HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942
619.462.1515 tel
619.462.0552 fax
www.**helixepi**.com

January 11, 2021

Mr. Brett Feuerstein
San Diego Coastal Properties, LLC
5330 Carroll Canyon Road, Suite 120
San Diego, CA 92121

Subject: Sweetwater and Jamacha Shopping Center Noise Analysis

Dear Mr. Feuerstein:

HELIX Environmental Planning, Inc. (HELIX) is providing noise analysis and impact planning for the Sweetwater and Jamacha Shopping Center project (project), located at the southeast corner of Sweetwater Road and Jamacha Road in the unincorporated community of Spring Valley within the County of San Diego. This letter addresses operational noise associated with a drive-thru speaker at the project's proposed fast food restaurant and construction noise levels at nearby residential land uses.

JANUARY 2021 SITE PLAN UPDATE

This letter was originally submitted on June 25, 2020. As of January 2021, a new site plan has been provided to HELIX which indicates that the fast food restaurant at the southwestern corner of the project site has been adjusted. The updated drive-thru speaker locations have been moved to the north, further from the project boundaries and away from off-site residences. Additionally, the fast food restaurant building has been moved further north, with the double lanes spanning the entire length of the drive-thru. The outside drive-thru lane would be at approximately the same location as in the previous site plan, and the inside drive-thru lane would be located further from the project boundary.

Note that the analysis within this letter is based on the previous site plan. The findings are therefore anticipated to be more conservative than what would be expected from the current design. Due to the attenuation of distance from the project's noise sources, and the siting of the speakers behind the restaurant building, the site plan changes are assumed to result in lower noise levels at nearby residences than what is found in this report's conclusions. The revised site plan is shown in Attachment A.

BRIEF PROJECT DESCRIPTION AND ENVIRONMENTAL SETTING

The proposed project would construct a drugstore, coffee shop, and a new fast food restaurant with an associated drive-thru speaker for orders. Single family residences are located directly south of the proposed fast food restaurant across St. George Street. The fast food restaurant's drive-thru speaker is approximately 150 feet from the nearest residences. The project site is zoned C36 (Commercial). The residences to the south are zoned R-S (Residential). The project location and site plan are shown in Attachment A.

A site visit was conducted at 12:35 p.m. on April 16, 2020[1]. A measurement of 66.2 dBA as taken during a 10-minute period near the corner of St. George Street and Sweetwater Road. The main noise source was vehicular traffic due to the project site's proximity to SR-125 to the west.

TERMINOLOGY

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels of one hour are expressed by the symbol L_{EQ}, unless a different duration is specified.

NOISE STANDARDS

County of San Diego Municipal Code – Noise Ordinance

Sections 36.401 through 36.423 of the County of San Diego Municipal Code discuss further County noise requirements. The purpose of the Noise Ordinance is to regulate noise in the unincorporated area of the County to promote the public health, comfort and convenience of the County's inhabitants and its visitors.

Section 36.404 General Sound Level Limits

The Noise Ordinance sets limits pertaining to the generation of exterior noise. It is unlawful for any person to cause or allow the creation of any noise to the extent that the one-hour average sound level at any point on or beyond the boundaries of the property will exceed the applicable limits in Table 1, *County of San Diego Municipal Code Exterior Sound Level Limits*.

Table 1
COUNTY OF SAN DIEGO MUNICIPAL CODE
EXTERIOR SOUND LEVEL LIMITS

Zone	Time	One-Hour Average Sound Level Limits (dBA)
(1) R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-90, S-92 and R-V and R-U with a density of less than 11 dwelling units per acre.	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	50 45
(2) R-RO, R-C, R-M, S-86, V5 and R-V and R-U with a density of 11 or more dwelling units per acre.	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	55 50

[1] This measurement was taken during the COVID-19 pandemic, which forced the mandatory closures of non-essential business throughout the region. Because of this, vehicular traffic during the measurement was likely lower than normal levels, and noise levels are likely lower than what would be expected under more standard conditions prior to COVID-19.

(3) S-94, V4 and all other commercial zones.	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	60 55
(4) V1, V2	7:00 a.m. to 7:00 p.m.	60
V1, V2	7:00 p.m. to 10:00 p.m.	55
V1	10:00 p.m. to 7:00 a.m.	55
V2	10:00 p.m. to 7:00 a.m.	50
V3	7:00 a.m. to 10:00 p.m. 10:00 p.m. to 7:00 a.m.	70 65
(5) M-50, M-52 and M-54	Anytime	70
(6) S-82, M-56 and M-58	Anytime	75
(7) S-88 (see subsection (c) below)	-	-

Source: County of San Diego Municipal Code Section 36.404.
Zoning Code Definitions: R-S = Single-Family Residential; R-D = Duplex Residential; R-R = Rural Residential; R-MH = Mobile home Residential; A-70 = Limited Agriculture; A-72 = General Agriculture; S-80 = Open Space; S-90 = Holding Area; S-92 = General Rural; S-94 = Transportation and Utility Corridor; R-V = Variable-Family Residential; R-RO = ; R-C = Residential-Commercial; R-M = Multi-Family Residential ; S-86 = Parking; R-U = Urban Residential; V1, V2, V3, V4, and V5 = Village Designations; M-50 = Basic Industrial; M-52 = Limited Industrial; M-54 = General Impact Industrial; S-82 = Extractive Use; M-56 = Mixed Industrial; M-58 = High-Impact Industrial; S-88 = Specific Plan

a. If the measured ambient level exceeds the applicable limit noted above, the allowable one-hour average sound level shall be the ambient noise level, plus 3 dB. The ambient noise level shall be measured when the alleged noise violation source is not operating.

b. The sound level limit at a location on a boundary between two zones is the arithmetic mean of the respective limits for the two zones; provided however, that the one hour average sound level limit applicable to extractive industries, including but not limited to borrow pits and mines, shall be 75 dB at the property line regardless of the zone which the extractive industry is actually located.

c. S-88 zones are Specific Planning Areas that allow for different uses. The sound level limits in Table 1-3 above that apply in an S-88 zone depend on the use being made of the property. The limits in Table 1-3, subsection (1) apply to property with a residential, agricultural, or civic use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M-50, M-52, or M-54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M-56 or M-58 zone.

d. A fixed-location public utility distribution or transmission facility located on or adjacent to a property line shall be subject to the sound level limits of this section, measured at or beyond six feet from the boundary of the easement upon which the facility is located.

Section 36.408 Hours of Operation of Construction Equipment

Except for emergency work, it shall be unlawful for any person to operate or cause to be operated, construction equipment:

a. Between the hours of 7:00 p.m. and 7:00 a.m.

b. On a Sunday or a holiday. For the purposes of this section a holiday means January 1, the last Monday in May, July 4, the first Monday in September, December 25, and any day appointed by the President as a special national holiday or the Governor of the State as a special State holiday. A person may, however, operate construction equipment on a Sunday or holiday between the hours of 10:00 a.m. and 5:00 p.m. at the person's residence or for the purpose of constructing a residence for himself or herself, provided that the operation of construction equipment is not carried out for financial consideration or other consideration of any kind and does not violate the limitations in Sections 36.409 and 36.410.

Section 36.409, Sound Level Limitations on Construction Equipment

Except for emergency work, it shall be unlawful for any person to operate construction equipment or cause construction equipment to be operated, that exceeds an average sound level of 75 dBA for an eight-hour period, between 7:00 a.m. and 7:00 p.m., when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is being received.

Section 36.410, Sound Level Limitations on Impulsive Noise

Section 36.410 provides additional limitation on construction equipment beyond Section 36.404 pertaining to impulsive noise. Except for emergency work or work on a public road project, no person shall produce or cause to be produced an impulsive noise that exceeds the maximum sound level shown in Table 2, *County of San Diego Maximum Sound Levels (Impulsive)*, when measured at the boundary line of the property where the noise source is located or on any occupied property where the noise is received, for 25 percent of the minutes in the measurement period.

Table 2
COUNTY OF SAN DIEGO MAXIMUM SOUND LEVELS (Impulsive)

Occupied Property Use	Decibels (dBA) L_{MAX}
Residential, village zoning or civic use	82
Agricultural, commercial or industrial use	85

Source: County of San Diego Municipal Code Section 36.410

METHODOLOGY AND ASSUMPTIONS

Operational Noise

The project is in a commercial zone with adjacent homes located in an R-S residential zone. The noise limits are therefore defined as the arithmetic mean of the respective limits for the two zones. This analysis includes the scenario where the fast food restaurant would operate during the nighttime hours between 10:00 p.m. and 7:00 a.m. and would therefore be subject to the lower 50-dBA LEQ property line

The operational noise analysis is based on the following assumptions:

- The peak drive-thru service, including order windows, takes approximately 30 to 40 seconds per car, limiting the maximum hourly throughput to approximately 60 cars per hour (at an average

speed of approximately 0.5 mile per hour [mph] along the driveway). The typical order window time is 20 seconds or less per vehicle (a maximum observed order time was slightly over 32 seconds) for a total speaker operation time of less than 12 minutes per hour; and

- The drive-thru speaker has a maximum sound pressure level of 54 dBA at 32 feet, which is the equivalent of 47 dBA LEQ (with consideration of 12 minutes of operation per hour). Refer to Attachment B for drive-thru speaker specifications.

Modeling was conducted using CadnaA 2019, which is a model-based computer program developed by DataKustik for predicting noise impacts in a wide variety of conditions. CadnaA assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project related 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.

Construction Noise

Construction of the project would involve demolition, grading, installation of utilities, construction of new buildings, and paving of the site. Equipment modeled for this analysis is based on those provided in the project's Air Quality Technical Report (HELIX 2020). Project construction noise was analyzed using the Roadway Construction Noise Model (RCNM; U.S. Department of Transportation 2008), which utilizes estimates of sound levels from standard construction equipment.

Construction activity would take place on three pads within the existing shopping center. Because construction equipment would move across each site during a given work day, an average distance between expected equipment and nearby property lines was chosen for modeling. Equipment at the drugstore would be located at an approximate distance of 175 feet from the nearest property line to the east. Equipment used at the southernmost fast food restaurant pad would be used at an average approximate distance of 125 feet from the residential property to the south. The coffee shop pad would be nearly 500 feet from the nearest residences. For the purposes of this analysis, construction equipment at the project's southernmost pad were modeled due to its proximity to nearby residences.

PROJECT FEATURES

The project would incorporate an existing concrete wall along the southern edge of the property. The height of the wall ranges from approximately two to four feet. The project does not propose noise attenuation features.

NOISE IMPACT ANALYSIS

Operational Noise Levels

With an assumed 60 cars per hour idling along the driveway, the drive-thru speaker in operation for 12 minutes per hour, and the existing wall along the southern property line, the noise level at the nearby residences to the south would be approximately 45.7 dBA L_{EQ}. Refer to Attachment C for noise contours.

Construction Noise Levels

Construction equipment would not all operate at the same time or location. Furthermore, construction equipment would not be in constant use during the 8-hour operating day. A dozer and an excavator may be working on the site simultaneously but would not be working in close proximity to one another at a given time due to the nature of their respective operations. An excavator, loader, and dump truck were conservatively analyzed together for due to their likelihood of being used in conjunction with one another. Table 3, *Construction Equipment Noise Levels*, provides the modeled distance noise levels for expected construction equipment at 125 feet. See Attachment D for full modeling results.

Table 3
CONSTRUCTION EQUIPMENT NOISE LEVELS

Unit	Percent Operating Time	Modeled Distance to Residences	L_{MAX} at Modeled Distance	dBA L_{EQ} at Modeled Distance
Backhoe	40	125 feet	69.6	65.6
Compactor	20	125 feet	75.3	68.3
Compressor	40	125 feet	69.7	65.7
Concrete Mixer Truck	40	125 feet	70.8	66.9
Concrete Pump Truck	20	125 feet	73.4	66.5
Dozer	40	125 feet	73.7	69.7
Dump Truck	40	125 feet	68.5	64.5
Grader	40	125 feet	77.0	73.1
Excavator	40	125 feet	72.8	68.8
Front End Loader	40	125 feet	71.2	67.2
Paver	50	125 feet	69.3	66.3
Roller	20	125 feet	72.0	65.1
Concrete Saw	20	125 feet	81.6	74.6
Crane	20	125 feet	72.6	64.6
Excavator, Loader, and Dump Truck	40	125 feet	72.8	71.9

Source: RCNM

As shown in Table 3, the loudest single construction equipment would be the use of a concrete saw at 74.6 dBA L_{EQ} at 125 feet. The combined use of an excavator, loader, and dump truck would generate noise levels of 71.9 dBA L_{EQ}. These noise levels would therefore not exceed the 75 dBA Leq (8-hour) construction noise limits.

CONCLUSIONS

The proposed project's fast food restaurant drive-thru speaker would not generate noise levels exceeding the County's nighttime property line noise limit of 50 dBA LEQ at the adjacent residences to the south. Project construction would not exceed the County's construction noise limits of 75 dBA (8-hour).

Regards,

Charles Terry
Principal Acoustician

Jason Runyan
Noise Analyst

Attachments:

Attachment A, Project Location and Proposed Site Plan
Attachment B, Drive-Thru Speaker Noise Specifications
Attachment C, Drive-Thru Speaker Noise Contours
Attachment D, Construction Noise Modeling Outputs

References:

HELIX Environmental Planning. 2020. Draft Air Quality Technical Report. April.
U.S. Department of Transportation. 2008. Roadway Construction Noise Model.

Attachment A

Project Location and Proposed Site Plan

I:\PROJECTS\M\MCE\MCE-01_Sweetwater\Jamacha\Map\AQGHG\Fig2_vic.mxd MCE-01 3/31/2020 - SAB

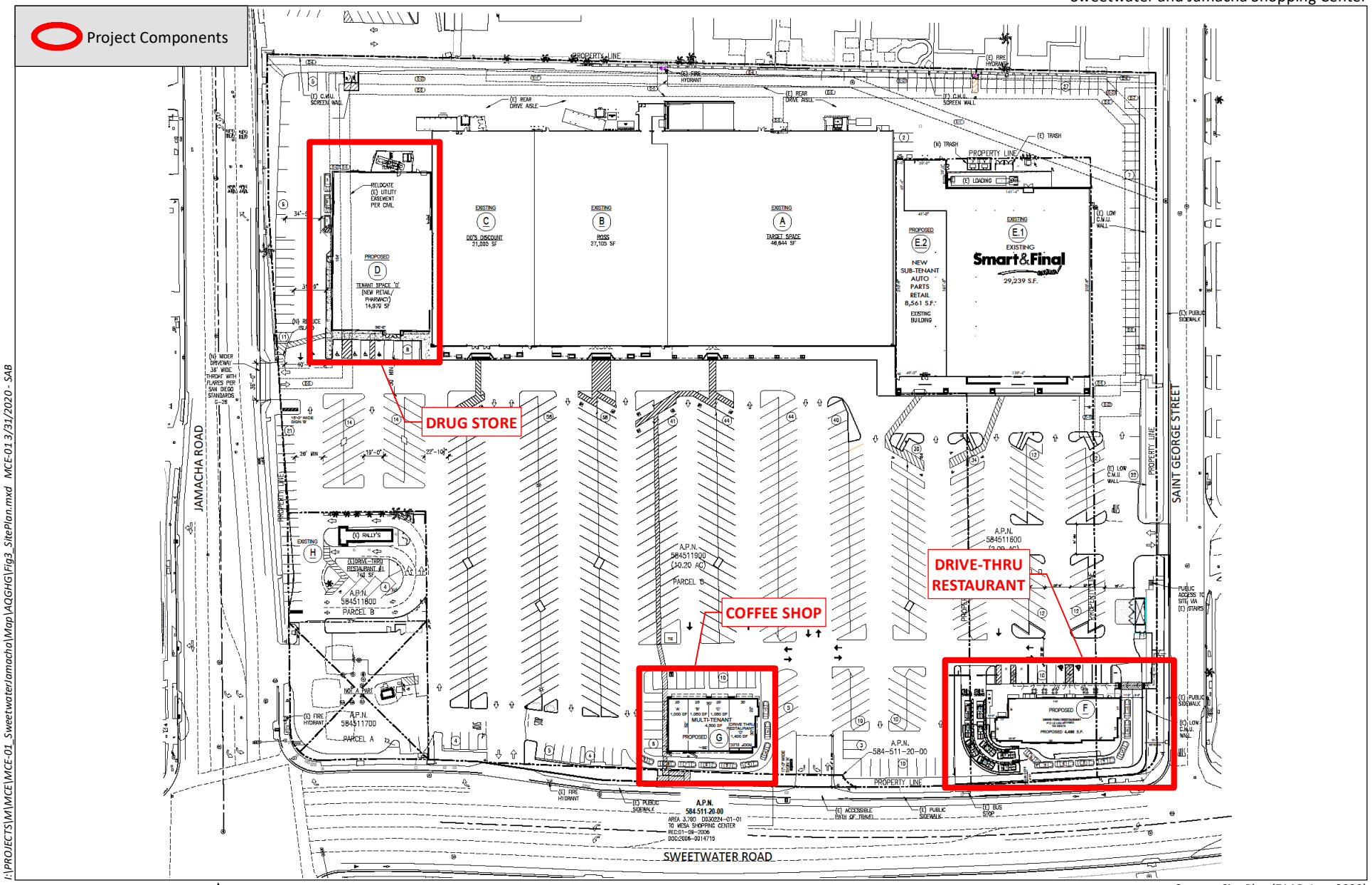
0 200 Feet

Source: Aerial (SanGIS, 2017)

HELIX Environmental Planning

Project Vicinity

Figure 2



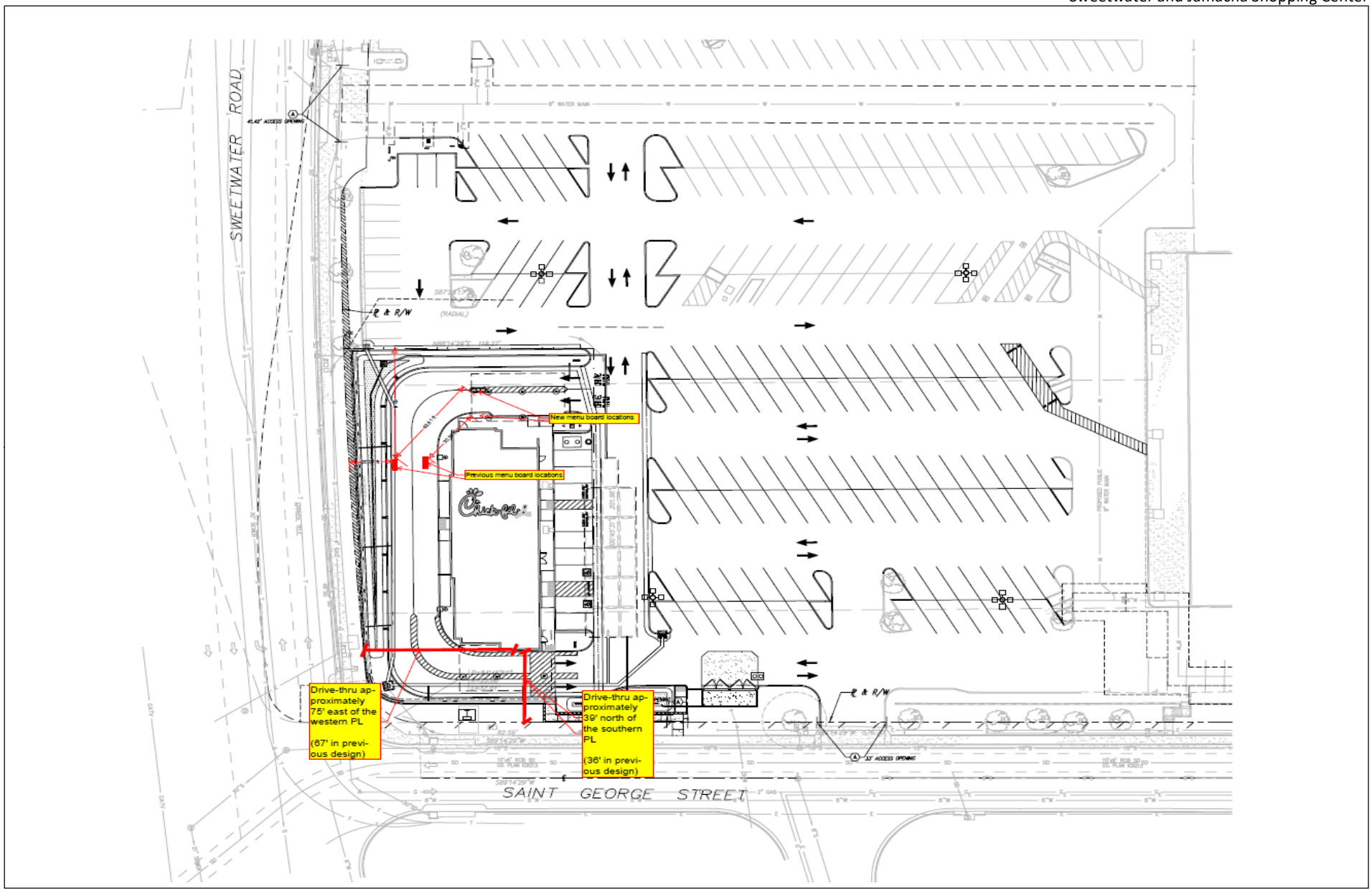
I:\PROJECTS\M\MCE\MCE-01_SweetwaterJamacha\Map\AQGHG\Fig3_SitePlan.mxd MCE-01 3/31/2020 - SAB

Source: Site Plan (ZAAP, Inc., 2020)

HELIX Environmental Planning

Site Plan

Figure 3



Source: Site Plan (ZAAP, Inc., 2020)

HELIX Environmental Planning

Revised Site Plan - Fast Food Restaurant

Figure 4

Attachment B

Drive-thru Speaker Specifications

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

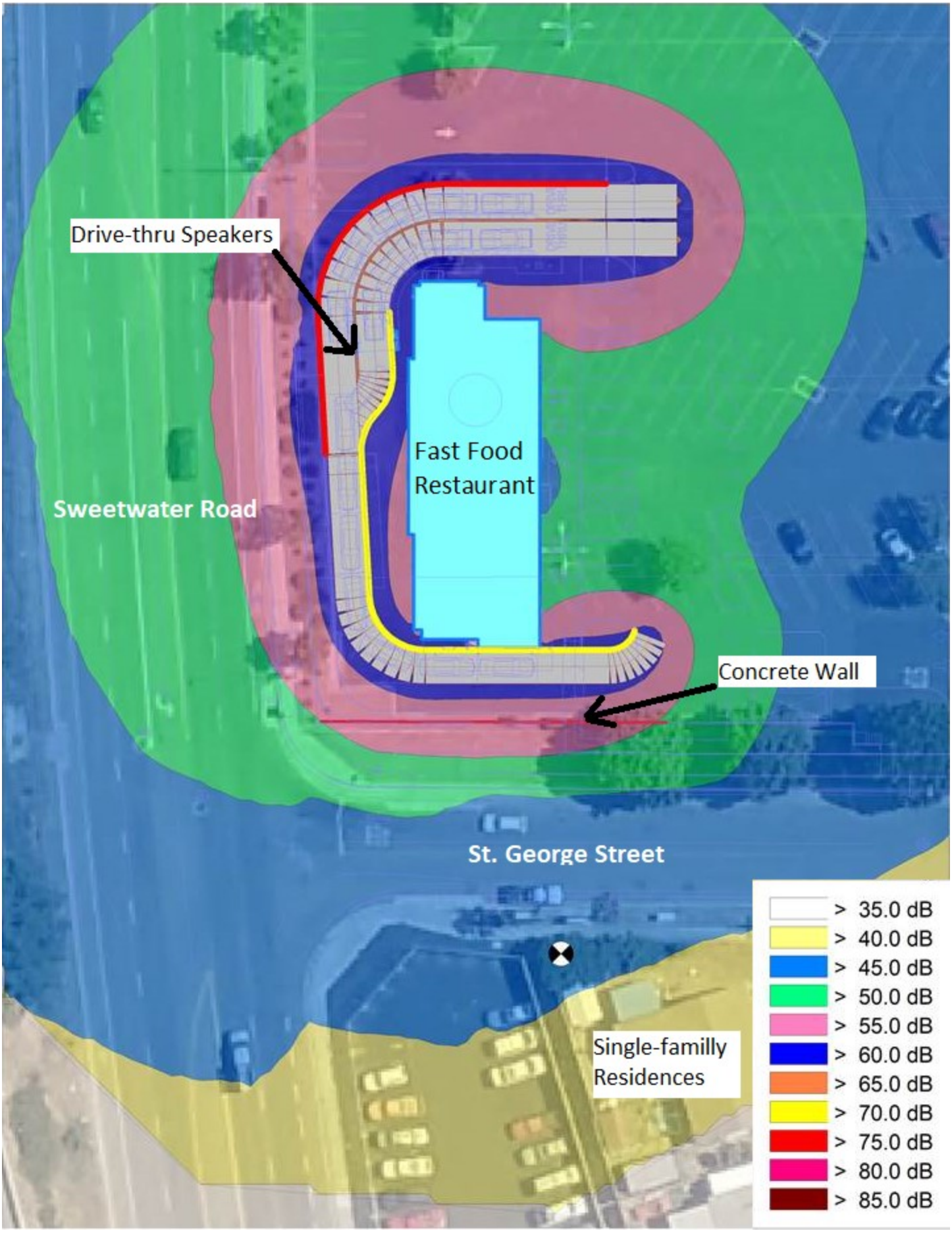
If there are any further questions regarding this issue please contact HME customer service at 1-800-848-4468.

Thank you for your interest in HME's products.

HM Electronics, Inc. | 14110 Stowe Drive | Poway, CA 92064
phone: 800.848.4468 | fax: 858.452.7207 | www.hme.com

Attachment C

Drive-thru Speaker Noise Contours


Drive-thru Speakers
Fast Food Restaurant
Sweetwater Road
Concrete Wall
St. George Street
Single-familly Residences
> 35.0 dB
> 40.0 dB
> 45.0 dB
> 50.0 dB
> 55.0 dB
> 60.0 dB
> 65.0 dB
> 70.0 dB
> 75.0 dB
> 80.0 dB
> 85.0 dB

Attachment D

Construction Noise Modeling Outputs

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 6/24/2020
Case Description:

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
1	Residential	40	40	40

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	125	0
Compactor (ground)	No	20		83.2	125	0
Compressor (air)	No	40		77.7	125	0
Concrete Mixer Truck	No	40		78.8	125	0
Concrete Pump Truck	No	20		81.4	125	0
Dozer	No	40		81.7	125	0
Dump Truck	No	40		76.5	125	0
Grader	No	40	85		125	0
Excavator	No	40		80.7	125	0
Front End Loader	No	40		79.1	125	0
Paver	No	50		77.2	125	0
Roller	No	20		80	125	0
Concrete Saw	No	20		89.6	125	0
Crane	No	16		80.6	125	0

			Results						
	Calculated (dBA)		Noise Limits (dBA)						
			Day		Evening		Night		
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Leq
Backhoe	69.6	65.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	75.3	68.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	69.7	65.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Mixer Truck	70.8	66.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Pump Truck	73.4	66.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	73.7	69.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck	68.5	64.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	77	73.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	72.8	68.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	71.2	67.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	69.3	66.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	72	65.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	81.6	74.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Crane	72.6	64.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	81.6	80.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.