Noise Assessment

For The

SAN BERNARDINO HOME DEPOT

CITY OF SAN BERNARDINO

Prepared For:

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October 21, 2011

Report #525801-0100NZ

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1.0 EXISTING SETTING

1.1 Project Description

The Home Depot project involves the redevelopment of a previously developed multi-family residential site into a commercial shopping center with a maximum of 204,720 square feet (SF) of general commercial land uses on approximately 17.37 acres in the northeasterly portion of the City of San Bernardino (City). The project site is located south of Highland Avenue, west of Arden Avenue, and north of 20th Street. The project will consist of a 107,979 square-foot home improvement center with an attached 28,111 square-foot garden center; a 43,830 square-foot major retail structure that may include a grocery store; a 8,340 square-foot multi-tenant building for various shops, which may include restaurants, and four (4) general commercial land uses ranging in size from 5,500 square feet to 2,900 square-feet that may include drive-thru restaurants, a gas station or bank. The conceptual site plan is attached (Exhibit 1). The project site has historically been developed with residential apartment buildings, primarily four-plexes, totaling 296 units.

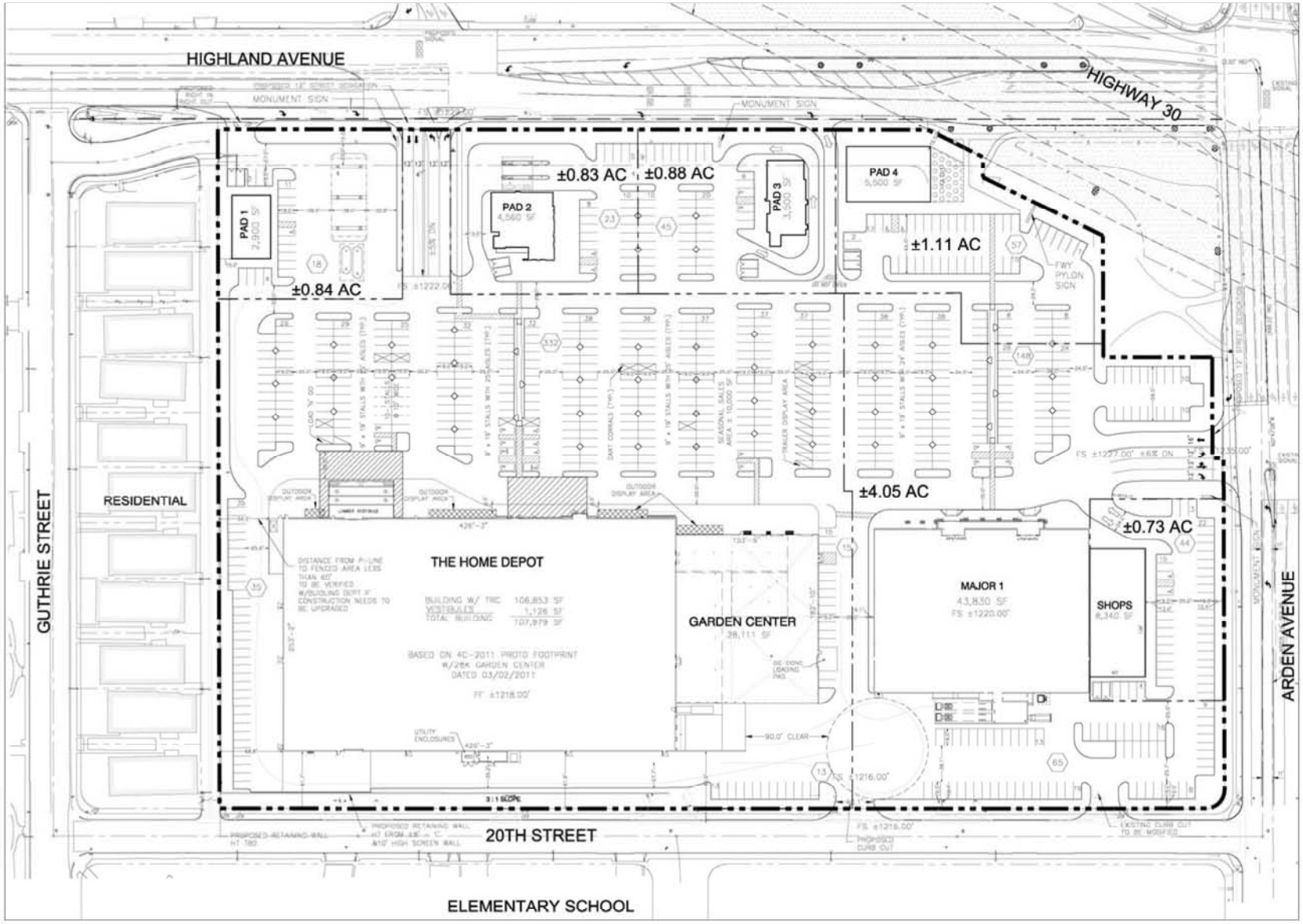
This report assesses the potential noise impacts of the project on the surrounding land uses. Construction noise, parking lot noise, and increases in traffic noise are considered.

1.2 Background Information on Noise

1.2.1 Noise Criteria Background

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; and 20 dB higher four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the "A-weighted decibel," abbreviated dBA. Exhibit 2 provides examples of various noises and their typical A-weighted noise level.



LILBURN CORPORATION

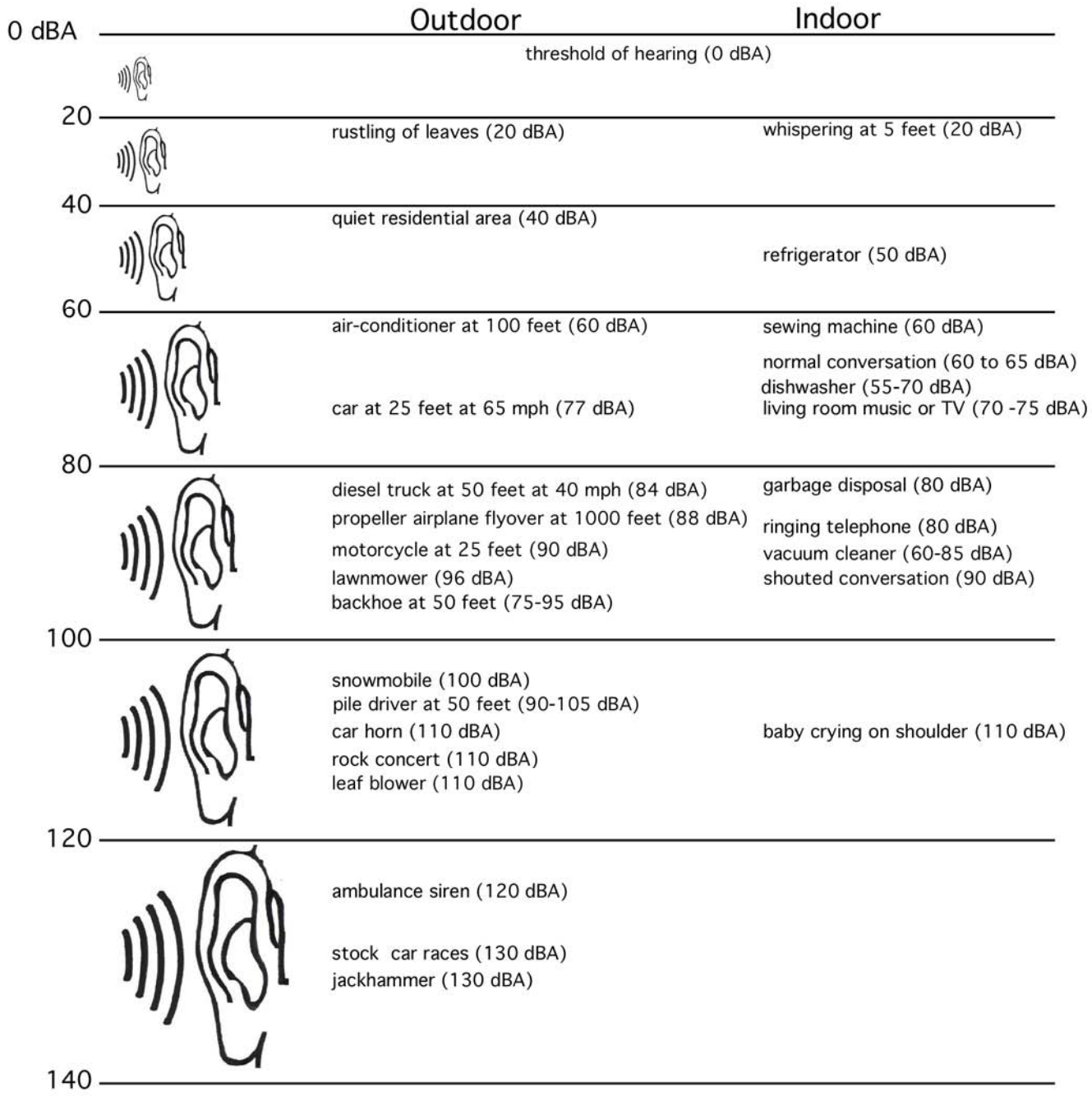
Site Plan

Home Depot at Highland and Arden AvenuesT
GPA 11-03, SUB 11-01, CUP 11-08
San Bernardino, California

Exhibit 1

Conceptual Site Plan

Mestre Greve Associates
Division of Landrum & Brown



Sources: League For The Hard Of Hearing, www.lhh.org
Handbook of Noise Control, McGraw Hill, Edited byCyril Harris, 1979
Measurements by Mestre Greve Associates

Exhibit 2

Typical Noise Levels

Sound levels decrease as a function of distance from the source as a result of wave divergence, atmospheric absorption and ground attenuation. As the sound wave form travels away from the source, the sound energy is dispersed over a greater area, thereby dispersing the sound power of the wave. Atmospheric absorption also influences the levels that are received by the observer. The greater the distance traveled, the greater the influence and the resultant fluctuations. The degree of absorption is a function of the frequency of the sound as well as the humidity and temperature of the air. Turbulence and gradients of wind, temperature and humidity also play a significant role in determining the degree of attenuation. Intervening topography can also have a substantial effect on the effective perceived noise levels.

Noise has been defined as unwanted sound and it is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. This criteria is based on such known impacts of noise on people as hearing loss, speech interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the following narratives:

HEARING LOSS is not a concern in community noise situations of this type. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. Noise levels in neighborhoods, even in very noisy airport environs, are not sufficiently loud to cause hearing loss.

SPEECH INTERFERENCE is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.

SLEEP INTERFERENCE is a major noise concern for traffic noise. Sleep disturbance studies have identified interior noise levels that have the potential to cause sleep disturbance. Note that sleep disturbance does not necessarily mean awakening from sleep, but can refer to altering the pattern and stages of sleep.

PHYSIOLOGICAL RESPONSES are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are sign of harm.

ANNOYANCE is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

1.2.2 Noise Assessment Metrics

The description, analysis and reporting of community noise levels around communities is made difficult by the complexity of human response to noise and the myriad of noise metrics that have

been developed for describing noise impacts. Each of these metrics attempts to quantify noise levels with respect to community response. Most of the metrics use the A-Weighted noise level to quantify noise impacts on humans. A-Weighting is a frequency weighting that accounts for human sensitivity to different frequencies.

Noise metrics can be divided into two categories: single event and cumulative. Single-event metrics describe the noise levels from an individual event such as an aircraft fly over or perhaps a heavy equipment pass-by. Cumulative metrics average the total noise over a specific time period, which is typically 1 or 24-hours for community noise problems. For this type of analysis, cumulative noise metrics will be used.

Several rating scales have been developed for measurement of community noise. These account for: (1) the parameters of noise that have been shown to contribute to the effects of noise on man, (2) the variety of noises found in the environment, (3) the variations in noise levels that occur as a person moves through the environment, and (4) the variations associated with the time of day. They are designed to account for the known health effects of noise on people described previously. Based on these effects, the observation has been made that the potential for a noise to impact people is dependent on the total acoustical energy content of the noise. A number of noise scales have been developed to account for this observation. Two of the predominate noise scales are the: Equivalent Noise Level (LEQ) and the Community Noise Equivalent Level (CNEL). These scales are described in the following paragraphs.

LEQ is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. LEQ is the "energy" average noise level during the time period of the sample. LEQ can be measured for any time period, but is typically measured for 1 hour. This 1-hour noise level can also be referred to as the Hourly Noise Level (HNL). It is the energy sum of all the events and background noise levels that occur during that time period.

CNEL, Community Noise Equivalent Level, is the predominant rating scale now in use in California for land use compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on the A-weighted decibel. Time weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized for occurring at these times. The evening time period (7 p.m. to 10 p.m.) penalizes noises by 5 dBA, while nighttime (10 p.m. to 7 a.m.) noises are penalized by 10 dBA. These time periods and penalties were selected to reflect people's increased sensitivity to noise during these time periods. A CNEL noise level may be reported as a "CNEL of 60 dBA," "60 dBA CNEL," or simply "60 CNEL." Typical noise levels in terms of the CNEL scale for different types of communities are presented in Exhibit 3.

Ldn, the day-night scale is similar to the CNEL scale except that evening noises are not penalized. It is a measure of the overall noise experienced during an entire day. The time-weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized for occurring at these times. In the Ldn scale, those noise levels that occur during the night (10 pm to 7 am) are penalized by 10 dB. This penalty was selected to attempt to account for increased human sensitivity to noise during the quieter period of a day, where home and sleep is the most probable activity.

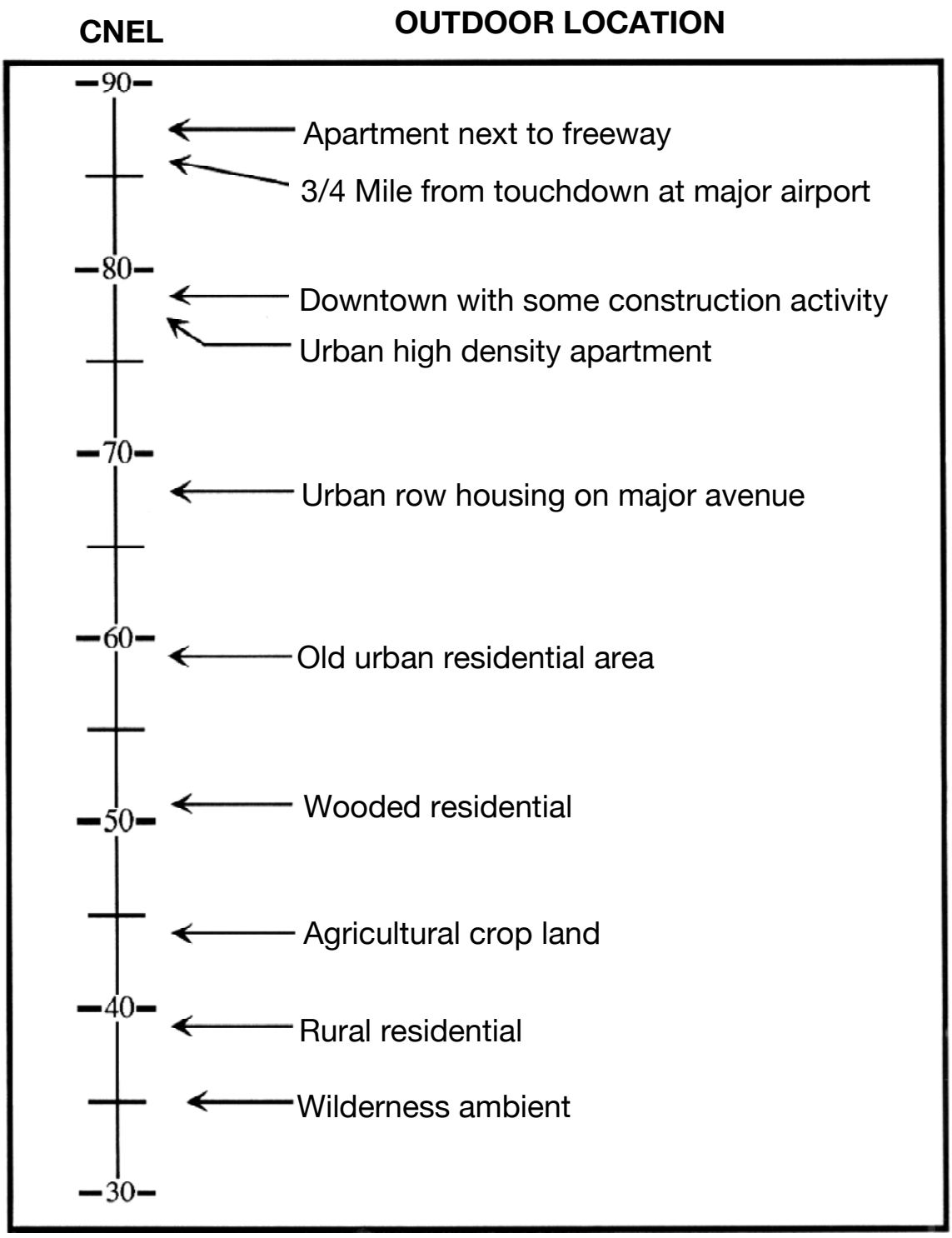


Exhibit 3

Typical CNEL Noise Levels

L(%) is a statistical method of describing noise which accounts for variance in noise levels throughout a given measurement period. L (%) is a way of expressing the noise level exceeded for a percentage of time in a given measurement period. For example since 5 minutes is 25% of 20 minutes, L(25) is the noise level that is equal to or exceeded for five minutes in a twenty-minute measurement period. It is L(%) that is used for most Noise Ordinance standards. For example most daytime County, state and City Noise Ordinances use an ordinance standard of 55 dBA for 30 minutes per hour or an L(50) level of 55 dBA. In other words, the Noise Ordinance states that no noise level should exceed 55 dBA for more that fifty percent of a given period.

1.3 Noise Criteria

The General Plan Noise Element and Noise Ordinance contain the City's policies on noise. The noise ordinance applies to noise on one property impacting a neighboring property. Typically, it sets limits on noise levels that can be experienced at the neighboring property. The Noise Ordinance is part of the City's Municipal Code (Chapter 8.54 Noise Control) and is enforceable throughout the City. The Noise Element of the General Plan presents limits on noise levels from transportation noise sources, vehicles on public roadways, railroads and aircraft. These limits are imposed on new developments. The new developments must incorporate the measures to ensure that the limits are not exceeded. The City Noise Ordinance and Noise Element policies are presented below.

1.3.1 City of San Bernardino Noise Element

The City of San Bernardino General Plan Noise Element has not established any specific noise standards for land uses impacted by transportation noise sources. The project impacts will be contrasted with the State noise guidelines.

The City Noise Element states that an interior noise limit of 45 CNEL for dwelling units are considered acceptable for residential land uses. Residential outdoor uses (i.e., rear yard, patio and balcony) within a 65 CNEL exterior noise environment are required to have acoustical analyses prepared indicating that the proposed buildings are limited to the allowable 45 CNEL indoor noise level, and outside levels need to be mitigated to less than 65 CNEL. Commercial, retail, and industrial land uses are not as sensitive to noise as residential land uses, and no standards have been adopted by the City. Since the City has not specified any noise standards for commercial uses, it is recommended that interior noise limits of 50 CNEL be applied for office or general commercial uses and 55 CNEL for retail and restaurant uses. These limits are used by other jurisdictions. Throughout this report, these interior noise limits will be used in the determination of whether or not an impact occurs.

The Noise Element identifies three policies that are relevant to this project. These are policies 14.1.2, 14.1.3, and 14.1.4. These policies are presented below. Essentially the policies require that access to a commercial site be located as far from residential uses as practical. Additionally, the policies require a soundwall between the commercial use and residential developments. And finally, the policies require that noise levels as generated by the commercial center not exceed 65 Ldn at residential and other noise sensitive land uses. The policy statements follow.

14.1.2 Require that automobile and truck access to commercial properties abutting residential parcels be located at the maximum practical distance from the residential parcel. (LU-1)

14.1.3 Require that all parking for commercial uses abutting residential areas be enclosed within a structure, buffered by walls, and/or limited hours of operation. (LU-1)

14.1.4 Prohibit the development of new or expansion of existing industrial, commercial, or other uses that generate noise impacts on housing, schools, health care facilities or other sensitive uses above a Ldn of 65 dB(A). (LU-1)

1.3.2 City of San Bernardino Noise Ordinance

A noise ordinance is designed to control unnecessary, excessive and annoying sounds from stationary (non-transportation) noise sources. Noise ordinance requirements cannot be applied to mobile noise sources such as heavy trucks when traveling on public roadways. Federal and state laws preempt control of mobile noise sources on public roads. Noise ordinance standards typically apply to a noise source on one parcel of land impacting a nearby parcel of land (usually residential).

Chapter 8.54 – Noise Control of the municipal code is the noise ordinance document for the City. It is what is called a "nuisance ordinance." It does not contain specific noise levels that should not be exceeded, rather it lists activities that cannot occur and provides general statements that any noise, which limits the use on another person's property, is a violation of the ordinance. Two items contained in the ordinance are of relevance to this project.

Chapter 8.54.050(B) limits loading and unloading of vehicles to certain hours, and it would appear that it applies to the loading dock activities associated with the proposed project. The section lists activities that can only occur between 7:00 a.m. and 8:00 p.m. Included in the list is the following.

B. Load or unload any vehicle, or operate or permit the use of dollies, carts, forklifts, or other wheeled equipment that causes any impulsive sound, raucous, or unnecessary noise within one thousand (1,000) feet of a residence.

Chapter 8.54.070 limits construction activity. Construction is limited to the hours of 7:00 a.m. to 8:00 p.m. No restrictions for Sundays or holidays are cited.

1.4 Existing Noise Measurements

The existing noise levels in the vicinity of the proposed Home Depot project are needed to establish the current baseline noise levels. A noise measurement survey of the project site and the surrounding area was conducted. The sites were selected to provide coverage of the project area. The measurement sites are displayed in Exhibit 4.

Four short-term noise measurements were taken. All four of the short-term measurements were taken between 11:15 a.m. and 1:40 p.m. on August 25, 2011. Measurements at all sites were performed using a Brüel & Kjær Model 2236 automated digital noise data acquisition system and sound meter mounted on a tripod. During the measurements a large windscreen covered the microphone to dampen out the effect of unwanted wind-generated noise. For each measurement site, 30 minutes of data were collected. Before and after the measurements were taken, a Brüel & Kjær 4231 calibrator with certification traceable to the National Institute of Standards and Technology was used to calibrate the sound meter to ensure that the measured sound level readings were accurate. At the conclusion of each set of measurements, the Leq, Lmin, Lmax, L1.7, L8.3, L25 and L50 values for the full time period were written down on a data sheet, and then the buffer on the sound meter was reset to prepare it for measurements at the next site. Prevailing weather conditions were noted, along with any other factors that might adversely affect the noise measurements. Table 1 shows the results of the measurements.

Table 1 Existing Noise Measurements (dBA)

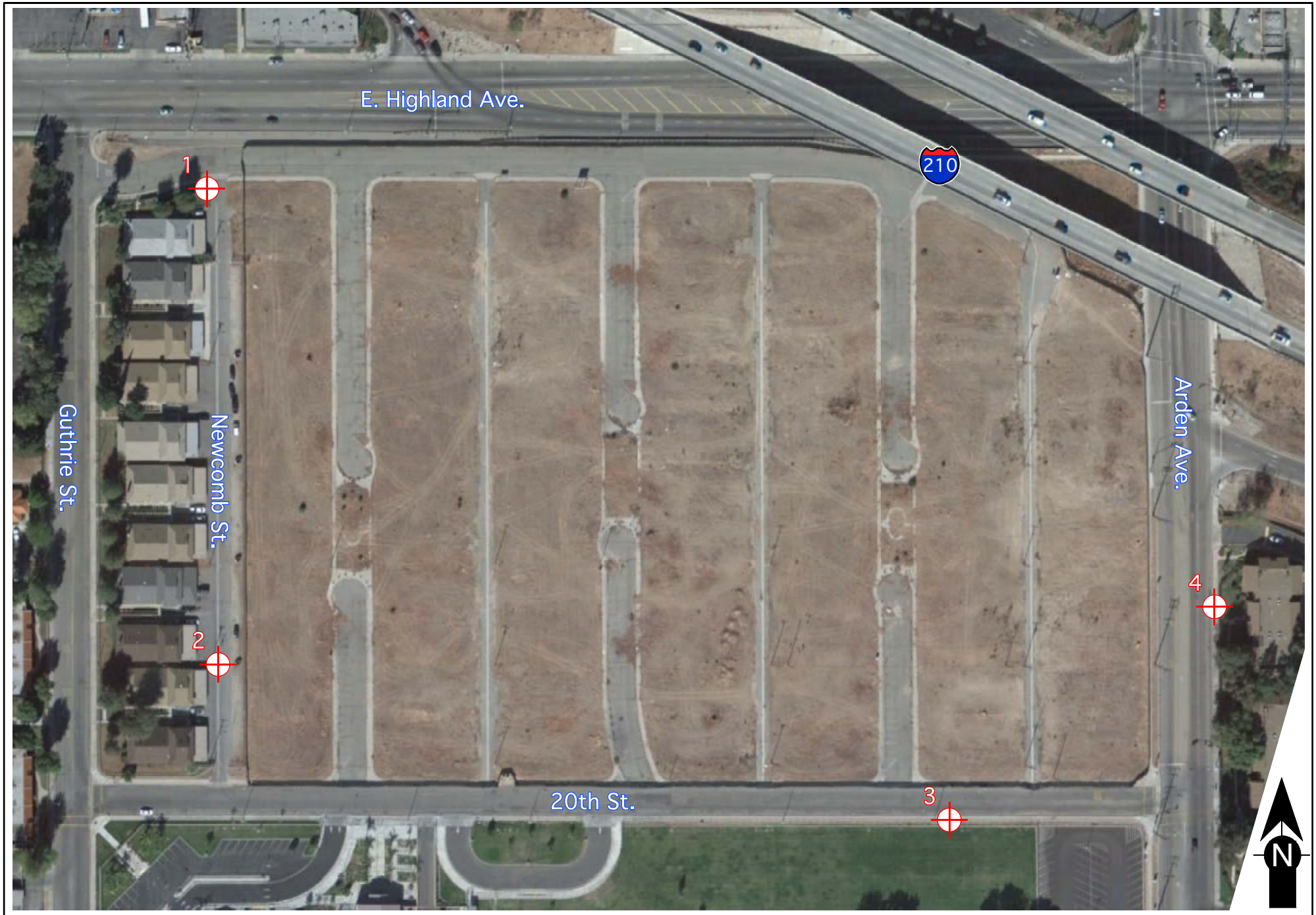
Site	Date	Time	Leq	Lmax	L1.7	L8.3	L25	L50	Lmin
1	8-24-11	11:15 am	63.0	76.4	69.0	66.0	63.5	61.0	50.4
2	8-24-11	11:50 am	52.5	66.3	58.5	55.0	52.5	50.5	46.0
3	8-24-11	12:30 pm	58.7	77.9	68.5	61.5	54.0	51.0	45.4
4	8-24-11	1:10 pm	66.0	78.8	73.0	70.0	66.5	63.0	51.4

Site 1: Northwest Corner of Project Site.

Site 1 is located near the intersection of Highland Avenue and Newcomb Street and at the west edge of the project site. The monitoring location was near the northernmost residence that backs up to Newcomb Street. The primary noise sources were traffic on State Route 210 and traffic on Highland Avenue. The Lmax was 76.4 dBA, which was caused by a truck on Highland Avenue. The Leq at this site measured 63.0 dBA, which is typical of a location near a freeway and a major highway.

Site 2: West Edge of Project Site

Site 2 is located at the west edge of the project site, just north of 20th Street. Noise sources heard at this site were mostly from traffic on State Route 210 and traffic on Highland Avenue, but also include car passes on Newcomb Street, and a distant gardener operating a trimmer. The Lmax was 66.3 dBA. This was due to a car passing near the microphone. The Leq at this site measured 52.5 dBA, which is typical for a residential area somewhat near to a freeway. This site was substantially quieter than Site 1 because it was farther from the freeway. This site was the quietest site measured.



Measurement Sites

Exhibit 4

Ambient Measurement Locations

Mestre Greve Associates
Division of Landrum & Brown

Site 3: South Edge of Site

Site 3 is located near the south edge of the project site on 20th Street and west of Arden Avenue. The microphone was placed on the sidewalk on the south side of 20th Street, just outside the fence at the easterly school property (Emmerton Elementary School). The dominant noise source at the site was traffic on State Route 210. Traffic on Arden Avenue also contributed to the noise levels, as well as cars on 20th Street and children playing at a distant location at the school. The Lmax was 77.9 dBA. This was caused by a bus passing near the microphone on 20th Street. The Leq at this site measured 58.7 dBA.

Site 4: East Edge of Project

Site 4 is located at the center of the east side of the project site and across Arden Avenue, south of State Route 210. Traffic on the 210 Freeway was the dominant noise source. Traffic on Arden Avenue also contributed significantly to the noise levels. The Lmax of 78.8 dBA was due to a truck pass-by on State Route 210. The Leq at this site measured 66.0 dBA, which is typical of a location near a freeway and a major highway. This site was the loudest site measured.

1.5 Existing Roadway Noise Levels

The highway noise levels projected in this report were computed using the Highway Noise Model published by the Federal Highway Administration ("FHWA Highway Traffic Noise Prediction Model," FHWA-RD-77-108, December, 1978). The FHWA Model uses traffic volume, vehicle mix, vehicle speed, and roadway geometry to compute the "equivalent noise level." A computer code has been written which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these noise levels and summing them results in the CNEL for the traffic projections used. CNEL contours are found by iterating over many distances until the distances to the 60, 65, 70, and 75 CNEL contours are found.

Peak hour traffic noise levels were presented in the traffic study for the project ("Draft Home Depot Traffic Impact Analysis," Fehr & Peers, August 12, 2011). The p.m. peak hour traffic levels were assumed to be 10% of the average daily traffic.

Traffic volumes and estimated speeds were used with the FHWA Model to estimate the noise levels in terms of CNEL. The distances to the CNEL contours for the roadways in the vicinity of the project site are given in Table 2. These numbers represent the distance from the centerline of the road to the contour value shown. Note that the values given in Table 2 do not take into account the effect of any noise barriers or topography that may affect ambient noise levels.

Table 2 Existing Roadway Traffic Noise Levels

Roadway Segment		CNEL @ 100' †	Distance To CNEL Contour from Centerline of Roadway (feet) 70 CNEL	65 CNEL	60 CNEL
Highland Avenue	West of Del Rosa Dr.	62.4	31	67	145
	Del Rosa Dr. to Sterling Ave.	62.2	30	65	140
	Sterling Ave. to SR-210 EB Off-Ramp	61.4	26	57	124
	SR-210 EB Off-Ramp to Arden Ave.	64.6	43	93	202
	Arden Ave. to Victoria Ave.	64.6	43	94	203
	Victoria Ave. to Orange Ave.	62.2	30	64	139
	East of Orange Ave.	61.9	28	61	133
Del Rosa Drive	North of Highland	63.5	36	79	170
	South of Highland	62.8	33	71	153
Sterling Avenue	North of Highland	61.3	26	56	121
	South of Highland	61.1	25	54	118
Arden Avenue	North of Date St.	56.2	RW	25	55
	Date St. to Highland	57.5	RW	31	67
	Highland to SR-210 EB Off-Ramp	59.2	RW	40	88
	SR-210 EB Off-Ramp to 20th Street	57.5	RW	31	68
	20 Street to Pacific St.	57.3	RW	30	66
	South of Pacific St.	55.6	RW	23	50
Victoria Avenue	North of Highland	62.2	30	64	139
	South of Highland	59.4	RW	42	91
Orange Avenue	North of Highland	50.9	RW	RW	24
	South of Highland	49.8	RW	RW	20
Date Street	West of Arden Ave.	45.9	RW	RW	RW
	East of Arden Ave.	45.3	RW	RW	RW
Pacific Street	West of Arden Ave.	54.3	RW	RW	41
	East of Arden Ave.	55.2	RW	22	48

† From roadway centerline
RW – Noise contour falls within roadway right-of-way.

Table 2 shows that substantial traffic noise occurs along Highland Avenue, Del Rosa Drive, and Sterling Avenue; traffic noise along these roadways is in excess of 65 CNEL.

2.0 POTENTIAL NOISE IMPACTS

Potential noise impacts are commonly divided into two groups; temporary and long term. Temporary impacts are usually associated with noise generated by construction activities. Long-term impacts are further divided into impacts on surrounding land uses generated by the proposed project and those impacts that occur at the proposed project site.

2.1 Noise Impact Criteria

Off-site impacts from on-site activities, short-term and long-term, are measured against the Noise Ordinance criteria discussed in Section 1.3. Construction activities for the proposed project will be required to meet the noise ordinance standards along with any noise generating activities associated with the operation of the project.

Long-term off-site impacts from traffic noise are measured against two criteria. Both criteria must be met for a significant impact to be identified. First, project traffic must cause a substantial noise level increase (greater than 3 dB) on a roadway segment adjacent to a noise sensitive land use. Second the future noise level that will exist if the project is completed must exceed the criteria level for the noise sensitive land use. In this case, the criteria level is 65 CNEL for residential land uses, schools, and other sensitive land uses. The project will have considerably contributed to this increase if it contributes more than 3 dB to the increase. The project will have a significant impact if it causes a 3 dB increase and the resulting noise level is 65 CNEL or higher for sensitive land uses.

In community noise assessment, changes in noise levels greater than 3 dB are often identified as significant, while changes less than 1 dB will not be discernible to local residents. In the range of 1 to 3 dB, residents who are very sensitive to noise may perceive a slight change. Note that there is no scientific evidence is available to support the use of 3 dB as the significance threshold. In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dB. In a community noise situation, however, noise exposures are over a long time period, and changes in noise levels occur over years, rather than the immediate comparison made in a laboratory situation. Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dB, and 3 dB appears to be appropriate for most people.

2.2 Temporary Impacts

2.2.1 Construction Noise

Construction noise represents a short-term impact on ambient noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers and portable generators can reach high levels.

Worst-case examples of construction noise at 50 feet are presented in Exhibit 5. Typical equipment that might be employed for this type of project includes graders, scrapers, front loaders, trucks, concrete mixers and concrete pumps. The peak noise level for most of the equipment that will be used during the construction is 70 to 95 dBA at a distance of 50 feet.

Noise levels at further distances would be less than this. For example, at 200 feet, the peak construction noise levels range from 58 to 83 dBA.

The noise levels shown in Exhibit 5 are based upon worst-case (i.e. loudest noise) conditions at the construction site, so these noise levels will be used as the basis for predicting the worst-case construction noise estimate.

The nearest sensitive land use is the existing residential land uses immediately west of the project. Potential construction operations could occur as close as 50 feet from the nearest residential buildings with the center of the site being at about 500 feet. Based on a distance of 50 feet, the worst-case unmitigated peak (Lmax) construction noise levels could be 70 to 95 dBA at the nearest homes. However, as the construction is moved towards the center of the project site (i.e., 500 feet from homes), the Lmax noise levels would be about 50 to 75 dBA. The average noise levels (L50) are typically 15 dB lower than the peak noise levels. Average noise levels (L50) at the nearest existing residential buildings could be in the range of 55 to 80 dBA (L50).

Two schools are located to the south of the project site. The Emmerton Elementary School and the Rodriquez Prep Academy are located just south of East 20th Street. Potential construction operations could occur as close as 50 feet from the nearest school property with the center of the site being at about 450 feet. Based on a distance of 50 feet, the worst-case unmitigated peak (Lmax) construction noise levels could be 70 to 95 dBA at the nearest school edge. However, as the construction is moved towards the center of the project site (i.e., 450 feet from schools), the Lmax noise levels would be about 51 to 76 dBA. The average noise levels (L50) are typically 15 dB lower than the peak noise levels. Average noise levels (L50) at the nearest existing residential buildings could be in the range of 55 to 80 dBA (L50).

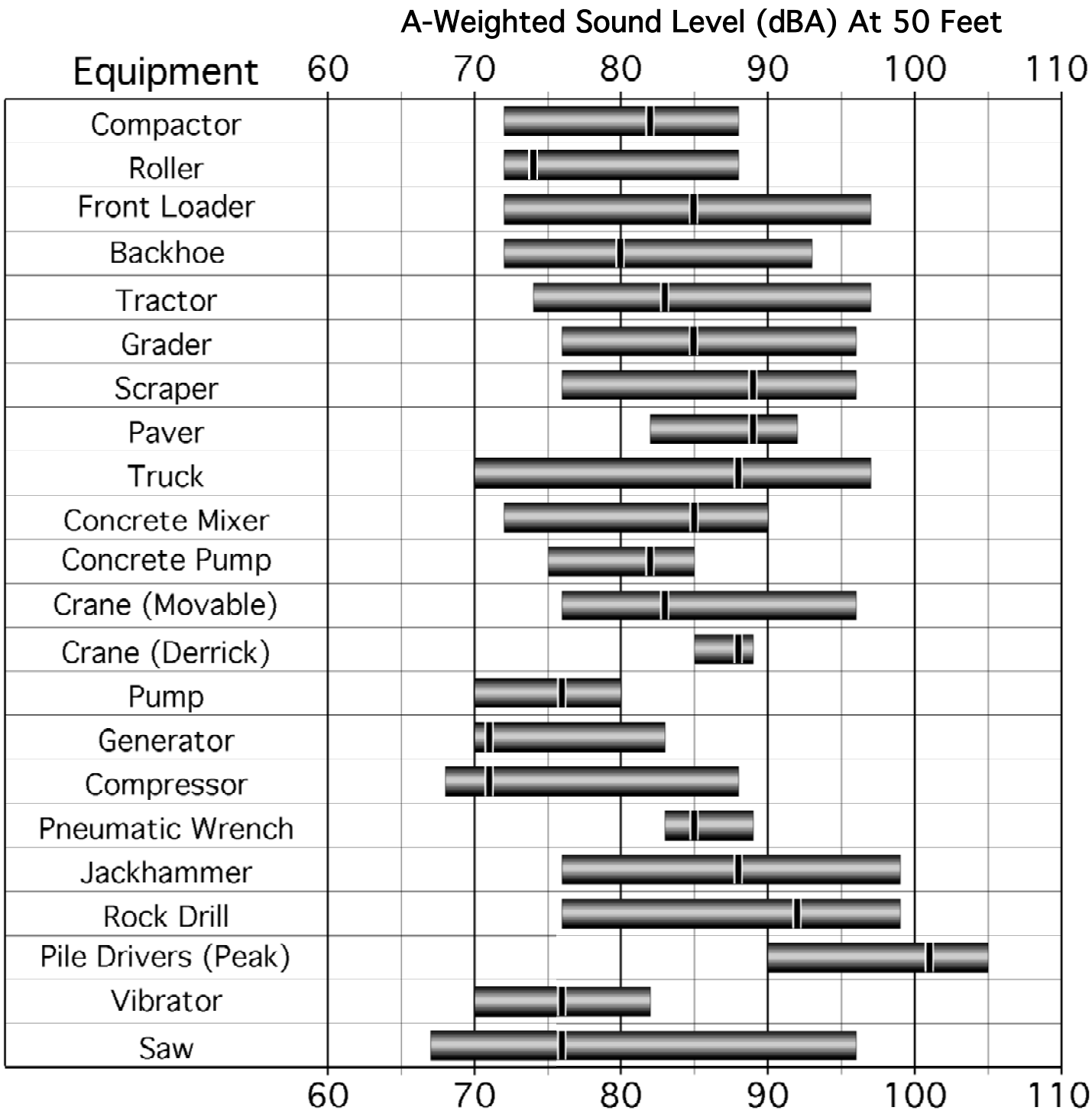
The Noise Ordinance excludes control of construction at all locations throughout the City to between the hours of 7:00 a.m. and 8:00 p.m. all days of the week. As long as the project operates within these hours it will be in compliance with the Noise Ordinance and no noise impacts would be anticipated.

2.3 Long-Term Off-Site Impact

Increased traffic caused by the project will result in increased traffic noise levels along the roadways in the vicinity of the project. This section examines noise impacts from the proposed project on the surrounding land uses. Specifically traffic noise increases due to the project are examined. Traffic data utilized was provided from the traffic study for the project ("Draft Home Depot Traffic Impact Analysis," Fehr & Peers, August 12, 2011).

2.3.1 Traffic Noise

To determine traffic noise impacts as a result of the project, the FHWA (Federal Highway Administration) noise model was used. The FHWA noise model utilizes various traffic-flow parameters (e.g. traffic volume, speed, mix, etc.) to predict noise levels that result from the operation of motor vehicles on the roadways. Traffic volumes for arterials utilized were provided in the traffic study for the project referenced previously.



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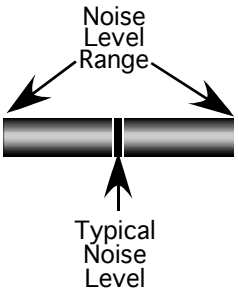

Sources: "Handbook of Noise Control,"
by Cyril Harris, 1979
"Transit Noise and Vibration Impact Assessment"
by Federal Transit Administration, 1995

Exhibit 5

Construction Noise Levels

Table 3 shows traffic noise CNEL level changes on the roadways affected by the project. The first column of Table 3 shows the project's contribution to the increase. That is, the noise increase is due solely to the proposed project. This represents a comparison of the existing condition with the opening year plus project condition. The second column shows the cumulative noise increase which represent the change from the existing condition (no project) to the buildout case (2030) with project.

Table 3 Traffic Noise CNEL Increases (dB)

Roadway Segment		Column 1 Increase Due to Project	Column 2 Cumulative Increase Over Existing Conditions
Highland Avenue	West of Del Rosa Dr.	0.4	2.6
	Del Rosa Dr. to Sterling Ave.	0.6	2.7
	Sterling Ave. to SR-210 EB Off-Ramp	0.8	2.8
	SR-210 EB Off-Ramp to Arden Ave.	0.6	2.7
	Arden Ave. to Victoria Ave.	0.6	2.6
	Victoria Ave. to Orange Ave.	0.6	2.7
	East of Orange Ave.	0.6	2.8
Del Rosa Drive	North of Highland	0.1	2.8
	South of Highland	0.4	2.9
Sterling Avenue	North of Highland	0.3	2.5
	South of Highland	0.4	2.6
Arden Avenue	North of Date St.	0.5	2.6
	Date St. to Highland	0.5	2.6
	Highland to SR-210 EB Off-Ramp	0.9	2.8
	SR-210 EB Off-Ramp to 20th Street	0.6	2.6
	20 Street to Pacific St.	0.6	2.7
	South of Pacific St.	0.3	2.5
Victoria Avenue	North of Highland	0.3	2.5
	South of Highland	0.3	2.5
Orange Avenue	North of Highland	0.3	2.5
	South of Highland	0.3	2.8
Date Street	West of Arden Ave.	0.3	2.4
	East of Arden Ave.	0.2	2.4
Pacific Street	West of Arden Ave.	0.3	2.5
	East of Arden Ave.	0.4	2.5

Column 1 of Table 3 indicates that the project itself will result in a very minor change in noise levels along all roadways in the area. The increases caused by the project range from 0.1 to 0.9 dB, which will not be discernable. Therefore, the traffic generated by the project will not result in a significant impact.

Column 2 of Table 3 indicates that cumulative CNEL traffic noise levels are projected to increase up to 2.9 dB over existing conditions. The project contributes insignificantly to these

levels, and therefore, is not adding to the cumulative impact. The increases in the cumulative noise levels are due to general development in the area, and not the proposed project.

The distances to the CNEL contours with future project traffic for the roadways in the vicinity of the proposed project site is presented in Table 4. The values shown under the 60, 65 and 70 CNEL columns represent the distance from the centerline of the roadway to the respective contour value. The CNEL at 100 feet from the roadway centerline is also presented. The contours do not take into account the effect of any noise barriers or topography that may reduce traffic noise levels. Traffic volumes, speeds and traffic mixes used to calculate the noise levels are presented in the appendix.

Table 4 Future Project Traffic Noise Levels

Roadway Segment		CNEL @ 100' †	Distance To CNEL Contour from Centerline of Roadway (feet) 70 CNEL	65 CNEL	60 CNEL
Highland Avenue	West of Del Rosa Dr.	65.1	46	100	217
	Del Rosa Dr. to Sterling Ave.	64.9	45	97	210
	Sterling Ave. to SR-210 EB Off-Ramp	64.2	41	88	190
	SR-210 EB Off-Ramp to Arden Ave.	67.2	65	141	304
	Arden Ave. to Victoria Ave.	67.2	65	141	304
	Victoria Ave. to Orange Ave.	64.9	45	98	212
	East of Orange Ave.	64.7	44	94	204
Del Rosa Drive	North of Highland	66.3	56	122	263
	South of Highland	65.6	51	110	237
Sterling Avenue	North of Highland	63.8	38	83	179
	South of Highland	63.6	37	81	175
Arden Avenue	North of Date St.	58.8	RW	38	82
	Date St. to Highland	60.0	21	46	100
	Highland to SR-210 EB Off-Ramp	61.9	29	62	134
	SR-210 EB Off-Ramp to 20th Street	60.1	21	47	101
	20 Street to Pacific St.	60.0	21	46	99
	South of Pacific St.	58.0	RW	34	74
Victoria Avenue	North of Highland	64.7	44	95	205
	South of Highland	61.9	28	62	134
Orange Avenue	North of Highland	53.3	RW	RW	35
	South of Highland	52.6	RW	RW	31
Date Street	West of Arden Ave.	48.3	RW	RW	RW
	East of Arden Ave.	47.7	RW	RW	RW
Pacific Street	West of Arden Ave.	56.8	RW	28	61
	East of Arden Ave.	57.8	RW	32	70
SR-210 Freeway Adjacent to the Project		83.1	373	804	1,733

† From roadway centerline
RW – Noise contour falls within roadway right-of-way.

The noise levels along Highland Avenue, Del Rosa Drive, and Sterling Avenue will continue to be high and will increase over existing levels. However, the increase in traffic noise is due to general development in the area, and the project will not contribute significantly to this increase. The noise from the SR-210 Freeway will continue to dominate the noise at the project site.

2.3.2 Parking Lot Noise

The proposed parking area will be a source of noise. Sensitive land uses near the project site include residential uses to the west as near as 50 feet and schools buildings located to the south less than 150 feet from the parking area.

Traffic associated with parking lots is not usually of sufficient volume to exceed community noise standards that are based on a time averaged scale such as the CNEL scale. However, the instantaneous maximum sound levels generated by car door slamming, engine start-up, alarm activation and car passbys can still be annoying to nearby residents. Tire squeal may also be a problem depending on the type of parking surface. Estimates of the maximum noise levels associated with some parking lot activities are presented in Table 5. These levels are based on measurements conducted by Mestre Greve Associates. The noise levels presented are for a distance of 50 feet from the source, and are the maximum noise level generated. A range is given to reflect the variability of noise generated by various automobile types and driving styles. Backup alarms will also be used on forklifts for loading building materials into customer vehicles. Backup alarms are regulated by CAL OSHA. Chapter 4, Division of Industrial Safety, Subchapter 4, Construction Safety Orders, Article 10, Haulage and Earth Moving, Section 1592, Warning Methods, of the California Code of Regulations describe the requirements for back up beepers on construction equipment. The regulation requires that "The warning sound shall be of such magnitude that it will normally be audible from a distance of 200 feet and will sound immediately on backing." Backup alarms are typically rated to generate 87, 97, 102, and 112 dBA at a distance of four feet from the alarm. Due to the low ambient noise level in the area, an 87 or 97 rated alarm would like be used for the forklift operations.

Table 5 Maximum Noise Levels Generated By Parking Lots (dBA at 50 feet)

Event	Lmax
Door Slam	60 to 70
Car Alarm Activation	65 to 70
Engine Start-up	60 to 70
Car pass-by	55 to 70
Back-up beepers	65 to 75

The nearest residences (west of project) to the project are as close as 50 feet from the proposed parking spaces, and may experience a maximum noise level of approximately 70 dBA for car activity and up to 75 dBA for backup beeper. The noise levels at the nearest school buildings would be about 10 dB less. Therefore, peak noise levels at the school would be less than 65 dBA, which put the noise levels down into the typical range of speech and clearly would not be an impact.

The 70 to 75 dBA noise levels at the residences do not exceed any noise ordinance criteria, but may be slightly annoying on occasion at some residences. Noise measurement Site 4 (refer to Exhibit 4) was measured with an Lmax level of 76.4 dBA. This is above the noise level that

would occur from parking lot activities, and the parking lot activities would generate noise levels well below the noise levels currently occurring at Site 1. Site 2 is much further from the freeway and East Highland Avenue and currently experiences lower noise levels. The maximum sound level was measured at 66.3 dBA. A car door slam could result in a maximum noise level at this location of 70 dBA. This would increase the maximum noise levels experienced in this area. However, it would occur so infrequently that the noise level in terms of the CNEL noise scale as used by the City would change much less than 1 dB. Therefore, residents in the area around Site 2 would clearly hear parking lot activity, but will not experience a significant change in the overall noise level based on the CNEL noise scale. A significant noise impact is not expected as a result of the parking lot activities.

The Noise Element of the General Plan provides guidance on walls around commercial uses when they are adjacent to a residential zone. The Noise Element Policy 14.1.3 states "Require that all parking for commercial uses abutting residential areas be enclosed within a structure, buffered by walls, and/or limited hours of operation." An 8-foot retaining/screening wall is shown along the western perimeter of the site plan. This wall would satisfy the intention of the guidance in the Noise Element. The wall would reduce noise levels 5 to 8 dB at the nearby residences.

2.3.3 Truck Delivery Noise

Truck deliveries will travel down the west side of the project within about 50 feet of existing residences. Trucks will also travel along the south edge of the project site approximately 150 feet from the nearest school buildings. Truck deliveries to Home Depot and Major 1 (Super Market) will use this route. Other business in the center will likely not use this route. Home Depot expects a maximum of 4.2 truck deliveries per day and these could occur between 6 a.m. and 7 p.m. Major 1 is project to have a maximum of 2.33 truck deliveries per day, and these could occur between 6 a.m. and 3 a.m. Noise Element Policy 14.1.4 states, "Prohibit the development of new or expansion of existing industrial, commercial, or other uses that generate noise impacts on housing, schools, health care facilities or other sensitive uses above a Ldn of 65 dB(A)." Therefore 65 Ldn is the critical noise level for truck deliveries.

If it was assumed that all truck deliveries (i.e., 6.53 per day) would occur before 7 a.m., which is during the nighttime period, then the Ldn noise levels at the residences would be 50.2 dBA. This is well below the City criteria of 65 Ldn. Using the same assumptions would result in a projected noise level of 43.0 Ldn at the nearest school buildings, which is also well below the City criteria of 65 Ldn.

Chapter 8.54.050(B) of the municipal code limits loading and unloading of vehicles to certain hours. The section limits certain activities to the hours of 7 a.m. to 8 p.m. Included in the list of activities is "Load or unload any vehicle, or operate or permit the use of dollies, carts, forklifts, or other wheeled equipment that causes any impulsive sound, raucous, or unnecessary noise within one thousand (1,000) feet of a residence." Chapter 8.54 Noise Control is primarily a nuisance noise ordinance, not intended to guide land development projects. Section 8.54.060(B) exempts noises that are part of a lawful commercial or industrial business in an area zoned for such activity. Therefore, the loading time limitations would not apply if not needed to mitigate noise to acceptable levels. Since the noise levels will be acceptable without mitigation, the time limitations are not needed.

2.4 Long-Term On-Site Impacts

The purpose of this section is to examine the noise impacts on the proposed project. The primary source of noise impacting the project site would be traffic on the SR-210 Freeway. The local roadways do little to affect the overall noise levels on-site. The distances to the future 60, 65 and 70 CNEL contours for the roadways adjacent to the proposed project site were presented previously in Table 4. The modeled on-site CNEL noise contours are illustrated in Exhibit 6.

The noise levels at the project site are projected to range from slightly above 75 CNEL to less than 65 CNEL (refer to Exhibit 6). The highest noise level is at Pad 4 with a projected noise level of about 76 CNEL. In order for the interior spaces to achieve 55 CNEL for commercial and retail uses, the outdoor-to-indoor noise attenuation provided by the building on Pad 4 needs to be at least 21 dB. Commercial buildings with standard construction usually achieve an outdoor to indoor noise reduction of between 20 to 25 dB. Therefore, the interior space for the building on Pad 4 will have an acceptable indoor noise environment without further building upgrades. In fact, all buildings for the project will achieve acceptable indoor noise levels without additional building upgrades.

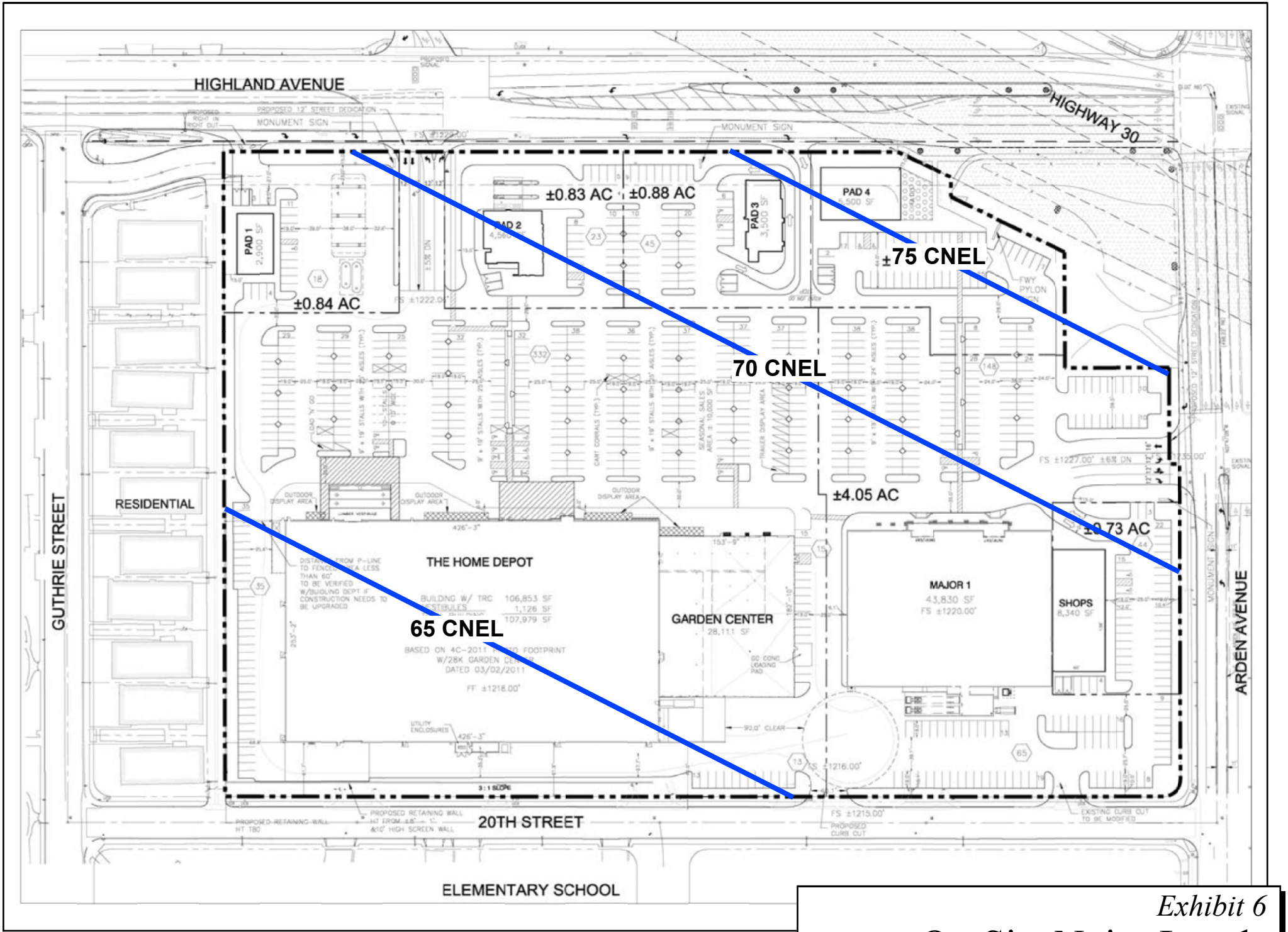

Exhibit 6

On-Site Noise Levels

Mestre Greve Associates
Division of Landrum & Brown

3.0 MITIGATION MEASURES

3.1 Temporary Impacts

3.1.1 Construction Noise

The analysis presented in Section 2.2.1 shows that loud construction activities could generate loud noise levels. The most effective method of controlling construction noise is through limiting construction hours. Therefore, the following mitigation measure is proposed and is consistent with the San Bernardino Noise Ordinance.

> **Mitigation Measure N-1:**
> Control of Construction Hours – All construction activities shall be limited to the allowable hours of 7:00 a.m. and 8:00 p.m. As long as the project operates within these hours, it will be in compliance with the Noise Ordinance.

3.2 Long Term Off-Site Impacts

3.2.1 Traffic Noise

The analysis presented in Section 2.3.1 shows that the project will not result in any significant long-term off-site traffic noise impacts. No mitigation is required.

3.2.2 On-Site Activities

The analysis presented in Sections 2.3.2 and 2.3.3 shows that parking lot and truck deliveries will not generate significant noise impacts at the nearest residences or schools. Therefore, no mitigation measures will be needed for these activities.

4.0 UNAVOIDABLE SIGNIFICANT IMPACTS

The mitigation measures described above will mitigate all significant impacts to a level of insignificance. The project will not result in an unavoidable significant impact.

APPENDIX

San Bernardino Home Depot Traffic Data								
				A	B	C	D	
Link #	**Roadway**	**End 1**	**End 2**	**Existing ADT**	**2013 + Project**		**2030 + Project**	**Speed**
1	Highland Avenue	West of Del Rosa Dr.		14,730	16,080		26,900	40
2		Del Rosa Dr.	Sterling Ave.	13,910	15,950		25,710	40
3		Sterling Ave.	SR-210 EB Off-Ramp	11,615	13,980		22,115	40
4		SR-210 EB Off-Ramp	Arden Ave.	24,145	27,775		44,535	40
5		Arden Ave.	Victoria Ave.	24,305	28,035		44,500	40
6		Victoria Ave.	Orange Ave.	13,880	15,790		25,925	40
7		East of Orange Ave.		12,900	14,760		24,520	40
8	Del Rosa Drive	North of Highland		13,940	14,390		26,630	45
9		South of Highland		11,840	12,860		22,920	45
10	Sterling Avenue	North of Highland		11,290	12,230		20,100	40
11		South of Highland		10,790	11,780		19,430	40
12	Arden Avenue	North of Date St.		4,800	5,420		8,750	35
13		Date St.	Highland	6,495	7,205		11,700	35
14		Highland	SR-210 EB Off-Ramp	9,620	11,805		18,185	35
15		SR-210 EB Off-Ramp	20th Street	6,605	7,510		11,885	35
16		20 Street	Pacific St.	6,270	7,170		11,590	35
17		South of Pacific St.		4,180	4,510		7,410	35
18	Victoria Avenue	North of Highland		13,790	14,930		24,770	40
19		South of Highland		7,330	7,780		13,080	40
20	Orange Avenue	North of Highland		3,070	3,270		5,400	25
21		South of Highland		2,410	2,570		4,550	25
22	Date Street	West of Arden Ave.		970	1,030		1,700	25
23		East of Arden Ave.		850	900		1,490	25
24	Pacific Street	West of Arden Ave.		6,840	7,320		12,070	25
25		East of Arden Ave.		8,420	9,190		15,020	25