

ENVIRONMENTAL NOISE ASSESSMENT

**PREFERRED PUMP
SACRAMENTO, CALIFORNIA**

WJVA Report No. 24-58

PREPARED FOR

**PRECISION ENGINEERING
1234 O STREET
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PREPARED BY

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DECEMBER 13, 2024

1. INTRODUCTION

Project Description

Preferred Pump (Applicant) proposes a Site Plan and Design Review to facilitate the development of a warehouse and distribution center in the City of Sacramento, referred to as the "proposed Project" or "Project" throughout this document.

The proposed Project would consist of a +/- 40,500 square foot building, with +/- 36,748 square feet allocated for the warehouse and +/- 9,500 square feet for an office. The office portion is planned as a two-story portion of the structure, reaching a height of 30 feet to the top of the parapet. Additionally, the project includes 65 parking stalls, an on-site ponding basin, and proposed landscaping. The project site plan is provided as Figure 1.

The intended function of the proposed Project is to serve as a distributor, selling manufactured goods from various vendors and manufacturers. There will be no manufacturing from raw materials or foundry work involved. Project operations will primarily involve the assembly of pumps using ready-to-use components that are assembled by screwing and/or bolting together. Typical equipment used for assembly includes engine lathes and end mills, with forklifts potentially utilized as well. All steel and bronze waste material will be recycled.

Apart from assembly, other common tasks will include shipping and receiving, as well as associated administrative efforts such as purchasing, sales order processing, and general administrative duties. The proposed Project is not expected to generate significant noise.

The proposed hours of operation for the facility are Monday through Friday, from 7:00 am to 5:00 pm. The estimated number of employees at the facility will be approximately 31. In addition to the employees, anticipated traffic will include approximately 4 to 6 delivery trucks daily and 4 to 6 will-call customers. On-site storage will include PVC and steel pipes for water well applications, as well as product pipes suitable for agriculture, irrigation, and potable water use.

Environmental Noise Assessment

This environmental noise assessment has been prepared to determine if significant noise impacts would be produced by the project and to describe mitigation measures for noise if significant impacts are determined. The environmental noise assessment, prepared by WJV Acoustics, Inc. (WJVA), is based upon the project site plan prepared by Precision Engineering (dated 9/30/24), project-related operational information provided by the applicant, the findings of on-site noise level measurements and the findings of reference noise level measurements conducted by WJVA, and WJVA file data. Revisions to the site plan, project-related equipment and noise level data or other project-related information available to WJVA at the time the analysis was prepared may require a reevaluation of the findings and/or recommendations of the report.

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides typical A-weighted sound levels for common noise sources.

In terms of human perception, a 5 dB increase or decrease is considered to be a noticeable change in noise levels. Additionally, a 10 dB increase or decrease is perceived by the human ear as half as loud or twice as loud. In terms of perception, generally speaking the human ear cannot perceive an increase (or decrease) in noise levels less than 3 dB.

2. THRESHOLDS OF SIGNIFICANCE

The CEQA Guidelines apply the following questions for the assessment of significant noise impacts for a project:

- a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?
- c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

a. Noise Level Standards

City of Sacramento

General Plan

The Environmental Resources and Constraints Element of the Sacramento 2040 General Plan¹ establishes noise level compatibility standards in terms of the Day-Night Average Level (L_{dn}) or Community Noise Equivalent Level (CNEL). Both the L_{dn} and CNEL represent the time-weighted energy average noise level for a 24-hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The CNEL includes an additional penalty of 5 dB (technically 4.77 dB) that is added to noise levels occurring during the evening hours between 7:00 p.m. and 10:00 p.m. Both the L_{dn} and CNEL represent cumulative exposure to noise over an extended period of time and are therefore calculated based upon *annual average* conditions. The L_{dn} and CNEL are considered to be equivalent descriptors of the community noise environment for the purposes of this study. Table I provides the City of Sacramento noise level compatibility standards for various land uses.

Table 1: Exterior Noise Compatibility Standards for Various Land Uses	
LAND USE TYPE	HIGHEST LEVEL OF NOISE EXPOSURE THAT IS REGARDED AS "NORMALLY ACCEPTABLE" ^a (LDN ^b OR CNEL ^c)
Residential—Low-Density Single-Family, Duplex, Mobile Homes	60 dBA ^{d, e}
Residential—Multi-family ^g	65 dBA
Urban Residential Infill ^h and Mixed-Use Projects ^{i, j}	70 dBA
Transient Lodging—Motels, Hotels	65 dBA
Schools, Libraries, Churches, Hospitals, Nursing Homes	70 dBA
Auditoriums, Concert Halls, Amphitheaters	Mitigation based on site-specific study
Sports Arena, Outdoor Spectator Sports	Mitigation based on site-specific study
Playgrounds, Neighborhood Parks	70 dBA
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75 dBA
Office Buildings—Business, Commercial, and Professional	70 dBA
Industrial, Manufacturing, Utilities, Agriculture	75 dBA
Source: Governor's Office of Planning and Research, State of California General Plan Guidelines 2003, October 2003. - As defined in the California Office of Planning and Research Guidelines, "Normally Acceptable" means that the "specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements. - Ldn, or day-night average sound level, is an average 24-hour noise measurement that factors in day and night noise levels. - CNEL, or Community Noise Equivalent Level, measurements are a weighted average of sound levels gathered throughout a 24-hour period. d Applies to the primary open space area of a detached single-family home, duplex, or mobile home, which is typically the backyard or fenced side yard, as measured from the center of the primary open space area (not the property line). This standard does not apply to secondary open space areas, such as front yards, balconies, stoops, and porches. e dBA, or A-weighted decibel scale, is a measurement of noise levels. f The exterior noise standard for the residential area west of McClellan Airport known as McClellan Heights/Parker Homes is 65 dBA. g Applies to the primary open space areas of townhomes and multi-family apartments or condominiums (private rear yards for townhomes; common courtyards, roof gardens, or gathering spaces for multi-family developments). These standards shall not apply to balconies or small attached patios in multistoried multi-family structures. h Applies to the Central City and areas with a Residential Mixed-Use designation. i All mixed-use projects located anywhere in the City of Sacramento. j See notes d and g above for definition of primary open space areas for single-family and multi-family developments.	

The General Plan provides the following noise-related Goals and Policies applicable to the project:

- Exterior Noise Standards.** The City shall require noise mitigation for all development where the projected exterior noise levels exceed those shown in **Table 1**, to the extent feasible.

- **Noise Source Control.** The City should require noise impacts in new developments to be controlled at the noise source where feasible, as opposed to the receptor end, using techniques including but not limited to the following:
 - Site design
 - Building orientation,
 - Building design, and
 - Hours of operation.
- **Interior Noise Standards.** The City shall require new development to include noise attenuation to assure acceptable interior noise levels appropriate to the land use, as follows:
 - 45 dBA L_{dn} for residential, transient lodgings, hospitals, nursing homes, and other uses where people normally sleep; and
 - 45 dBA L_{eq} (peak hour with windows closed) for office buildings and similar uses.
- **Construction Noise Controls.** The City shall limit the potential noise impacts of construction activities on surrounding land uses through noise regulations in the City Code that address permitted days and hours of construction, types of work, construction equipment, and sound attenuation devices.

Municipal Code

Chapter 8.68.060 of the City of Sacramento Municipal Code² (noise ordinance) provides additional noise standards and criteria applicable to the project. The noise ordinance addresses the statistical distribution of noise over time and allows for progressively shorter periods of exposure to levels of increasing loudness. Table II summarizes the exterior noise level standards of the ordinance. The standards are to be adjusted by -5 dB if the noise source of concern consists primarily of impulsive or simple tone noises, or for noises consisting of speech or music.

The ordinance is to be applied during any one-hour time period of the day or night and the standards are 5 dB more restrictive during the nighttime hours of 10:00 p.m. to 7:00 a.m. The standards of the noise ordinance may be adjusted upward (made less restrictive) if existing ambient noise levels without the source of concern already exceed the noise ordinance standards. Specifically, if the ambient noise level exceeds that permitted by any of the first four noise limit categories, the allowable noise limit shall be increased in five dBA increments in each category to encompass the ambient noise level. If the ambient noise level exceeds the fifth noise level category, the maximum ambient noise level shall be the noise limit for that category.

TABLE II EXTERIOR NOISE LEVEL STANDARDS, DBA CITY OF SACRAMENTO NOISE ORDINANCE			
Category	Cumulative # Min/Hr. (L _n) ¹	Daytime (7 am-10 pm)	Nighttime (10 pm-7 am)
1	30 (L ₅₀)	55	50
2	15 (L ₂₅)	60	55
3	5 (L _{8.3})	65	60
4	1 (L _{1.7})	70	65
5	0 (L _{max})	75	70

¹In layman's terms, the noise level standards shown may not be exceeded for more than the specified number of minutes within any one-hour time period. The L_n value shown in parenthesis indicates the percent of the time during an hour that a particular noise level may not be exceeded. For example, the L₅₀ represents 50% of the hour, or 30 minutes.

²Adjusted standard for a noise source consisting primarily of speech or music.

Source: Fresno County Ordinance Code

State of California

There are no state noise standards that are applicable to the project.

Federal Noise Standards

There are no federal noise standards that are applicable to the project.

b. Construction Noise and Vibration

Section 8.68.080 (D) of the City of Sacramento Municipal Code (Exemptions), provides the following restrictions on construction noise exemptions.

- *Noise sources due to the erection (including excavation), demolition, alteration or repair of any building or structure between the hours of seven a.m. and six p.m., on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday, and between nine a.m. and six p.m. on Sunday; provided, however, that the operation of an internal combustion engine shall not be exempt pursuant to this subsection if such engine is not equipped with suitable exhaust and intake silencers which are in good working order. The director of building inspections, may permit work to be done during the hours not exempt by this subsection in the case of urgent necessity and in the interest of public health and welfare for a period*

not to exceed three days. Application for this exemption may be made in conjunction with the application for the work permit or during progress of the work.

There are no City of Sacramento vibration level standards. Some guidance is provided by the Caltrans Transportation and Construction Vibration Guidance Manual³. The Manual provides guidance for determining annoyance potential criteria and damage potential threshold criteria. These criteria are provided below in Table III and Table IV, and are presented in terms of peak particle velocity (PPV) in inches per second (in/sec).

TABLE III		
GUIDELINE VIBRATION ANNOYANCE POTENTIAL CRITERIA		
Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.1
Severe	2.0	0.4

Source: Caltrans

TABLE IV		
GUIDELINE VIBRATION DAMAGE POTENTIAL THRESHOLD CRITERIA		
Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile, historic buildings, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans

3. SETTING

The proposed Project is located on approximately +/- 8.0 acres on the northeast corner of Dry Creek Road and Claire Avenue, within the northern portion of the City of Sacramento. The project site consists of undeveloped land, and is predominantly surrounded by a mix of industrial/commercial and rural residential land uses, with many nearby parcels appearing to operate as industrial land uses with residential land uses on site. The land uses to the east of Dry Creek Road (including adjacent lots to the north, east and south) are zoned M-1, light industrial. The land uses to the west of Dry Creek Road are zoned R-1, residential.

a. Background Noise Level Measurements

Existing noise levels in the project vicinity are dominated by noise associated with vehicle traffic on Dry Creek Road and Claire Avenue, as well as noise associated with surrounding industrial land uses. Additional sources of noise observed during site inspection included noise associated with landscaping and construction activities as well as occasional aircraft overflights.

Measurements of existing ambient noise levels in the project vicinity were conducted on December 4 & 5, 2024. Long-term (24-hour) ambient noise level measurements were conducted at one (1) location (site LT-1). Long-term ambient noise measurement site LT-1 was located in the northwest portion of the project site, in the vicinity of the proposed project building. The location of LT-1 was selected as a long-term noise monitoring site as it represents existing ambient noise levels that are considered representative of the existing sensitive receptors (residential land uses) located in the vicinity of the proposed project building and project operational activities.

Noise monitoring equipment consisted of a Larson-Davis Laboratories Model LDL-820 sound level analyzer equipped with a B&K Type 4176 1/2" microphone. The equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meter was calibrated with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements.

Measured hourly energy average noise levels (L_{eq}) at site LT-1 ranged from a low of 50.0 dB between 2:00 a.m. and 3:00 a.m. to a high of 65.3 dB between 5:00 p.m. and 6:00 p.m. Hourly maximum (L_{max}) noise levels at site LT-1 ranged from 69.7 to 84.2 dB. Residual noise levels at the monitoring site, as defined by the L_{90} statistical descriptor ranged from 33.4 to 48.1 dB. The L_{90} is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The L_{90} is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft, and other local noise sources. The measured L_{dn} value at site LT-1 during the 24-hour noise measurement period was 65.3 dB L_{dn} .

Figure 3 graphically depicts hourly variations in noise levels at ambient noise measurement site LT-1. Figure 4 provides a photograph of ambient noise measurement site LT-1. Table V provides the hourly measured ambient noise levels at site LT-1 in terms on the City of Sacramento noise

ordinance metrics, and provides the average of each noise standard metric during the proposed hours of operation at the project site (7:00 a.m. to 5:00 p.m.)

TABLE V SUMMARY OF 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS DRY CREEK ROAD & CLAIRE AVENUE, SACRAMENTO DECEMBER 4, 2024 LT-1					
Time	A-Weighted Decibels, dB, L_{eq} (one-hour average)				
	L_{50}	L_{25}	L_8	L_2	L_{max}
12:00 a.m.	47.5	50.4	57.8	63.3	75.3
1:00 a.m.	47.6	49.0	53.6	59.2	75.2
2:00 a.m.	46.1	47.4	51.3	58.6	69.7
3:00 a.m.	48.4	50.2	55.2	61.7	74.9
4:00 a.m.	53.3	56.9	61.7	66.1	72.5
5:00 a.m.	56.0	60.5	65.4	68.9	81.0
6:00 a.m.	59.1	63.4	67.9	70.8	84.2
7:00 a.m.	62.3	65.1	68.1	70.5	76.0
8:00 a.m.	59.4	63.4	66.9	69.0	76.4
9:00 a.m.	57.3	62.3	66.5	69.0	74.2
10:00 a.m.	58.1	62.8	66.5	69.0	77.4
11:00 a.m.	58.6	63.2	66.7	69.1	78.0
12:00 p.m.	58.8	63.3	67.1	69.5	73.8
1:00 p.m.	59.3	63.8	66.9	69.2	73.9
2:00 p.m.	60.0	64.2	67.4	69.6	81.8
3:00 p.m.	61.5	65.1	68.1	70.0	79.5
4:00 p.m.	62.5	65.7	68.3	70.2	84.1
5:00 p.m.	63.1	66.1	68.4	70.8	83.2
6:00 p.m.	59.2	62.8	66.6	68.7	73.8
7:00 p.m.	58.3	62.6	66.8	68.9	79.4
8:00 p.m.	56.1	60.9	65.9	69.1	83.9
9:00 p.m.	53.7	59.2	64.8	68.2	78.3
10:00 p.m.	50.0	54.1	60.2	65.1	73.7
11:00 p.m.	47.1	51.5	58.7	63.7	69.9
Average During Operational Hours 7 a.m. to 5 p.m.	60	64	67	70	79

Source: WJV Acoustics, Inc.

Reference to Table V indicates that existing ambient noise levels in the vicinity of the proposed project building, operational area and nearby residential land uses already exceed the City of Sacramento noise ordinance standards in all five statistical categories. Furthermore, the project site noise exposure of approximately 65 dB L_{dn} exceeds the City of Sacramento General Plan land use compatibility noise standard of 60 dB L_{dn} for single-family residential land uses.

Additionally, short-term (15-minute) ambient noise level measurements were conducted at four (4) locations (Sites ST-1 through ST-4). Two (2) individual measurements were taken at each of

the four short-term sites to quantify ambient noise levels in the morning and afternoon hours. The locations of the long-term and short-term noise monitoring sites are provided as Figure 2.

Short-term noise measurements were conducted for 15-minute periods at each of the four sites. Site ST-1 was located near residential land uses in the vicinity of Rood Avenue and Dry Creek Road. Site ST-2 was located near residential land uses in the vicinity of Claire Avenue and Dry Creek Road, near the southwest portion of the project site. Site ST-3 was located within the northeast corner of the project site. Site ST-4 was located near the southeast corner of the project site, near existing residential land uses along Claire Avenue.

Table VI summarizes short-term noise measurement results. The noise measurement data included the five individual statistical parameters applicable to the Sacramento noise ordinance standards. Observations were made of the dominant noise sources affecting the measurements. The statistical parameters describe the percent of time a noise level was exceeded during the measurement period. For instance, the L_{50} describes the noise level exceeded 50 percent of the time during the measurement period.

TABLE VI SUMMARY OF SHORT-TERM NOISE MEASUREMENT DATA PREFERRED PUMP & EQUIPMENT, SACRAMENTO DRY CREEK ROAD & CLAIRE AVENUE DECEMBER 3 & 4, 2024							
Site	Time	A-Weighted Decibels, dBA					Sources
		L_{max}	L_2	L_8	L_{25}	L_{50}	
ST-1	8:45 a.m.	79.9	66.6	64.1	60.9	59.4	TR, L, C
ST-1	4:05 p.m.	77.7	65.8	63.8	62.0	61.0	TR, AC
ST-2	9:10 a.m.	78.0	67.9	66.1	63.8	61.1	TR, D
ST-2	4:30 p.m.	79.2	68.3	67.0	64.0	62.3	TR, D, L
ST-3	9:35 a.m.	60.1	56.6	50.8	46.2	45.8	TR, C, AC, I
ST-3	4:55 p.m.	64.4	57.1	50.5	45.8	44.9	TR, AC, I
ST-4	10:00 a.m.	66.9	58.7	53.8	52.3	50.3	TR, AC, I, D
ST-4	5:20 p.m.	71.8	59.2	54.4	53.7	51.0	TR, I, D

TR: Traffic AC: Aircraft L: Landscaping Activities C: Construction Activities I: Industrial D: Barking Dogs
Source: WJV Acoustics, Inc.

4. PROJECT-RELATED NOISE LEVELS

a. Noise Impacts from Proposed Operational Activities

The intended function of the proposed Project is to serve as a distributor, selling manufactured goods from various vendors and manufacturers. There will be no manufacturing from raw materials or foundry work involved. Project operations will primarily involve the assembly of pumps using ready-to-use components that are assembled by screwing and/or bolting together. Typical equipment used for assembly includes engine lathes and end mills, with forklifts potentially utilized as well. All steel and bronze waste material will be recycled.

Apart from assembly, other common tasks will include shipping and receiving, as well as associated administrative efforts such as purchasing, sales order processing, and general administrative duties. The proposed Project is not expected to generate significant noise.

The proposed hours of operation for the facility are Monday through Friday, from 7:00 am to 5:00 pm. The estimated number of employees at the facility will be approximately 31. In addition to the employees, anticipated traffic will include approximately 4 to 6 delivery trucks daily and 4 to 6 will-call customers. On-site storage will include PVC and steel pipes for water well applications, as well as product pipes suitable for agriculture, irrigation, and potable water use.

The applicant (Preferred Pump) currently operates at an existing facility in Sacramento, located at 4631 Beloit Drive. According to the project applicant, activities currently occurring at the existing location are the same operational activities anticipated at the proposed location. Additionally, the existing site currently operates during the same hours as are proposed at the new location, approximately 7:00 a.m. to 5:00 p.m.

The majority of activities associated with project operations would occur indoor (as is the case at the existing facility on Beloit Drive). Sources of exterior project-related noise levels include occasional truck deliveries, occasional forklift movements and periodic noise associated with minor mechanical work, typically consisting of pneumatic powered tools and equipment.

In order to assess noise levels that would be anticipated at the proposed project site, WJVA conducted 24-hour noise levels at the existing Beloit Drive Facility on December 4, 2024. Reference noise levels were measured at one (1) location at the existing facility on Beloit Drive. The location of the reference noise measurement site is provided as Figure 5. A photograph of the reference noise measurement site is provided as Figure 6.

It should be noted, the existing Preferred Pump facility is located within an existing industrial park complex, with several noise-producing land uses surrounding the facility. These surrounding industrial land uses include numerous distribution/truck facilities, a shredding facility, and a water utility facility. As such, noise levels measured at site R-1 include noise levels from all nearby noise sources, and noise levels described below should therefore be considered a worst-case scenario of project-related noise levels.

TABLE VII
SUMMARY OF 24-HOUR NOISE LEVEL MEASUREMENTS
EXISTING PREFERRED PUMP FACILITY
4631 BELOIT DRIVE, SACRAMENTO
DECEMBER 4, 2024

Time	A-Weighted Decibels, dB, L_{eq} (one-hour average)				
	L_{50}	L_{25}	L_8	L_2	L_{max}
12:00 a.m.	52.0	53.4	55.0	56.6	62.9
1:00 a.m.	50.8	51.9	53.3	54.8	69.0
2:00 a.m.	49.5	50.7	52.6	54.8	60.1
3:00 a.m.	52.8	54.2	55.9	57.4	62.3
4:00 a.m.	54.3	55.4	56.7	57.8	64.7
5:00 a.m.	57.1	58.6	60.0	61.3	68.3
6:00 a.m.	57.9	58.9	60.3	61.4	68.3
7:00 a.m.	57.7	58.7	59.8	61.9	68.5
8:00 a.m.	55.3	56.4	59.4	62.0	70.9
9:00 a.m.	54.8	55.8	58.6	62.1	81.9
10:00 a.m.	53.7	55.2	56.5	61.8	79.4
11:00 a.m.	54.1	54.8	57.2	62.3	81.1
12:00 p.m.	54.6	55.6	56.4	59.4	76.8
1:00 p.m.	51.2	54.2	57.1	59.6	71.1
2:00 p.m.	51.7	53.1	58.4	61.3	72.4
3:00 p.m.	47.0	50.4	53.5	57.7	72.6
4:00 p.m.	49.8	51.5	54.6	58.6	74.2
5:00 p.m.	50.8	57.8	61.6	62.9	74.3
6:00 p.m.	50.2	51.4	53.0	55.6	73.4
7:00 p.m.	50.9	52.5	55.1	56.9	73.0
8:00 p.m.	50.1	51.2	53.0	56.6	69.4
9:00 p.m.	52.0	53.0	54.5	56.3	67.7
10:00 p.m.	55.0	56.0	57.2	59.1	64.6
11:00 p.m.	53.5	54.6	55.9	57.5	69.0
Average During Operational Hours 7 a.m. to 5 p.m.	53.9	55.1	57.5	60.9	77.1

Source: WJV Acoustics, Inc.

Reference noise measurement site R-1 was located at a comparable setback distance to the existing facility building as would be the setback distance between the proposed project site building and the closest residence (within M-1 zoning) to the north. Reference to noise levels described in Table VII indicate that noise levels measured at the existing site were below Sacramento noise ordinance standards (Table II above) in every statistical category with the exception of the maximum (L_{max}) noise level standard of 75 dB. However, as described in Table V, maximum noise levels measured at site LT-1 averaged approximately 79 dB during the proposed hours of operations of 7:00 a.m. to 5:00 p.m., and as such project-related noise levels would not exceed any City of Sacramento noise ordinance standards when adjusted for existing ambient noise levels.

In regards to the City of Sacramento General Plan noise compatibility standards, overall project-related noise exposure during the proposed hours of operation was calculated to be approximately 53 dB L_{dn}. Such levels do not exceed the City of Sacramento noise compatibility standard of 60 dB L_{dn} for residential land uses and 75 dB L_{dn} for industrial land uses. Furthermore, such noise exposure levels do not exceed existing (without project) ambient noise levels measured at site LT-1. As such, mitigation measures are not required for project noise compliance.

It should be noted, the reference noise levels measured at the existing Beloit Avenue facility were conducted at an on-site location with direct lines to both the rollup doors (where noise from indoor activities can occasionally be audible), the storage area where forklift operations periodically occur, and the general loading dock area. However, as indicated on the site plan, these areas would be located along the south and east sides of the proposed building, opposite the directions of nearby residential land uses to both the north and west, where the proposed building would provide additional acoustic shielding from on-site project related noise sources. As such, the noise levels described above should be considered a worst-case assessment of project-related noise levels at nearby residential land uses.

b. Noise From Construction (Less Than Significant With Mitigation)

Construction noise would occur at various locations within and near the project site through the build-out period. The distance from the closest residences to the project site is approximately 150 feet. Table VIII provides typical construction-related noise levels at distances of 100 feet, 200 feet, and 300 feet.

Construction noise is typically not considered to be a significant impact if construction is limited to the daytime hours and construction equipment is adequately maintained and muffled. The City of Sacramento Municipal Code restricts hours of construction activity to occur between the hours of 7:00 a.m. and 6:00 p.m., Monday through Saturday and between 9:00 a.m. and 6:00 p.m. on Sunday. Construction noise impacts could result in annoyance or sleep disruption for nearby residents if nighttime operations were to occur or if equipment is not properly muffled or maintained.

TABLE VIII
TYPICAL CONSTRUCTION EQUIPMENT
MAXIMUM NOISE LEVELS, dBA

Type of Equipment	100 Ft.	200 Ft.	300 Ft.
Concrete Saw	84	78	74
Crane	75	69	65
Excavator	75	69	65
Front End Loader	73	67	63
Jackhammer	83	77	73
Paver	71	65	61
Pneumatic Tools	79	73	69
Dozer	76	70	66
Rollers	74	68	64
Trucks	80	72	70
Pumps	74	68	64
Scrapers	81	75	71
Portable Generators	74	68	64
Backhoe	80	74	70
Grader	80	74	70

Source: FHWA

Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman, 1987

Potential Impact:

A noise impact could occur if construction activities do not incorporate appropriate best management practices.

Mitigation Measures:

Noise levels associated with construction activities may be effectively mitigated by incorporating noise mitigation measures and appropriate best management practices. The following best management practices should be applied during periods of project construction.

- Per the City of Sacramento Municipal Code, construction activities should not occur outside the hours of 7:00 a.m. to 6:00 p.m. Monday through Saturday and between 9:00 a.m. to 6:00 p.m. on Sunday.
- All construction equipment shall be properly maintained and muffled as to minimize noise generation at the source.
- Noise-producing equipment shall not be operating, running, or idling while not in immediate use by a construction contractor.
- All noise-producing construction equipment shall be located and operated, to the extent possible, at the greatest possible distance from any noise-sensitive land uses.

- Locate construction staging areas, to the extent possible, at the greatest possible distances from any noise-sensitive land uses.

c. Vibration Impacts (No Impact)

The dominant sources of man-made vibration are sonic booms, blasting, pile driving, pavement breaking, demolition, diesel locomotives, and rail-car coupling. None of these activities are anticipated to occur with construction or operation of the proposed project. Due to the distances between the project site and the closest sensitive receptor locations, vibration from construction activities would not be expected to be detected at the closest sensitive land uses during any period of project construction. As a point of reference, typical vibration levels at distances of 100 feet and 300 feet are summarized by Table IX.

TABLE IX TYPICAL VIBRATION LEVELS DURING CONSTRUCTION		
Equipment	PPV (in/sec)	
	@ 100'	@ 300'
Bulldozer (Large)	0.011	0.006
Bulldozer (Small)	0.0004	0.00019
Loaded Truck	0.01	0.005
Jackhammer	0.005	0.002
Vibratory Roller	.03	0.013
Caisson Drilling	.01	0.006

Source: *Caltrans*

After full project build out, it is not expected that ongoing operational activities will result in any vibration impacts at nearby sensitive uses. Additional mitigation is not required.

5. IMPACT SUMMARY

Noise levels associated with project operational activities are not expected to exceed any City of Sacramento noise level standards or land use compatibility guidelines, as established in the Municipal Code and the General Plan. Furthermore, based upon the findings of on-site ambient noise levels conducted at the proposed project site location and reference noise level measurements conducted at the existing facility on Beloit Drive, it can be determined that project-related operational noise levels would not be expected to exceed existing (without project) ambient noise levels at any nearby residential land use in the vicinity of the proposed project site on Dry Creek Road and Claire Avenue. Mitigation measures are therefore not required for project noise compliance.

In regards to construction noise, WJVA provides the following analysis, findings, and input regarding potential impacts associated with construction noise:

Potential Impact:

A noise impact could occur if construction activities do not incorporate appropriate management practices.

Mitigation Measures:

Noise levels associated with construction activities may be effectively addressed by incorporating appropriate best management practices. The following best management practices should be applied during periods of project construction.

- Per the City of Sacramento Municipal Code, construction activities should not occur outside the hours of 7:00 a.m. to 6:00 p.m., Monday through Saturday, and 9:00 a.m. to 6:00 p.m. on Sunday.
- All construction equipment shall be properly maintained and muffled as to minimize noise generation at the source.
- Noise-producing equipment shall not be operating, running, or idling while not in immediate use by a construction contractor.
- All noise-producing construction equipment shall be located and operated, to the extent possible, at the greatest possible distance from any noise-sensitive land uses.
- Locate construction staging areas, to the extent possible, at the greatest possible distances from any noise-sensitive land uses.

6. SOURCES CONSULTED

1. Sacramento 2040 General Plan, February 27, 2024.
2. City of Sacramento Municipal Code, last updated November 19, 2024
3. California Department of Transportation, *Transportation and Construction Vibration Guidance Manual*, September 2013.

24-58 (Preferred Pump, Sacramento) 12-13-24



FIGURE 2: PROJECT VICINITY AND AMBIENT NOISE MONITORING SITES

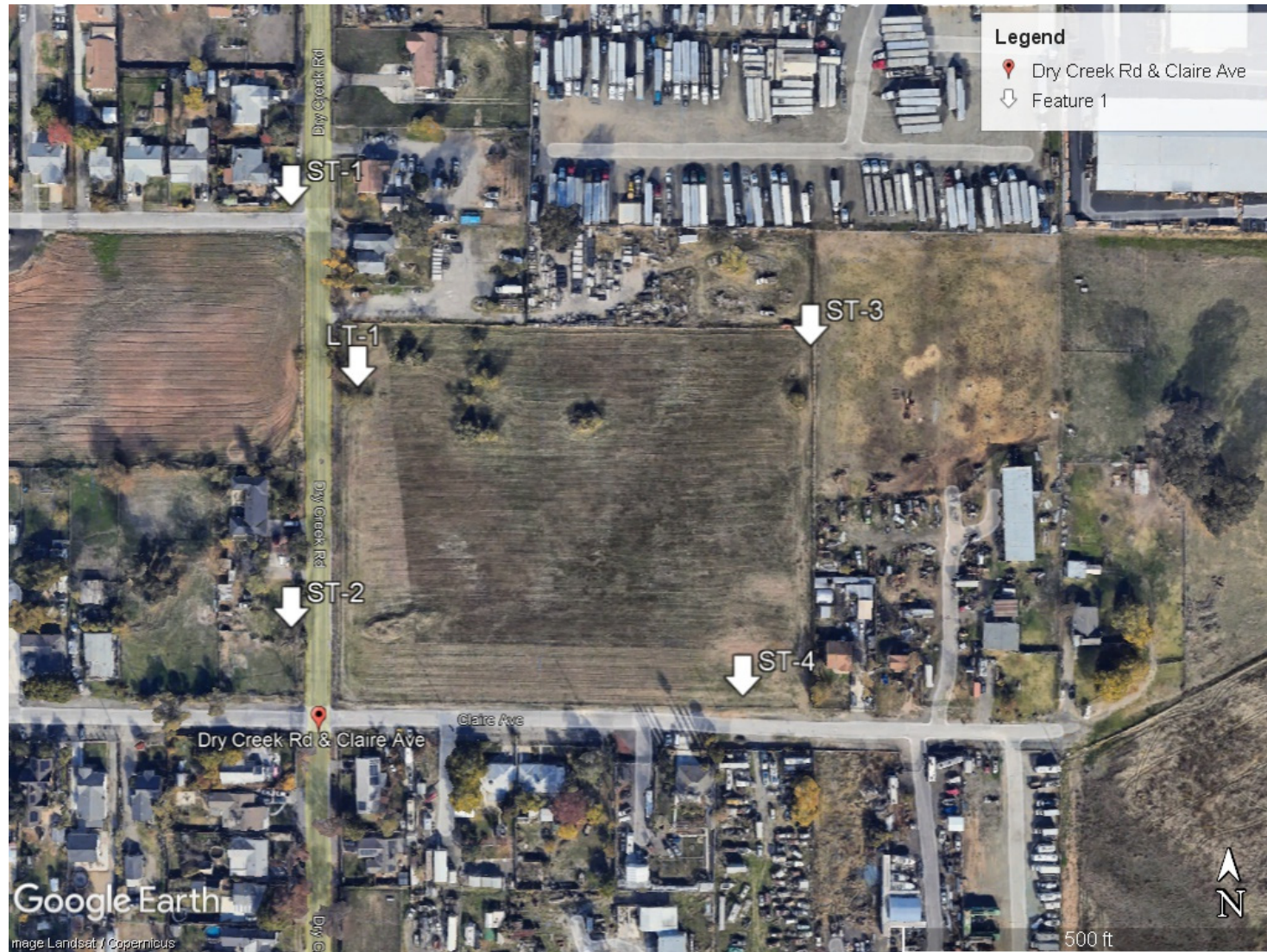


FIGURE 3: HOURLY NOISE LEVELS AT LONG-TERM MONITORING SITE LT-1

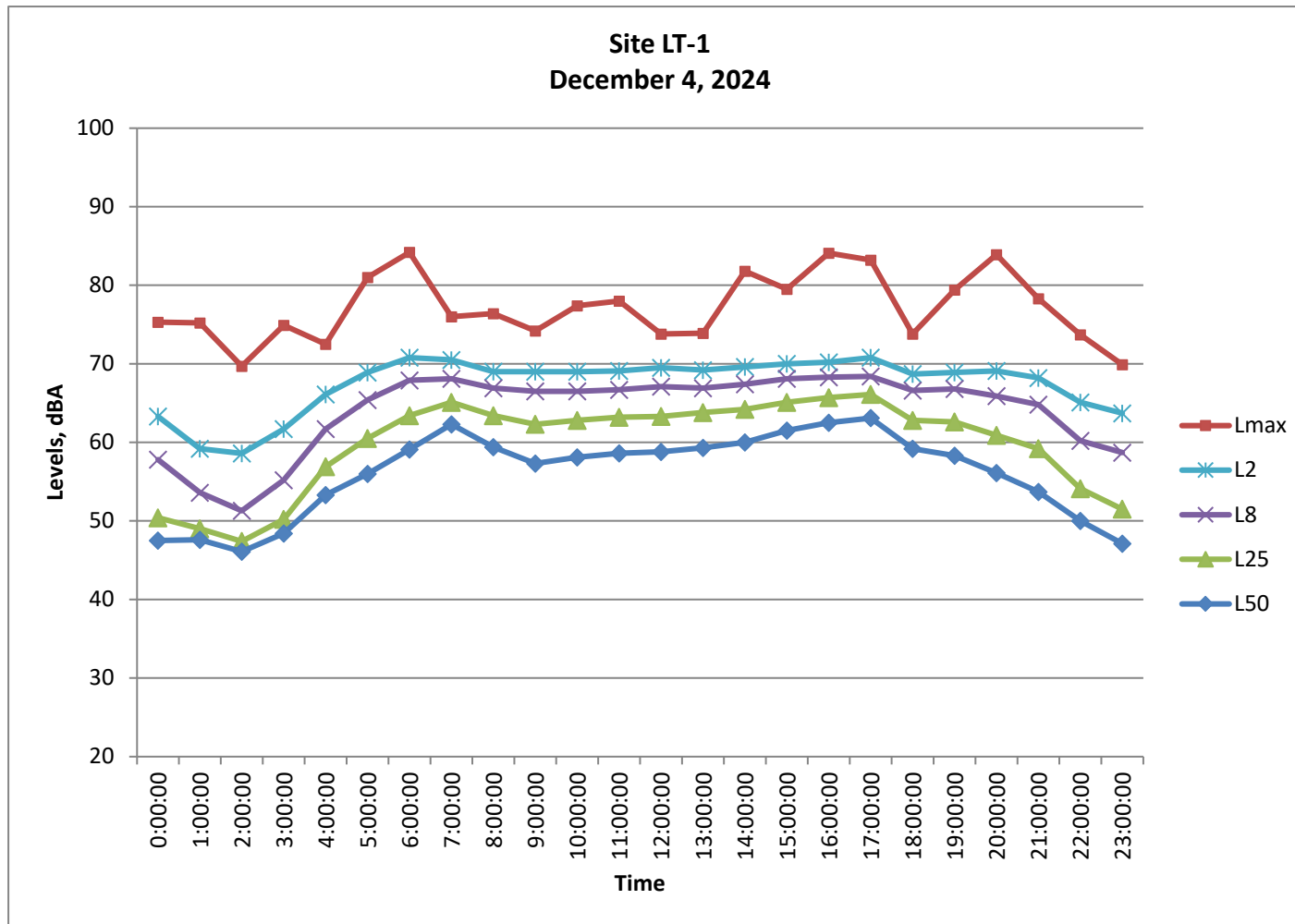


FIGURE 4: AMBIENT NOISE MONITORING SITE LT-1



FIGURE 5: REFERENCE NOISE MEASUREMENT LOCATION, EXISTING BELOIT DRIVE FACILITY

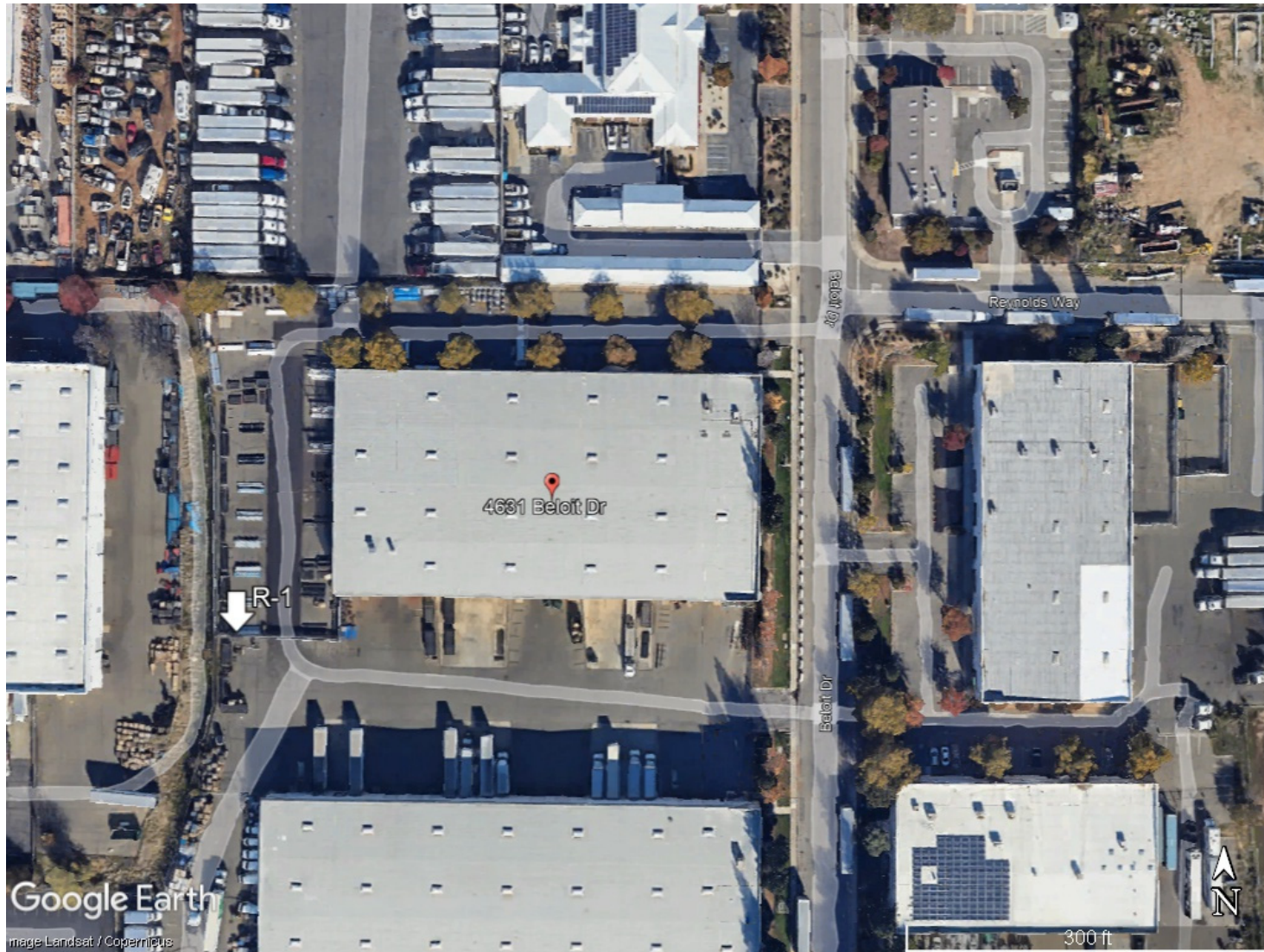


FIGURE 6: REFERENCE NOISE MEASUREMENT SITE, EXISTING BELOIT DRIVE FACILITY



APPENDIX A-1

ACOUSTICAL TERMINOLOGY

AMBIENT NOISE LEVEL:	The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.
CNEL:	Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.
DECIBEL, dB:	A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
DNL/L_{dn}:	Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.
L_{eq}:	Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8 and 24-hour sample periods.
NOTE:	The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the average noise exposure for a shorter time period, typically one hour.
L_{max}:	The maximum noise level recorded during a noise event.
L_n:	The sound level exceeded "n" percent of the time during a sample interval (L_{90} , L_{50} , L_{10} , etc.). For example, L_{10} equals the level exceeded 10 percent of the time.

A-2

ACOUSTICAL TERMINOLOGY

NOISE EXPOSURE CONTOURS:

Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

NOISE LEVEL REDUCTION (NLR):

The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of "noise level reduction" combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

SEL or SENEL:

Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

SOUND LEVEL:

The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

SOUND TRANSMISSION CLASS (STC):

The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX B

EXAMPLES OF SOUND LEVELS

