Eilar Associates, Inc.
Acoustical and Environmental Consulting Services

Acoustical Analysis Report for Starbucks – Stevens Creek and Harold

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Job # S240604

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Table of Contents

		Page
1.0	**Executive Summary**	1
2.0	**Introduction**	1
2.1	Project Description	
2.2	Project Location	
2.3	Applicable Noise Criteria	
3.0	**Environmental Setting**	2
3.1	Existing Noise Environment	
3.2	Future Noise Environment	
4.0	**Methodology and Equipment**	8
4.1	Methodology	
4.2	Measurement Equipment	
5.0	**Noise Impacts**	9
5.1	Project-Generated Noise Impacts	
5.2	Project-Generated Traffic	
6.0	**Conclusion**	12
7.0	**Certification**	12
8.0	**References**	12

Figures

1.	Vicinity Map	3
2.	Assessor's Parcel Map	4
3.	Satellite Aerial Photograph	5
4.	Project-Generated Noise Contours	10

Appendices

A. Project Plans
B. Applicable Noise Regulations
C. Manufacturer Data Sheets
D. Pertinent Sections of Project Traffic Study
E. CadnaA Analysis Data and Results

1.0 Executive Summary

The proposed project, Starbucks – Stevens Creek and Harold, consists of the demolition of existing on-site structures and the construction of a new standalone Starbucks coffee store with drive-through services. The project site is located at the northeast corner of Stevens Creek Boulevard and Harold Avenue in the City of Santa Clara, California.

The City of Santa Clara City Code requires the assessment of permanent project-generated noise impacts to determine if additional project design features are necessary and feasible to reduce project-related noise impacts to comply with applicable noise limits. Calculations show that, as currently designed with the existing property line walls and fences in place, exterior noise levels from the proposed intercoms, rooftop equipment, and truck deliveries are expected to meet the applicable noise limits defined by the City of Santa Clara at all surrounding receivers. Additionally, project-generated traffic noise is also expected to be less than significant. Therefore, no mitigation is deemed necessary to attenuate project-generated noise impacts at neighboring receivers.

2.0 Introduction

This acoustical analysis report is submitted to satisfy the noise requirements of the City of Santa Clara. Its purpose is to assess noise impacts from potential project-related noise sources, such as drive-through intercoms, drive-through traffic, mechanical equipment, and truck deliveries. This analysis aims to determine if additional project design features are necessary and feasible to reduce these impacts to comply with the applicable noise regulations of the City of Santa Clara City Code.

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting, abbreviated "dBA," to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ} for a specified duration. Unless a different time period is specified, L_{EQ} is implied to mean a period of one hour. On-site noise measurements were performed using "fast" time averaging, as required by the City of Santa Clara City Code. These metrics are used to express noise levels for both measurement and municipal regulations, for land use guidelines, and for enforcement of noise ordinances.

Some of the data may also be presented as octave-band-filtered and/or 1/3-octave-band-filtered data, which are a series of sound spectra centered about each stated frequency, with half of the bandwidth above and half of the bandwidth below each stated frequency. This data is typically used for machinery noise analysis and barrier calculations. Sound pressure is the actual noise experienced by a human or registered by a sound level instrument. When sound pressure is used to describe a noise source, the distance from the noise source must be specified in order to provide complete information. Sound power, on the other hand, is a specialized analytical metric used to provide information without the distance requirement, but it may be used to calculate the sound pressure at any desired distance.

2.1 Project Description

The proposed project, Starbucks – Stevens Creek and Harold, consists of demolition of existing on-site structures and the construction of a new standalone coffee shop (2,300 square-foot gross area) with drive-through services. The hours of operation for the coffee shop are currently proposed to be 4:30 a.m. to 12 a.m., seven days a week. For additional project details, please refer to the project plans provided in Appendix A.

2.2 Project Location

The subject property is located at the northeast corner of Stevens Creek Boulevard and Harold Avenue in the City of Santa Clara, California. The Assessor's Parcel Number (APN) for the project site is 303-21-068. The site is currently occupied by a commercial building, to be demolished. The site is surrounded by commercial use to the north, east, west (across Harold Avenue), and south (across Stevens Creek Boulevard); there are single-family residential uses located to the northeast and northwest (across Harold Avenue). For a graphical representation of the site, please refer to the Vicinity Map, Assessor's Parcel Map, and Satellite Aerial Photograph, provided as Figures 1 through 3, respectively.

2.3 Applicable Noise Regulations

The City of Santa Clara requires that noise levels from project-generated sources, such as drive-through intercom equipment, rooftop HVAC equipment, and truck deliveries must be adequately controlled at surrounding receivers. According to the City of Santa Clara City Code Section 9.10.040, during the most restrictive nighttime hours of 10 p.m. to 7 a.m., noise levels from on-site noise sources should not exceed 50 dBA at single-family residential properties and 60 dBA at commercial properties.

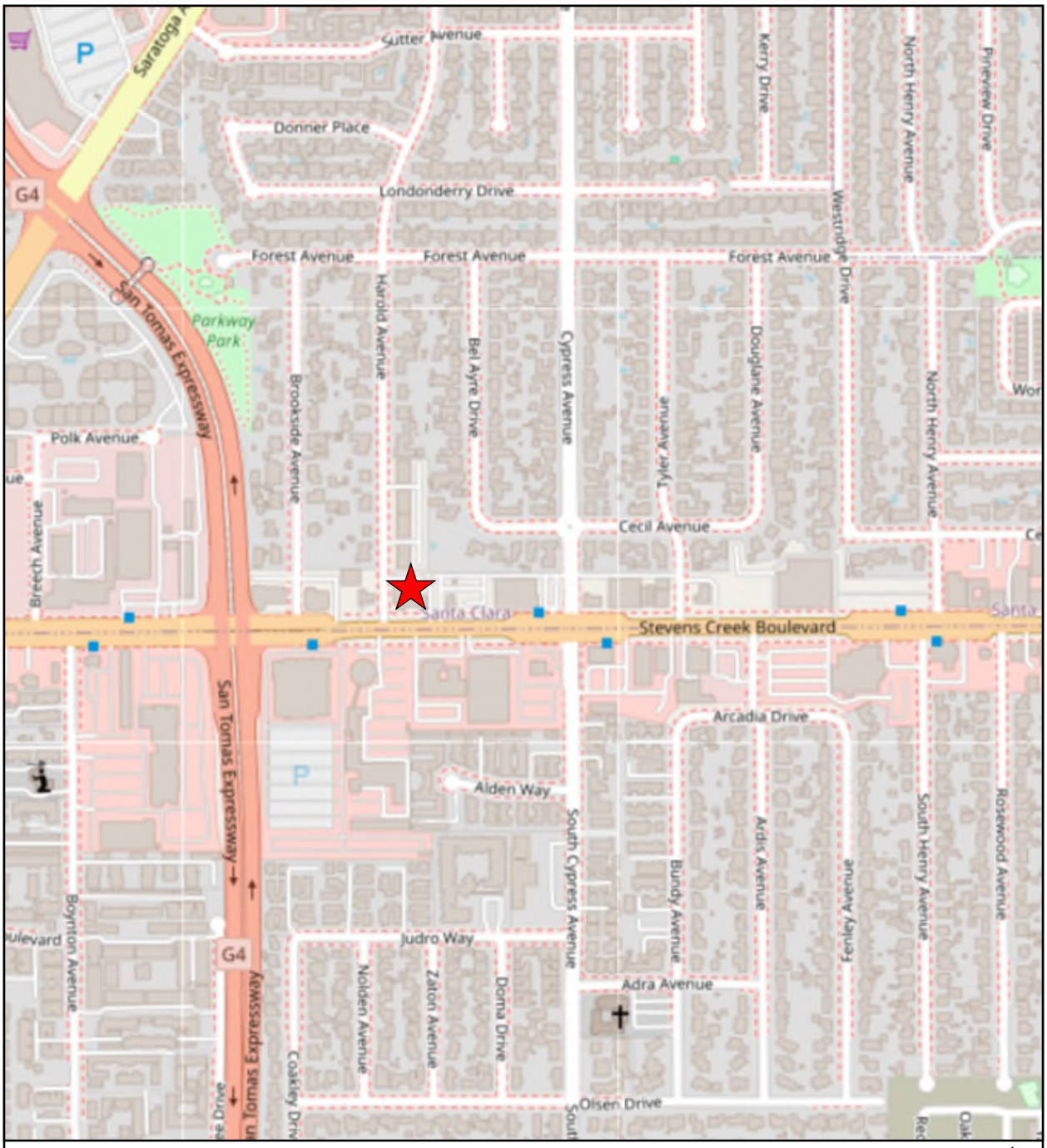
Pertinent sections of the City of Santa Clara City Code are provided as Appendix B.

3.0 Environmental Setting

3.1 Existing Noise Environment

An on-site inspection and long-term noise measurements were made beginning the morning of Monday, July 1, 2024 and running through the afternoon of Tuesday, July 2, 2024. The purpose of these measurements was to obtain information regarding existing ambient noise levels on site. The noise measurement performed is expected to be representative of the typical noise exposure on site (NML 1) and at off-site receivers (NML 2), and encompasses the primary source of noise, which is traffic noise. Two noise level monitors were placed on site. The first sound level meter (NML 1) was placed at approximately 95 feet north of the Stevens Creek Boulevard centerline and approximately 44 feet east of the Harold Avenue centerline; noise levels measured at NML 1 are expected to be representative of ambient noise impacts at proposed building facades. The second sound level meter (NML 2) was placed at approximately 221 feet north of the Stevens Creek Boulevard centerline and approximately 157 feet east of the Harold Avenue centerline; noise levels measured at NML 2 are expected to be representative of ambient noise impacts at the nearest single-family residential receivers to the northeast of the project site.

Each meter was placed at a height of approximately four feet above ground level, where each was placed in a bush for security purposes. Noise data obtained on site is shown in Table 1, and the measurement locations are shown graphically in Figure 3. On-site noise measurements were performed using "fast" time averaging, as required by the City of Santa Clara City Code.

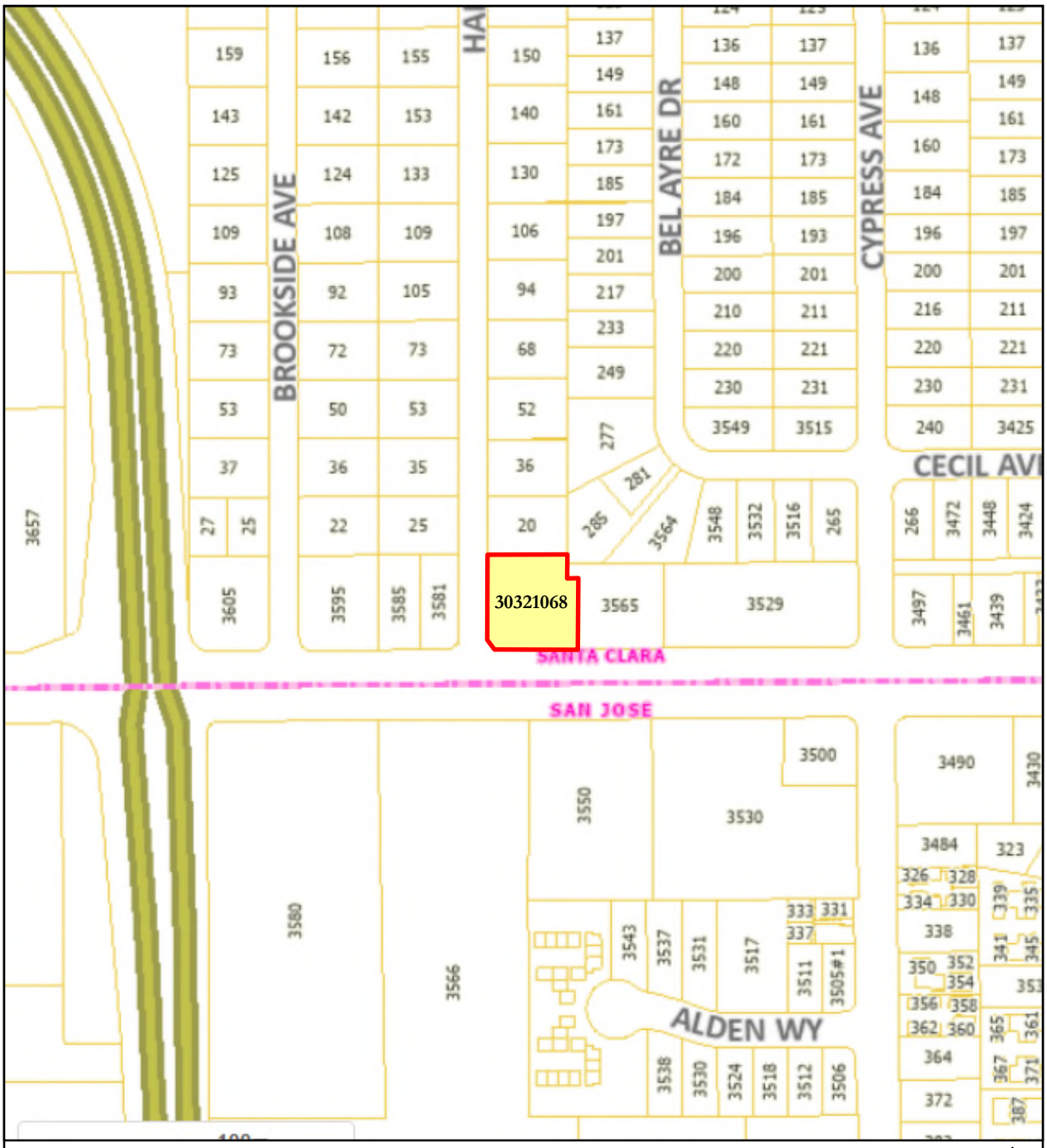


Source: Open Street Map, 2024

Project Location

Figure 1.

Vicinity Map

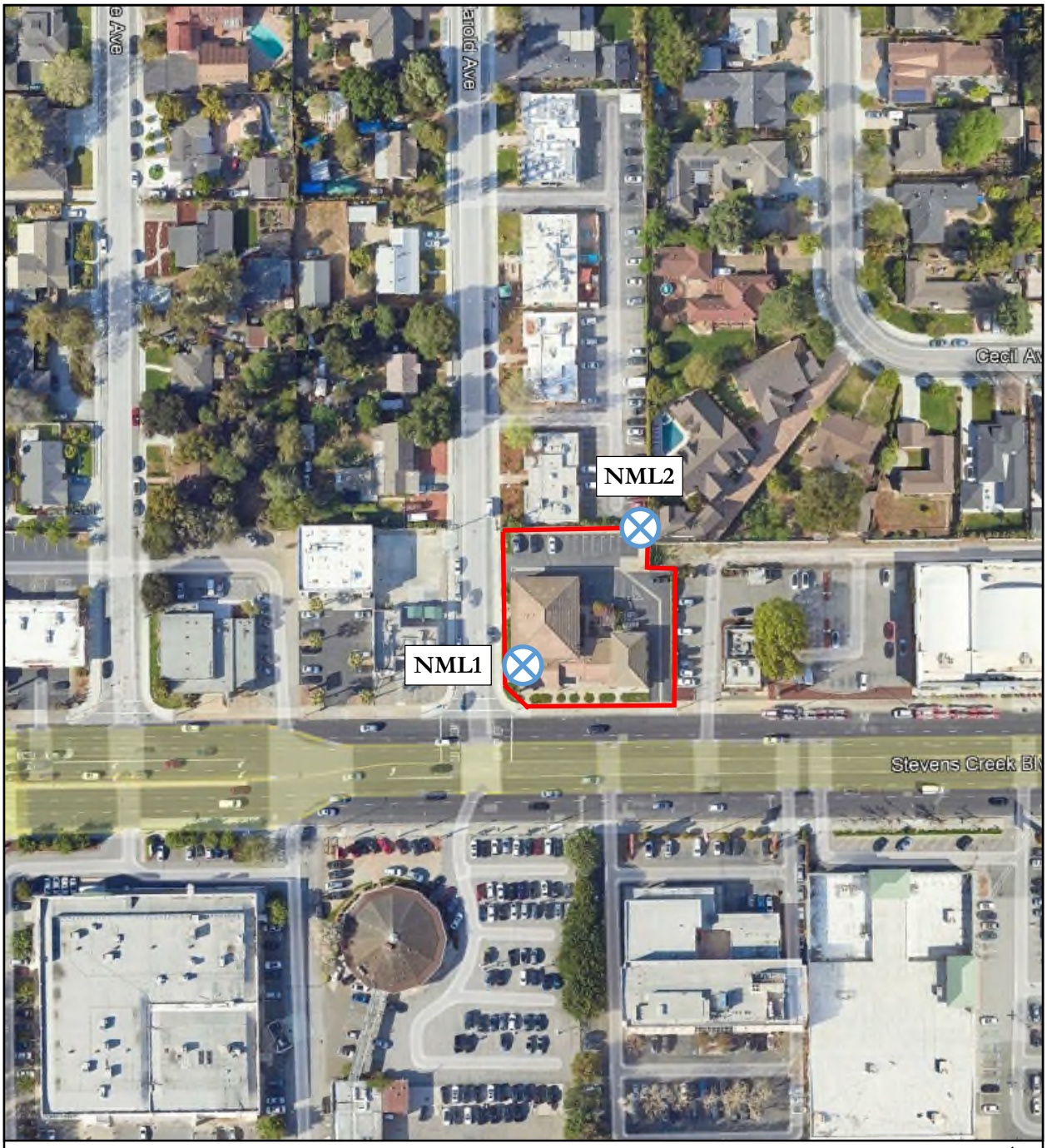


Source: SCCMap, 2024

Project Location

Figure 2.

Assessor's Parcel Map



Source: Google Earth Pro, 2024

N

Noise Measurement Location

Project Location

Figure 3.

Satellite Aerial Photograph

Table 1. Long-Term Measured Noise Levels on Site			
Date	**Time**	**Hourly Average Noise Level (dBA L_{EQ})**	
		NML 1	**NML 2**
July 1, 2024	9 a.m. – 10 a.m.	62.4	52.8
	10 a.m. – 11 a.m.	63.5	53.7
	11 a.m. – 12 p.m.	62.0	53.2
	12 p.m. – 1 p.m.	62.7	51.3
	1 p.m. – 2 p.m.	63.3	52.3
	2 p.m. – 3 p.m.	62.0	53.2
	3 p.m. – 4 p.m.	61.5	54.4
	4 p.m. – 5 p.m.	61.9	52.6
	5 p.m. – 6 p.m.	63.1	53.6
	6 p.m. – 7 p.m.	61.5	51.7
	7 p.m. – 8 p.m.	71.5	55.0
	8 p.m. – 9 p.m.	61.5	50.9
	9 p.m. – 10 p.m.	62.3	51.2
	10 p.m. – 11 p.m.	61.5	52.2
	11 p.m. – 12 a.m.	57.2	46.6
July 2, 2024	12 a.m. – 1 a.m.	55.9	46.4
	1 a.m. – 2 a.m.	51.3	43.1
	2 a.m. – 3 a.m.	53.0	45.5
	3 a.m. – 4 a.m.	50.5	43.6
	4 a.m. – 5 a.m.	53.9	46.0
	5 a.m. – 6 a.m.	58.2	49.9
	6 a.m. – 7 a.m.	61.1	52.6
	7 a.m. – 8 a.m.	65.8	56.7
	8 a.m. – 9 a.m.	64.8	55.3
	9 a.m. – 10 a.m.	64.7	56.9
	10 a.m. – 11 a.m.	63.3	53.6
	11 a.m. – 12 p.m.	63.2	54.2
	12 p.m. – 1 p.m.	63.4	51.8

Measured noise levels at NML 1 were observed to range from a minimum of 50.5 dBA between the hours of 3 a.m. and 4 a.m. on July 2, 2024 to a maximum of 71.5 dBA between 7 p.m. and 8 p.m. on July 1, 2024. Measured noise levels at NML 2 were observed to range from a minimum of 43.1 dBA between the hours of 1 a.m. and 2 a.m. on July 2, 2024 to a maximum of 56.9 dBA between 9 a.m. and 10 a.m. on July 2, 2024.

3.2 Future Noise Environment

3.2.1 Operational Noise Sources

The future noise environment in the vicinity of the project site will be primarily a result of the same ambient noise sources, as well as the noise generated by activity on the project site. The primary sources of noise associated with the project site will be the proposed drive-through intercom equipment, rooftop HVAC equipment, and truck deliveries to the coffee shop.

The proposed drive-through intercom is expected to be manufactured by HME. Two intercoms will be located at the project site. The proposed HME Intercom System is documented to have a maximum noise level of 84 dBA at one foot from the speaker post. The system will also be equipped with an automatic volume control (AVC) system that will automatically reduce the sound level produced by the intercom as the ambient noise level decreases. It is likely that the actual sound level produced by the intercom system during hours with lower levels of business will be less than the projected 84 dBA, as the ambient noise level may be lower during these hours due to lower traffic volumes; however, the higher noise level was modeled for a worst-case analysis. For further details on the HME intercom system, please refer to Appendix C: Manufacturer Data Sheets.

Though detailed mechanical plans are not currently available, the proposed project building is expected to be served by a rooftop packaged HVAC unit. A typical unit expected to be used at the site is the 5-ton 50HCQA06 unit, manufactured by Carrier. Manufacturer sound power levels for the units are shown in Table 2. Additional information is provided in Appendix C.

Table 2. Sound Power Level of Carrier 50HCQ Rooftop HVAC Unit

Source	Sound Power Level at Octave Band Frequency (dB)								Total (dBA)
	63	125	250	500	1K	2K	4K	8K	
Carrier 50HCQA06	88	83	76	74	71	67	64	60	77

Additionally, truck deliveries to the coffee shop were evaluated for a worst-case analysis of noise impacts to surrounding noise-sensitive properties. In order to approximate noise from this source, noise levels measured for a previous study conducted by Eilar Associates were implemented into calculations. The previous noise measurement was performed at an operational Henry's grocery store. The noise measurement was performed at a distance of 15 feet from an operational refrigerated truck (with both the engine and refrigeration unit running) and was one minute in duration. In order to determine worst-case noise levels at surrounding property lines, the L_{MAX} of this noise measurement was used in calculations (rather than the average noise level, or L_{EQ}) in order to evaluate operational noise levels of the refrigerated truck maneuvering in the parking lot with its refrigeration unit running. According to the project proponent, truck deliveries to the site are expected to occur two to three times a week; therefore, it was assumed that a maximum of one delivery per hour would be required for the project site. Based on the site layout, it is anticipated that delivery trucks will enter the project site from the driveway on Stevens Creek Boulevard, park near the restaurant building, then proceed to exit from the driveway to Harold Avenue. Noise measurement data is shown in Table 3.

Table 3. Sound Pressure Levels of Operational Refrigerated Truck at 15 feet									
Source	Sound Pressure at Octave Band Frequency (dBA)								Total (dBA L_{MAX})
	63	125	250	500	1K	2K	4K	8K	
Refrigerated Truck	91	85	80	81	80	77	72	66	84

Operational mechanical noise levels were calculated for the project site using the above information. Results of this analysis are provided in Section 5.0.

3.2.2 Project-Generated Traffic

Project-generated traffic volumes were provided in the traffic study for this project prepared by TJKM. The project traffic study gives information regarding the existing and project-generated peak-hour trips at surrounding intersections. The project-generated traffic impacts were evaluated for the intersection of Harold Avenue and Stevens Creek Boulevard and for the intersection of Harold Avenue and the project driveway. According to the project traffic study, the existing peak hour trips at the intersection of Harold Avenue and Stevens Creek Boulevard are 1,990 trips during the a.m. peak hour and 2,454 trips during the p.m. peak hour; the existing peak hour trips at the intersection of Harold Avenue and the project driveway are 1,990 trips during the a.m. peak hour and 2,454 trips during the p.m. peak hour. According to the project traffic study, the project-generated peak hour trips at the intersection of Harold Avenue and Stevens Creek Boulevard are expected to be 77 trips during the a.m. peak hour and 31 trips during the p.m. peak hour; the project-generated peak hour trips at the intersection of Harold Avenue and the project driveway are expected to be 87 trips during the a.m. peak hour and 35 trips during the p.m. peak hour.

This traffic information was incorporated into the analysis to determine worst-case noise exposure at surrounding receivers. Please refer to Section 5.2 for the results of this analysis. Pertinent sections of the project traffic study are provided as Appendix D.

4.0 Methodology and Equipment

4.1 Methodology

4.1.1 CadnaA Noise Modeling Software

Modeling of the outdoor noise environment is accomplished using CadnaA Version 2023 MR 2, which is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. CadnaA (Computer Aided Noise Abatement) assists in the calculation, presentation, assessment, and alleviation of noise exposure. It allows for the input of project information such as noise source data, barriers, structures, and topography to create a detailed model and uses the most up-to-date calculation standards to predict outdoor noise impacts. Noise standards used by CadnaA that are particularly relevant to this analysis include ISO 9613-2 (Attenuation of sound during propagation outdoors). CadnaA provides results that are in line with basic acoustical calculations for distance attenuation and barrier insertion loss.

4.1.2 Formulas and Calculations

Changes in traffic noise levels can be predicted by inputting the ratio of the two scenarios into the following logarithmic equation:

$$\Delta = 10\log\left(V_2/V_1\right)$$

where: Δ= Change in sound energy,
V_1 = original or existing traffic volume, and
V_2 = future or cumulative traffic volume.

4.2 Measurement Equipment

The following equipment was used at the site to measure existing noise levels:

- Soft dB Model Piccolo II Type 2 Sound Level Meter, Serial # P0220043006 & P0222040701
- Larson Davis Model CAL200 Type 1 Calibrator, Serial # 16455

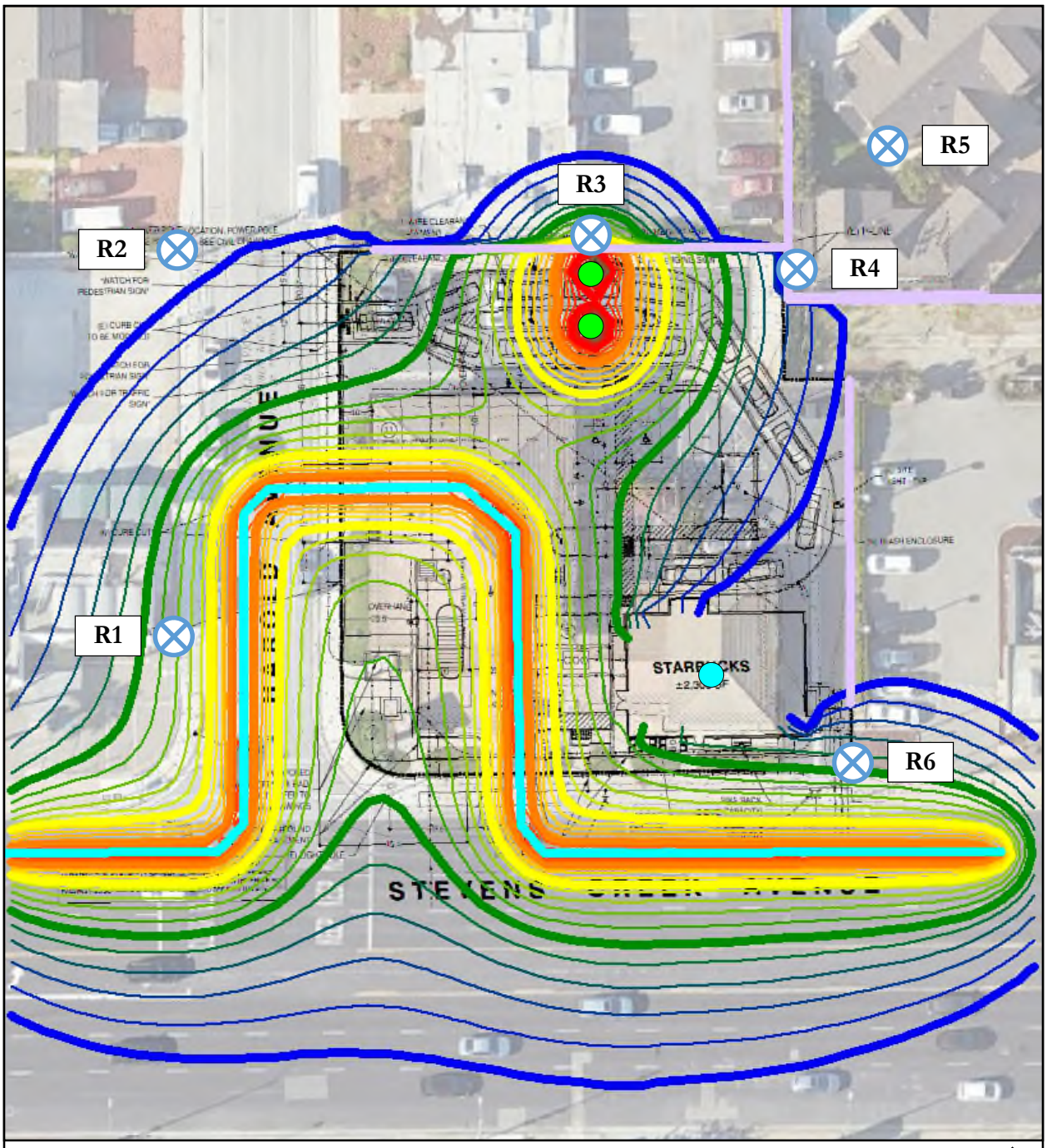
The sound level meter was field-calibrated immediately prior to the noise measurement and checked afterward to ensure accuracy. All sound level measurements presented in this report, in accordance with the regulations, were conducted using a sound level meter that conforms to the American National Standards Institute specifications for sound level meters (ANSI S1.4). All instruments are maintained with National Institute of Standards and Technology (NIST) traceable calibration, per the manufacturers' standards.

5.0 Noise Impacts

5.1 Project-Generated Noise Impacts

Noise levels of the proposed drive-through intercoms, rooftop HVAC equipment, and truck deliveries were calculated using CadnaA at the nearest occupied receivers to the north, east, and west of the project site. All other noise-sensitive receivers are located at a further distance from the noise sources, and therefore are expected to have lower noise levels, due to distance attenuation and shielding from intervening structures. As per industry standard, the receivers were calculated at a height of five feet above project grade to represent the height of an average individual's ears above ground level; additionally, a second-floor receiver (R5) was calculated at a height of 15 feet above grade at the building facade of the nearest two-story residential building.

This calculation also makes conservative assumptions in that it was assumed that the intercom equipment would be in constant operation, with no breaks between orders, while in actuality, it will only operate for a fraction of an hour, thereby resulting in lower average hourly noise impacts than what have been calculated. Additionally, rooftop HVAC equipment was modeled as running constantly, though it is expected to cycle on and off throughout the day. This analysis considers noise shielding provided by the on-site building and the existing walls and fences along the north, east, and northeastern boundaries of the project site. Results of the analysis are shown in Table 4. Noise contours showing equipment noise levels and receiver locations are shown in Figure 4. Additional information can be found in Appendix E: CadnaA Analysis Data and Results.



Source: GreenbergFarrow, Google Earth Pro, 2024

Receiver Location
Drive-Through Intercom
HVAC Equipment
Delivery Truck Route
Existing Wall/Fence

≥ 50 dB
≥ 55 dB
≥ 60 dB
≥ 65 dB
≥ 70 dB

N

Figure 4.

Project-Generated Noise Contours

Table 4. Project-Generated Noise Levels at Surrounding Property Lines			
Receiver	**Location**	**Noise Limit (dBA)**	**Hourly Average Noise Level (dBA)**
R1	West – Commercial (Ground Floor)	60	56.8
R2	Northwest – Single-Family Residential (Ground Floor)	50	49.1
R3	North – Commercial (Ground Floor)	60	59.7
R4	Northeast – Single Family Residential (Ground Floor)	50	43.2
R5	Northeast – Single Family Residential (Second Floor)	50	46.8
R6	East – Commercial (Ground Floor)	60	54.7

As shown above, as currently designed, noise levels from on-site activity are expected to be in compliance with City of Santa Clara noise limits at all surrounding property lines. All other receivers are located at a greater distance from on-site noise sources and would therefore be expected to have lower noise levels due to shielding from intervening structures and distance attenuation. Additionally, the results of this analysis are expected to be conservative, as equipment was evaluated as being in operation constantly, though equipment is expected to cycle on and off during actual on-site conditions. For these reasons, no project design features are deemed necessary to control project-generated noise impacts from on-site equipment or project activity.

5.2 Project-Generated Traffic Noise

As detailed in Section 3.2.2, project-generated traffic impacts were evaluated to determine whether noise impacts from the project site would be significant. Calculations were performed using the formula shown in Section 4.1.2 to determine the approximate change in noise levels as a result of project-generated traffic. A significant direct impact occurs when project traffic combines with existing traffic and causes a doubling of sound energy, which is an increase of 3 dB. Project-generated traffic noise increases are shown in Table 5.

Table 5. Anticipated Traffic Noise Level Increase due to Project-Generated Traffic					
Intersection	**Peak Hour**	**Peak Hour Traffic Volume (Trips)**			**Increase in Traffic Noise Level (dB)**
		Existing	**Project**	**Total**	
Harold Avenue and Stevens Creek Boulevard	a.m.	1,990	77	2,067	0.2
	p.m.	2,454	31	2,485	0.1
Harold Avenue and Project Driveway	a.m.	139	87	226	2.1
	p.m.	166	35	201	0.8

As shown in Table 5, the noise level increase from project-generated traffic is expected to be less than 3 dB. For this reason, project-generated traffic noise levels are expected to be less than significant.

6.0 Conclusion

The City of Santa Clara City Code requires the assessment of permanent project-generated noise impacts to determine if additional project design features are necessary and feasible to reduce project-related noise impacts to comply with applicable noise limits. Calculations show that, as currently designed with the existing property line walls and fences in place, exterior noise levels from the proposed intercoms, rooftop equipment, and truck deliveries are expected to meet the applicable noise limits defined by the City of Santa Clara at all surrounding receivers. Additionally, project-generated traffic noise is also expected to be less than significant. Therefore, no mitigation is deemed necessary to attenuate project-generated noise impacts at neighboring receivers.

7.0 Certification

All recommendations for noise control are based on the best information available at the time our consulting services are provided. However, as there are many factors involved in sound transmission, and Eilar Associates has no control over the construction, workmanship, or materials, Eilar Associates is specifically not liable for final results of any recommendations or implementation of the recommendations.

This report is based on the related project information received and measured noise levels and represents a true and factual analysis of the acoustical impact issues associated with the Starbucks – Stevens Creek and Harold project, located in the City of Santa Clara, California. This report was prepared by Mo Ouwenga and Amy Hool.

Mo Ouwenga, INCE
Senior Acoustical Consultant

Amy Hool, INCE
President/CEO

8.0 References

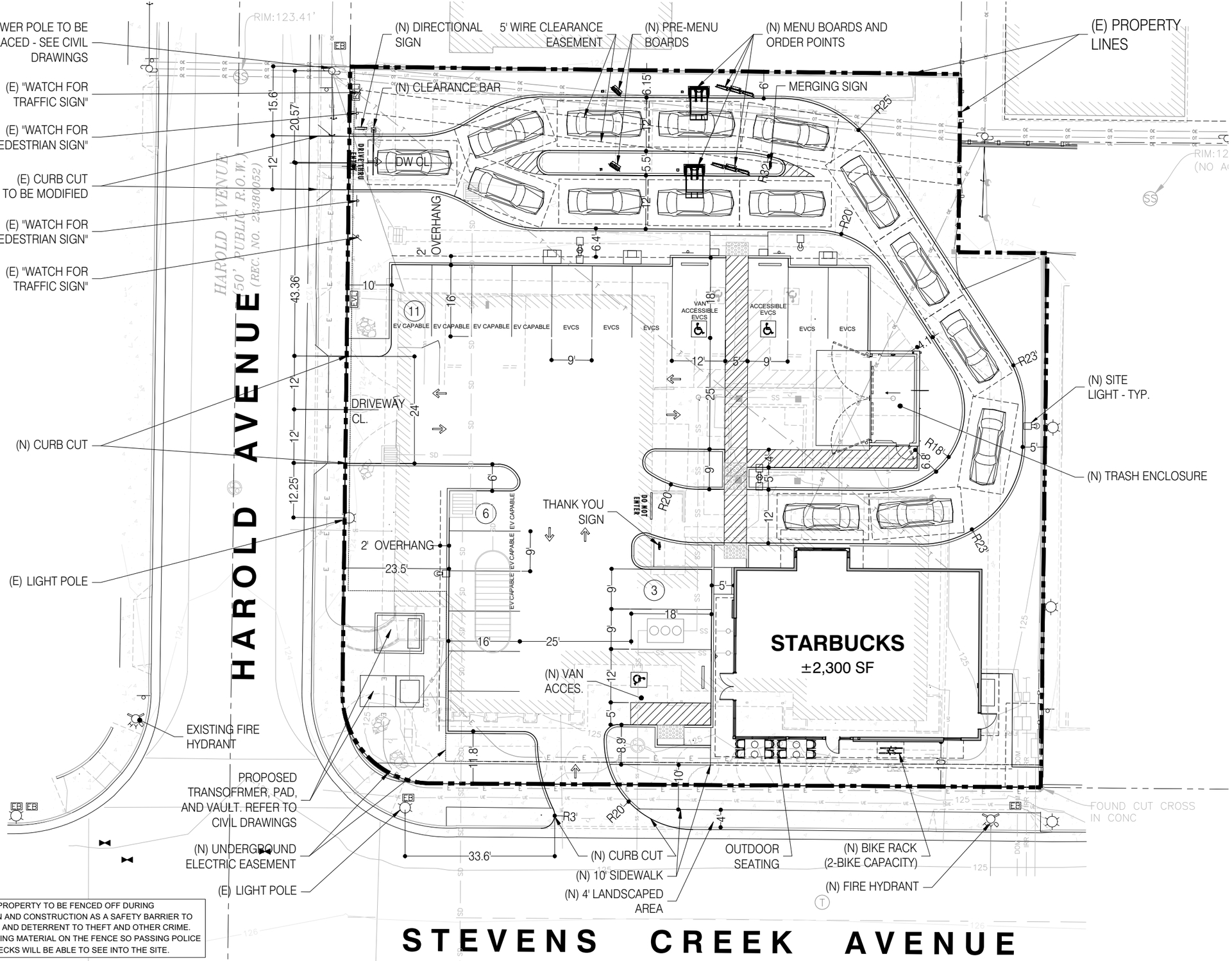
City of Santa Clara City Code, Chater 9.10: Regulation of Noise and Vibration.

TJKM, Starbucks Stevens Creek – Traffic Study, 12 July 2024.

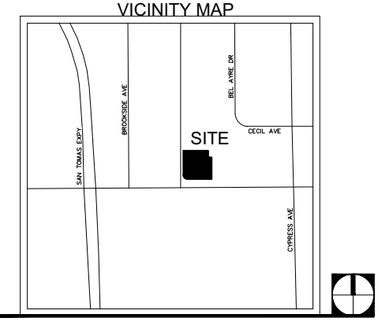
DataKustik, CadnaA (Computer Aided Noise Abatement), Version 2023 MR 2.

Eilar Associates, Inc.
Acoustical and Environmental Consulting Services

Appendix A
Project Plans



NOTE: THE PROPERTY TO BE FENCED OFF DURING DEMOLITION AND CONSTRUCTION AS A SAFETY BARRIER TO THE PUBLIC AND DETERRENT TO THEFT AND OTHER CRIME. NO SCREENING MATERIAL ON THE FENCE SO PASSING POLICE PATROL CHECKS WILL BE ABLE TO SEE INTO THE SITE.



LOCATION MAP N.T.S.

PROJECT INFORMATION

ASSESSOR'S PARCEL NUMBER (APN)	303-21-068

ZONING CLASSIFICATION

JURISDICTION	CITY OF SANTA CLARA, CA
EXISTING ZONE	THOROUGHFARE COMMERCIAL
REQUIRED ZONE	THOROUGHFARE COMMERCIAL

PROJECT DATA MATRIX

LOT SQUARE FOOTAGE:	±0.558 AC (±24,295 SF)
PROPOSED SITE COVERAGE:	8.6%
EXISTING USE:	2-STORY OF RETAIL/PERSONAL SERVICE
EXISTING SQUARE FOOTAGE:	±7,266 SF
PROPOSED USE:	RESTAURANT
PROPOSED SQUARE FOOTAGE:	±2,200 S.F.
REQUIRED AND PROPOSED PARKING SUMMARY"	SEE- PARKING SUMMARY BELOW

PARKING SUMMARY

USER	SPACES PROVIDED
- PROPOSED	
STRABUCKS	
STANDARD	17
ACCESSIBLE	1VAN +1 VAN EVCS +1 STANDARD EVCS
TOTAL PARKING	20

-PER SANTA CLARA CITY CODE AMENDED SECTION 5.106.5.3.1 (EV CAPABLE SPACES) = 35 PERCENT OF PARKING SPACES = 7 SPACES
-PER SANTA CLARA CITY CODE AMENDED SECTION 5.106.5.3.2 (EVCS ELECTRICAL VEHICEL CHARGING STATIONS) = 35 PERCENT OF PARKING SPACES = 7 SPACES - 1 VAN ACCESSIBLE AND 1 STANDARD ACCESSIBLE CHARGING STATION IS REQUIRED PER CBC TABLE 11B-228.3.2.1

TOTAL STACKING PROVIDED: 15 VEHICLES

SHORT TERM BICYCLE PARKING:
ONE TWO-BIKE CAPACITY RACK IS REQUIRED PER CGC 5.106.4.1.1
ONE TWO-BIKE CAPACITY RACK IS PROVIDED

PROJECT NOTES

1. THIS CONCEPTUAL SITE PLAN IS FOR PLANING SUBMITTAL PURPOSES ONLY.
2. THIS SITE PLAN IS BASED ON ALTA SURVEY BY CLARK LAND SURVEYING, INC. DATED 04/25/2022

DRAWING ISSUE/REVISION RECORD

	NARRATIVE	INITIALS
DATE 2022	PREP SP-7	BP
03.22.2023	PREP SP-P	BP
04.19.2023	PREP SP-10	BP
04.24.2023	PREP SP-11	BP
05.15.2023	PREP SP-11.a	BP
07.03.2023	PREP SP-12	BP
09.29.2023	PREP SP-13	BP
01.18.2024	PREP SP-14	BP
01.25.2024	PREP SP-15	BP
04.02.2024	PREP SP-16	BP
07.16.2024	PREP SP-17	CD

GREENBERG FARROW CONTACTS

PROJECT MANAGER	I. IBRAHIMBEGOVIC
SITE DEV. COORDINATOR	FRANK CODA

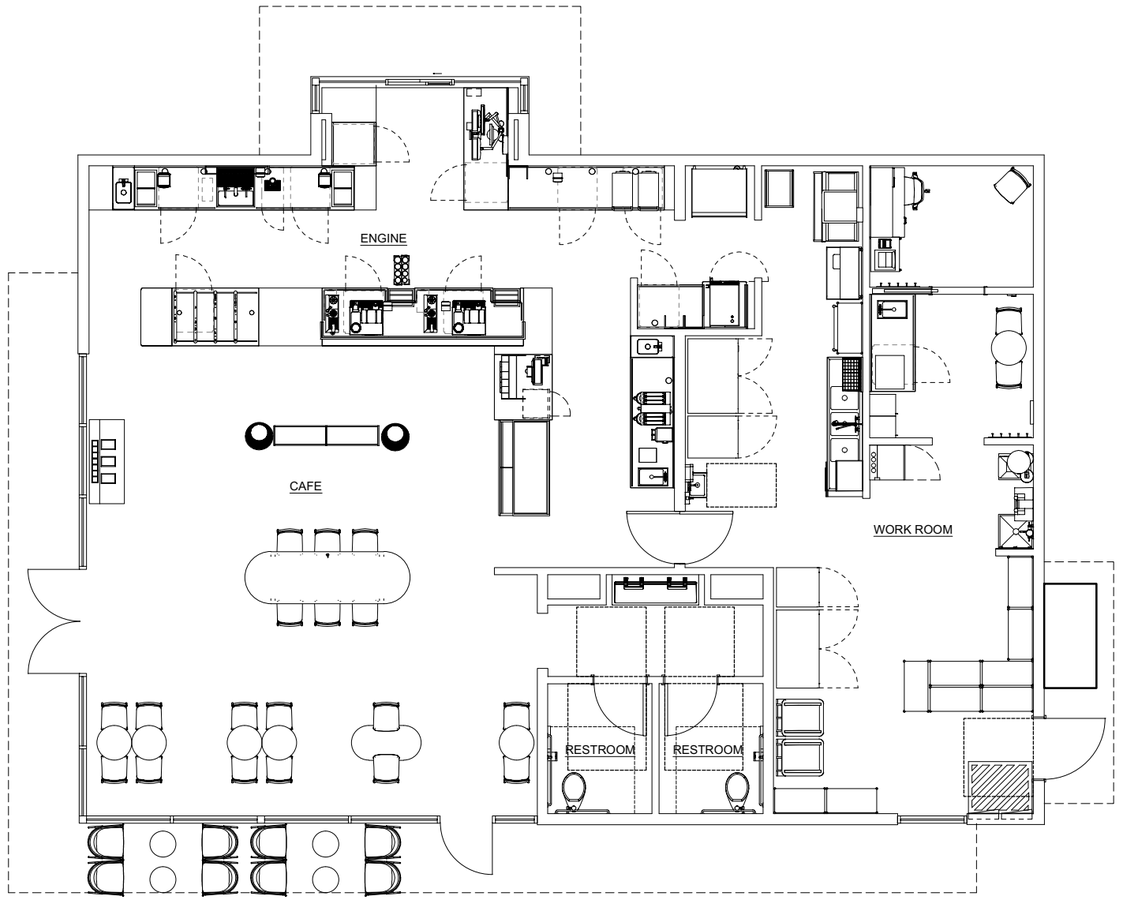
4695 MACARTHUR COURT
SUITE 1450
NEWPORT BEACH, CA 92660
T:949 296 0450

TRUE NORTH

SCALE: 1"=10'-0"
0 10' 20' 30' 40'

STARBUCKS
STEVENS CREEK BOULEVARD & HAROLD AVENUE
SANTA CLARA, CA
20210896.0

SITE PLAN
SP-17
07.17.2024



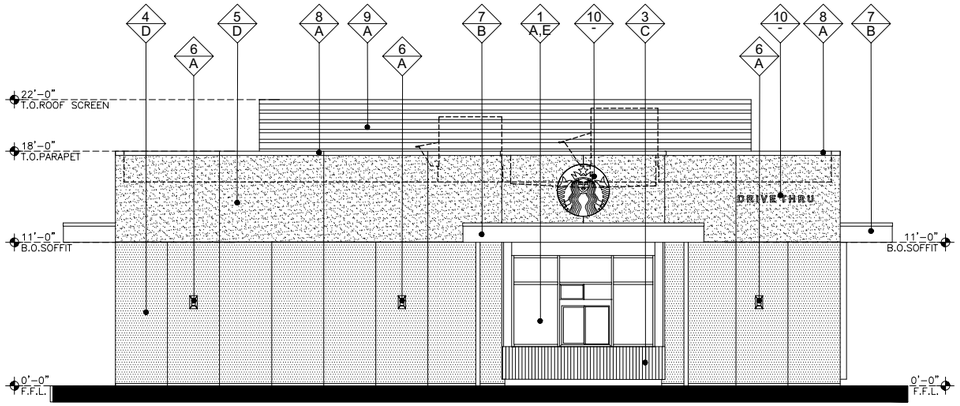
1 PROPOSED FLOOR PLAN
SCALE: 1/4" = 1'-0"

4695 MACARTHUR COURT
SUITE 1450
NEWPORT BEACH, CA 92660
T:949 296 0450

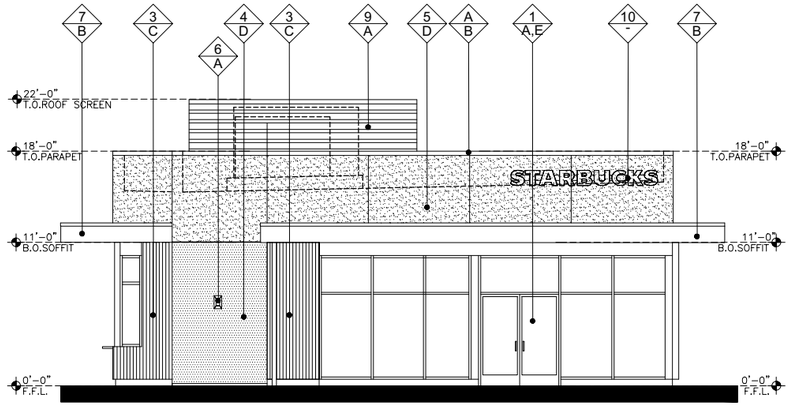
TRUE NORTH

STARBUCKS
STEVENS CREEK & HAROLD
SANTA CLARA, CA
20210896.0

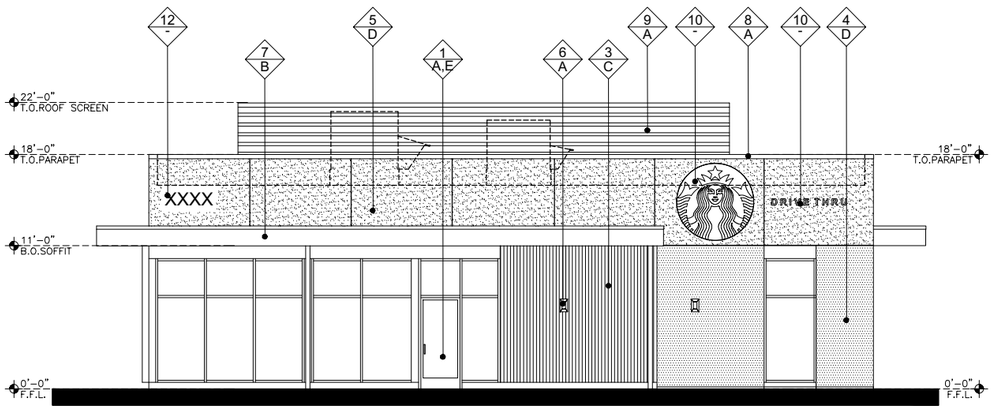
PROPOSED FLOOR PLAN
09.30.2023



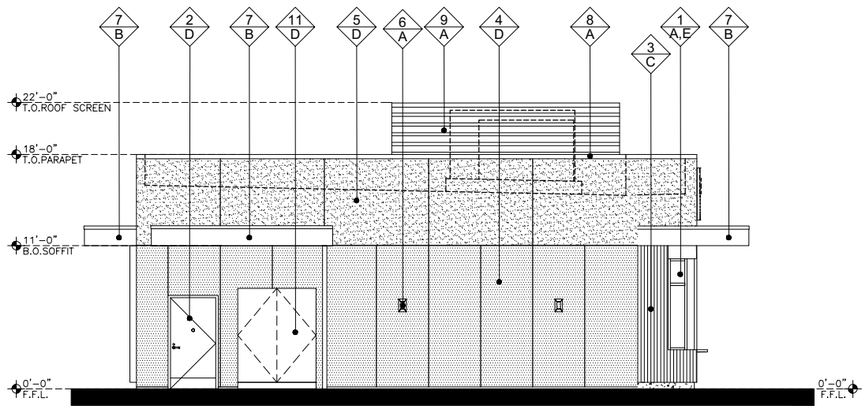
1 WEST ELEVATION
SCALE: 3/16" = 1'-0"



2 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



3 EAST ELEVATION
SCALE: 3/16" = 1'-0"



4 NORTH ELEVATION
SCALE: 3/16" = 1'-0"

FINISH SCHEDULE

	FINISH MATERIAL		FINISH COLOR
1	ALUMINUM STOREFRONT DOORS / WINDOWS SYSTEM	A	PRE-FINISHED - BLACK
2	HOLLOW METAL DOOR AND FRAME	B	POWDER COATED TO MATCH STOREFRONT COLOR
3	WOOD APPEARANCE VERTICAL SIDING	C	NICHIHA VINTAGEWOOD SPRUCE
4	STUCCO FINISH: WITH INTEGRAL COLOR & TEXTURE - COARSE	D	OMEGA 69 TRUE GRAY
5	STUCCO FINISH: WITH INTEGRAL COLOR & TEXTURE - SMOOTH	E	DOUBLE PANE CLEAR GLASS
6	WALL SCONCE		
7	METAL CANOPY BEAMS AND POSTS		
8	METAL COPING		
9	CORRUGATED METAL ROOF SCREEN		
10	SIGNAGE (UNDER SEPARATE PERMIT)		
11	ELECTRICAL CABINET		
12	12" HIGH ADDRESS NUMBERS		

30 EXECUTIVE PARK,
SUITE 100
IRVINE, CA 92614
T:949 296 0450

STARBUCKS
STEVENS CREEK & HAROLD
SANTA CLARA, CA
20210896.0

EXTERIOR ELEVATIONS

07.03.2023

Eilar Associates, Inc.
Acoustical and Environmental Consulting Services

Appendix B

Applicable Noise Regulations

Chapter 9.10
REGULATION OF NOISE AND VIBRATION

Sections:

Article I. Noise and Vibration from Fixed Sources

9.10.010 Purpose.

9.10.020 Definitions.

9.10.030 Application of regulations.

9.10.040 Noise or sound regulation.

9.10.050 Vibration regulation.

9.10.060 Noise, sound, or vibration evaluation criteria.

9.10.070 Exceptions.

9.10.080 Plan submittal.

9.10.090 Existing sound, noise, or vibration sources.

9.10.100 Special permit approval.

9.10.110 Manner of enforcement.

9.10.120 Additional remedies.

Article II. Off-Street Operation of Certain Construction Sites

9.10.210 Purpose.

9.10.220 Definitions.

9.10.230 Regulation.

9.10.240 Exemption from regulation.

Article I. Noise and Vibration from Fixed Sources

9.10.010 Purpose.

It is determined and declared by the City Council of the City that certain noise or vibration levels are detrimental and contrary to the public health, welfare and safety and that persons in the City of Santa Clara require protection from unnecessary, excessive, and unreasonable noise or vibration from fixed sources in the community. It is the intent of the City Council in adopting this chapter to control unnecessary, excessive, unusually loud, and annoying noise or vibration within the jurisdictional boundaries of the City which are prolonged or unusual in their time, place, and use and are detrimental to the public health, comfort, convenience, welfare, safety, and prosperity of persons in the City of Santa Clara. It is the intent of the City Council to prohibit such noise or vibration generated from or by all sources as specified in this chapter. Every person is entitled to an environment in which the noise or vibration level is not detrimental to his/her life, health, or enjoyment of property.

It is also the intent of the City to maintain quiet in those areas which currently maintain low noise and vibration levels and to implement programs aimed at reducing noise and vibration in those areas within the city where noise and vibration are above acceptable levels. The necessity for the provisions and prohibitions contained and enacted in this chapter is declared as a matter of legislative determination and public policy and it is further declared that the provisions and prohibitions contained and enacted herein are for the purpose of securing and promoting the public health, comfort, convenience, safety, welfare, and prosperity and the peace and quiet of all persons in the City of Santa Clara.

Therefore, the City Council does ordain and declare that any noise or vibration which is created, caused, or maintained, or allowed to be created, caused, or maintained, in a manner prohibited by, or not in conformity with, the provisions of this chapter, is unlawful and a public nuisance. It is further determined that private civil actions seeking enforcement of the provisions of this chapter may be necessary and desirable to accomplish the goals sought herein. (Ord. 1588 § 1, 6-14-88. Formerly § 18-26.1).

9.10.020 Definitions.

Whenever the following words or phrases are used in this chapter, they shall have the meaning ascribed to them in this section:

(a) "A-weighted sound level" means the sound level in decibels as measured on a sound level meter using the A-weighing network. The level so read is designated dB(A) or dBA.

(b) "Commercial area" means an area zoned for commercial uses.

(c) "Decibel" means a unit for measuring the amplitude level of a sound or noise, equal to twenty (20) times the logarithm to the base ten of the ratio of the pressure of the sound measured to the reference pressure, which is twenty (20) micropascals.

(d) "Disturbing, excessive, or offensive sound, noise, or vibration levels" means any sound, noise, or vibration which annoys or disturbs human beings or which causes or tends to cause an adverse physiological or psychological effect on human beings and which conflicts with the criteria of sound levels set forth in this chapter.

(e) "Emergency work" means any work made necessary to restore property to a safe condition following a public calamity, work required to protect persons or property from imminent exposure to danger of damages, or work by public or private utilities when restoring utility services.

(f) "Fixed noise, sound, or vibration source" means a stationary device which creates sound or vibration while operating in a fixed or stationary position, including, but not limited to, residential, agricultural, industrial, and commercial machinery and equipment, pumps, fans, compressors, air conditioners, and refrigeration equipment.

(g) "Industrial area" means an area zoned for industrial uses.

(h) "Mobile noise, sound, or vibration source" means any noise, sound, or vibration source other than a fixed noise, sound, or vibration source, including but not limited to vehicles, hand-held power equipment, and portable music amplifiers. Certain mobile noise, sound, or vibration sources, such as aircraft, are preempted from City regulation.

(i) "Noise level" means the same as sound level. The terms may be used interchangeably in this chapter.

(j) "Person" means any individual, association, partnership, corporation, or entity, public or private, including but not limited to, any officer, employee, department, agency or instrumentality of a state or any political subdivision of a state.

(k) "Public space" means any real property or structures thereon which are owned or controlled by a governmental entity.

(l) "Real property boundary" means an imaginary line along the ground surface, and its vertical extension, which separates the real property owned by one person from that owned by another person, but not including intra-building real property divisions.

(m) "Residential area" means an area zoned for single-family, duplex or multifamily residential use.

(n) "Sound level" means sound volume measured in decibels with a sound level meter as defined herein, by the use of the "A" frequency weighted and "fast" time averaging, unless some other time

averaging is specified.

(o) "Sound level meter" means an instrument, including a microphone, an amplifier, an output meter, and frequency weighing networks, designed for the measurement of sound levels, which meets or exceeds the requirements pertinent for type S2A meters in American National Standards Institute (ANSI) specifications for sound level meters, S1.4-1971, or the most recent revision thereof.

(p) "Vibration perception threshold" means the minimum ground or structure-borne vibrational motion necessary to cause a reasonable person of average sensitiveness to be aware of the vibration, including by such direct means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold shall be presumed to be a motion velocity of 0.01 inch/second over the range of one to 100 Hz.

(q) Terminology. All terminology used in this chapter, not defined above, shall conform with applicable publications of the American National Standards Institute (ANSI) or its successor body. All definitions of technical terms not defined herein shall be obtained from American National Standard Acoustical Terminology (ANSAT). (Ord. 1588 § 1, 6-14-88. Formerly § 18-26.2).

9.10.030 Application of regulations.

This chapter shall apply only to fixed noise, sound, or vibration sources and shall not apply to any mobile noise, sound, or vibration source. (Ord. 1588 § 1, 6-14-88. Formerly § 18-26.3).

9.10.040 Noise or sound regulation.

It shall be unlawful for any person to operate or cause to allow to be operated, any fixed source of disturbing, excessive or offensive sound or noise on property owned, leased, occupied or otherwise controlled by such person, such that the sound or noise originating from that source causes the sound or noise level on any other property to exceed the maximum noise or sound levels which are set forth in Schedule A, as follows:

Schedule A
Exterior Sound or Noise Limits

Receiving Zone Zoning Category	Time Period	Noise Level (dBA)
Category 1		

Single-family and duplex residential (R1, R2)	Commencing at 7:00 A.M. and ending at 10:00 P.M. that evening	55
	Commencing at 10:00 P.M. and ending at 7:00 A.M. the following morning	50
Category 2		
Multiple-family residential, public space (R3, B)	Commencing at 7:00 A.M. and ending at 10:00 P.M. that evening	55
	Commencing at 10:00 P.M. and ending at 7:00 A.M. the following morning	50
Category 3		
Commercial, Office (C, O)	Commencing at 7:00 A.M. and ending at 10:00 P.M. that evening	65
	Commencing at 10:00 P.M. and ending at 7:00 A.M. the following morning	60
Category 4		
Light Industrial (ML, MP)	Anytime	70
Heavy Industrial (MH)	Anytime	75

Except as otherwise provided in this chapter, the noise or sound standards for the various zone districts as presented in this Schedule A shall apply to all such properties within a specified zone, as designated on the most recent update of the official zoning map of the City. For planned development, agricultural or mixed zoning site, the most restrictive noise standard for the comparable zone district, as determined by the Director of Planning and Inspection, shall apply. (Ord. 1588 § 1, 6-14-88. Formerly § 18-26.4).

9.10.050 Vibration regulation.

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Appendix C

Manufacturer Data Sheets

HME

Customer Driven

Memo

Re: Drive-Thru Sound Pressure Levels From the Menu Board or Speaker Post

The sound pressure levels from the menu board or speaker post are as follows:

1. Sound pressure level (SPL) contours (A weighted) were measured on a typical HME SPP2 speaker post. The test condition was for pink noise set to 84 dBA at 1 foot in front of the speaker. All measurements were conducted outside with the speaker post placed 8 feet from a non-absorbing building wall and at an oblique angle to the wall. These measurements should not be construed to guarantee performance with any particular speaker post in any particular environment. They are typical results obtained under the conditions described above.

2. The SPL levels are presented for different distances from the speaker post:

Distance from the Speaker (Feet)	SPL (dBA)
1 foot	84 dBA
2 feet	78 dBA
4 feet	72 dBA
8 feet	66 dBA
16 feet	60 dBA
32 feet	54 dBA

3. The above levels are based on factory recommended operating levels, which are preset for HME components and represent the optimum level for drive-thru operations in the majority of the installations.

Also, HME incorporates automatic volume control (AVC) into many of our Systems. AVC will adjust the outbound volume based on the outdoor, ambient noise level. When ambient noise levels naturally decrease at night, AVC will reduce the outbound volume on the system. See below for example:

Distance from Outside Speaker	Decibel Level of standard system with 45 dB of outside noise without AVC	Decibel level of standard system with 45 dB of outside noise with AVC active
1 foot	84 dBA	60 dBA
2 feet	78 dBA	54 dBA
4 feet	72 dBA	48 dBA
8 feet	66 dBA	42 dBA
16 feet	60 dBA	36 dBA

If there are any further questions regarding this issue please contact HME customer service at 1-800-848-4468.

Thank you for your interest in HME's products.

Turn to the experts

Product Data

WeatherMaster® Packaged Rooftop Units with Electric Heat

3 to 12.5 Nominal Tons

50HC Sizes 04 to 14
Packaged Rooftop Units with Electric Heat, Optional EnergyX® Energy Recovery Device, and *Comfort*Link Controls

AHRI capacity ratings

AHRI RATINGS

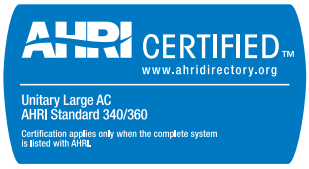
50HC UNIT	COOLING STAGES	NOMINAL CAPACITY (TONS)	NOMINAL COOLING CAPACITY (TONS)	TOTAL POWER (kW	SEER	EER	IPLV	IEER	IEER WITH 2-SPEED INDOOR MOTOR
A04	1	3.0	35.4	2.8	15.0	12.50	N/A	N/A	N/A
A05	1	4.0	48.5	3.7	15.6	13.00	N/A	N/A	N/A
A06	1	5.0	57.5	4.6	15.2	12.45	N/A	N/A	N/A
A07	1	6.0	73.0	6.0	N/A	12.20	N/A	13.2	N/A
D07	2	6.0	72.0	5.9	N/A	12.20	N/A	14.2	16.2
D08	2	7.5	89.0	7.3	N/A	12.20	13.2	13.2	14.0
D09	2	8.5	97.0	8.0	N/A	12.20	13.2	13.2	14.0
D11	2	10.0	111.0	9.3	N/A	12.00	N/A	12.6	14.5
D12	2	10.0	115.0	9.8	N/A	11.70	N/A	12.2	12.9
D14	2	12.5	146.0	11.8	N/A	12.40	N/A	13.2	14.1

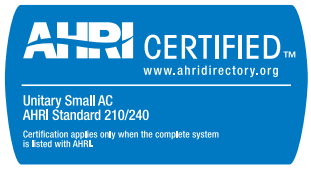
LEGEND

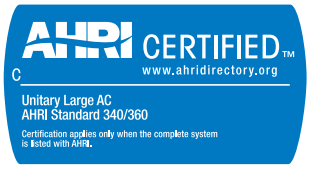
AHRI — Air-Conditioning, Heating and Refrigeration Institute
COP — Coefficient of Performance
EER — Energy Efficiency Ratio
IEER — Integrated Energy Efficiency Ratio
SEER — Seasonal Energy Efficiency Ratio

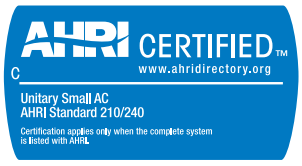
NOTES:

1. Rated in accordance with AHRI Standards 210/240 (sizes 04-06) and 340/360 (sizes 07-14).
2. Ratings are based on:
   Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temp and 95°F (35°C) db outdoor air temp.
   IEER Standard: A measure that expresses cooling part-load EER efficiency for commercial unitary air-conditioning and heat pump equipment on the basis of weighted operation at various load capacities.
3. All 50HC units comply with ASHRAE 90.1-2016 Energy Standard for minimum SEER and EER requirements.
4. 50HC units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.









SOUND RATINGS TABLE

50HC UNIT	COOLING STAGES	OUTDOOR SOUND (dB) AT 60 HZ								
		A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
A04	1	76	78.2	78.0	74.2	73.3	70.6	66.0	62.4	56.9
A05	1	78	84.7	83.6	77.1	74.6	72.3	68.3	64.7	60.9
A06	1	77	87.5	82.5	76.1	73.6	71.3	67.1	64.1	60.0
A07	1	82	90.1	82.6	81.0	79.4	77.0	73.0	70.4	66.7
D07	2	82	90.1	82.6	81.0	79.4	77.0	73.0	70.4	66.7
D08	2	82	90.6	84.3	80.2	79.3	77.1	72.2	67.4	63.7
D09	2	82	88.6	85.0	81.6	79.5	77.4	74.1	71.0	66.3
D11	2	87	85.9	87.9	85.6	84.4	82.8	78.5	74.9	72.5
D12	2	87	85.9	87.9	85.6	84.4	82.8	78.5	74.9	72.5
D14	2	83	89.3	86.0	82.9	80.7	78.5	73.6	69.6	64.5

LEGEND

dB — Decibel

NOTES:

1. Outdoor sound data is measured in accordance with AHRI standards 270 and 370.
1. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure depends on specific environmental factors which normally do not match individual applications. Sound power values are independent of the environment and therefore more accurate.
2. A-weighted sound ratings filter out very high and very low frequencies, to better approximate the response of “average” human ear. A-weighted measurements for Carrier units are taken in accordance with AHRI.

Eilar Associates, Inc.
Acoustical and Environmental Consulting Services

Appendix D

Pertinent Sections of Project Traffic Study

TECHNICAL MEMORANDUM

Date:	July 12, 2024	
To:	Steve Chan	City of Santa Clara
	Steve Le	City of Santa Clara
	Ralph Garcia	City of Santa Clara
CC:	Frank Coda	Greenberg Farrow
From:	Girish Basavaraj	TJKM
	Steven Matthew Dauterman, PE, TE, PTOE, RSP_1	TJKM
Subject:	***Starbucks Stevens Creek – Traffic Study***	

This memorandum summarizes a traffic study for a proposed redevelopment of an existing ~7,266 square-foot (SF) commercial plaza to a ~2,300 SF drive-through Starbucks café/restaurant in the City of Santa Clara, California. The site is located immediately northeast of the intersection of Stevens Creek Boulevard and Harold Avenue. TJKM previously prepared a focused trip generation and vehicle miles traveled analysis in November of 2023. Although the project does not require a local transportation assessment (LTA), as discussed below, the project applicant volunteered to conduct a more detailed traffic operations study analyzing the project's level of service and queuing impacts on Harold Avenue and Stevens Creek Boulevard. The project vicinity is shown in **Figure 1**, and the site plan dated December 12, 2023, is shown in **Figure 2**. The site plan will be finalized in consultation with City staff.

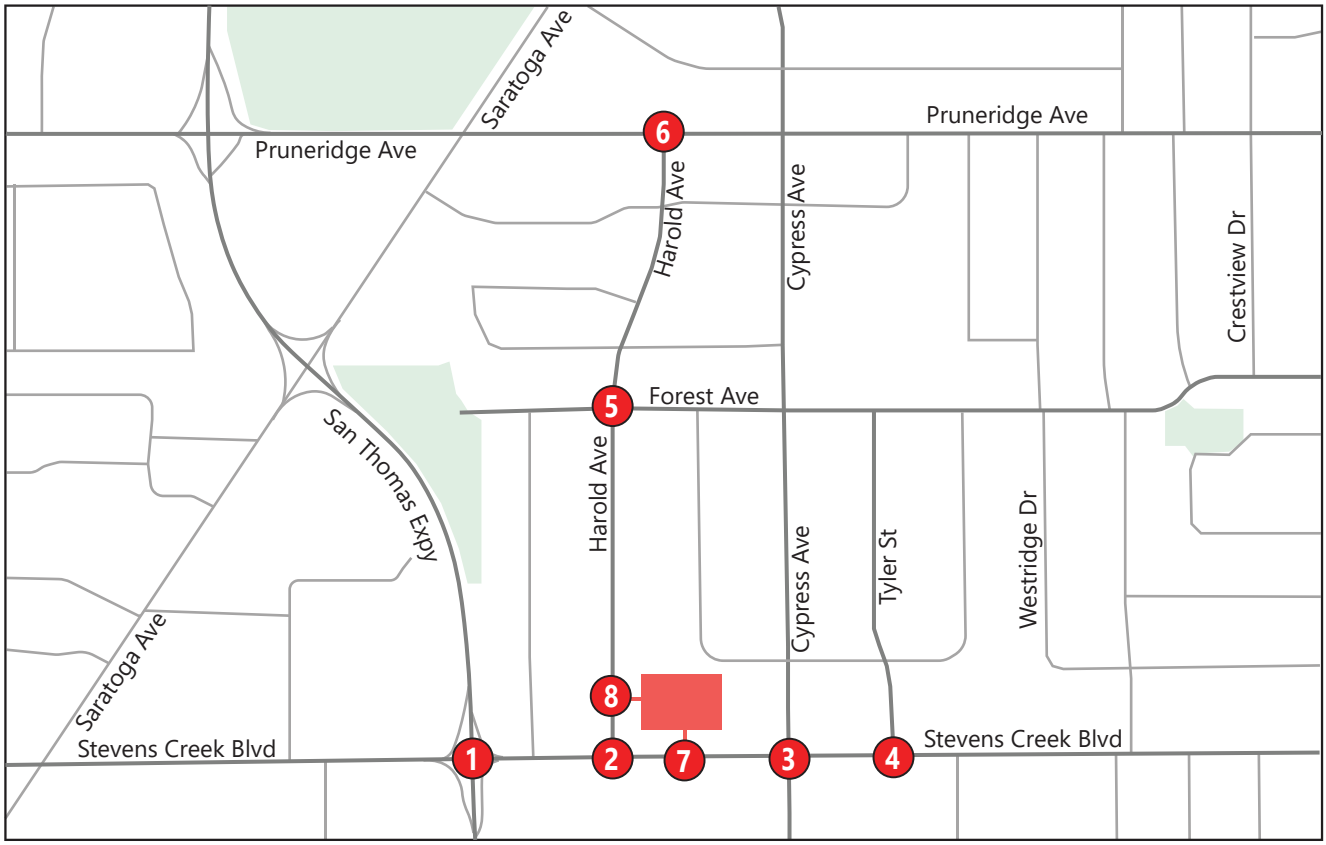
Additionally, it should be noted that this study is a second iteration. Comments were received from City staff based on the March 2024 iteration of the study. Those comments were, as appropriate, incorporated herein. A comment-response matrix was prepared by TJKM to discuss changes to this study.

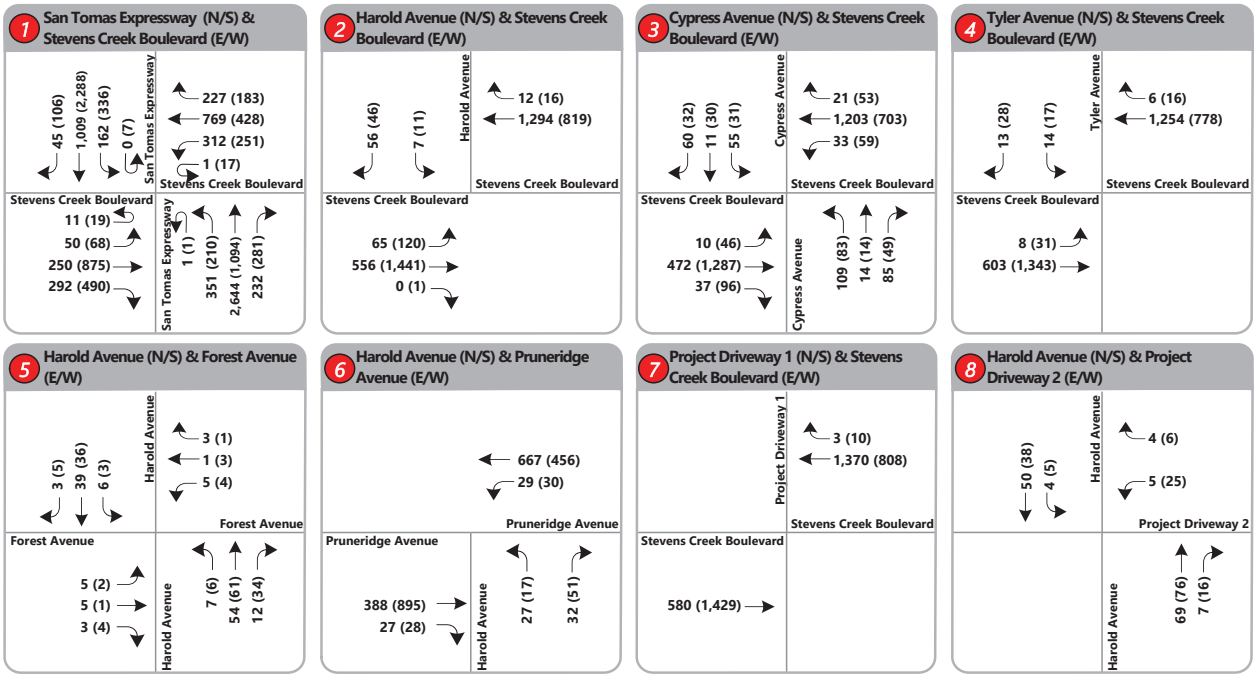
This memorandum includes:

- A summary of site access;
- A trip generation assessment;
- A vehicle miles traveled (VMT) assessment with respect to City policy;
- An intersection Level of Service (LOS) and queuing analysis for six existing intersections under existing conditions with and without the proposed project;
- A five-year review of historic safety trends;
- A traffic calming audit for Harold Street, including an all-way stop warrant assessment for the intersection of Harold Street and Forest Avenue;
- Assessments of potential circulation impacts on all primary modes of transportation (vehicular, pedestrian, bicycle, and transit); and
- Review of sight profiles at the intersection of Harrold Avenue at Stevens Creek Boulevard.

Our findings indicate the following:

Figure 4: Existing Conditions Peak Hour Turning Movement Volumes



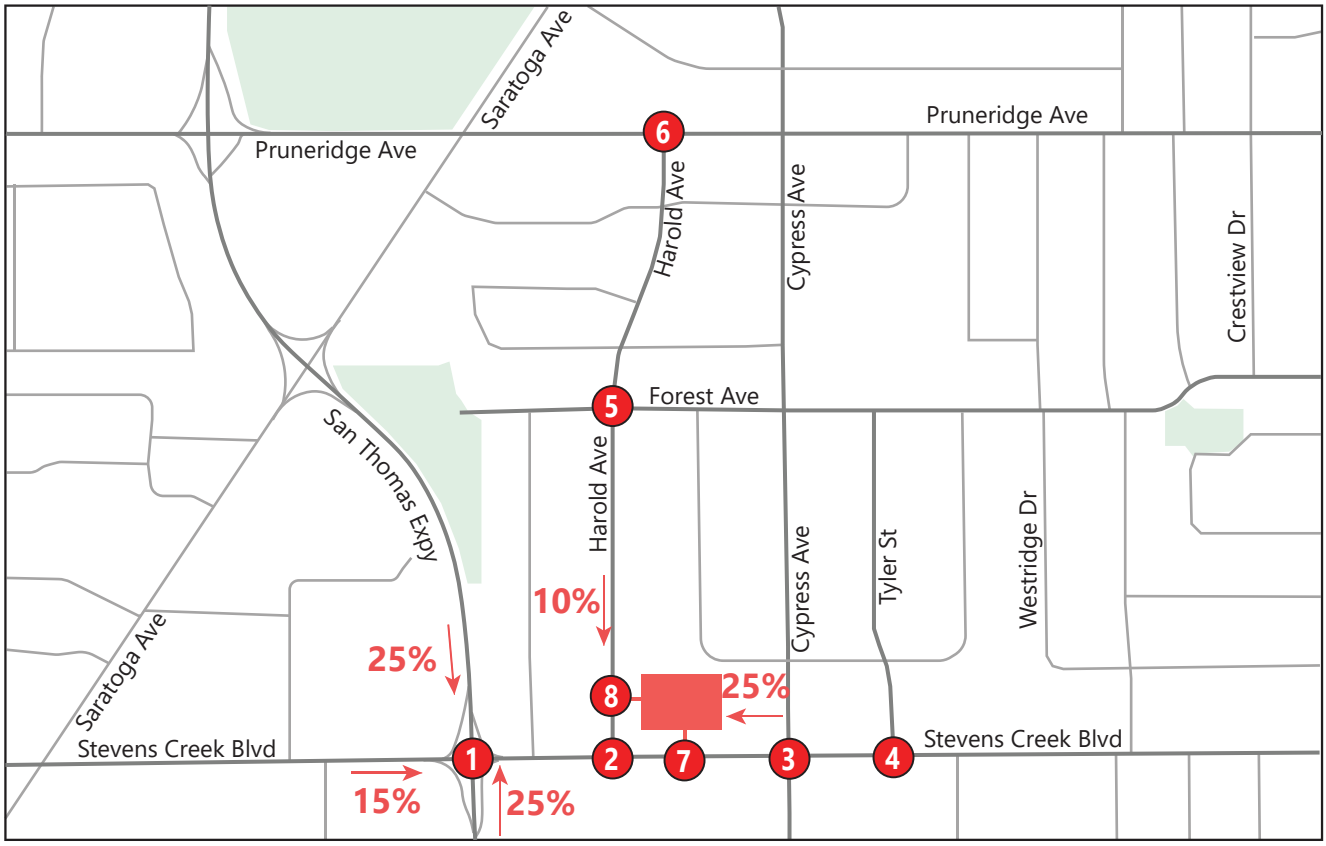


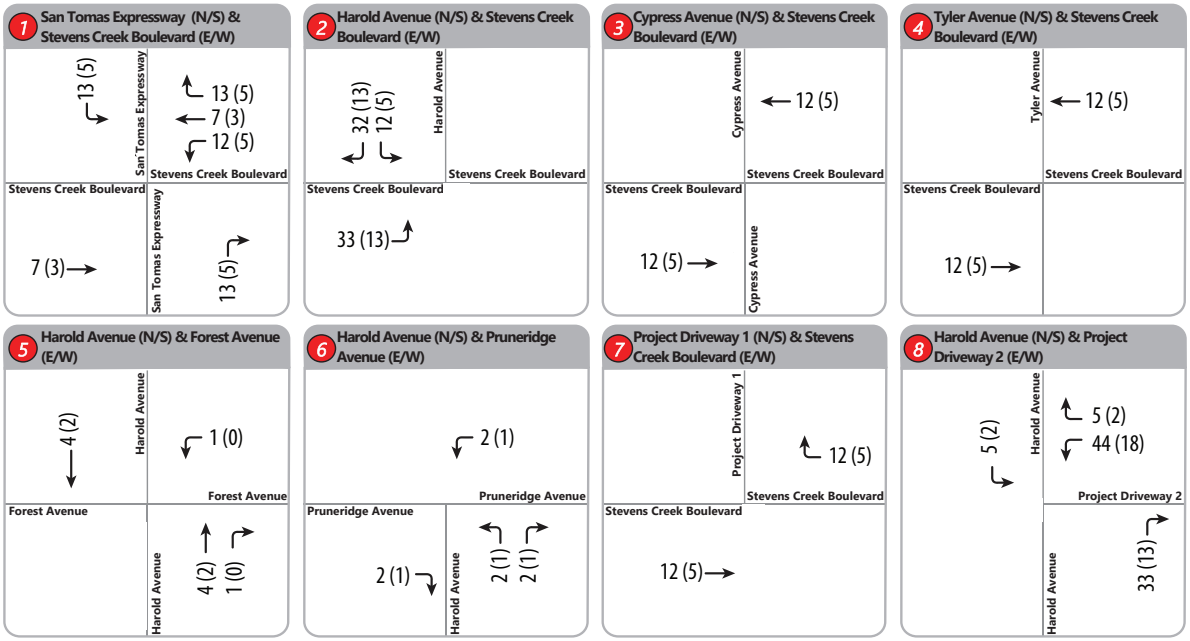
LEGEND

- Project Site
- Study Intersection
- Project Driveway
- (XX) PM Peak Hour Volumes
- XX AM Peak Hour Volumes

N

Figure 5: Project Trip Distribution and Assignment





LEGEND

- Project Site
- X Study Intersection
- Project Driveway
- XX AM Trip Assignments
- (XX) PM Trip Assignments

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Appendix E

CadnaA Analysis Data and Results

Eilar Associates, Inc.
210 South Juniper Street, Suite 100
Escondido, California 92025-4230
Phone: (760) 738-5570

Date: 06 Aug 2024

Calculation Configuration

Configuration	
Parameter	Value
General	
Max. Error (dB)	0.00
Max. Search Radius (#(Unit,LEN))	2000.00
Min. Dist Src to Rcvr	0.00
Partition	
Raster Factor	0.50
Max. Length of Section (#(Unit,LEN))	1000.00
Min. Length of Section (#(Unit,LEN))	1.00
Min. Length of Section (%)	0.00
Proj. Line Sources	On
Proj. Area Sources	On
Ref. Time	
Daytime Penalty (dB)	0.00
Recr. Time Penalty (dB)	6.00
Night-time Penalty (dB)	10.00
DTM	
Standard Height (m)	0.00
Model of Terrain	Triangulation
Reflection	
max. Order of Reflection	0
Search Radius Src	100.00
Search Radius Rcvr	100.00
Max. Distance Source - Rcvr	1000.00 1000.00
Min. Distance Rvcr - Reflector	1.00 1.00
Min. Distance Source - Reflector	0.10
Industrial (ISO 9613)	
Lateral Diffraction	some Obj
Obst. within Area Src do not shield	On
Screening	Excl. Ground Att. over Barrier
	Dz with limit (20/25)
Barrier Coefficients C1,2,3	3.0 20.0 0.0
Temperature (#(Unit,TEMP))	10
rel. Humidity (%)	70
Ground Absorption G	0.50
Wind Speed for Dir. (#(Unit,SPEED))	3.0
Roads (TNM)	
Railways (Schall 03 (1990))	
Strictly acc. to Schall 03 / Schall-Transrapid	
Aircraft (NONE)	
Strictly acc. to AzB	

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(ft)		(ft)	(ft)	(ft)
R1				56.8	40.3	60.0	0.0				5.00	r	405.88	317.78	5.00
R2				49.1	42.9	50.0	0.0				5.00	r	406.22	435.94	5.00
R3				59.7	59.6	60.0	0.0				5.00	r	534.19	440.10	5.00
R4				43.2	42.2	50.0	0.0				5.00	r	597.28	429.58	5.00
R5				46.8	44.8	60.0	0.0				15.00	r	624.77	468.86	15.00
R6				54.7	33.8	60.0	0.0				5.00	r	614.26	277.38	5.00

Line Sources

Name	Sel.	M.	ID	Result. PWL			Result. PWL'			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Moving Pt. Src			
				Day	Evening	Night	Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night				Number			Sp
				(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(ft²)		(min)	(min)	(min)	(dB)	(Hz)		Day	Evening	Night	(r
Truck Delivery				91.4	-8.6	-8.6	69.5	-30.5	-30.5	PWL-Pt	T		0.0	0.0	0.0							0.0		(none)	1.0	0.0	0.0	

Geometry - Line Sources

Name	ID	Height				Coordinates			
		Begin		End		x	y	z	Ground
		(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
Truck Delivery		6.00	r			659.77	251.42	6.00	0.00
						519.21	251.07	6.00	0.00
						512.14	259.69	6.00	0.00
						510.59	349.78	6.00	0.00
						494.57	363.22	6.00	0.00
						434.45	362.88	6.00	0.00
						426.87	355.12	6.00	0.00
						426.83	259.89	6.00	0.00
						418.78	251.25	6.00	0.00
						351.77	251.07	6.00	0.00

Barriers

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height			
				left	right		horz.	vert.	Begin		End	
						(ft)	(ft)	(ft)	(ft)		(ft)	
existing concrete wall									5.67	r		
existing fence									6.67	r		
existing CMU wall									3.75	r		
existing CMU wall									4.67	r		

Geometry - Barriers

Name	Sel.	M.	ID	Absorption		Z-Ext.	Cantilever		Height				Coordinates			
				left	right		horz.	vert.	Begin		End		x	y	z	Ground
						(ft)	(ft)	(ft)	(ft)		(ft)		(ft)	(ft)	(ft)	(ft)
existing concrete wall									5.67	r			594.31	421.17	5.67	0.00
													757.13	422.04	5.67	0.00
existing fence									6.67	r			654.56	422.85	6.67	0.00
													594.26	422.14	6.67	0.00
													594.05	543.77	6.67	0.00
existing CMU wall									3.75	r			613.21	396.51	3.75	0.00
													613.49	296.81	3.75	0.00
existing CMU wall									4.67	r			466.90	436.44	4.67	0.00
													594.11	437.21	4.67	0.00

Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height	
							Begin	
							(ft)	
Project Building				x	0		15.00	r

Geometry - Buildings

Name	Sel.	M.	ID	RB	Residents	Absorption	Height		Coordinates			
							Begin		x	y	z	Ground
							(ft)		(ft)	(ft)	(ft)	(ft)
Project Building				x	0		15.00	r	544.22	324.26	15.00	0.00
									544.89	286.06	15.00	0.00
									599.93	286.66	15.00	0.00
									599.50	324.82	15.00	0.00
									570.15	324.65	15.00	0.00
									570.11	329.21	15.00	0.00
									557.77	329.00	15.00	0.00
									557.75	324.47	15.00	0.00

Sound Level Spectra

Name	ID	Type	1/3 Oktave Spectrum (dB)												Source
			Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	
Drive-Through Intercom	DT	Lw (c)	A					84.5					84.5	87.7	Manufacturer
Refrigerated Truck	T	Lw (c)			115.2	109.2	104.2	105.2	104.2	101.2	96.2	90.2	108.6	117.1	Measurements
Carrier 50HCQA06 5-ton RTU	AC	Lw			87.5	82.5	76.1	73.6	71.3	67.1	64.1	60.0	76.7	89.2	Manufacturer