading Dock 7				2.2		9.2	0	0
Loading Dock 8				2.4		9.4	0	0
Loading Dock 9				2.6		9.6	0	0
Loading Dock 10				3.4		10.4	0	0
Loading Dock 11				3.6		10.6	0	0
Loading Dock 12				3.9		10.9	0	0
Loading Dock 13				4.2		11.2	0	0
Loading Dock 14				4.5		11.5	0	0
Loading Dock 15				5.5		12.5	0	0
Loading Dock 16				5.9		12.9	0	0
Loading Dock 17				6.4		13.4	0	0
Loading Dock 18				6.9		13.9	0	0
Loading Dock 19				7.6		14.6	0	0
Loading Dock 20				10.5		17.5	0	0
Loading Dock 21				11.8		18.8	0	0
Loading Dock 22				13.9		20.9	0	0
Truck Route 1				29.1		29.1	0	0
Truck Route 2				31.5		31.5	0	0
Truck Route 3				32.3		32.3	0	0
Truck Route 4				32.9		32.9	0	0
Truck Route 5				31.8		31.8	0	0
16	1.Fl	37.1	37.4	0.0	0.0			
AHU				23.6		23.6	0	0
HVAC - Sales Office				22.0		25.0	0	0
HVAC - Warehouse Office				11.6		14.6	0	0
Knock Out Door 1				-0.9		6.1	0	0
Knock Out Door 2				0.4		7.4	0	0
Knock Out Door 3				1.9		8.9	0	0
Knock Out Door 4				4.9		11.9	0	0
Loading Dock 1				-1.7		5.3	0	0
Loading Dock 2				-1.2		5.8	0	0
Loading Dock 3				-1.1		5.9	0	0
Loading Dock 4				-0.9		6.1	0	0
Loading Dock 5				-0.6		6.4	0	0
Loading Dock 6				-0.4		6.6	0	0
Loading Dock 7				-0.3		6.7	0	0
Loading Dock 8				-0.1		6.9	0	0
Loading Dock 9				0.0		7.0	0	0
Loading Dock 10				0.7		7.7	0	0
Loading Dock 11				0.8		7.8	0	0
Loading Dock 12				1.1		8.1	0	0
Loading Dock 13				1.3		8.3	0	0
Loading Dock 14				1.5		8.5	0	0

Loading Dock 15				2.1		9.1	0	0
Loading Dock 16				2.5		9.5	0	0
Loading Dock 17				2.9		9.9	0	0
Loading Dock 18				3.2		10.2	0	0
Loading Dock 19				3.7		10.7	0	0
Loading Dock 20				5.9		12.9	0	0
Loading Dock 21				6.8		13.8	0	0
Loading Dock 22				8.8		15.8	0	0
Truck Route 1				27.0		27.0	0	0
Truck Route 2				29.5		29.5	0	0
Truck Route 3				30.2		30.2	0	0
Truck Route 4				31.1		31.1	0	0
Truck Route 5				29.9		29.9	0	0
17	1.Fl	33.3	33.7	0.0	0.0			
AHU				24.5		24.5	0	0
HVAC - Sales Office				19.6		22.6	0	0
HVAC - Warehouse Office				13.0		16.0	0	0
Knock Out Door 1				-3.2		3.8	0	0
Knock Out Door 2				-2.3		4.7	0	0
Knock Out Door 3				-1.4		5.6	0	0
Knock Out Door 4				0.5		7.5	0	0
Loading Dock 1				-3.8		3.2	0	0
Loading Dock 2				-3.2		3.8	0	0
Loading Dock 3				-3.1		3.9	0	0
Loading Dock 4				-3.1		3.9	0	0
Loading Dock 5				-2.9		4.1	0	0
Loading Dock 6				-2.8		4.2	0	0
Loading Dock 7				-2.7		4.3	0	0
Loading Dock 8				-2.6		4.4	0	0
Loading Dock 9				-2.5		4.5	0	0
Loading Dock 10				-2.1		4.9	0	0
Loading Dock 11				-2.0		5.0	0	0
Loading Dock 12				-1.9		5.1	0	0
Loading Dock 13				-1.7		5.3	0	0
Loading Dock 14				-1.6		5.4	0	0
Loading Dock 15				-1.3		5.7	0	0
Loading Dock 16				-1.1		5.9	0	0
Loading Dock 17				-0.8		6.2	0	0
Loading Dock 18				-0.6		6.4	0	0
Loading Dock 19				-0.3		6.7	0	0
Loading Dock 20				1.2		8.2	0	0
Loading Dock 21				1.8		8.8	0	0
Loading Dock 22				3.1		10.1	0	0
Truck Route 1				22.6		22.6	0	0
Truck Route 2				25.1		25.1	0	0
Truck Route 3				25.8		25.8	0	0
Truck Route 4				26.8		26.8	0	0
Truck Route 5				25.7		25.7	0	0
18	1.Fl	28.4	29.9	0.0	0.0			
AHU				23.0		23.0	0	0
HVAC - Sales Office				23.4		26.4	0	0
HVAC - Warehouse Office				10.8		13.8	0	0
Knock Out Door 1				-4.5		2.5	0	0
Knock Out Door 2				-3.6		3.4	0	0
Knock Out Door 3				-2.9		4.1	0	0

Knock Out Door 4				-2.0		5.0	0	0
Loading Dock 1				-5.1		1.9	0	0
Loading Dock 2				-4.6		2.4	0	0
Loading Dock 3				-4.5		2.5	0	0
Loading Dock 4				-4.4		2.6	0	0
Loading Dock 5				-4.2		2.8	0	0
Loading Dock 6				-4.1		2.9	0	0
Loading Dock 7				-4.0		3.0	0	0
Loading Dock 8				-3.9		3.1	0	0
Loading Dock 9				-3.8		3.2	0	0
Loading Dock 10				-3.4		3.6	0	0
Loading Dock 11				-3.4		3.6	0	0
Loading Dock 12				-3.2		3.8	0	0
Loading Dock 13				-3.1		3.9	0	0
Loading Dock 14				-3.0		4.0	0	0
Loading Dock 15				-2.8		4.2	0	0
Loading Dock 16				-2.7		4.3	0	0
Loading Dock 17				-2.5		4.5	0	0
Loading Dock 18				-2.4		4.6	0	0
Loading Dock 19				-2.3		4.7	0	0
Loading Dock 20				-1.7		5.3	0	0
Loading Dock 21				-1.5		5.5	0	0
Loading Dock 22				-1.6		5.4	0	0
Truck Route 1				14.7		14.7	0	0
Truck Route 2				16.9		16.9	0	0
Truck Route 3				17.4		17.4	0	0
Truck Route 4				18.1		18.1	0	0
Truck Route 5				16.7		16.7	0	0
19	1.Fl	26.9	29.1	0.0	0.0			
AHU				21.6		21.6	0	0
HVAC - Sales Office				24.3		27.3	0	0
HVAC - Warehouse Office				9.0		12.0	0	0
Knock Out Door 1				-5.6		1.4	0	0
Knock Out Door 2				-5.0		2.0	0	0
Knock Out Door 3				-4.1		2.9	0	0
Knock Out Door 4				-2.8		4.2	0	0
Loading Dock 1				-6.2		0.8	0	0
Loading Dock 2				-5.8		1.2	0	0
Loading Dock 3				-5.7		1.3	0	0
Loading Dock 4				-5.6		1.4	0	0
Loading Dock 5				-5.4		1.6	0	0
Loading Dock 6				-5.4		1.6	0	0
Loading Dock 7				-5.3		1.7	0	0
Loading Dock 8				-5.2		1.8	0	0
Loading Dock 9				-5.1		1.9	0	0
Loading Dock 10				-4.8		2.2	0	0
Loading Dock 11				-4.7		2.3	0	0
Loading Dock 12				-4.6		2.4	0	0
Loading Dock 13				-4.6		2.4	0	0
Loading Dock 14				-4.4		2.6	0	0
Loading Dock 15				-3.9		3.1	0	0
Loading Dock 16				-3.7		3.3	0	0
Loading Dock 17				-3.5		3.5	0	0
Loading Dock 18				-3.4		3.6	0	0
Loading Dock 19				-3.2		3.8	0	0

Loading Dock 20				-2.7		4.3	0	0
Loading Dock 21				-2.5		4.5	0	0
Loading Dock 22				-2.2		4.8	0	0
Truck Route 1				9.2		9.2	0	0
Truck Route 2				11.2		11.2	0	0
Truck Route 3				11.4		11.4	0	0
Truck Route 4				11.5		11.5	0	0
Truck Route 5				9.9		9.9	0	0
20	1.Fl	26.9	28.4	0.0	0.0			
AHU				24.3		24.3	0	0
HVAC - Sales Office				20.8		23.8	0	0
HVAC - Warehouse Office				10.9		13.9	0	0
Knock Out Door 1				-4.2		2.8	0	0
Knock Out Door 2				-3.4		3.6	0	0
Knock Out Door 3				-2.1		4.9	0	0
Knock Out Door 4				-1.0		6.0	0	0
Loading Dock 1				-4.8		2.2	0	0
Loading Dock 2				-4.4		2.6	0	0
Loading Dock 3				-4.3		2.7	0	0
Loading Dock 4				-4.2		2.8	0	0
Loading Dock 5				-4.0		3.0	0	0
Loading Dock 6				-3.9		3.1	0	0
Loading Dock 7				-3.8		3.2	0	0
Loading Dock 8				-3.7		3.3	0	0
Loading Dock 9				-3.7		3.3	0	0
Loading Dock 10				-3.2		3.8	0	0
Loading Dock 11				-3.1		3.9	0	0
Loading Dock 12				-2.9		4.1	0	0
Loading Dock 13				-2.7		4.3	0	0
Loading Dock 14				-2.5		4.5	0	0
Loading Dock 15				-2.0		5.0	0	0
Loading Dock 16				-1.8		5.2	0	0
Loading Dock 17				-1.6		5.4	0	0
Loading Dock 18				-1.5		5.5	0	0
Loading Dock 19				-1.3		5.7	0	0
Loading Dock 20				-0.9		6.1	0	0
Loading Dock 21				-0.7		6.3	0	0
Loading Dock 22				-0.5		6.5	0	0
Truck Route 1				10.5		10.5	0	0
Truck Route 2				12.5		12.5	0	0
Truck Route 3				12.6		12.6	0	0
Truck Route 4				12.6		12.6	0	0
Truck Route 5				10.9		10.9	0	0
21	1.Fl	28.1	29.1	0.0	0.0			
AHU				26.4		26.4	0	0
HVAC - Sales Office				18.6		21.6	0	0
HVAC - Warehouse Office				12.3		15.3	0	0
Knock Out Door 1				-3.2		3.8	0	0
Knock Out Door 2				-2.0		5.0	0	0
Knock Out Door 3				-0.9		6.1	0	0
Knock Out Door 4				0.0		7.0	0	0
Loading Dock 1				-3.8		3.2	0	0
Loading Dock 2				-3.4		3.6	0	0
Loading Dock 3				-3.3		3.7	0	0
Loading Dock 4				-3.2		3.8	0	0

Loading Dock 5				-2.9		4.1	0	0
Loading Dock 6				-2.8		4.2	0	0
Loading Dock 7				-2.6		4.4	0	0
Loading Dock 8				-2.5		4.5	0	0
Loading Dock 9				-2.3		4.7	0	0
Loading Dock 10				-1.8		5.2	0	0
Loading Dock 11				-1.7		5.3	0	0
Loading Dock 12				-1.5		5.5	0	0
Loading Dock 13				-1.4		5.6	0	0
Loading Dock 14				-1.2		5.8	0	0
Loading Dock 15				-0.7		6.3	0	0
Loading Dock 16				-0.6		6.4	0	0
Loading Dock 17				-0.5		6.5	0	0
Loading Dock 18				-0.4		6.6	0	0
Loading Dock 19				-0.3		6.7	0	0
Loading Dock 20				0.0		7.0	0	0
Loading Dock 21				0.1		7.1	0	0
Loading Dock 22				0.2		7.2	0	0
Truck Route 1				11.5		11.5	0	0
Truck Route 2				13.5		13.5	0	0
Truck Route 3				13.5		13.5	0	0
Truck Route 4				13.5		13.5	0	0
Truck Route 5				11.7		11.7	0	0
22	1.Fl	29.1	29.9	0.0	0.0			
AHU				27.8		27.8	0	0
HVAC - Sales Office				17.2		20.2	0	0
HVAC - Warehouse Office				14.0		17.0	0	0
Knock Out Door 1				-1.6		5.4	0	0
Knock Out Door 2				-0.7		6.3	0	0
Knock Out Door 3				-0.1		6.9	0	0
Knock Out Door 4				0.0		7.0	0	0
Loading Dock 1				-2.5		4.5	0	0
Loading Dock 2				-2.2		4.8	0	0
Loading Dock 3				-2.1		4.9	0	0
Loading Dock 4				-2.0		5.0	0	0
Loading Dock 5				-1.5		5.5	0	0
Loading Dock 6				-1.3		5.7	0	0
Loading Dock 7				-1.2		5.8	0	0
Loading Dock 8				-1.1		5.9	0	0
Loading Dock 9				-0.9		6.1	0	0
Loading Dock 10				-0.6		6.4	0	0
Loading Dock 11				-0.5		6.5	0	0
Loading Dock 12				-0.4		6.6	0	0
Loading Dock 13				-0.3		6.7	0	0
Loading Dock 14				-0.2		6.8	0	0
Loading Dock 15				0.0		7.0	0	0
Loading Dock 16				0.0		7.0	0	0
Loading Dock 17				0.0		7.0	0	0
Loading Dock 18				0.0		7.0	0	0
Loading Dock 19				0.0		7.0	0	0
Loading Dock 20				-0.1		6.9	0	0
Loading Dock 21				-0.1		6.9	0	0
Loading Dock 22				-0.2		6.8	0	0
Truck Route 1				12.4		12.4	0	0
Truck Route 2				14.2		14.2	0	0

Truck Route 3				14.3		14.3	0	0
Truck Route 4				14.2		14.2	0	0
Truck Route 5				12.3		12.3	0	0
23	1.Fl	28.2	29.2	0.0	0.0			
AHU				26.5		26.5	0	0
HVAC - Sales Office				15.7		18.7	0	0
HVAC - Warehouse Office				15.6		18.6	0	0
Knock Out Door 1				-0.2		6.8	0	0
Knock Out Door 2				-0.2		6.8	0	0
Knock Out Door 3				-0.6		6.4	0	0
Knock Out Door 4				-1.4		5.6	0	0
Loading Dock 1				-0.8		6.2	0	0
Loading Dock 2				-0.6		6.4	0	0
Loading Dock 3				-0.5		6.5	0	0
Loading Dock 4				-0.5		6.5	0	0
Loading Dock 5				-0.2		6.8	0	0
Loading Dock 6				-0.2		6.8	0	0
Loading Dock 7				-0.2		6.8	0	0
Loading Dock 8				-0.2		6.8	0	0
Loading Dock 9				-0.1		6.9	0	0
Loading Dock 10				-0.2		6.8	0	0
Loading Dock 11				-0.2		6.8	0	0
Loading Dock 12				-0.3		6.7	0	0
Loading Dock 13				-0.3		6.7	0	0
Loading Dock 14				-0.4		6.6	0	0
Loading Dock 15				-0.7		6.3	0	0
Loading Dock 16				-0.8		6.2	0	0
Loading Dock 17				-0.9		6.1	0	0
Loading Dock 18				-1.0		6.0	0	0
Loading Dock 19				-1.1		5.9	0	0
Loading Dock 20				-1.5		5.5	0	0
Loading Dock 21				-1.6		5.4	0	0
Loading Dock 22				-1.9		5.1	0	0
Truck Route 1				12.7		12.7	0	0
Truck Route 2				14.4		14.4	0	0
Truck Route 3				14.3		14.3	0	0
Truck Route 4				14.2		14.2	0	0
Truck Route 5				12.2		12.2	0	0
24	1.Fl	24.8	26.4	0.0	0.0			
AHU				22.1		22.1	0	0
HVAC - Sales Office				13.3		16.3	0	0
HVAC - Warehouse Office				14.7		17.7	0	0
Knock Out Door 1				0.5		7.5	0	0
Knock Out Door 2				-0.4		6.6	0	0
Knock Out Door 3				-1.6		5.4	0	0
Knock Out Door 4				-2.8		4.2	0	0
Loading Dock 1				0.9		7.9	0	0
Loading Dock 2				0.8		7.8	0	0
Loading Dock 3				0.7		7.7	0	0
Loading Dock 4				0.7		7.7	0	0
Loading Dock 5				0.4		7.4	0	0
Loading Dock 6				0.3		7.3	0	0
Loading Dock 7				0.1		7.1	0	0
Loading Dock 8				0.0		7.0	0	0
Loading Dock 9				-0.1		6.9	0	0

Loading Dock 10				-0.6		6.4	0	0
Loading Dock 11				-0.8		6.2	0	0
Loading Dock 12				-0.9		6.1	0	0
Loading Dock 13				-1.1		5.9	0	0
Loading Dock 14				-1.3		5.7	0	0
Loading Dock 15				-1.8		5.2	0	0
Loading Dock 16				-1.9		5.1	0	0
Loading Dock 17				-2.1		4.9	0	0
Loading Dock 18				-2.3		4.7	0	0
Loading Dock 19				-2.5		4.5	0	0
Loading Dock 20				-3.0		4.0	0	0
Loading Dock 21				-3.2		3.8	0	0
Loading Dock 22				-3.4		3.6	0	0
Truck Route 1				10.9		10.9	0	0
Truck Route 2				12.4		12.4	0	0
Truck Route 3				12.0		12.0	0	0
Truck Route 4				11.6		11.6	0	0
Truck Route 5				9.6		9.6	0	0
25	1.Fl	27.4	29.3	0.0	0.0			
AHU				21.6		21.6	0	0
HVAC - Sales Office				10.4		13.4	0	0
HVAC - Warehouse Office				23.2		26.2	0	0
Knock Out Door 1				0.7		7.7	0	0
Knock Out Door 2				-0.5		6.5	0	0
Knock Out Door 3				-1.8		5.2	0	0
Knock Out Door 4				-2.8		4.2	0	0
Loading Dock 1				2.4		9.4	0	0
Loading Dock 2				2.2		9.2	0	0
Loading Dock 3				1.8		8.8	0	0
Loading Dock 4				1.5		8.5	0	0
Loading Dock 5				0.6		7.6	0	0
Loading Dock 6				0.4		7.4	0	0
Loading Dock 7				0.2		7.2	0	0
Loading Dock 8				0.0		7.0	0	0
Loading Dock 9				-0.1		6.9	0	0
Loading Dock 10				-0.7		6.3	0	0
Loading Dock 11				-0.8		6.2	0	0
Loading Dock 12				-1.0		6.0	0	0
Loading Dock 13				-1.1		5.9	0	0
Loading Dock 14				-1.3		5.7	0	0
Loading Dock 15				-1.9		5.1	0	0
Loading Dock 16				-2.1		4.9	0	0
Loading Dock 17				-2.2		4.8	0	0
Loading Dock 18				-2.3		4.7	0	0
Loading Dock 19				-2.5		4.5	0	0
Loading Dock 20				-2.8		4.2	0	0
Loading Dock 21				-2.9		4.1	0	0
Loading Dock 22				-3.5		3.5	0	0
Truck Route 1				14.7		14.7	0	0
Truck Route 2				15.8		15.8	0	0
Truck Route 3				15.4		15.4	0	0
Truck Route 4				15.1		15.1	0	0
Truck Route 5				13.2		13.2	0	0
26	1.Fl	26.9	28.8	0.0	0.0			
AHU				18.8		18.8	0	0

HVAC - Sales Office	3.4	6.4	0	0
HVAC - Warehouse Office	22.8	25.8	0	0
Knock Out Door 1	0.2	7.2	0	0
Knock Out Door 2	-0.6	6.4	0	0
Knock Out Door 3	-2.1	4.9	0	0
Knock Out Door 4	-2.9	4.1	0	0
Loading Dock 1	1.0	8.0	0	0
Loading Dock 2	1.3	8.3	0	0
Loading Dock 3	1.0	8.0	0	0
Loading Dock 4	0.9	7.9	0	0
Loading Dock 5	0.2	7.2	0	0
Loading Dock 6	0.1	7.1	0	0
Loading Dock 7	-0.1	6.9	0	0
Loading Dock 8	-0.2	6.8	0	0
Loading Dock 9	-0.3	6.7	0	0
Loading Dock 10	-1.0	6.0	0	0
Loading Dock 11	-1.1	5.9	0	0
Loading Dock 12	-1.3	5.7	0	0
Loading Dock 13	-1.4	5.6	0	0
Loading Dock 14	-1.7	5.3	0	0
Loading Dock 15	-2.2	4.8	0	0
Loading Dock 16	-2.3	4.7	0	0
Loading Dock 17	-2.4	4.6	0	0
Loading Dock 18	-2.5	4.5	0	0
Loading Dock 19	-2.6	4.4	0	0
Loading Dock 20	-2.9	4.1	0	0
Loading Dock 21	-3.0	4.0	0	0
Loading Dock 22	-3.6	3.4	0	0
Truck Route 1	15.4	15.4	0	0
Truck Route 2	16.6	16.6	0	0
Truck Route 3	16.5	16.5	0	0
Truck Route 4	16.4	16.4	0	0
Truck Route 5	14.7	14.7	0	0