December 20, 2023

Mr. Andrew Sacher
306 Maple, LLC
c/o AIS CRE Development
1991 Worcester Road, Suite 200
Framingham, MA 01701

Re: Sound Study of 306 Maple Street, Bellingham, MA Ref 4903

Dear Mr. Sacher:

Tech Environmental, Inc. (Tech) is pleased to provide this letter report summarizing the results of an acoustic modeling study of the proposed 306 Maple Street warehouse development in Bellingham, Massachusetts. The goal of this work was to demonstrate that the proposed warehouse development will comply with the Massachusetts Department of Environmental Protection (MassDEP) Noise Policy, the Town of Bellingham Zoning (Chapter 240-48) Noise Bylaw, and the Town of Bellingham Scenic Roads (Chapter 154) Noise Bylaw.

This letter report summarizes the monitoring and modeling analyses performed for this study. Section 1.0 introduces the common measures of environmental sound. Section 2.0 presents the existing baseline sound levels, Section 3.0 presents the applicable noise regulations, and Section 4.0 presents the acoustic modeling approach and results. The study concludes that the proposed warehouse development will generate sound level impacts that fully comply with the MassDEP Noise Policy, the Town of Bellingham Zoning (Chapter 240-48) Noise Bylaw, and the Town of Bellingham Scenic Roads (Chapter 154) Noise Bylaw.

1.0 Common Measures of Environmental Sound

Noise is defined as "unwanted sound", which implies sound pressure levels that are annoying or disrupt activities that people are engaged in. The human sense of hearing is subjective and highly variable between individuals. Noise regulations and guidelines set quantitative limits to the sound pressure level (measured with sound analyzers and predicted with computer models) to protect people from sound exposures that most would judge to be annoying or disruptive.

The loudness of a sound is dependent on the radiated energy of the sound source and the propagation and attenuation characteristics of the air. The standard unit of sound pressure level (L_p) is the decibel (dB). A property of the decibel scale is that the sound pressure levels of two separate sounds are not directly additive. For example, if a sound of 40 dB is added to another sound of 40 dB, the total is only a 3 dB increase, not a doubling to 80 dB. For broadband sounds, a 3 dB change is the minimum change perceptible to the human ear. Table 1 presents the perceived change in loudness of different changes in sound pressure levels.

TABLE 1

SUBJECTIVE EFFECT OF CHANGES IN SOUND PRESSURE LEVELS

Change in Sound Pressure Level	Perceived Change in Loudness
3 dB	Just perceptible
5 dB	Noticeable
10 dB	Twice (or half) as loud

The acoustic environment in a rural industrial/residential area, such as that surrounding 306 Maple Street in Bellingham, primarily results from motor vehicle traffic on Interstate I-495 and local roadways. Typical sound levels associated with various activities and environments are presented in Table 2.[1]

TABLE 2

COMMON SOUND LEVELS

Sound Level (dBA)	Common Indoor Sounds	Common Outdoor Sounds
110	Rock Band	Jet Takeoff at 1000’
100	Inside NYC Subway Train	Chain Saw at 3’
90	Food Blender at 3’	Impact Hammer (Hoe Ram) at 50’
80	Garbage Disposal at 3’	Diesel Truck at 100’
70	Vacuum Cleaner at 10’	Lawn Mower at 100’
60	Normal Speech at 3’	Auto (40 mph) at 100’
50	Dishwasher in Next Room	Busy Suburban Area at night
40	Empty Conference Room	Quiet Suburban Area at night
25	Empty Concert Hall	Rural Area at night

[1] U.S. DOT, FHWA, Noise Fundamentals Training Document, Highway Noise Fundamentals, September, 1980.

2.0 Existing Sound Levels

This section presents the ambient sound monitoring results for the study.

2.1 Long-term Monitoring

To identify the lowest L_{90} background level of the nearest residential areas surrounding the proposed warehouse development, a long-term sound analyzer was used to measure hourly sound levels over an eight-day period, including a weekend, to provide a complete picture of 24-hour sound conditions at the site. The location of the long-term sound level measurements are presented in Figure 1. The long-term sound analyzer measured hourly sound levels and octave band levels from Wednesday, December 6, 2023 through Thursday, December 14, 2023.

The long-term measurements were collected with a Larson Davis 831 sound level analyzer. This analyzer is equipped with a 1/2" precision condenser microphone and has an operating range of 5 dB to 140 dB, and an overall frequency range of 3.5 to 20,000 Hz. This analyzer meets or exceeds all requirements set forth in the American National Standards Institute (ANSI) Type 1 Standards for quality and accuracy. Prior to and immediately following the measurement session, the sound analyzer was calibrated (no level adjustment was required; therefore, it was monitoring accurately) with an ANSI Type 1 calibrator, which has an accuracy traceable to the National Institute of Standards and Technology (NIST). For the measurement sessions, the microphone was fitted with a 7-inch windscreen to negate the effect of air movement across microphone diaphragm. All data were downloaded to a computer following the measurement session for the purposes of storage and further analysis.

A summary of the long-term sound measurement results is provided in Table 3. One-hour background levels (L_{90}) ranged from 34 to 58 dBA. The overall sound levels measured are typical of a suburban area located near busy roads.

For the long-term measurements, the lowest nighttime one-hour L_{90} level of 34 dBA was selected as the existing background sound level at the site during overnight hours. This sound level was measured on Sunday, December 10, 2023, between 3:00 a.m. and 5:00 a.m. The lowest daytime one-hour L_{90} level of 42 dBA was selected as the as the existing background sound level at the site during daytime hours. That sound level was measured on Sunday, December 10, 2023, between 7:00 a.m. and 8:00 a.m.

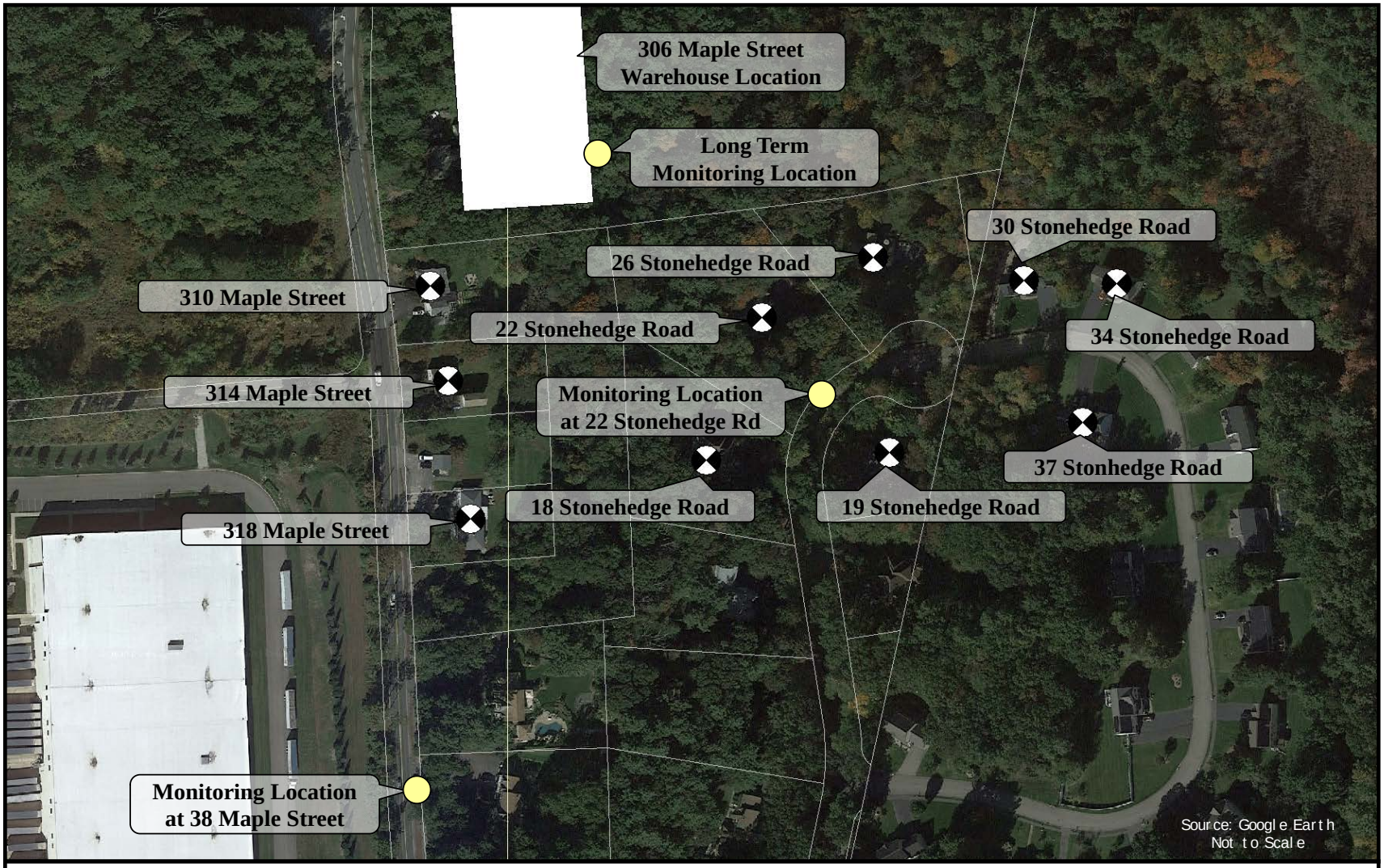

Figure 1

Sound Monitoring Locations and Residential Modeling Locations
306 Maple Street Warehouse, Bellingham, Massachusetts

TABLE 3

SUMMARY OF LONG-TERM BASELINE SOUND LEVELS (L_{90}, dBA)
Wednesday, December 6, 2023 to Wednesday, Decmeber 13, 2023

Hour Starting	Measured L_{90} Broadband Hourly Sound Levels (dBA)								
	Wed. 12/6/23	Thurs. 12/7/23	Fri. 12/8/23	Sat. 12/9/23	Sun. 12/10/23	Mon. 12/11/23	Tues. 12/12/23	Wed. 12/13/23	Thurs. 12/14/23
Midnight	--	41	45	45	37	56	40	39	40
1 a.m.	--	41	42	44	37	56	40	37	39
2 a.m.	--	39	43	42	36	57	39	37	39
3 a.m.	--	38	41	41	**34***	54	39	37	41
4 a.m.	--	42	42	42	**34***	58	43	41	40
5 a.m.	--	46	50	47	36	57	47	46	47
6 a.m.	--	50	55	51	39	58	49	52	49
7 a.m.	--	49	54	52	**42****	56	50	54	50
8 a.m.	--	46	52	53	44	54	47	52	51
9 a.m.	--	46	48	51	46	54	45	48	51
10 a.m.	52	43	47	48	47	54	45	47	49
11 a.m.	51	43	49	48	46	54	45	47	--
Noon	50	43	45	49	47	53	45	48	--
1 p.m.	52	43	45	48	49	52	47	49	--
2 p.m.	52	45	46	47	52	54	46	50	--
3 p.m.	52	45	48	48	50	54	47	51	--
4 p.m.	53	46	49	46	48	53	47	50	--
5 p.m.	52	47	50	48	55	50	47	50	--
6 p.m.	51	47	49	48	51	49	45	48	--
7 p.m.	49	47	50	47	50	49	45	47	--
8 p.m.	46	47	50	45	48	47	43	46	--
9 p.m.	45	47	49	42	47	46	41	44	--
10 p.m.	44	46	46	39	46	45	42	43	--
11 p.m.	42	47	47	37	55	42	39	42	--

* Lowest nighttime hourly sound levels were measured on Sunday, December 10, 2023, between 3:00 a.m. and 5:00 a.m.
** Lowest daytime hourly sound level was measured on Sunday, December 10, 2023, between 7:00 a.m. and 8:00 a.m.

2.2 Short-term Monitoring

Short-term baseline sound levels were measured during the late-night hours (12:00 a.m. to 12:37 a.m.) on Wednesday, December 13, 2023, and during daytime hours (9:36 a.m. to 10:19 a.m.) on Thursday, December 14, 2023 at two (2) additional monitoring locations. During the late-night monitoring skies were clear with no precipitation; the temperature was 34°F, and wind speeds were 8 mph out of the northwest, and during the daytime monitoring skies were clear with no precipitation; the temperature was 34°F, and wind speeds were 10 mph out of the northwest. The approximate locations of the short-term

sound level measurements are presented in Figure 1. One (1) set of sound level measurements, of 15 to 20 minutes in duration, was conducted at each of these locations during the late-night hours and during the daytime hours. Broadband A-weighted maximum (L_{max}), average (L_{eq}) and background (L_{90}) sound levels were measured at each location to provide a complete picture of sound conditions in the residential areas surrounding the site.

All short-term (15 to 20-minutes) sound level measurements were collected by an acoustic engineer using a Larson Davis Model 831 ANSI Type 1 (high precision) real-time sound level analyzer, which was equipped with precision condenser microphone, windscreen, and frequency analyzer. This analyzer is equipped with a 1/2" precision condenser microphone and has an operating range of 5 dB to 140 dB, and an overall frequency range of 3.5 to 20,000 Hz. This analyzer meets or exceeds all requirements set forth in the American National Standards Institute (ANSI) Type 1 Standards for quality and accuracy. Prior to, and immediately following, each measurement session, the sound analyzer was calibrated (no level adjustment was required; therefore, they were monitoring accurately) with an ANSI Type 1 calibrator, which has an accuracy traceable to NIST. For each measurement session, the microphone was fitted with a 7-inch windscreen to negate the effect of air movement across microphone diaphragm. All data were downloaded to a computer following the measurement session for the purposes of storage and further analysis. Concurrent observations of audible activity from sound-producing sources were recorded by the acoustic engineers.

A summary of the late-night short-term sound level measurement results is provided in Table 4 and a summary of daytime short-term sound level measurement results is provided in Table 5. The background levels (L_{90}) ranged from 36 to 40 dBA in the late-night hours and ranged from 46 to 48 dBA during the daytime. The dominant sources of sound were distant and local traffic including I-495 and existing industrial/commercial uses off of Maple Street. The overall sound levels measured are typical of a suburban area located near busy roads and industrial/commercial uses.

TABLE 4

SUMMARY OF LATE NIGHT SHORT-TERM SOUND LEVELS SURROUNDING THE PROJECT SITE

Wednesday, December 13, 2023, 12:00 a.m. to 12:37 a.m.

Measured Broadband Sound Levels (dBA)	**22 Stonhedge Road**	**338 Maple Street**
	12:00 - 12:15 a.m.	**12:17 - 12:37 a.m.**
Baseline Sound Level (L_{90})	36 dBA	40 dBA

TABLE 5

SUMMARY OF DAYTIME SHORT-TERM SOUND LEVELS SURROUNDING THE PROJECT SITE

Thursday, December 14, 2023, 9:36 a.m. to 10:19 a.m.

Measured Broadband Sound Levels (dBA)	**22 Stonhedge Road**	**338 Maple Street**
	9:36 - 9:56 a.m.	**9:59 – 10:19 a.m.**
Baseline Sound Level (L_{90})	46 dBA	48 dBA

The lowest late night and daytime ambient (L_{90}) sound levels collected at the long-term monitoring location were lower than the late night and daytime short-term monitoring results presented above (see Section 2.1). Thus, this analysis will assume that the lowest late night ambient sound levels at each of nearest sensitive locations are consistent with the long-term monitoring (i.e., lowest late night ambient sound level of 34 dBA). Furthermore, this analysis will assume that the lowest daytime ambient sound levels at all locations experience ambient sound levels consistent with the long-term monitoring (i.e., lowest daytime ambient sound level of 42 dBA).

3.0 Noise Regulations

This section presents the noise regulations applicable to the proposed warehouse development.

3.1 MassDEP Noise Policy

The Massachusetts Department of Environmental Protection (MassDEP) regulates noise through 310 CMR 7.10, "Air Pollution Control". In these regulations "air contaminant" is defined to include sound and a condition of "air pollution" includes the presence of an air contaminant in such concentration and duration as to "cause a nuisance" or "unreasonably interfere with the comfortable enjoyment of life and property". Regulation 7.10 further prohibits "unnecessary emissions" of noise. The MassDEP Noise Policy (Policy Statement 90-001, February 1, 1990) interprets a violation of this noise regulation to have occurred if the source causes either:

1. An increase in the broadband sound pressure level of more than 10 dBA above the ambient, or
2. A "pure tone" condition.

The nighttime MassDEP Noise Policy limit in the residential areas of Maple Street and Stonehedge Road is 44 dBA (i.e., the nighttime baseline sound level (L_{90}) + 10 dBA). And the daytime MassDEP Noise Policy limit in the residential areas of Maple Street and Stonehedge Road is 52 dBA (i.e., the daytime baseline sound level (L_{90}) + 10 dBA). Continuous sound level impacts from the proposed warehouse development may not exceed those levels. A "pure tone" condition occurs when any octave band sound pressure level exceeds both of the two adjacent octave band sound pressure levels by 3 dB or more.

3.2 Town of Bellingham Zoning Noise Bylaw

Under Bellingham Bylaw, Chapter 240-48 Noise, noise receiving zones are defined as follows:

- Receiving Zone A: Business and Industrial districts.
- Receiving Zone B: Locations in any other district, but within 200 feet of a Business or Industrial district, or within 200 feet of an arterial street.
- Receiving Zone C: All other locations.

The noise limits presented in Table 6 cannot be exceeded by more than 20 dB(A) at any time, or by more than 10 dB(A) for more than ten minutes in an hour, or at all for more than 30 minutes in an hour. The noise limits are applicable at the Receiving Zone where noise is potentially heard, not the Zone where noise is generated. "Daytime" is defined as 7:00 a.m. until 9:00 p.m. on all days except Sundays and legal holidays, when it shall be from 12:00 noon until 9:00 p.m.

TABLE 6

TOWN OF BELLINGHAM NOISE BYLAW SOUND LIMITS

Maximum Allowable Exterior Noise Level (dBA)		
Receiving Zone	**Daytime**	**Nighttime**
A	65	60
B	55	50
C	50	45

3.3 Town of Bellingham Scenic Roads Noise Bylaw

Under Chapter 154: Scenic Roads, § 154-3 Scenic Road Designation, Part C, designates the following roads as scenic roads:

- Farm Street – From Hartford Avenue (Caryville) to the I-495 Bridge
- High Street – From Maple Street to North Main
- Maple Street – From Hartford Avenue to Mechanic Street

Under § 154-7 Noise on Scenic Roads, Section A, noise receiving zones are defined as follows:

1) Receiving Zone A: Business and Industrial Districts.
2) Receiving Zone B: locations in any other district, but within 200 feet of a Business or Industrial district.
3) Receiving Zone C: all other locations.
4) For purposes of this part, any Town owned or managed property that may be used for passive or active recreation shall be treated as Receiving Zone C.

Thus, the Scenic Roads Noise Bylaw is applicable to the proposed 306 Maple Street warehouse development for those Receiving Zone receivers located on Maple Street. The noise limits presented in the Table 7 cannot be exceeded by more than 20 dB(A) at any time, or by more than 10 dB(A) for more than ten minutes in an hour, or at all for more than 30 minutes in an hour. The nighttime noise limits are not to be exceeded, except for an allowance of up to one occurrence during a 24-hour period that may exceed the standard by up to 10 dBA for a duration of no more than 10 minutes. In addition, a 5-dBA penalty is applied to the sound limits for impulsive noise. "Daytime" is defined as 7:00 a.m. until 9:00 p.m. on all days except Sundays and legal holidays, when it shall be from 12:00 noon until 9:00 p.m. Furthermore, compliance with the Town of Bellingham Scenic Roads (Chapter 154) Noise Bylaw infers compliance with the Town of Bellingham Zoning (Chapter 240-48) Noise Bylaw.

TABLE 7

TOWN OF BELLINGHAM SCENIC ROADS NOISE BYLAW SOUND LIMITS

Maximum Allowable Exterior Noise Level (dBA)		
Receiving Zone	**Daytime**	**Nighttime**
A	65	50
B	55	45
C	50	40

3.4 Facility Design Goals

The baseline sound conditions in the project area (see Section 2.0) define the MassDEP Noise Policy limits for the project (see Section 3.1). The prescribed nighttime limit is 44 dBA, and the prescribed daytime limit is 52 dBA. Furthermore, the Scenic Roads Noise Bylaw is applicable for those Receiving Zone residential locations on Maple Street. Those locations include those that are defined as in Receiving Zone B and Receiving Zone C as defined by the Bellingham Scenic Roads Noise Bylaw (See Section 3.3). Those prescribed nighttime sound limits are 45 dBA for residential uses within 200 feet of an Industrial District (Receiving Zone B), and 40 dBA for all other locations. The prescribed daytime sound limits are 55 dBA for residential uses within 200 feet of an Industrial District (Receiving Zone B), and 50 dBA for all other locations.

The residential areas of Maple Street and Stonehedge Road included in this study is presented in Figure 1. Table 8 presents each residential area, the prescribed nighttime MassDEP Noise Policy limit for each location, and the prescribed nighttime Bellingham Scenic Roads Noise Bylaw limit (applicable to Maple Street, Bellingham) or Bellingham Noise Bylaw limit (applicable to Stonehedge Road, Bellingham) for each location. (Please note that 30 Stonehedge Road, 34 Stonehedge Road, and 37 Stonehedge Road are in Franklin, and the Bellingham Bylaw limits do not apply.) The lesser of the two (2) limits for each location is the facility nighttime design goal for this analysis and is bolded in Table 8.

TABLE 8

FACILITY NIGHTTIME DESIGN GOALS FOR THE WAREHOUSE DEVELOPMENT

Residential Location	Baseline Sound Level	MassDEP Noise Policy Limit	Bellingham Bylaw Zone	Bellingham Scenic Roads or Noise Bylaw Limit
310 Maple Street	34 dBA	**44 dBA**	Zone B	45 dBA
314 Maple Street	34 dBA	**44 dBA**	Zone B	45 dBA
318 Maple Street	34 dBA	44 dBA	Zone C	**40 dBA**
18 Stonehedge Road	34 dBA	**44 dBA**	Zone B	50 dBA
19 Stonehedge Road	34 dBA	**44 dBA**	Zone C	45 dBA
22 Stonehedge Road	34 dBA	**44 dBA**	Zone B	50 dBA
26 Stonehedge Road	34 dBA	**44 dBA**	Zone B	50 dBA
30 Stonehedge Road	34 dBA	**44 dBA**	NA	NA
34 Stonehedge Road	34 dBA	**44 dBA**	NA	NA
37 Stonehedge Road	34 dBA	**44 dBA**	NA	NA

Table 9 presents the residential areas of Maple Street and Stonehedge Road included in this study, the prescribed daytime MassDEP Noise Policy limits for each location, and the prescribed Bellingham Scenic Roads Noise Bylaw limit (applicable to Maple Street, Bellingham) or Bellingham Noise Bylaw limit (applicable to Stonehedge Road, Bellingham) for each location. (Please note that 30 Stonehedge Road, 34 Stonehedge Road, and 37 Stonehedge Road are in Franklin, and the Bellingham Bylaw limits do not apply.) The lesser of the two (2) limits for each location is the facility daytime design goal for this analysis and is bolded in Table 9.

TABLE 9

FACILITY DAYTIME DESIGN GOALS FOR THE WAREHOUSE DEVELOPMENT

Residential Location	Baseline Sound Level	MassDEP Noise Policy Limit	Bellingham Bylaw Zone	Bellingham Scenic Roads or Noise Bylaw Limit
310 Maple Street	42 dBA	**52 dBA**	Zone B	55 dBA
314 Maple Street	42 dBA	**52 dBA**	Zone B	55 dBA
318 Maple Street	42 dBA	51 dBA	Zone C	**50 dBA**
18 Stonehedge Road	42 dBA	**52 dBA**	Zone B	55 dBA
19 Stonehedge Road	42 dBA	51 dBA	Zone C	**50 dBA**
22 Stonehedge Road	42 dBA	**52 dBA**	Zone B	55 dBA
26 Stonehedge Road	42 dBA	**52 dBA**	Zone B	55 dBA
30 Stonehedge Road	42 dBA	**52 dBA**	NA	NA
34 Stonehedge Road	42 dBA	**52 dBA**	NA	NA
37 Stonehedge Road	42 dBA	**52 dBA**	NA	NA

4.0 Modeling Assumptions and Results

This section describes the modeling approach and assumptions included in our acoustic modeling analysis and predicted sound levels in the residential areas of Maple Street and Stonehedge Road.

4.1 Modeling Assumptions

Future sound levels of the proposed warehouse development were calculated with the CadnaA acoustic model assuming both continuous and non-continuous sources associated with the facility. The assumptions in our acoustic modeling analysis are as follows:

1. The location of the proposed warehouse development and associated grading was based on site plans by Allen Engineering & Associates.[2] The plans show the proposed location of the warehouse building in the western portion of the lot, with loading docks on its east wall, and with car parking stalls to the west, north and east of the building.
2. The primary sources of daytime and nighttime continuous operational sounds are rooftop-mounted heating, ventilation, and air conditioning (HVAC) rooftop units (RTUs) on top of the building. Furthermore, the modeling analysis assumes that heavy trucks traveling to and from the facility are continuous sound sources for both daytime and nighttime periods. Other non-continuous sound sources are truck backup alarms, trucks idling at the loading docks and trash compactors at the

[2] Layout and Materials Plan for 306 Maple Street, Bellingham, MA, Allen Engineering & Associates, September 6, 2023.

loading dock areas. The locations of the sound sources are illustrated in Figure 2. The sound power levels for the sources, including octave bands, are included in the attached Appendix A.

3. The warehouse development is proposing to install a sound barrier wall along the southern property line of the site to shield the nearest residences on Maple Street and Stonhedge Road from sounds produced by truck traffic and truck activities at the loading docks. The location and design of the southern fence and sound barrier is illustrated in Figure 3. The barrier is south of the warehouse building along the rear access road and southern loading dock area and is assumed to be at least seven (7) to nine (9) feet tall. The portion along the southern loading dock area is assumed to be at least seven (7) feet tall except for an approximately 100 feet long section that is assumed to be at least nine (9) feet tall.
4. The proposed warehouse development will operate up to 24 hours per day, seven days per week

4.2 Future Sound Levels

CadnaA is a sophisticated 3-D model for sound propagation and attenuation based on International Standard ISO 9613.[3] Absorption of sound assumed standard conditions and is significant at large distances and at high frequencies. ISO 9613 was used to calculate propagation and attenuation of sound energy by hemispherical divergence with distance, surface reflection, ground, and shielding effects by barriers, buildings, and ground topography. Offsite topography was determined using MassGIS digital terrain models.[4]

The predicted maximum sound levels are conservative because:

1. The model assumes a ground-based temperature inversion, such as may occur on a clear, calm night when sound propagation is at a maximum. This worst-case condition is infrequent.

2. The model assumes that all rooftop equipment operates at maximum load simultaneously (a worst-case condition not likely to occur). Furthermore, the modeling analysis assumes that heavy trucks traveling to and from the facility will occur during all daytime and nighttime periods consistent with the maximum peak hour[5].

Sound levels were predicted for the continuous operation of RTUs on top of the building, as well as heavy trucks traveling to and from the facility. Additional sound level impacts were predicted from non-continuous sound sources: truck backup alarms, trucks idling at the loading docks and trash compactors at the loading docks. The locations of the sound sources are presented in Figure 2.

Table 10 summarizes the modeling results that the warehouse development would result in sound level impacts at night that range from 25 dBA to 44 dBA at the residential uses on Maple Street & Stonehedge Road. Some of these projected sound levels are greater than the existing nighttime baseline sound level of

[3] International Standard, ISO 9613-2, Acoustics – Attenuation of Sound During Propagation Outdoors, -- Part 2 General Method of Calculation.

[4] https://docs.digital.mass.gov/dataset/massgis-data-digital-terrain-model-dtm-files

[5] The "Weekday PM Peak Hour" is one (1) truck round trip (i.e., 2 truck trip ends) per Traffic Impact and Access Study, Proposed Warehouse, 306 Maple Street, Bellingham, MA by Chappell Engineering Associates, LLC, August 31, 2023.

34 dBA (see Section 2.0). The predicted total sound level impacts of the warehouse development comply with the facility design goals for each location (see Section 3.4) for the nighttime periods. The sound level impacts of the warehouse development at locations further away would be even less. Furthermore, the modeled sound level impact at the nearest residences does not demonstrate the presence of a pure tone condition. Table 10 confirms that the proposed warehouse development will comply with the MassDEP Noise Policy, the Town of Bellingham Zoning (Chapter 240-48) Noise Bylaw, and the Town of Bellingham Scenic Roads (Chapter 154) Noise Bylaw at night.

TABLE 10

PREDICTED NIGHTTIME SOUND LEVELS FROM THE WAREHOUSE DEVELOPMENT

Sensitive Receptor Location	Facility Design Goal	Basis of Design Goal	Sound Level Impacts of Project				Facility Complies?
			All Continuo-us Sound Sources	With Truck Backup Beepers	With Idling Trucks	With Trash Compact-ors	
310 Maple Street	44 dBA	MassDEP Policy	32 dBA	33 dBA	32 dBA	33 dBA	**Yes**
314 Maple Street	44 dBA	MassDEP Policy	31 dBA	39 dBA	32 dBA	32 dBA	**Yes**
318 Maple Street	40 dBA	Bellingham Bylaw	32 dBA	37 dBA	36 dBA	33 dBA	**Yes**
18 Stonehedge Rd	44 dBA	MassDEP Policy	32 dBA	38 dBA	37 dBA	41 dBA	**Yes**
19 Stonehedge Rd	44 dBA	MassDEP Policy	27 dBA	37 dBA	31 dBA	34 dBA	**Yes**
22 Stonehedge Rd	44 dBA	MassDEP Policy	32 dBA	43 dBA	41 dBA	44 dBA	**Yes**
26 Stonehedge Rd	44 dBA	MassDEP Policy	30 dBA	43 dBA	38 dBA	37 dBA	**Yes**
30 Stonehedge Rd	44 dBA	MassDEP Policy	27 dBA	41 dBA	34 dBA	33 dBA	**Yes**
34 Stonehedge Rd	44 dBA	MassDEP Policy	26 dBA	39 dBA	32 dBA	31 dBA	**Yes**
37 Stonehedge Rd	44 dBA	MassDEP Policy	25 dBA	35 dBA	32 dBA	31 dBA	**Yes**

Table 11 summarizes the modeling results that the warehouse development would result in sound level impacts during daytime hours that range from 25 dBA to 44 dBA at the residential uses on Maple Street and Stonehedge Road. Some of these projected sound levels are greater than the existing daytime baseline sound level of 42 dBA (see Section 2.0). The predicted total sound level impacts of the warehouse development comply with the facility design goals for each location (see Section 3.4) for the daytime periods. The sound level impacts of the warehouse development at locations further away would be even less. Furthermore, the modeled sound level impact at the nearest residences does not demonstrate the presence of a pure tone condition. Table 11 confirms that the proposed warehouse development will comply with the MassDEP Noise Policy, the Town of Bellingham Zoning (Chapter 240-48) Noise Bylaw, and the Town of Bellingham Scenic Roads (Chapter 154) Noise Bylaw during daytime hours.

TABLE 11

PREDICTED DAYTIME SOUND LEVELS FROM THE WAREHOUSE DEVELOPMENT

Sensitive Receptor Location	Facility Design Goal	Basis of Design Goal	Sound Level Impacts of Project				Facility Complies?
			All Continuo-us Sound Sources	With Truck Backup Beepers	With Idling Trucks	With Trash Compact-ors	
310 Maple Street	52 dBA	MassDEP Policy	32 dBA	33 dBA	32 dBA	33 dBA	**Yes**
314 Maple Street	52 dBA	MassDEP Policy	31 dBA	39 dBA	32 dBA	32 dBA	**Yes**
318 Maple Street	50 dBA	Bellingham Bylaw	32 dBA	37 dBA	36 dBA	33 dBA	**Yes**
18 Stonehedge Rd	52 dBA	MassDEP Policy	32 dBA	38 dBA	37 dBA	41 dBA	**Yes**
19 Stonehedge Rd	50 dBA	Bellingham Bylaw	27 dBA	37 dBA	31 dBA	34 dBA	**Yes**
22 Stonehedge Rd	52 dBA	MassDEP Policy	32 dBA	43 dBA	41 dBA	44 dBA	**Yes**
26 Stonehedge Rd	52 dBA	MassDEP Policy	30 dBA	43 dBA	38 dBA	37 dBA	**Yes**
30 Stonehedge Rd	52 dBA	MassDEP Policy	27 dBA	41 dBA	34 dBA	33 dBA	**Yes**
34 Stonehedge Rd	52 dBA	MassDEP Policy	26 dBA	39 dBA	32 dBA	31 dBA	**Yes**
37 Stonehedge Rd	52 dBA	MassDEP Policy	25 dBA	35 dBA	32 dBA	31 dBA	**Yes**

In conclusion, the proposed 306 Maple Street warehouse development in Bellingham, Massachusetts will not create a noise nuisance condition and will fully comply with the MassDEP Noise Policy, the Town of Bellingham Zoning (Chapter 240-48) Noise Bylaw, and the Town of Bellingham Scenic Roads (Chapter 154) Noise Bylaw.

If you have any questions, please call me at 781-890-2220.

Sincerely,

TECH ENVIRONMENTAL, INC.

Marc C. Wallace, QEP, INCE
Vice President

4903/306 Maple Streed Bellingham Sound Study

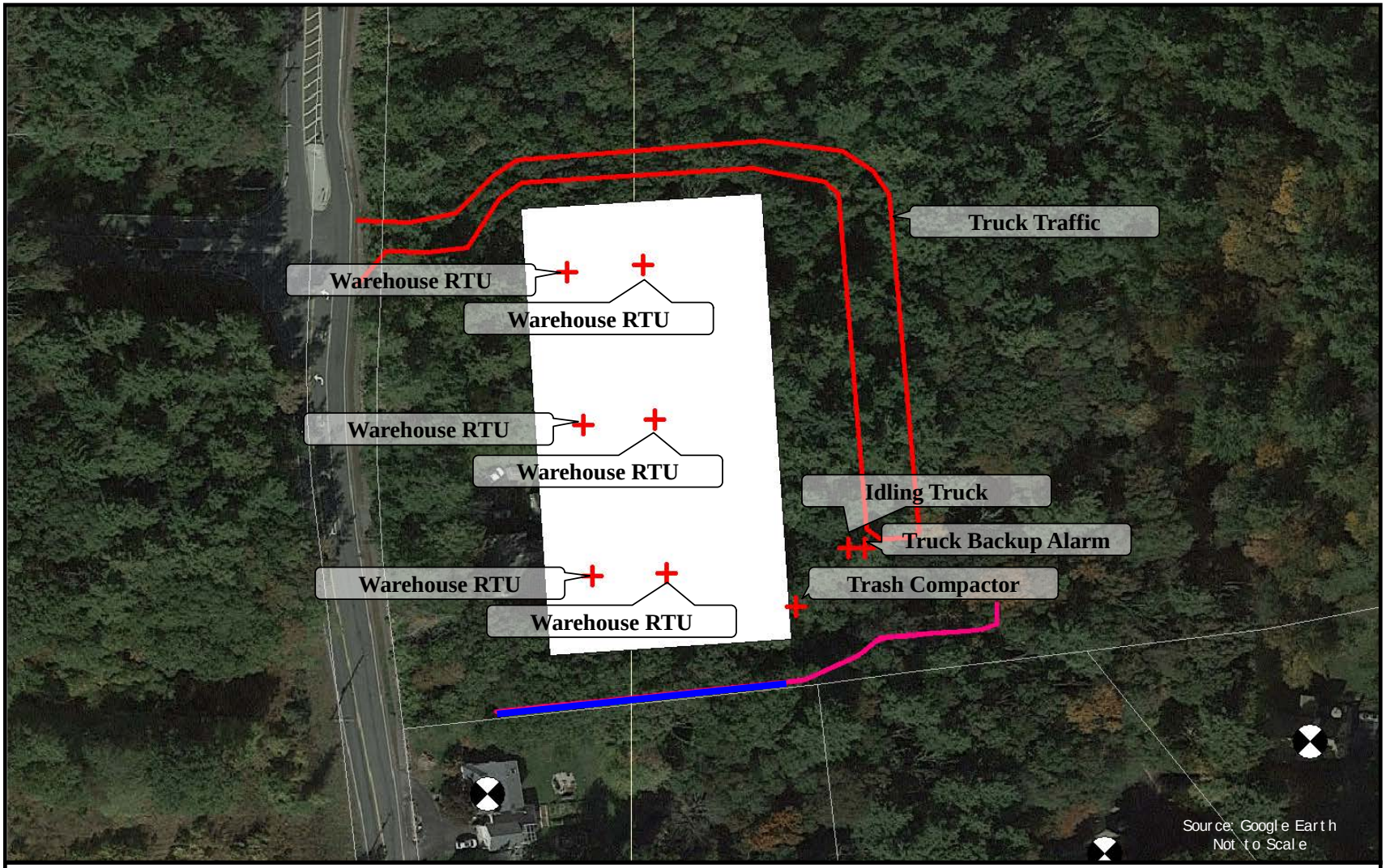

Figure 2

On-Site Sound Source Locations
306 Maple Street Warehouse, Bellingham, Massachusetts

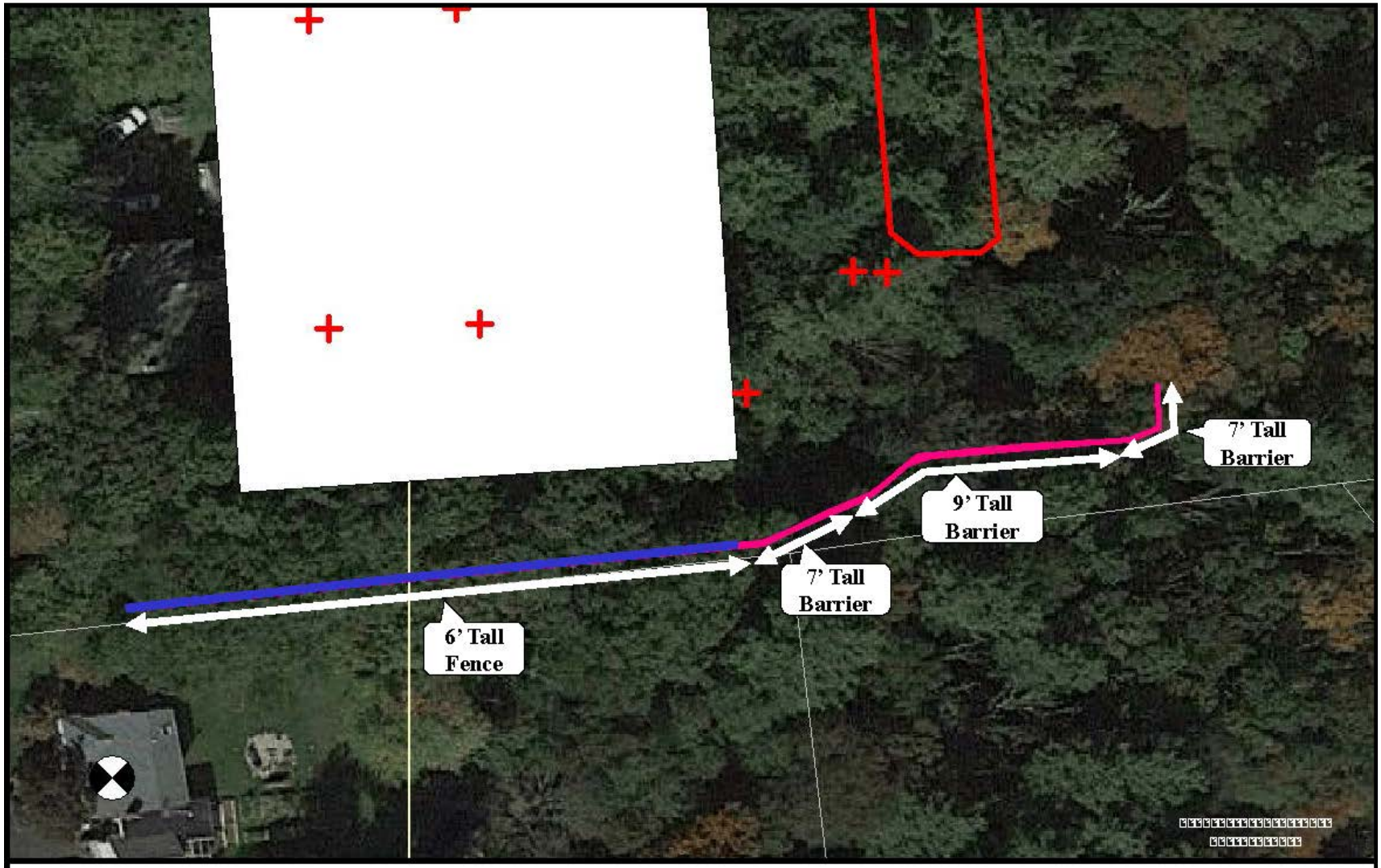

Figure 3

Southern Fence and Sound Barrier Location and Design
306 Maple Street Warehouse, Bellingham, Massachusetts

APPENDIX A – REFERENCE SOUND POWER LEVELS (L_w, dB)

Sound Source	31 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1K Hz	2K Hz	4K Hz	8K Hz	Total (dBA)
Warehouse RTUs (Typ of 6)	86	86	84	81	79	76	73	68	65	**81**
Truck Traffic[6]	72	81	90	94	94	95	94	92	87	**100**
Truck Backup Alarms[7]	0	0	0	0	101	104	101	0	0	**107**
Truck Idling[7]	72	81	90	94	94	95	94	92	87	**100**
Trash Compactor	100	98	94	93	89	86	82	75	72	**91**

[6] Truck traffic is modeled as a "moving point source" with an intermittent emission of 100 dBA traveling at 15 miles per hour (mph) and one (1) time per hour. The distance of the source around the site roadway is 1,354 feet.

[7] Truck backup alarms and idling trucks are each modeled as a point source with an assumed usage factor of five (5) minutes per hour (i.e., -10 x log10(5/60)), which is consistent with the MassDEP anti-idling law.