

EXHIBIT H

PROJECT ENGINEER:
LARVIN POLLOCK
ELEVATE ENGINEERING
2208 WEST 700 SOUTH
SPRINGVILLE, UT 84663
(801) 718-5993
LARVIN@ELEVATENG.COM

LEGEND

DOT LINES (PROPERTY)	
EXISTING CURB AND GUTTER	
PROPOSED CURB AND GUTTER	
STRIPING	
BUILDING SETBACK	
LANDSCAPE SETBACK	
EXISTING BUILDING	
EXISTING FENCE	
TOP BACK OF CURB	
FINISHED FLOOR ELEVATION	
LANDSCAPE AREA	
CONCRETE AREA	

SITE DATA

LOT AREA:	34,745	SF (0.79 ACRES)
BUILDING AREA:	3,350	SF± 9.7%
PAVEMENT AREA:	20,370	SF± 58.6%
LANDSCAPE AREA:	11,025	SF± 31.7%

ZONING: COMMUNITY COMMERCIAL
CONDITIONAL USE
PARCEL ID#: 21171260250000

BUILDING DATA

CONSTRUCTION TYPE: V-B
SPRINKLERS: NO
SETBACKS:
FRONT=25 FEET
REAR=15 FEET; 30 FEET IF ABUTTING RESIDENTIAL
SIDE=10 FEET

PARKING TABULATION

REQUIRED: 5 SPACES PER 1,000 SQ FT OF FLOOR AREA
PROVIDED: 3 STALLS
1 ADA STALL

VACUUM STALLS: 13 STALLS
TUNNEL LENGTH: 94 FEET
STACKING: 8 STALLS

NOTES:

- ① PROPOSED 5' SIDEWALK PER APWA PLAN 231. SEE SHEET C-4 FOR DETAILS.
- ② ALL HANDICAP STALLS TO BE INSTALLED PER ADA AND APWA STANDARDS. SEE SHEET C-4 FOR DETAILS.
- ③ PROPOSED CURB & GUTTER TYPE E PER APWA 205. SEE SHEET C-4 FOR DETAILS.
- ④ PROPOSED ROLLED CURB PER APWA STANDARDS. SEE SHEET C-4 FOR DETAILS.
- ⑤ CONSTRUCT VACUUM ENCLOSURE WITH CONCRETE PAD AND APRON. INSTALL OWNER PROVIDED VACUUM EQUIPMENT, UNDERGROUND TRUNK LINES, PIPING, ETC. COORDINATE WITH ARCHITECTURAL PLANS.
- ⑥ PAINT 4" SOLID YELLOW PAINT STRIPE AS SHOWN (TYPICAL).
- ⑦ INSTALL OWNER PROVIDED "TOMMY BALL" PLANTERS/GARBAGE RECEPTACLE (TYPICAL). COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILS.
- ⑧ INSTALL OWNER PROVIDED PAY STATIONS WITH CANOPY. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILS.
- ⑨ INSTALL OWNER PROVIDED GATES AND LOOP DETECTION SYSTEM. COORDINATE TIMING OF INSTALLATION PRIOR TO CONSTRUCTION OF PAVEMENT. SEE ARCHITECTURAL PLANS FOR DETAILS.
- ⑩ PROPOSED DUMPSTER LOCATION. SEE SHEET C-4 FOR DETAILS.



SCALE: 1" = 2'

[illegible]

ELEVATE ENGINEERING

2208 WEST 700 SOUTH
SPRINGVILLE, UT 84663
PHONE: (801) 718-5993
larvin@elevateeng.com

The logo for Elevate Engineering features the word "ELEVATE" in a large, bold, blue sans-serif font. Below it, the word "ENGINEERING" is written in a smaller, red, all-caps sans-serif font. A red compass is positioned between the two words, with its point resting on the letter "V" in "ELEVATE".

**QUICK QUACK - TAYLORSVILLE 5400 S
SITE PLAN**

3621 WEST 5400 SOUTH, TAYLORSVILLE, UT 84129



SHEET:
C-1

DATE:
Jul 27, 2023

August 4, 2023

Ms. Nikki Humphreys
Lonestar Builders
2208 W 700 S
Springville, UT 84663

Subject: QQ Taylorsville Car Wash Facility – Noise Impact Study – Taylorsville, Utah

Dear Ms. Humphreys:

MD Acoustics, LLC (MD) has completed a noise assessment for the proposed car wash located at 3621 West 5400 South in the City of Taylorsville, Utah. This assessment reviews the projected carwash operational noise levels and compares them to the City's noise ordinance. The project proposes a 94-foot covered car wash tunnel with 13 vacuum stations on approximately 0.79 acres.

1.0 Assessment Overview

This assessment evaluates the noise impact of the proposed car wash. Three (3) short-term noise monitoring locations were selected to characterize the existing noise environment at the project site. The project noise levels were evaluated using real-world data and SoundPLAN acoustical modeling software. The proposed project does not exceed the noise limits and does not increase the perceptible noise levels.

The project location map is located in Exhibit A, and the site plan utilized for the project is indicated in Exhibit B. The noise monitoring locations are shown in Exhibit C. Exhibit D provides the results of the SoundPLAN acoustical model, and measurement field sheets are included in Appendix A.

2.0 Local Acoustical Requirements

The City of Taylorsville complies with the County of Salt Lake's noise regulations. The County of Salt Lake outlines their noise regulations and standards within the Salt Lake County Health Department Health Regulation #21 – Community Noise Pollution Control:

4.1 – General Prohibition of Noise. Notwithstanding the specific noise restrictions in Section 4.7, no person may emit, nor cause, allow, permit, or fail to control the emission of any noise source so as to exceed the maximum allowable sound pressure levels set forth in Section 4.2.

4.2 – Maximum Permissible Sound Pressure Level Tables.

<Tables 1 & 2, next page>

Table 1: Maximum Permissible Sound Pressure Levels (L_{eq})

Receiving Property Use	Between 10:00 p.m. and 7:00 a.m.	Between 7:00 a.m. and 10:00 p.m.
Type A	5 dBA above ambient sound not to exceed 50 dBA	10 dBA above ambient sound not to exceed 60 dBA
Type B	5 dBA above ambient sound not to exceed 55 dBA	10 dBA above ambient sound not to exceed 65 dBA
Type C	5 dBA above ambient sound not to exceed 70 dBA	10 dBA above ambient sound not to exceed 70 dBA
Type D	5 dBA above ambient sound not to exceed 75 dBA	10 dBA above ambient sound not to exceed 75 dBA

Table 2: Maximum Permissible Sound Pressure Levels (L_{max})

Receiving Property Use	Between 10:00 p.m. and 7:00 a.m.	Between 7:00 a.m. and 10:00 p.m.
Type A & B	70 dBA	100 dBA
Type C & D	100 dBA	100 dBA

Appendix A – Noise Area Classifications.

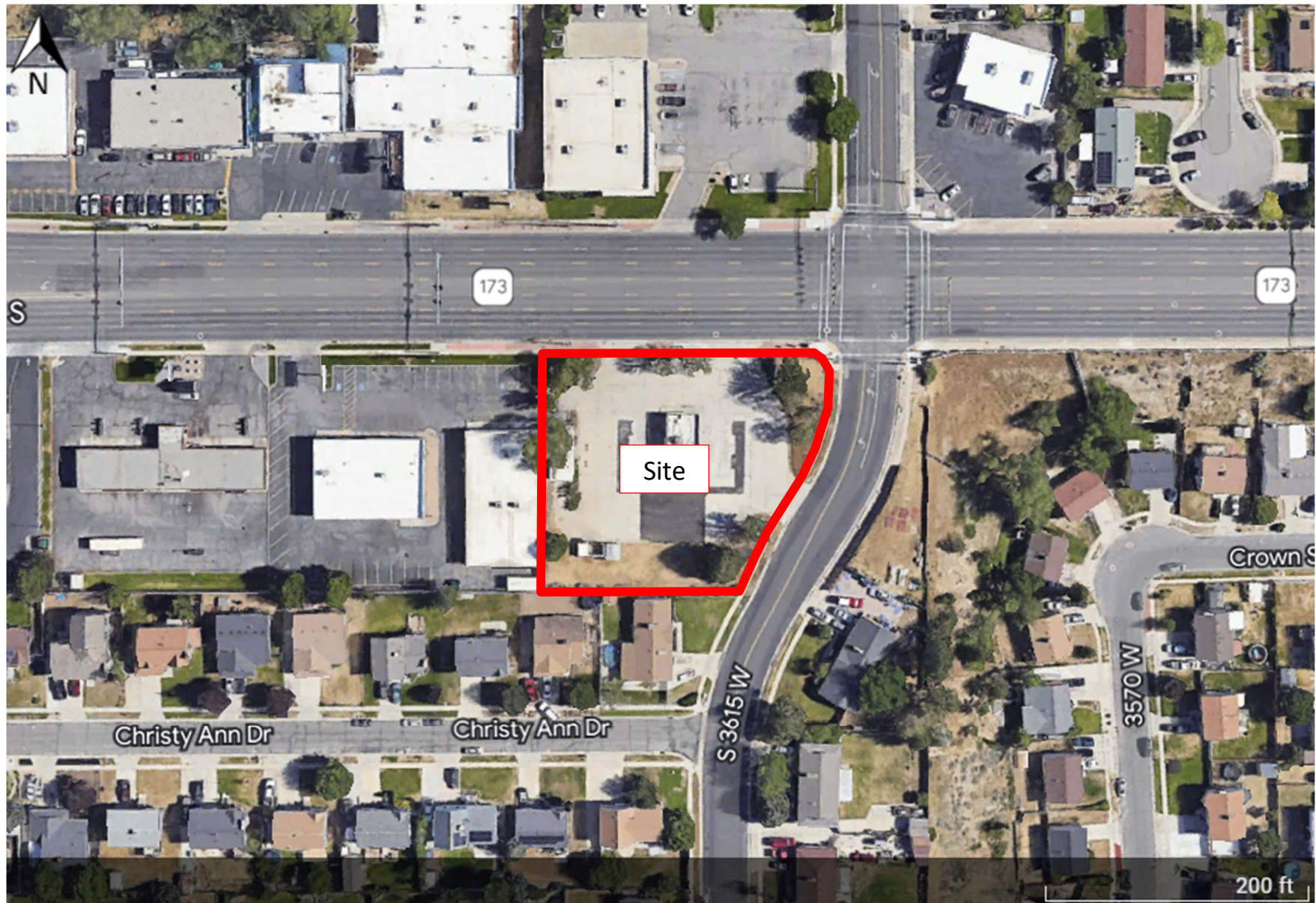
Type A Property Use Activities/Examples:

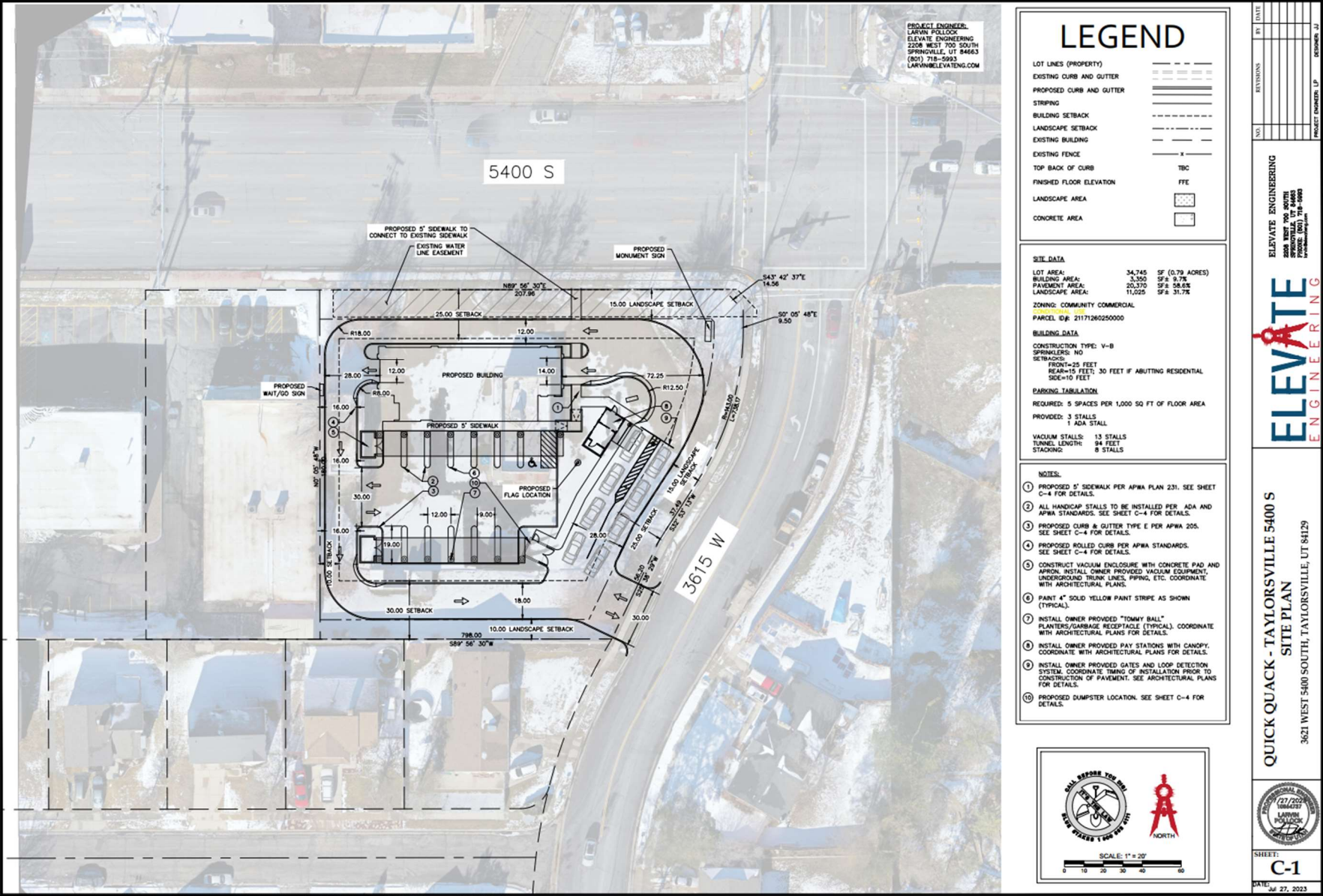
- Single family residential structure that does not share a common wall with residential or any other use.

Type C Property Use Activities/Examples:

- Retail trade
 - Food, eating and drinking, other recreation (bar, discotheques, clubs)
 - Automotive & accessories, gas stations
- Other retail trade
 - Repair services

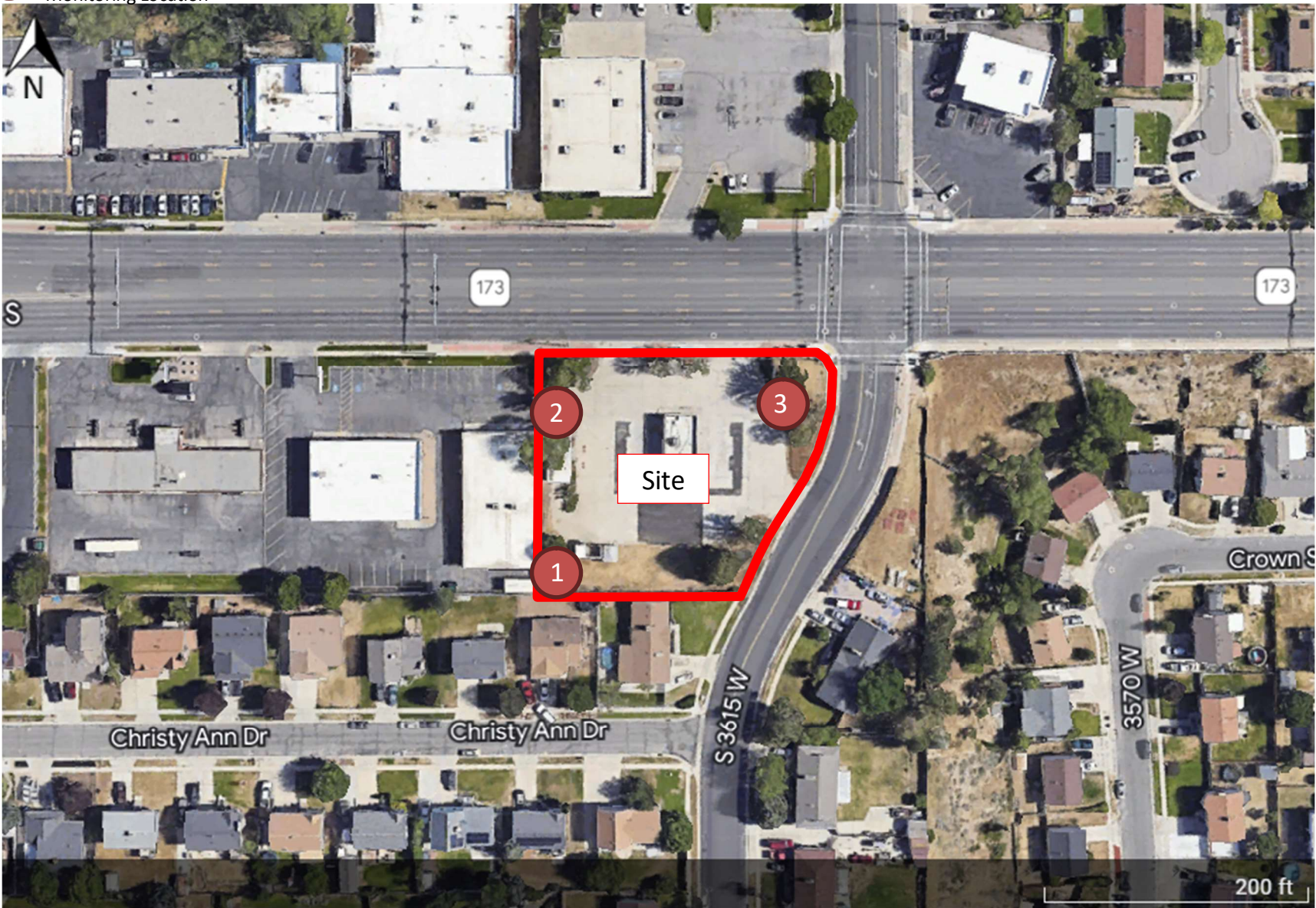
Exhibit A
Location Map





 = Short-Term
Monitoring Location

Exhibit C
Measurement Locations



3.0 Study Method and Procedure

Noise Measurement Procedure and Criteria

Sound level measurements were conducted in accordance with the Federal Highway Administration (FHWA) technical noise specifications. All measuring equipment used meets the American National Standards Institute (ANSI) specifications for sound level meters (S1.4-1983). The noise measurement procedures are presented below:

- Microphones for sound levels were placed 5 feet above the ground for all measurements
- Sound level meters were calibrated before and after each measurement
- Following the calibration of equipment, a windscreen was placed over the microphone
- Frequency weighting was set on “A” and slow response
- Results of the noise measurement were recorded on field data sheets
- Temperature and sky conditions were observed and documented

Noise monitoring locations were selected to obtain a baseline of the existing noise environment. Three (3) short-term 15-minute noise measurements were conducted at the site. Appendix A includes photos, field sheets, and measured noise data.

SoundPLAN Acoustic Model

SoundPLAN (SP) acoustical modeling software was utilized to model future worst-case stationary noise impacts to the adjacent land uses. SP is capable of evaluating multiple stationary noise source impacts at various receiver locations. SP’s software utilizes algorithms (based on the inverse square law and reference equipment noise level data) to calculate noise level projections. The software allows the user to input specific noise sources, spectral content, sound barriers, building placement, topography, and sensitive receptor locations.

The future worst-case noise level projections were modeled using referenced sound level data for the various stationary on-site sources (vacuums and car wash blowers at the exit). The SP model assumes a total of 13 vacuums and the dryer systems are operating simultaneously (worst-case scenario) when the noise will, in reality, be intermittent and lower in noise level. In addition, the modeling takes into account the louver, windows, and openings on the car wash tunnel based on the plan elevations. The reference vacuum equipment and blower system sound level data are provided in Appendix B. Appendix C contains the model’s inputs and outputs.

All other noise-producing equipment (e.g., compressors, pumps) will be housed within mechanical equipment rooms.

The following outlines the project design features:

1. The Project will incorporate a 120 HP IDC Predator blower system or equivalent to meet these acoustical benchmarks.
2. An acoustic liner (Acoustiblok perforated metal panels or equivalent) will line 15’ of the exit (see Appendix B).

4.0 Existing Noise Environment

Three (3) short-term (15-minute) ambient noise measurements were performed on June 9th, 2023, to determine the existing ambient noise level at the project site. Appendix A contains the location of the measurement and the recorded data. The results of the short-term noise measurements are presented in Table 3. See Appendix A for the measurement field sheets.

Table 3: Short-Term Measurement Ambient Noise Data (dBA)¹

Location	Start Time	Stop Time	Leq	Lmax	Lmin	L(2)	L(8)	L(25)	L(50)	L(90)
NM1	1:38 PM	1:53 PM	60.0	74.9	45.5	66.4	62.8	60.3	57.6	51.7
NM2	1:57 PM	2:12 PM	68.5	85.8	52.4	75.6	70.6	68.7	66.0	59.1
NM3	2:15 PM	2:30 PM	66.4	81.5	53.2	73.9	69.9	66.3	62.9	57.2
Notes:										
1. Short-term noise monitoring locations are illustrated in Exhibit C.										

The data indicates that the ambient noise levels at or near the project site range between 60 to 69 dBA Leq. The measured noise levels and field notes indicate that traffic noise along 5400 South is the main source of noise impacting the project site. For this evaluation, MD has utilized the measured ambient noise level of 60 to 69 dBA Leq for the surrounding land uses.

5.0 Findings and Recommendations

A total of four (4) receptors were modeled to accurately evaluate the future operational noise levels near the project site. A yellow dot denotes a receptor. Receptors 1 and 2 represent commercial uses, and Receptors 3 and 4 represent residential uses.

Table 4 presents the measured ambient noise level, the project's noise level, and the combined project plus ambient noise level condition.

Table 4: Worst-Case Predicted Operational Noise Levels (dBA, Leq)

Receptor ¹	Existing Ambient Noise Level (dBA, Leq) ²	Project Noise Level (dBA, Leq) ³	Total Combined Noise Level (dBA, Leq)	Non Transp. Noise Limit (dBA, Leq)	Change in Noise Level as Result of Project
1	69	52	69	70	0
2	69	66	70	70	2
3	57	47	57	60	0
4	60	47	60	60	0
Notes:					
1. Receptors 1 and 2 represent commercial uses. Receptors 3 and 4 represent residential uses.					
2. See Appendix A for the ambient noise measurements.					
3. See Exhibit D for the operational noise level projections at said receptors.					

Exhibit D shows the future noise level projections and contours based on the proposed project design. The model indicates that the project-only noise level will be 47 dBA at the existing residential receptors and 52 to 66 dBA Leq at the existing commercial receptors. The project plus ambient noise level at the residential receptors will be 57 to 60 dBA Leq and meets the City's daytime noise standard of 60 dBA Leq for Type A property uses. The project plus ambient noise level at the commercial receptors will be 69 to 70 dBA Leq and meets the City's daytime noise standard of 70 dBA Leq for Type C property uses. The project will increase the existing ambient noise level by 0 to 2 dB at the surrounding receptors. The project increases the ambient noise level by less than 10 dBA and does not exceed the noise level limit at the various receptors. Thus, the project is less than significant.

6.0 Conclusions

MD has reviewed the applicable noise ordinances and modeled the noise levels for the proposed car wash. The proposed car wash does not exceed the maximum permitted noise levels and does not perceptibly increase the overall ambient noise level. Furthermore, the proposed project will use the quietest available blower technology on the market to ensure the noise levels do not produce an impact. The following outlines the project design features:

1. The Project will incorporate a 120 HP IDC Predator blower system or equivalent.
2. An acoustic liner (Acoustiblok perforated metal panels or equivalent) will line 15' of the exit (see Appendix B).

MD is pleased to provide this noise review for the car wash project. If you have any questions regarding this analysis, please call our office at (602) 774-1950.

Sincerely,
MD Acoustics, LLC

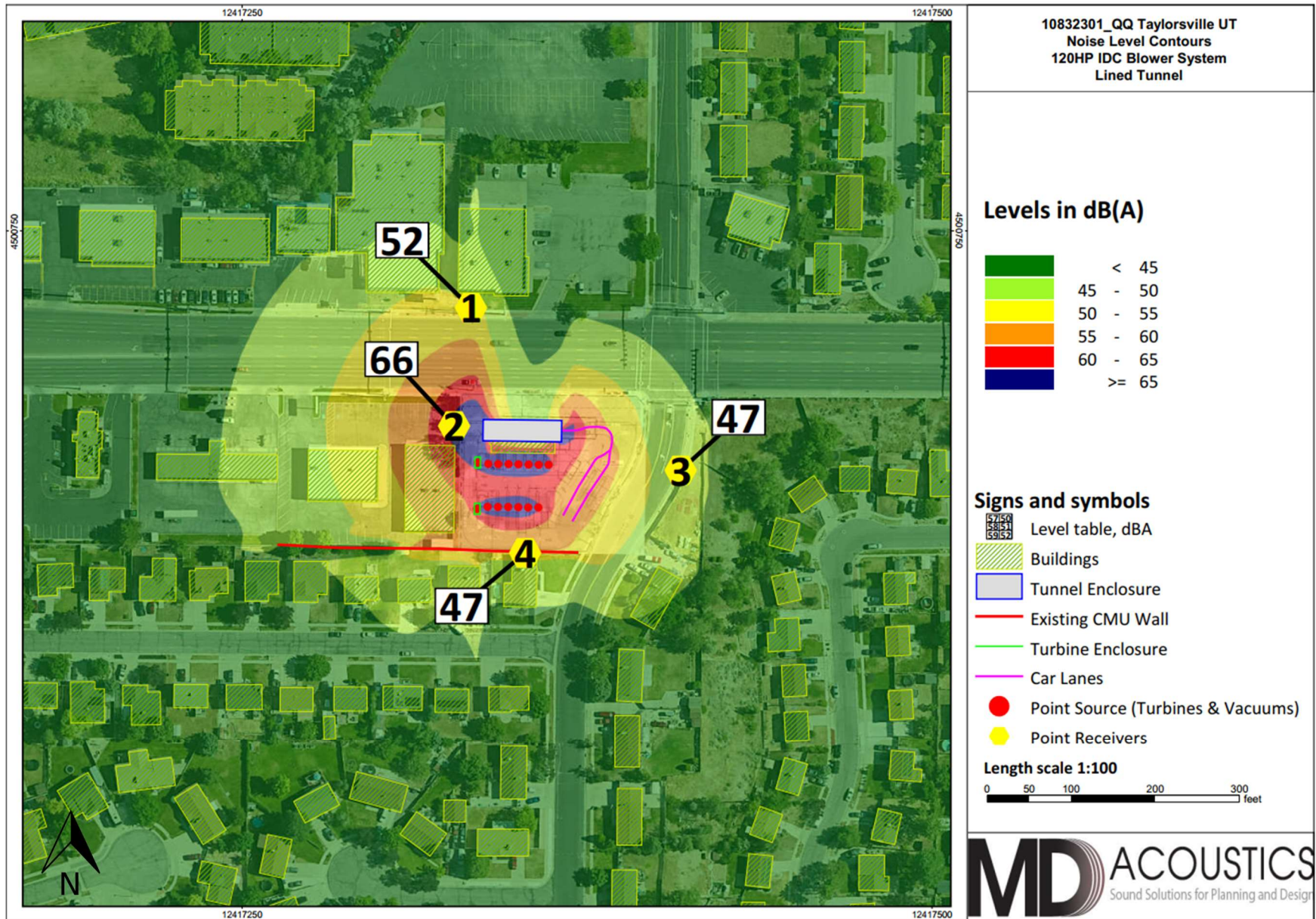


Claire Pincock, INCE-USA
Acoustical Consultant



Rachel Edelman
Acoustical Consultant

Exhibit D
Project Only Operational Noise Levels



Appendix A
Noise Measurement Field Sheets

15-Minute Continuous Noise Measurement Datasheet

Project Name: QQ Taylorsville
Project: #/Name: 1083-2023-001
Site Address/Location: 3621 West 5400 South
Date: 06/09/2023
Field Tech/Engineer: Rachel Edelman

Site Observations:
79 degrees F, winds 5-6 mph, partly cloudy

Sound Meter: 831, Larson Davis **SN:** 0003715
Settings: A-weighted, slow, 1-sec, 15-minute interval
Site Id: NM1, NM2, NM3



15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: QQ Taylorsville
Site Address/Location: 3621 West 5400 South
Site Id: NM1, NM2, NM3

Figure 1: NM1



Figure 2: NM2



Figure 3: NM3

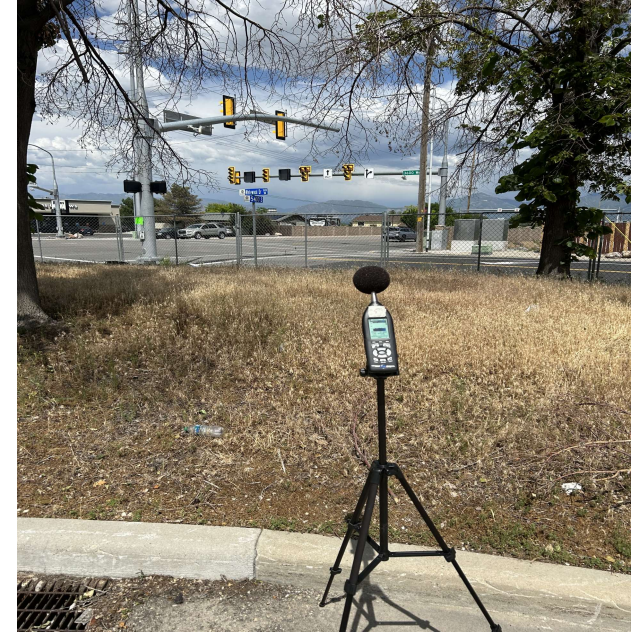
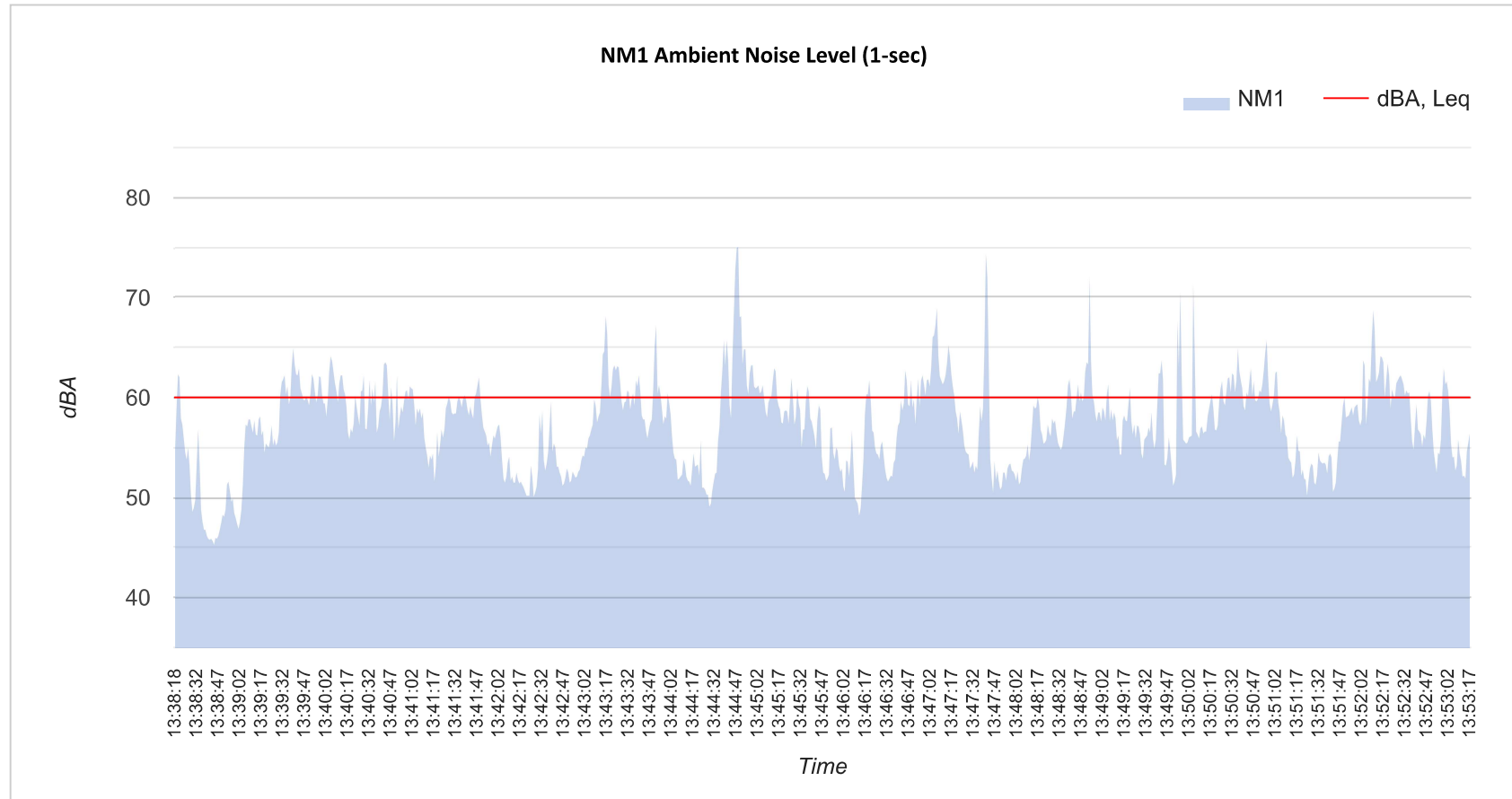


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
NM1	1:38 PM	1:53 PM	60	74.9	45.5	66.4	62.8	60.3	57.6	51.7
NM2	1:57 PM	2:12 PM	68.5	85.8	52.4	75.6	70.6	68.7	66	59.1
NM3	2:15 PM	2:30 PM	66.4	81.5	53.2	73.9	69.9	66.3	62.9	57.2

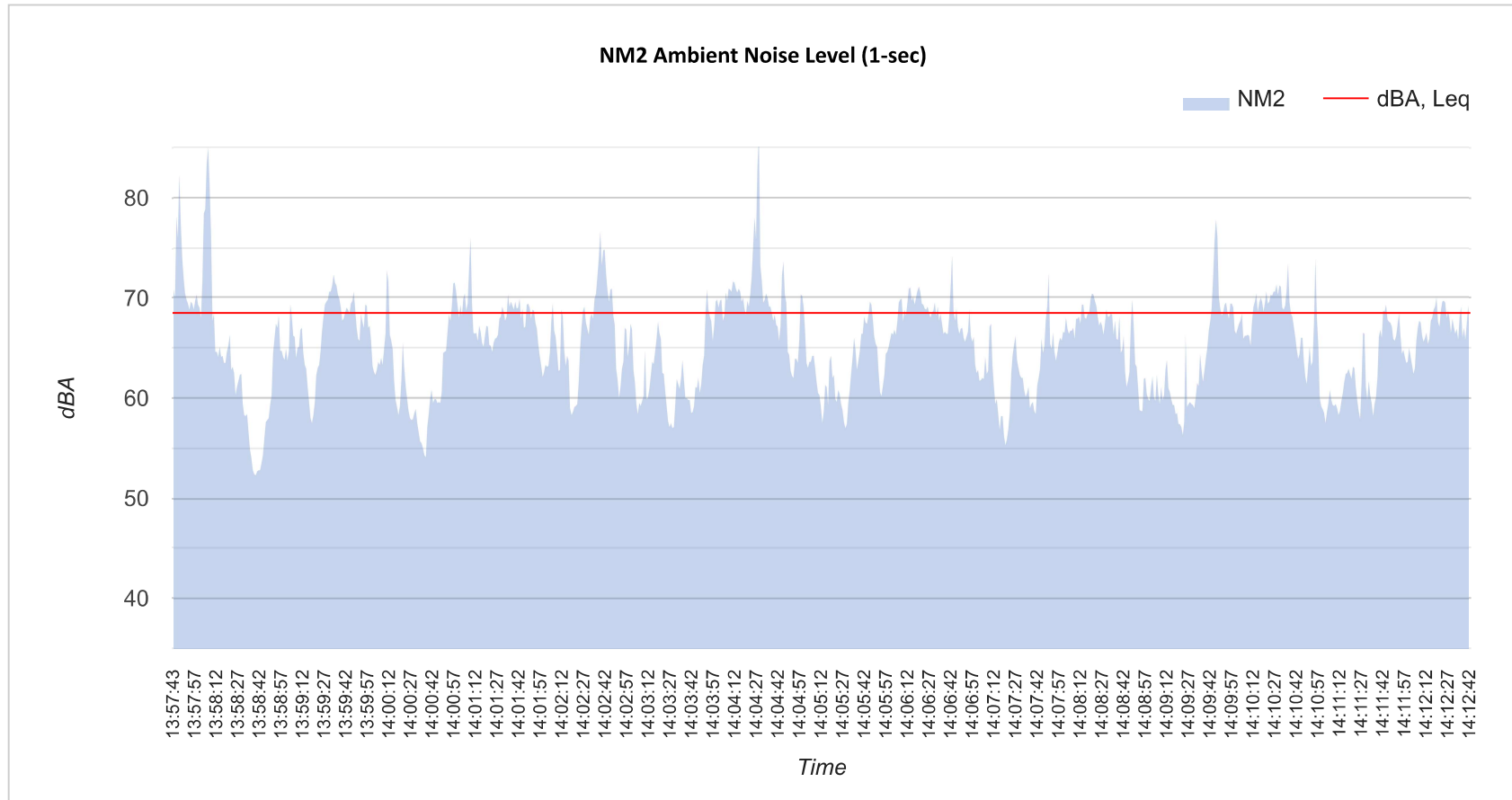
15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	QQ Taylorsville	Site Topo:	Buildings 1-2 stories tall	Noise Source(s) w/ Distance:
Site Address/Location:	3621 West 5400 South	Meteorological Cond.:	78F, 5-6 mph winds, partly cloudy	Road noise
Site Id:	NM1	Ground Type:	Asphalt	



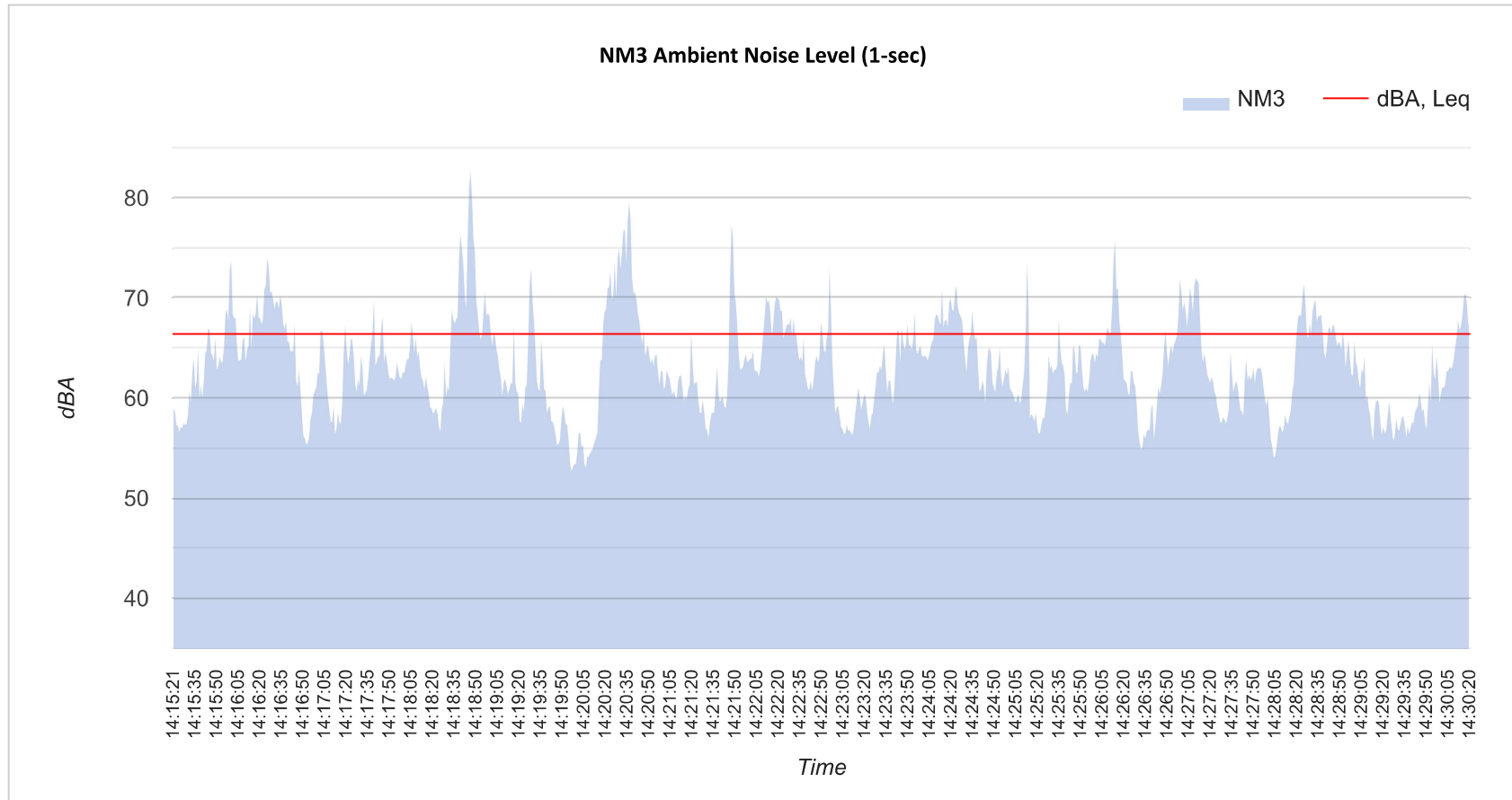
15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	QQ Taylorsville	Site Topo:	Buildings 1-2 stories tall	Noise Source(s) w/ Distance:
Site Address/Location:	3621 West 5400 South	Meteorological Cond.:	78F, 5-6 mph winds, partly cloudy	Road noise
Site Id:	NM2	Ground Type:	Asphalt	



15-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	QQ Taylorsville	Site Topo:	Buildings 1-2 stories tall	Noise Source(s) w/ Distance:
Site Address/Location:	3621 West 5400 South	Meteorological Cond.:	78F, 5-6 mph winds, partly cloudy	Road noise
Site Id:	NM3	Ground Type:	Asphalt	



Appendix B
Equipment Reference Data



STEALTH PREDATOR DRYING SYSTEM



THE FIRST "ULTRA QUIET" DRYING SYSTEM

- ✓Patent pending Reverse flow technology
- ✓Producers constructed from 304 surgical stainless steel
- ✓Over 11,000 cubic feet per minute (CFM) per 10HP motor
- ✓Meets or exceeds most U.S. and International sound regulations
- ✓Sound & Performance studies done in reverberant sound room ISO 3741:2010, 3747:2010



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160 Chicago St
Cary, IL 60013

Stealth Predator Ultra-Quiet Drying System Specifications

30HP System - Total Sound 60Hz

80HP System - Total Sound 60Hz

Q = sound source

65 dBA at Q=1, 30 feet

61.8 dBA at Q=1, 45 feet

60.2 dBA at Q=1, 55 feet

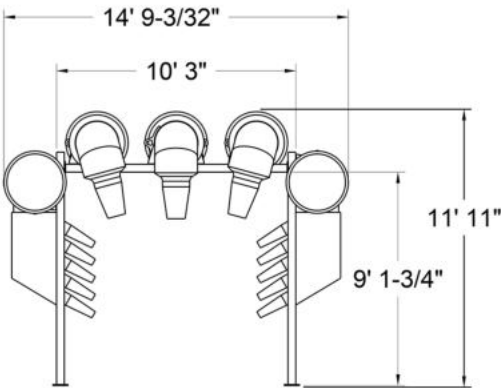
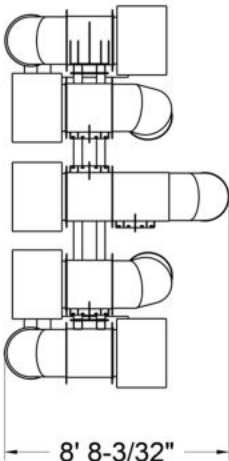
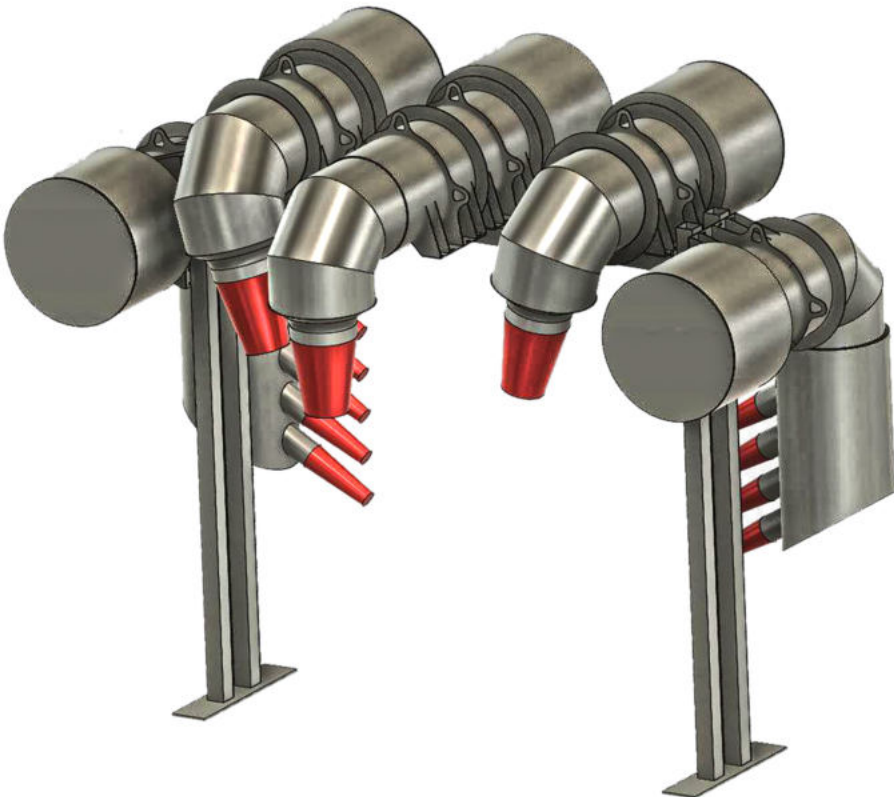
69.4 dBA at Q=1, 30 feet

66.5 dBA at Q=1, 45 feet

64.9 dBA at Q=1, 55 feet

Meets OSHA Sound Exposure Requirements

✓ The Stealth Predator features patent pending "Reverse flow air technology" which creates the first "Ultra-Quiet Dryer" and is the most powerful Ultra Quiet Dryer ever designed.



SPECIFICATIONS

15' 2" Bay Width
12' 0" Ceiling Height
96" Standard Clearance

Closed cell foam nozzles available in red, blue, black

Ducts-Stainless Steel
Molded Aluminum Impellers
Stainless Steel Motor Housings

Slotted flanges for adjustability of air outlet and air intake direction

Project:	SuperStar Car Wash Chula Vista
Site Location:	1555 W Warner Rd, Gilbert, AZ 85233
Date:	4/5/2018
Field Tech/Engineer:	Robert Pearson
Source/System:	Vacutec System

Location: Vac Bay 1
Sound Meter: NTi XL2 **SN:** A2A-05967-E0
Settings: A-weighted, slow, 1-sec, 10-sec duration
Meteorological Cond.: 80 degrees F, 2 mph wind

Site Observations:

Clear sky, measurements were performed within 1.5ft of source. Measurements were performed while the vacuum was positioned at three (3) different positions. Holstered, unholstered and inside a car. This data is utilized for acoustic modeling purposes and represents an average sound level at a vacuum station.

Measurement	Value	Unit
Temperature	25.0	°C
Pressure	101.3	kPa
Humidity	65.0	%
Wind Speed	1.2	m/s
Wind Direction	135	°
Cloud Cover	30	%
Soil Moisture	15.0	%
Light Intensity	1000	lux
CO2 Concentration	400	ppm
NO2 Concentration	0.05	ppm
O3 Concentration	0.02	ppm
PM2.5 Concentration	10.0	µg/m³
PM10 Concentration	20.0	µg/m³
Air Quality Index	50	Index

Source	System	Overall dB(A)	3rd Octave Band Data (dBA)																														
			20	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1K	1.25K	1.6K	2K	2.5K	3.15K	4K	5K	6.3K	8K	10K	12.5K	16K	20K
Vacutech (Holstered)	Vacuum	63.3	9	17	22	29	31	35	40	41	44	43	46	48	47	49	51	51	51	52	53	52	52	50	52	53	50	47	47	48	45	39	30
Vacutech (Unholstered)	Vacuum	80.7	6	19	22	28	34	37	40	43	47	46	48	48	48	49	54	55	58	58	62	65	68	70	74	75	73	69	67	65	63	60	55
Vacutech (Inside Car)	Vacuum	69.6	16	28	31	38	42	45	49	51	52	55	60	61	57	55	59	53	55	56	54	57	57	57	57	57	55	54	51	48	46	42	36
Average Level*	Vacuum	76.3	13	24	28	34	38	41	45	47	49	51	56	57	53	52	56	54	56	56	59	61	64	66	69	70	68	64	62	60	58	55	50

* Refers to the logarithmic average of all measurements. This measurement represents an average of the multiple vacuum positions.

Figure 1: Example Measurement Position

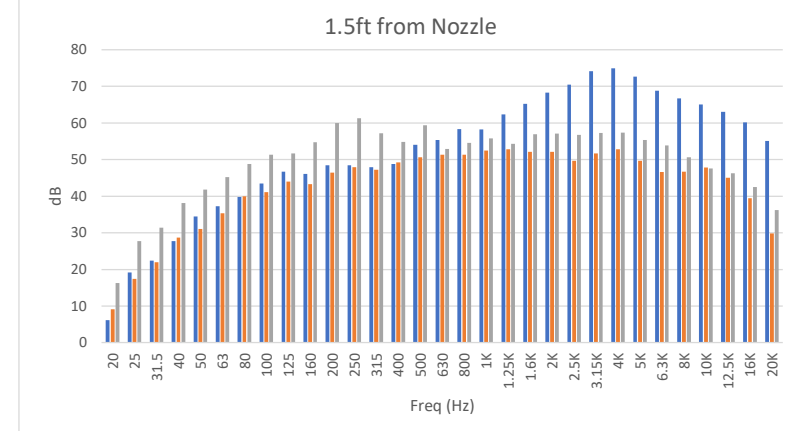
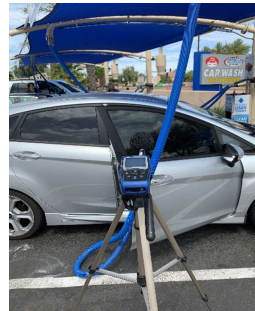
Figure 1: Holstered



Figure 2: Unholstered



Figure 3: Inside Car





SOUND LEVEL METER READINGS

MODEL: FT-DD-T340HP4 (40hp VACSTAR TURBINE VACUUM PRODUCER)

READING ONE: 43 DB-A, 3 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING TWO: 36 DB-A, 10 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING THREE: 24 DB-A, 20 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

READING FOUR: 12 DB-A, 30 FEET FROM TURBINE @ 45° ANGLE
AND NO BACKGROUND NOISE OR OUTSIDE INTERFERENCE.

NOTE: THESE READINGS WERE TAKEN OUTSIDE OF 8'x10'x8' CINDER BLOCK ENCLOSURE WITH CONCRETE SLAB AND WOOD JOIST ROOF.

SOUND LEVEL METER USED:

SIMPSON MODEL #40003 – MSHA APPROVED.
MEETS OSHA & WALSH-HEALY REQUIREMENTS FOR NOISE CONTROL.
CONFORMS TO ANSI S1.4-1983, IEC 651 SPECS FOR METER TYPE.

Vacutech
1350 Hi-Tech Drive, Sheridan WY, 82801
PHONE: (800) 917-9444 FAX: (303) 675-1988
EMAIL: info@vacutechllc
WEB SITE: vacutechllc.com

Appendix I

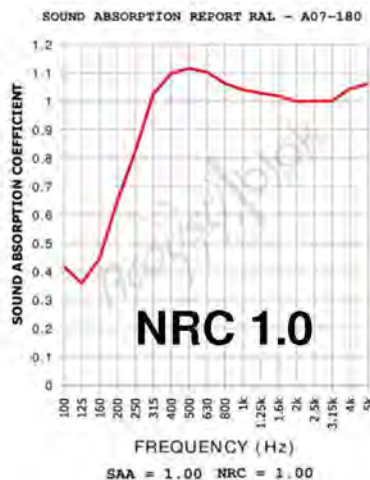


MADE IN
USA



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Acoustiblok, Inc.
6900 Interbay Boulevard
Tampa, FL 33616 USA
Phone: 813-980-1400
Fax: 813-549-2653
www.acoustiblok.com
sales@acoustiblok.com

Industrial Model All Weather Sound Panel™ (Pat. Pend) Technical Data



Acoustiblok All Weather Sound Panels™ achieve high STC and NRC ratings. They have been specifically designed to withstand outdoor exposure in full sunlight, extreme weather conditions, and harsh industrial environments. (NRC of 1.0 is the highest sound absorption rating possible)

All Weather Sound Panels include an internal layer of U.L. classified Acoustiblok sound isolation material plus a specifically engineered 2" thick weather proof sound absorbing material.

Specifications:		
NRC (Noise Reduction Coefficient):	1.00 *	Gross dimensions: up to 48" x 120" x 2.423", $\pm 0.125"$ custom sizes available on special order.
STC (Sound Transmission Class):	29 *	Frame construction: 0.125" welded corrosion resistant 6063-T5 aluminum, mill finish, eyelets: 0.375" (18 ea.)
Weight: (8' panel)	104 lbs	Front face: 0.040 corrosion resistant 5052-H32 aluminum alloy, 3/32" round holes staggered on 5/32" centers.
UL Std 723 fire resistance: Flame spread 0, smoke developed 0.		Back face: 0.032 corrosion resistant 5052-H32 aluminum alloy, mill finish.
UV tolerant, animal resistant, washable, does not support mold growth.		

* Independent Testing by accredited NVLAP testing facility in compliance with ASTM E90, E 413, and other applicable industry standards.

Subject to change without notice, contact Acoustiblok for details.

Product Name

QuietFiber® Hydrophobic Noise Absorption Material – QF2

For Manufacturer Info:

Contact:

Acoustiblok, Inc.
6900 Interbay Boulevard
Tampa, FL 33616
Call - (813) 980-1400
Fax - (813)849-6347
Email - sales@acoustiblok.com
www.acoustiblok.com

Product Description

Basic Use

QuietFiber hydrophobic noise absorption material is an easily installed solution to many noise problems. It is engineered specifically for maximum noise absorption and is used extensively for industrial and commercial applications and is now being successfully introduced into non-industrial environments where reverberant sound and echo is a problem.

QuietFiber® QF2

QuietFiber is rated at the highest noise reduction level – NRC 1.00. Areas of high noise levels including sound reverberation can be resolved easily and economically by introducing QuietFiber into as much of the area as possible. The amount of noise reduction in highly reflective rooms will be directly relative to how much of the QuietFiber material can be installed into the room.

Unlike other fibrous materials which do not have the same high NRC ratings, QuietFiber is hydrophobic, meaning it will not absorb nor combine with water. Marine noise reduction applications are endless.



QuietFiber® QF2

- Highest noise absorption rating of NRC 1.00
- Non Silica
- Virtually fireproof – Class A fire rating
 - o 0 Smoke + 0 Flame Development
- Hydrophobic – will not combine with water
- Will not support mold or mildew growth
- Available in plain, black or white face
- Full outdoor weather and U.V. tolerant
- Significant sound benefit v. fiberglass
- Install on top of acoustical ceiling tiles
- High temperature capable
- Comprised of up to 90% recycled material
- 100% recyclable

Product Name

QuietFiber® Hydrophobic Noise Absorption Material – QF2

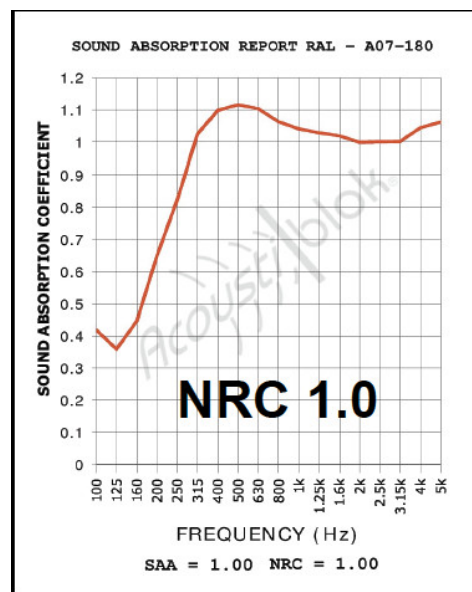
NRC 1.0 Rated	125hz	250hz	500hz	1000hz	2000hz	4000hz
	0.36	0.79	1.15	1.04	1.01	1.04

Technical Data:

- ASTM C 423 – NRC 1.00
- ASTM E 84 – Class 1, 0 Flame 0 Smoke
- ASTM C 518 – R 4.2 per inch
- ASTM C 518 – 0.24 @ 75°F (24°C)

Standards Compliance:

- ASTM C 665 Non-Corrosive Type I
- ASTM C 612 1A, 1B, II, III
- ASTM E 136 Rated Non-combustible per NFPA Standard 220
- ASTM C 1104 Absorption less than 1% by volume
- ASTM C 356 Linear shrinkage <2% @ 1200°F (650°C)



6900 Interbay Blvd
Tampa, Florida USA 33616
Telephone: (813)980-1440
www.Acoustiblok.com
sales@acoustiblok.com

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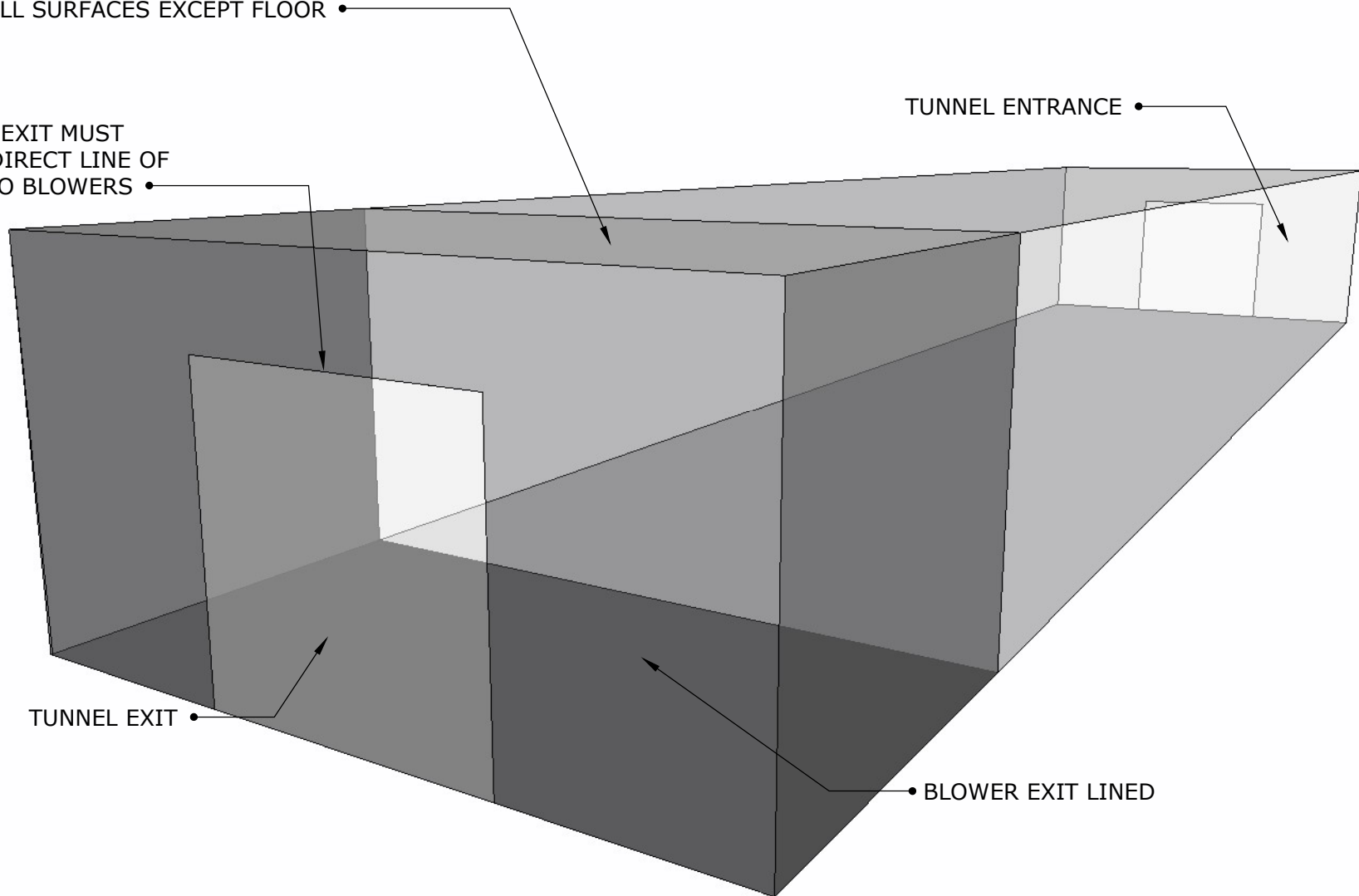
LINE EXIT INTERIOR SECTION
OF BLOWER ROOM W/ 2" THICK ACOUSTIC
MATERIAL W/ NRC 1.0 OR EQUIVALENT.
LINER NEEDS TO BE ADDED
TO ALL SURFACES EXCEPT FLOOR

TUNNEL EXIT MUST
BLOCK DIRECT LINE OF
SIGHT TO BLOWERS

TUNNEL ENTRANCE

TUNNEL EXIT

BLOWER EXIT LINED



Appendix C
SoundPLAN Inputs/Outputs

QQ Taylorsville UT Contribution spectra - 002 - 120HP IDC - Lined: Outdoor SP

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Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz	
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Receiver R1 FI G Lr,lim dB(A) Leq,d 52.1 dB(A) Sigma(Leq,d) 0.0 dB(A)																																
Leq,d	29.9								18.8			27.8			24.0			14.9			1.1			-16.8								
Leq,d	52.0								34.1			44.4			46.5			46.4			45.4			38.2								
Leq,d	-5.7								-11.9			-7.4			-16.6			-30.1			-37.6			-49.5								
Leq,d	-11.4								-21.3			-12.3			-21.7			-40.2			-57.9			-78.4								
Leq,d	7.9								-1.1			6.0			1.2			-8.8			-14.3			-24.6								
Leq,d	3.3								-5.7			1.2			-3.0			-12.6			-17.9			-28.1								
Leq,d	4.9								-5.2			3.5			-2.9			-14.5			-21.0			-32.5								
Leq,d	23.4	3.5	-13.6	-7.8	7.0	7.7	9.5	4.8	8.5	5.3	5.8	0.4	2.0	5.9	5.7	9.4	12.3	12.1	12.9	12.1	14.8	15.5	11.9	9.0	4.7	-0.3	-5.3	-12.7	-20.8	-30.9	-42.0	
Leq,d	12.2	-9.6	-26.6	-20.7	-5.8	-4.9	-3.0	-7.5	-3.6	-6.7	-6.5	-11.6	-9.7	-5.6	-5.7	-1.8	1.0	0.9	1.8	1.0	3.8	4.5	1.0	-1.7	-5.9	-10.6	-15.2	-22.0	-29.2	-38.1	-47.6	
Leq,d	14.6				-16.7	-9.6	-2.6	-1.8	1.0	1.8	-3.3	-4.3	-2.1	-4.6	-6.6	-4.9	-4.6	-2.1	0.8	3.2	3.1	0.7	5.0	5.7	4.8	4.3	1.9	-3.8	-9.1	-18.3		
Leq,d	10.4				-18.9	-11.9	-5.1	-4.5	-2.1	-1.6	-7.0	-8.5	-6.1	-9.0	-11.3	-9.9	-9.7	-7.1	-4.4	-2.1	-2.4	-5.0	-0.4	2.8	1.5	-0.1	-3.5	-11.6	-20.0	-32.3		
Leq,d	16.0	-10.1	-7.9	-1.6	1.5	3.6	6.6	5.1	4.9	6.5	7.8	7.3	1.9	-1.4	1.3	-5.9	-3.7	-3.2	-5.6	-1.8	-2.2	-2.6	-3.2	-4.1	-7.3	-10.1	-15.7	-22.4	-29.6	-40.6	-55.2	
Leq,d	29.8	-10.5	-7.5	-0.5	3.5	6.5	10.5	10.2	11.2	14.2	17.5	18.5	14.4	12.7	16.6	10.6	14.6	16.0	14.5	19.6	20.7	20.4	20.0	19.1	15.8	13.1	7.2	-0.2	-8.2	-20.1	-35.9	
Leq,d	17.5	-9.0	-6.7	-0.4	2.8	4.9	8.0	6.6	6.5	8.2	9.0	8.6	3.2	-0.1	2.5	-4.7	-1.9	-1.6	-4.2	-0.5	-1.0	-1.5	-2.1	-2.9	-6.1	2.4	-5.5	-15.1	-25.2	-37.4	-51.8	
Leq,d	16.5	-9.7	-7.4	-1.2	2.0	4.1	7.0	5.6	5.4	7.1	8.4	7.9	2.5	-0.8	1.9	-5.4	-3.0	-2.5	-5.0	-1.2	-1.6	-2.0	-2.6	-3.4	-6.5	-9.2	-14.6	-21.0	-28.0	-38.5	-52.5	
Leq,d	16.1	-10.1	-7.8	-1.6	1.5	3.6	6.6	5.1	4.9	6.5	8.0	7.6	2.2	-1.2	1.5	-5.7	-3.5	-3.0	-5.4	-1.5	-1.9	-2.3	-2.9	-3.7	-6.8	-9.5	-14.9	-21.1	-28.5	-39.1	-53.3	
Leq,d	15.9	-10.3	-8.0	-1.8	1.4	3.4	6.4	4.9	4.6	6.2	7.8	7.3	1.9	-1.4	1.3	-5.9	-3.8	-3.2	-5.6	-1.7	-2.1	-2.5	-3.1	-3.9	-7.1	-9.8	-15.3	-21.6	-29.0	-39.8	-54.2	
Leq,d	25.4	-8.2	-5.4	1.4	5.1	7.8	11.5	10.7	11.2	13.7	13.9	14.1	9.2	6.5	9.6	2.8	8.2	8.4	5.5	8.9	7.8	6.6	18.6	17.4	13.5	9.7	2.6	-6.4	-16.8	-31.9	-51.2	
Leq,d	19.1	-9.2	-6.6	-0.1	3.4	5.8	9.1	7.8	7.9	9.9	11.2	10.9	5.7	2.6	5.4	-1.7	1.6	1.5	-1.5	1.6	0.4	-0.8	-1.9	-3.3	-7.0	-10.4	-16.7	-24.0	-32.6	-45.0	-61.2	
Leq,d	17.9	-9.8	-7.3	-0.9	2.5	4.9	8.1	6.7	6.7	8.5	10.4	10.1	4.7	1.5	4.2	-3.0	-1.2	-1.4	-4.6	-1.5	-2.7	-4.0	-4.8	-5.8	-9.3	-12.4	-18.6	-26.1	-34.4	-46.7	-63.1	
Leq,d	18.5	-9.5	-7.0	-0.5	2.9	5.2	8.5	7.2	7.2	9.1	10.7	10.5	5.2	2.0	4.9	-2.3	0.4	0.3	-2.8	0.4	-0.8	-2.0	-3.1	-4.3	-8.0	-11.3	-17.5	-23.5	-33.2	-45.8	-62.1	
Leq,d	20.0	-7.9	-5.4	1.1	4.4	6.8	10.0	8.9	9.0	11.1	11.1	11.0	5.9	3.0	5.9	-1.1	3.6	3.8	0.9	4.3	3.4	2.4	1.4	0.1	0.7	-2.1	-9.0	-17.4	-25.5	-36.3	-50.4	
Leq,d	25.7	-6.4	-3.6	3.1	6.9	9.6	13.3	12.7	13.4	16.0	16.1	16.5	11.9	9.6	13.0	6.4	12.2	12.5	9.8	13.3	12.4	11.4	10.2	8.8	5.5	2.3	-4.0	-11.5	-19.0	-30.1	-43.9	
Leq,d	20.3	-8.7	-6.0	0.6	4.2	6.7	10.1	8.9	9.2	11.3	12.0	11.8	6.7	3.7	6.6	-0.4	3.8	3.8	0.7	4.0	2.8	1.5	1.0	-0.6	-4.6	-8.3	-7.8	-18.2	-29.3	-43.2	-59.9	
Receiver R2 FI G Lr,lim dB(A) Leq,d 66.4 dB(A) Sigma(Leq,d) 0.0 dB(A)																																
Leq,d	28.0								16.4			26.0			22.2			13.4			1.1			-15.0								
Leq,d	66.3								50.5			60.1			61.2			59.7			58.5			52.0								
Leq,d	8.1								0.8			6.5			-1.0			-14.0			-18.8			-29.5								
Leq,d	-13.6								-23.1			-14.6			-24.6			-43.6			-60.5			-79.4								
Leq,d	10.6								2.6			9.0			2.3			-10.1			-17.2			-28.6								
Leq,d	17.7								8.7			15.9			10.7			0.0			-5.3			-14.8								
Leq,d	9.6								0.8			8.2			0.9			-12.2			-19.8			-31.5								
Leq,d	24.5	5.8	-11.5	-5.8	8.8	9.4	11.0	6.3	9.9	6.4	7.9	2.5	4.0	7.8	7.4	11.0	12.6	12.3	13.1	12.9	15.6	16.2	12.9	10.8	6.9	2.3	-2.3	-9.0	-15.8	-24.1	-32.7	
Leq,d	8.5	-7.0	-24.1	-18.5	-5.9	-5.5	-4.2	-9.1	-5.7	-9.3	-7.8	-13.3	-11.8	-8.1	-8.5	-5.0	-3.6	-3.9	-3.2	-3.6	-0.8	-0.1	-3.4	-5.7	-9.5	-13.3	-17.9	-24.5	-31.1	-38.9	-47.0	
Leq,d	26.8				-5.7	1.3	8.3	9.5	12.2	13.0	10.2	9.2	8.2	6.9	5.9	8.8	9.7	10.3	13.2	14.0	13.9	11.7	16.1	17.1	16.8	17.2	16.8	13.0	10.5	5.7		

MD Acoustics 1197 E Los Angeles Ave,Unit C 256 Simi Valley, CA 93065 USA

QQ Taylorsville UT Contribution spectra - 002 - 120HP IDC - Lined: Outdoor SP

23

Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz	
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Leq,d	20.3				-11.4	-4.3	2.7	3.8	6.6	7.5	2.2	1.3	0.3	0.5	-1.5	0.1	0.7	1.3	4.1	6.9	6.9	6.0	10.7	11.7	11.1	11.1	9.9	5.0	0.9	-6.1		
Leq,d	26.0	-3.4	-0.9	5.6	9.1	11.4	14.7	13.8	13.9	16.1	16.9	16.9	11.9	9.0	12.0	5.0	8.9	8.9	6.0	9.1	8.2	7.3	6.3	5.3	16.1	12.7	6.2	-1.8	-10.3	-21.8	-35.2	
Leq,d	39.4	1.4	4.4	11.4	15.4	18.4	22.4	22.3	23.3	26.3	27.4	28.4	24.3	22.5	26.5	20.5	25.7	26.6	24.6	28.4	28.3	28.9	28.6	28.2	25.6	23.7	19.3	14.3	9.6	2.1	-8.2	
Leq,d	37.1	0.9	3.7	10.5	14.3	17.1	20.9	20.7	21.6	24.4	26.4	27.3	23.2	21.2	25.0	18.9	23.3	24.2	22.1	25.6	25.4	25.1	24.8	25.1	22.7	20.7	16.0	10.9	6.3	-0.9	-10.7	
Leq,d	31.9	-0.3	2.4	9.2	12.9	15.6	19.2	18.8	19.4	22.0	23.5	24.0	19.4	16.8	20.1	13.3	17.2	17.4	14.6	17.5	16.6	15.7	14.7	14.6	11.7	8.8	3.6	-2.2	-7.3	-15.1	-25.4	
Leq,d	29.2	-1.5	1.2	7.8	11.4	14.0	17.5	16.8	17.2	19.6	20.8	21.0	16.1	13.4	16.4	9.5	13.3	13.4	10.5	13.4	12.5	11.6	10.5	9.4	14.5	11.4	5.4	-1.7	-8.9	-18.4	-29.7	
Leq,d	27.3	-2.5	0.1	6.6	10.1	12.6	16.0	15.1	15.4	17.6	18.5	18.6	13.6	10.8	13.8	6.9	10.7	10.8	7.9	10.9	10.0	9.1	8.1	7.0	15.8	12.5	6.3	-1.4	-9.4	-20.2	-32.7	
Leq,d	35.6	1.0	4.0	11.0	15.0	18.0	22.0	20.7	21.5	24.3	26.6	27.4	23.1	20.9	24.5	18.1	21.5	22.0	19.3	22.5	21.7	21.3	20.3	19.1	16.8	14.3	8.7	2.4	-3.5	-12.2	-23.7	
Leq,d	35.2	0.0	3.0	10.0	14.0	17.0	21.0	19.7	20.5	23.4	25.4	26.5	22.3	20.1	23.9	17.5	21.1	21.6	19.1	22.5	21.8	20.9	22.9	22.0	18.7	16.3	10.7	4.2	-2.4	-12.1	-24.7	
Leq,d	36.5	-1.1	1.9	8.9	12.9	15.9	19.9	19.7	20.7	23.6	23.9	24.9	20.9	19.1	23.1	17.1	22.9	23.9	21.9	25.8	25.7	25.5	26.2	25.8	23.0	20.7	15.8	10.1	4.4	-4.3	-16.1	
Leq,d	37.1	-0.6	2.4	9.4	13.4	16.4	20.4	20.2	21.2	24.2	24.7	25.7	21.7	19.9	23.8	17.8	23.5	24.5	22.5	26.4	26.2	26.1	26.7	26.2	23.4	21.4	16.6	11.0	5.6	-2.8	-14.3	
Leq,d	43.3	4.9	7.9	14.9	18.9	21.9	25.9	25.8	26.8	29.8	32.0	33.0	29.0	27.1	31.1	25.1	29.4	30.4	28.4	31.9	31.9	32.2	32.0	31.9	29.5	27.8	23.9	19.5	15.7	9.4	0.5	
Leq,d	45.4	6.0	9.0	16.0	20.0	23.0	27.0	27.0	28.0	31.0	33.4	34.4	30.4	28.5	32.5	27.7	32.0	32.9	30.9	34.5	34.8	34.7	34.6	34.3	31.9	30.3	26.5	22.3	18.6	12.4	3.7	
Leq,d	34.5	0.5	3.5	10.5	14.5	17.5	21.5	20.2	20.9	23.6	25.9	26.6	22.2	19.7	23.1	16.4	19.3	19.4	16.5	19.5	18.5	17.4	21.1	20.2	16.8	14.5	8.6	1.6	-5.5	-15.7	-28.6	
Receiver R3 FI G Lr,lim dB(A) Leq,d 47.4 dB(A) Sigma(Leq,d) 0.0 dB(A)																																
Leq,d	43.1								28.8									32.9														
Leq,d	28.5								20.2									19.8														
Leq,d	2.3								-5.0									-15.8														
Leq,d	-1.8								-13.1									-25.5														
Leq,d	-2.8								-9.1									-12.1														
Leq,d	-14.1								-19.4									-24.6														
Leq,d	1.2								-8.5									-19.0														
Leq,d	36.5	12.0	-4.9	1.1	16.1	17.0	19.1	15.0	18.9	15.9	19.0	14.0	16.0	20.1	20.2	24.1	25.3	25.2	26.2	25.0	27.9	28.7	25.5	23.2	19.7	15.8	12.5	7.8	3.3	-1.9	-6.8	
Leq,d	21.5	-2.8	-19.8	-13.8	1.3	2.3	4.3	0.2	4.3	1.2	3.6	-1.2	0.7	4.9	4.9	9.0	10.3	10.3	11.3	10.1	13.0	13.8	10.6	8.2	4.6	0.6	-2.8	-7.8	-12.4	-17.9	-23.1	
Leq,d	12.2				-19.3	-12.3	-5.4	-4.8	0.9	1.8	-3.1	-4.1	-5.1	-5.8	-7.8	-4.9	-4.4	-3.8	-0.9	0.1	0.8	-1.7	2.4	2.7	1.5	0.5	-2.2	-9.4	-16.9	-28.3		
Leq,d	11.6				-19.5	-12.5	-5.6	-5.0	0.7	1.6	-3.3	-4.3	-5.2	-5.9	-7.9	-5.0	-4.6	-4.0	-1.1	0.0	-0.2	-2.7	1.4	1.7	0.4	-0.6	-3.3	-10.5	-18.1	-29.6		
Leq,d	35.3	-2.2	0.8	7.8	11.8	14.8	18.8	18.6	19.6	22.5	22.5	23.4	19.4	17.6	21.6	15.6	21.8	22.7	20.7	24.7	24.6	25.1	25.1	24.5	21.5	19.1	13.9	7.9	1.8	-7.4	-19.9	
Leq,d	33.0	-5.6	-2.6	4.4	8.4	11.4	15.4	15.0	16.0	18.9	17.7	18.7	16.9	15.1	19.1	13.2	20.3	21.2	19.1	23.4	23.2	22.8	22.3	22.7	20.0	16.9	10.9	3.4	-4.8	-17.0	-33.1	
Leq,d	33.7	-4.5	-1.5	5.5	9.5	12.5	16.5	16.2	17.2	20.1	19.3	20.3	16.2	14.5	18.5	12.4	19.3	20.2	19.8	24.0	24.7	24.4	23.8	23.0	19.8	16.9	11.1	4.1	-3.3	-14.5	-29.2	
Leq,d	33.9	-4.0	-1.0	6.0	10.0	13.0	17.0	16.7	17.7	20.7	20.0	21.0	17.0	15.2	19.2	13.1	19.8	20.8	18.7	24.2	24.1	24.6	24.0	23.3	20.1	17.2	11.6	4.8	-2.3	-12.9	-27.0	
Leq,d	34.3	-3.4	-0.4	6.6	10.6	13.6	17.6	17.3	18.3	21.3	20.8	21.7	17.7	15.9	19.9	13.9	20.4	21.4	19.3	23.4	24.4	24.8	24.3	23.6	20.4	17.7	12.2	5.7	-1.1	-11.2	-24.7	
Leq,d	34.8	-2.8	0.2	7.2	11.2	14.2	18.2	17.9	18.9	21.9	21.6	22.6	18.5	16.8	20.7	14.7	21.1	22.0	20.0	24.0	24.8	25.1	24.7	24.0	20.9	18.5	13.1	6.8	0.4	-9.3	-22.3	
Leq,d	33.0	-5.2	-2.2	4.8	8.8	11.8	15.8	15.4	16.4	19.4	18.3	19.3	15.3	13.5	17.5	11.5	20.4	21.4	19.3	23.6	23.3	23.0	22.5	22.9	19.6	16.7	10.7	3.5	-4.4	-16.2	-31.7	
Leq,d	32.5	-8.9	-5.8	1.2	5.3	8.3	12.4	12.2	13.3	16.4	19.7	20.7	16.6	14.9	18.8	12.8	19.6	20.5	18.5	22.6	22.4	22.1	21.7	22.7	19.6	16.8	11.3	4.6	-2.6	-13.4	-27.8	
Leq,d	33.5	-7.8	-4.7	2.3	6.3	9.4	13.5	13.3	14.4	17.6	21.2	22.1	18.1	16.3	20.3	14.3	20.8	21.7	19.7	23.7	23.6	23.3	22.9	22.3	19.4	17.0	11.9	5.7	-0.6	-10.4	-23.6	
Leq,d	32.8	-8.3	-5.3	1.7	5.8	8.8	12.9	12.7	13.8	17.0	20.4	21.4	17.4	15.6	19.6	13.5	20.1	21.1	19.0	23.1	23.0	22.7	22.3	21.7	18.7	16.2	10.9	4.6	-2.1	-12.2	-25.9	

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Time slice	Sum	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	12.5kHz	16kHz	20kHz	
	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	
Leq,d	33.1	-5.0	-2.0	5.0	9.0	12.0	16.0	15.6	16.6	19.6	18.6	19.6	15.5	13.8	17.8	11.7	20.6	21.6	19.5	23.7	23.5	23.2	22.7	21.9	18.6	15.8	10.0	2.9	-4.7	-16.2	-31.3	
Leq,d	32.9	-5.5	-2.5	4.5	8.5	11.5	15.5	15.2	16.1	19.1	17.9	18.9	17.1	15.3	19.3	13.4	20.5	21.4	19.3	23.6	23.3	23.0	22.5	21.7	18.4	15.5	9.6	2.4	-5.4	-17.2	-32.8	
Leq,d	31.9	-9.4	-6.3	0.7	4.8	7.8	11.9	11.6	12.8	15.9	19.0	20.0	16.0	14.2	18.2	12.1	19.0	20.0	17.9	22.1	21.9	21.6	21.1	22.2	19.0	16.1	10.4	3.5	-3.9	-15.1	-30.0	
Receiver R4 FI G Lr,lim dB(A) Leq,d 47.5 dB(A) Sigma(Leq,d) 0.0 dB(A)																																
Leq,d	24.0								12.1			22.1			17.8			8.9			-3.2			-19.3								
Leq,d	31.4								19.6			27.1			26.0			23.5			21.5			13.2								
Leq,d	-3.6								-11.8			-5.1			-12.6			-25.2			-32.1			-44.1								
Leq,d	-15.7								-26.1			-16.5			-26.9			-45.9			-63.0			-82.6								
Leq,d	-8.8								-15.7			-10.4			-19.2			-32.4			-39.1			-50.1								
Leq,d	-11.3								-18.3			-12.9			-20.8			-33.3			-40.2			-52.2								
Leq,d	-0.3								-8.6			-1.6			-9.9			-23.5			-31.9			-45.0								
Leq,d	29.3	8.1	-8.9	-2.9	12.0	12.9	14.9	10.7	14.5	11.4	16.3	11.2	13.0	16.8	16.5	20.2	18.2	17.7	18.1	16.3	18.8	19.0	15.0	11.9	7.5	2.8	-1.3	-6.9	-12.2	-18.1	-23.5	
Leq,d	13.1	-7.8	-24.8	-18.9	-3.9	-3.0	-1.1	-5.3	-1.5	-4.7	0.3	-4.7	-2.9	0.8	0.5	4.0	2.0	1.4	1.8	0.1	2.4	2.6	-1.4	-4.6	-9.0	-13.8	-18.1	-23.9	-29.2	-35.1	-40.6	
Leq,d	14.6				-13.3	-6.5	0.2	0.8	3.1	3.6	-0.7	-2.1	-1.6	-4.5	-4.6	-3.2	-2.8	-1.5	1.7	2.4	2.1	-0.4	3.8	4.4	3.6	3.4	2.0	-2.8	-7.0	-14.0		
Leq,d	17.9				-9.6	-2.8	3.9	4.6	6.8	10.0	4.2	2.7	1.6	-1.1	-3.5	-2.2	-1.8	0.9	3.6	4.3	4.0	1.5	5.9	6.6	6.0	6.2	5.6	1.5	-1.5	-6.9		
Leq,d	34.1	-3.8	-0.8	6.1	10.0	13.0	18.7	18.4	19.3	22.1	26.0	26.8	22.5	20.2	23.8	17.4	19.2	19.6	17.0	20.8	20.2	19.2	18.1	16.9	13.4	10.5	5.1	-1.1	-7.0	-15.8	-27.5	
Leq,d	37.2	-0.1	2.9	9.8	13.8	16.7	20.6	20.4	21.3	24.1	28.0	29.2	24.9	24.4	28.1	21.6	23.6	24.1	21.5	24.5	23.7	22.8	22.0	20.9	17.6	15.0	10.1	4.8	0.0	-7.5	-17.5	
Leq,d	34.0	-3.8	-0.8	6.1	10.1	13.0	18.7	18.4	19.3	22.1	26.1	26.8	22.5	20.2	23.8	17.4	19.1	19.6	16.9	20.1	19.3	18.4	17.3	16.1	12.7	9.9	4.5	-1.5	-7.3	-16.0	-27.5	
Leq,d	34.4	-3.6	-0.7	6.3	10.2	13.2	18.8	18.6	19.4	22.3	26.2	27.0	22.7	20.3	23.9	17.5	19.3	19.7	18.2	21.6	20.8	19.9	18.8	17.6	14.1	11.3	5.8	-0.2	-6.1	-15.0	-26.7	
Leq,d	34.4	-3.5	-0.6	6.4	10.3	13.2	18.9	18.6	19.5	22.3	26.2	27.0	22.7	20.4	24.0	17.6	19.4	19.8	17.1	21.6	20.8	19.9	18.8	17.5	14.1	11.2	5.8	-0.3	-6.2	-15.0	-26.7	
Leq,d	34.3	-3.6	-0.7	6.3	10.2	13.2	18.8	18.5	19.4	22.2	26.2	27.0	22.7	20.3	24.0	17.5	19.3	19.7	17.1	21.2	20.5	19.5	18.5	17.2	13.7	10.8	5.4	-0.8	-6.7	-15.5	-27.1	
Leq,d	37.1	0.8	3.8	10.7	14.7	17.6	21.5	21.3	22.2	25.0	28.8	30.0	25.7	23.3	26.9	20.5	22.5	22.9	20.3	23.2	22.4	21.5	20.7	19.6	16.3	13.8	9.0	3.9	-0.7	-7.8	-17.3	
Leq,d	38.1	2.0	5.0	11.9	15.8	18.8	22.6	22.5	23.4	26.2	29.9	31.0	26.7	24.3	27.9	21.4	23.5	23.9	21.2	24.0	23.2	22.4	21.5	20.4	17.2	14.8	10.1	5.1	0.8	-6.0	-15.2	
Leq,d	38.0	1.8	4.8	11.7	15.7	18.6	22.5	22.3	23.2	26.0	29.8	30.9	26.6	24.2	27.8	21.3	23.4	23.8	21.2	24.0	23.2	22.4	21.5	20.4	17.2	14.8	10.1	5.1	0.7	-6.1	-15.4	
Leq,d	38.2	2.1	5.1	12.0	16.0	18.9	22.8	22.6	23.5	26.3	30.0	31.1	26.8	24.4	28.0	21.5	23.6	24.0	21.3	24.2	23.4	22.5	21.6	20.5	17.3	14.9	10.2	5.3	0.9	-5.8	-15.0	
Leq,d	33.8	-4.0	-1.0	5.9	9.8	12.8	18.5	18.2	19.1	21.9	25.9	26.6	22.3	20.0	23.6	17.2	18.9	19.4	16.7	19.9	19.1	18.2	17.1	15.9	12.5	9.7	4.3	-1.8	-7.6	-16.4	-28.1	
Leq,d	33.5	-4.3	-1.4	5.6	9.5	12.5	18.2	17.9	18.8	21.6	25.6	26.4	22.1	19.8	23.4	16.9	18.7	19.1	16.5	19.7	18.9	18.0	16.9	15.6	12.3	9.4	3.9	-2.2	-8.2	-17.1	-29.0	
Leq,d	37.7	1.6	4.5	11.5	15.4	18.3	22.2	22.1	22.9	25.7	29.5	30.6	26.3	23.9	27.5	21.0	23.1	23.5	20.8	23.7	22.9	22.0	21.2	20.1	16.9	14.4	9.7	4.7	0.2	-6.7	-16.1	

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Source group	Source type	Fr. lane	Leq,d dB(A)	A dB	
Receiver R1	FI G	Lr,lim	dB(A)	Leq,d 52.1 dB(A)	Sigma(Leq,d) 0.0 dB(A)
Default industrial noise	Point		17.5	0.0	
Default industrial noise	Point		16.5	0.0	
Default industrial noise	Point		16.1	0.0	
Default industrial noise	Point		15.9	0.0	
Default industrial noise	Point		16.0	0.0	
Default industrial noise	Point		29.8	0.0	
Default industrial noise	Point		25.4	0.0	
Default industrial noise	Point		20.3	0.0	
Default industrial noise	Point		19.1	0.0	
Default industrial noise	Point		18.5	0.0	
Default industrial noise	Point		17.9	0.0	
Default industrial noise	Line		12.2	0.0	
Default industrial noise	Line		23.4	0.0	
Default industrial noise	Point		14.6	0.0	
Default industrial noise	Point		10.4	0.0	
Default industrial noise	Point		25.7	0.0	
Default industrial noise	Point		20.0	0.0	
Default industrial noise	Area		4.9	0.0	
Default industrial noise	Area		-5.7	0.0	
Default industrial noise	Area		-11.3	0.0	
Default industrial noise	Area		29.9	0.0	
Default industrial noise	Area		7.9	0.0	
Default industrial noise	Area		3.3	0.0	
Default industrial noise	Area		52.0	0.0	
Receiver R2	FI G	Lr,lim	dB(A)	Leq,d 66.4 dB(A)	Sigma(Leq,d) 0.0 dB(A)
Default industrial noise	Point		37.1	0.0	
Default industrial noise	Point		31.9	0.0	
Default industrial noise	Point		29.2	0.0	
Default industrial noise	Point		27.3	0.0	
Default industrial noise	Point		26.0	0.0	
Default industrial noise	Point		39.4	0.0	
Default industrial noise	Point		35.6	0.0	
Default industrial noise	Point		34.5	0.0	
Default industrial noise	Point		35.2	0.0	
Default industrial noise	Point		37.1	0.0	
Default industrial noise	Point		36.5	0.0	
Default industrial noise	Line		8.5	0.0	
Default industrial noise	Line		24.5	0.0	
Default industrial noise	Point		26.8	0.0	
Default industrial noise	Point		20.3	0.0	
Default industrial noise	Point		45.4	0.0	
Default industrial noise	Point		43.3	0.0	
Default industrial noise	Area		9.6	0.0	

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Source group	Source type	Per. lane	Leq,d dB(A)	A dB	
Default industrial noise	Area		8.1	0.0	
Default industrial noise	Area		-13.6	0.0	
Default industrial noise	Area		28.0	0.0	
Default industrial noise	Area		10.6	0.0	
Default industrial noise	Area		17.7	0.0	
Default industrial noise	Area		66.3	0.0	
Receiver R3 FI G Lr,lim dB(A) Leq,d 47.4 dB(A) Sigma(Leq,d) 0.0 dB(A)					
Default industrial noise	Point		33.7	0.0	
Default industrial noise	Point		33.9	0.0	
Default industrial noise	Point		34.3	0.0	
Default industrial noise	Point		34.8	0.0	
Default industrial noise	Point		35.3	0.0	
Default industrial noise	Point		33.0	0.0	
Default industrial noise	Point		33.0	0.0	
Default industrial noise	Point		31.9	0.0	
Default industrial noise	Point		32.5	0.0	
Default industrial noise	Point		32.8	0.0	
Default industrial noise	Point		33.5	0.0	
Default industrial noise	Line		21.5	0.0	
Default industrial noise	Line		36.5	0.0	
Default industrial noise	Point		12.2	0.0	
Default industrial noise	Point		11.6	0.0	
Default industrial noise	Point		32.9	0.0	
Default industrial noise	Point		33.1	0.0	
Default industrial noise	Area		1.2	0.0	
Default industrial noise	Area		2.3	0.0	
Default industrial noise	Area		-1.8	0.0	
Default industrial noise	Area		43.1	0.0	
Default industrial noise	Area		-2.8	0.0	
Default industrial noise	Area		-14.1	0.0	
Default industrial noise	Area		28.5	0.0	
Receiver R4 FI G Lr,lim dB(A) Leq,d 47.5 dB(A) Sigma(Leq,d) 0.0 dB(A)					
Default industrial noise	Point		34.0	0.0	
Default industrial noise	Point		34.4	0.0	
Default industrial noise	Point		34.4	0.0	
Default industrial noise	Point		34.3	0.0	
Default industrial noise	Point		34.1	0.0	
Default industrial noise	Point		37.2	0.0	
Default industrial noise	Point		37.1	0.0	
Default industrial noise	Point		37.7	0.0	
Default industrial noise	Point		38.1	0.0	
Default industrial noise	Point		38.2	0.0	
Default industrial noise	Point		38.0	0.0	
Default industrial noise	Line		13.1	0.0	

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Contribution level - 002 - 120HP IDC - Lined: Outdoor SP

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Source group	Source type	Per. lane	Leq,d dB(A)	A dB	
Default industrial noise	Line		29.3	0.0	
Default industrial noise	Point		14.6	0.0	
Default industrial noise	Point		17.9	0.0	
Default industrial noise	Point		33.5	0.0	
Default industrial noise	Point		33.8	0.0	
Default industrial noise	Area		-0.3	0.0	
Default industrial noise	Area		-3.6	0.0	
Default industrial noise	Area		-15.7	0.0	
Default industrial noise	Area		24.0	0.0	
Default industrial noise	Area		-8.8	0.0	
Default industrial noise	Area		-11.3	0.0	
Default industrial noise	Area		31.4	0.0	

QQ Taylorsville UT
Octave spectra of the sources in dB(A) - 002 - 120HP IDC - Lined: Outdoor SP

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Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)	16kHz dB(A)
001 - 120HP IDC - Standard Tunnel-Entrance	Area	15.61	74.8	0.0	74.8	86.7	0.0	0.0		3	100%/24h	2523_Entrance		69.4	84.3	82.3	73.5	61.7	46.9		
001 - 120HP IDC - Standard Tunnel-Exit	Area	13.38	83.3	0.0	83.3	94.6	0.0	0.0		3	100%/24h	2526_Exit		78.0	89.0	89.8	87.4	86.0	79.8		
001 - 120HP IDC - Standard Tunnel-Facade 01	Area	156.54	78.6	57.0	29.3	51.3	0.0	0.0		3	100%/24h	2521_Facade 01_		41.1	49.8	43.7	31.7	26.1	16.8		
001 - 120HP IDC - Standard Tunnel-Facade 02	Area	26.55	74.9	57.0	27.2	41.5	0.0	0.0		3	100%/24h	2522_Facade 02		27.9	40.6	32.7	14.9	-0.4			
001 - 120HP IDC - Standard Tunnel-Facade 03	Area	156.54	78.6	57.0	29.3	51.3	0.0	0.0		3	100%/24h	2524_Facade 03_		41.1	49.8	43.7	31.7	26.1	16.8		
001 - 120HP IDC - Standard Tunnel-Facade 04	Area	28.78	81.5	57.0	31.9	46.5	0.0	0.0		3	100%/24h	2525_Facade 04_		36.7	44.8	39.2	27.8	22.4	13.2		
001 - 120HP IDC - Standard Tunnel-Roof 01	Area	218.16	78.9	57.0	29.6	53.0	0.0	0.0		0	100%/24h	2514_Roof 01_		42.6	51.5	45.5	33.5	27.9	18.6		
Car Lane	Line	29.61			62.8	77.5	0.0	0.0		0	100%/24h	Drive-Thru - Idiling Car @ 6ft	61.5	63.0	66.5	70.2	71.1	72.3	68.8	60.6	54.2
Car Lane	Line	54.55			45.4	62.8	0.0	0.0		0	100%/24h	Drive-Thru - Idiling Car @ 6ft	46.8	48.3	51.8	55.5	56.4	57.6	54.0	45.9	39.5
Turbine	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech Turbine	44.9	57.3	55.1	52.0	55.6	59.5	66.2	69.5	63.7
Turbine	Point				72.6	72.6	0.0	0.0		0	100%/24h	Vacutech Turbine	44.9	57.3	55.1	52.0	55.6	59.5	66.2	69.5	63.7
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1

MD Acoustics 1197 E Los Angeles Ave,Unit C 256 Simi Valley, CA 93065 USA

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QQ Taylorsville UT

Octave spectra of the sources in dB(A) - 002 - 120HP IDC - Lined: Outdoor SP

3

Name	Source type	I or A m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB(A)	DO-Wall dB	Time histogram	Emission spectrum	63Hz dB(A)	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)	16kHz dB(A)
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1
Vac	Point				81.0	81.0	0.0	0.0		0	100%/24h	Vacutech - in car	61.6	69.0	76.6	72.9	71.4	73.2	72.6	67.6	58.1

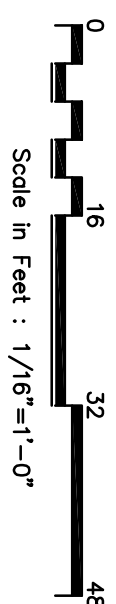
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3400 SOUTH

EXISTING HARDSCAPE

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RDL Design Company, Inc.
1020 East Yale Avenue
Salt Lake City, Utah 84105
Phone : 801-647-3114
Email : rdldesign@comcast.net

Tree #	Type	Size	Condition	Remarks
1	Little-Leaf Linden	12" Diameter	Acceptable	Conflicting Location / Remove
2	Native Elm	30" Diameter	Undetermined	Conflicting Location / Remove
3	Flowering Pear	12" Diameter	Acceptable	Conflicting Location / Remove
4	Little-Leaf Linden	14" Diameter	Acceptable	Retain if Possible
5	Flowering Pear	12" Diameter	Poor	Remove
6	Flowering Pear	10" Diameter	Poor	Remove
7	Flowering Pear	12" Diameter	Poor	Remove
8	Flowering Pear	10" Diameter	Dead	Remove
9	Flowering Pear	12" Diameter	Poor	Remove
10	Flowering Pear	16" Diameter	Acceptable	Retain if Possible
11	Little-Leaf Linden	12" Diameter	Dead	Remove
12	Little-Leaf Linden	14" Diameter	Dead	Remove
13	Little-Leaf Linden	12" Diameter	Poor	Remove
14	Flowering Pear	16" Diameter	Acceptable	Conflicting Location / Remove
15	Flowering Pear	12" Diameter	Dead	Remove
16	Little-Leaf Linden	16" Diameter	Acceptable	Conflicting Location / Remove

EX J