

Appendix G: Noise Supporting Information

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Project Number: 6224.0003

Sheet 1 of 2

Project Name: Orange Residential

Test Personnel: Henry Welch

NOISE MEASUREMENT SURVEY

Site Number: 1 Date: 9/30/2025 Time: From 11:00 to 11:10

Site Location: NW Corner of Lot. At Nicky street and Santiago Canyon. just NE of Storm Drain and next to knocked down sign posts

Primary Noise Sources: Traffic, Airplane

Measurement Results

	dBA
L _{eq}	70.3
L _{max}	80.4
L _{min}	38.1
L _{peak}	
L ₅	75.9
L ₁₀	74.6
L ₅₀	67.3
L ₉₀	57.2
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA

Comments:

Equipment:

Settings: A-Weighted ☒ Other ☐

Measured Difference: 0.24

Slow ☒ Fast ☐

dBA

Windscreen ☒

Atmospheric Conditions

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
1	2.4	71	58	
Comments:				

Photos Taken

Photo Number	Location/Description
1	Facing North towards Santiago Canyon
2	Facing East towards Neighborhood
3	Facing West towards parking lot of project site

Traffic Description

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts

Measurement Report

Report Summary

Meter's File Name	LxT_Data.037.s	Computer's File Name	LxT_0004228-20250930 110024-LxT_Data.037.ldbin
Meter	LxT2 0004228	Firmware	2.404
User	Henry Welch	Location	NW of lot, Corner of Kelly and Santiago Canyon
Job Description	6224.0003 Orange Residential		
Note			

Measurement

Start Time	2025-09-30 11:00:24	Duration	0:11:18.7		
End Time	2025-09-30 11:11:43	Run Time	0:11:17.6	Pause Time	0:00:01.1
Pre-Calibration	2025-09-30 10:58:22	Post-Calibration	None	Calibration Deviation	0.0

Results

Overall Metrics

LA _{eq}	70.3 dB		
LAE	98.6 dB	SEA	— dB
EA	806.7 μ Pa ² /h		
EA8	34.3 mPa ² /h		
EA40	171.4 mPa ² /h		
LA _{peak}	96.0 dB	2025-09-30 11:05:20	
LA _{max}	80.4 dB	2025-09-30 11:11:04	
LA _{min}	38.1 dB	2025-09-30 11:10:28	
LA _{eq}	70.3 dB		
LC _{eq}	74.4 dB	LC _{eq} - LA _{eq}	4.1 dB
LAI _{eq}	71.9 dB	LAI _{eq} - LA _{eq}	1.6 dB

Exceedances

Count Duration

LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight	
70.3 dB	70.3 dB	— dB	
LDEN	LDay	LEve	LNight
70.3 dB	70.3 dB	— dB	— dB

Any Data

	Level	A Time Stamp	Level	C Time Stamp	Z Level	Z Time Stamp
L _{eq}	70.3 dB		— dB		— dB	
LS _(max)	80.4 dB	2025-09-30 11:11:04	— dB	None	— dB	None

LS _(min)	38.1 dB	2025-09-30 11:10:28	— dB	None	— dB	None
L _{Peak(max)}	96.0 dB	2025-09-30 11:05:20	— dB	None	— dB	None
Overloads	Count	Duration				
	0	0:00:00.0				
Statistics						
LAS 5.0	75.9 dB					
LAS 10.0	74.6 dB					
LAS 33.3	70.3 dB					
LAS 50.0	67.3 dB					
LAS 66.6	64.1 dB					
LAS 90.0	57.2 dB					

Project Number: 6224.0003

Sheet 1 of 2

Project Name: Orange Residential

Test Personnel: Henry Welch

NOISE MEASUREMENT SURVEY

Site Number: 2 Date: 9/30/2025 Time: From 11:41 to 11:51

Site Location: SW corner of lot, outside lot on Nicky Road. Between storm grate and chain link fence

Primary Noise Sources: Traffic, airplanes

Measurement Results

	dBA
L _{eq}	50.9
L _{max}	62
L _{min}	38.6
L _{peak}	
L ₅	57.9
L ₁₀	55.7
L ₅₀	46.2
L ₉₀	42.2
SEL	

Observed Noise Sources/Events

Time	Noise Source/Event	dBA

Comments: Occasional dog barks and neighbor doing light gardenwork

Equipment:

Settings: A-Weighted ☒ Other ☐

Measured Difference: -.03

Slow ☒ Fast ☐

dBA

Windscreen ☒

Atmospheric Conditions

Maximum Wind Velocity (mph)	Average Wind Velocity (mph)	Temperature (F)	Relative Humidity (%)	
5	2.4	71	55	
Comments:				

Photos Taken

Photo Number	Location/Description
1	Facing North toward Santiago Canyon
2	Facing East towards Project site
3	Facing South towards residential

Traffic Description

Roadway	# Lanes	Posted Speed	Average Speed	NB/EB Counts	SB/WB Counts

Measurement Report

Report Summary

Meter's File Name	LxT_Data.038.s	Computer's File Name	LxT_0004228-20250930 114050-LxT_Data.038.ldbin
Meter	LxT2 0004228	Firmware	2.404
User	Henry Welch	Location	St 2. SW Corner. On Kelly road
Job Description	6224.0003 Orange Residential		
Note			

Measurement

Start Time	2025-09-30 11:40:50	Duration	0:10:07.4	
End Time	2025-09-30 11:50:57	Run Time	0:10:04.7	Pause Time 0:00:02.7
Pre-Calibration	2025-09-30 11:39:16	Post-Calibration	None	Calibration Deviation 0.0

Results

Overall Metrics

LA _{eq}	50.9 dB	SEA	---	dB
LAE	78.7 dB			
EA	8.3 μPa²h			
EA8	393.7 μPa²h			
EA40	2.0 mPa²h			
LAS _{peak}	81.6 dB	2025-09-30 11:50:34		
LAS _{max}	62.0 dB	2025-09-30 11:46:05		
LAS _{min}	38.6 dB	2025-09-30 11:41:56		
LA _{eq}	50.9 dB			
LC _{eq}	60.8 dB	LC _{eq} - LA _{eq}	9.9 dB	
LAI _{eq}	54.0 dB	LAI _{eq} - LA _{eq}	3.1 dB	

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight	
	50.9 dB	50.9 dB	---	
	LDEN	LDay	LEve	LNight
	50.9 dB	50.9 dB	---	---

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	51.0 dB		--- dB		--- dB	
L _{S(max)}	62.0 dB	2025-09-30 11:46:05	--- dB	None	--- dB	None
L _{S(min)}	38.6 dB	2025-09-30 11:41:56	--- dB	None	--- dB	None
L _{Peak(max)}	81.6 dB	2025-09-30 11:50:34	--- dB	None	--- dB	None

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	57.9 dB
LAS 10.0	55.7 dB
LAS 33.3	48.0 dB
LAS 50.0	46.2 dB
LAS 66.6	44.9 dB
LAS 90.0	42.2 dB

Mobile Construction Activity Noise Calculation

Receiving residential land use									
	Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor [2]	Ground Effect[3]	Shielding (dBA)[4]	Calculated (dBA)		Energy
							Lmax	Leq	
Equipment Description	Lmax								
Grader	85	1	40	40	1	0	86.9	83.9	247052942.2
Excavator	85	1	40	90	1	0	79.9	73.4	21689147.19
Dozer	85	1	40	90	1	0	79.9	73.4	21689147.19
Front End Loader	80	1	40	90	1	0	74.9	68.4	6858710.562
Backhoe	80	1	40	90	1	0	74.9	68.4	6858710.562
Notes:						Lmax[5]	87	Leq	85

Notes:

[1] Percentage of time activity occurs each hour based on FHWA usage factors

[2] Distance assumes one piece of equipment adjacent to project boundary and others at the closest reasonable operating distance away

[3] Soft ground terrain between project site and receptor.

[4] Shielding due to terrain or structures

[5] Calculated Lmax is the loudest value.

Distance to Receptor (feet)		8 Hour Average Calculation						
Notes: *Equipment is measured as operating across the project site	Night	Time	Hourly Leq	Leq'	0.1*Leq	antiLog		
		12:00 AM	0.0	10.0	1	10		
		1:00 AM	0.0	10.0	1	10		
		2:00 AM	0.0	10.0	1	10		
		3:00 AM	0.0	10.0	1	10		
		4:00 AM	0.0	10.0	1	10		
	Day	5:00 AM	0.0	10.0	1	10		
		6:00 AM	0.0	10.0	1	10		
		7:00 AM	0.0	0.0	0	1		
		8:00 AM	84.8	84.8	8.483085904	304148657.7		
		9:00 AM	79.0	79.0	7.896442782	78784862.69		
		10:00 AM	73.2	73.2	7.320786204	20930818.11		
		11:00 AM	69.2	69.2	6.922909508	8373547.879		
		12:00 PM	0.0	0.0	0	1		
		1:00 PM	66.2	66.2	6.618536586	4154670.494		
		2:00 PM	63.7	63.7	6.371976317	2354920.862		
		3:00 PM	61.6	61.6	6.16473356	1461280.402		
		4:00 PM	59.9	59.9	5.98597649	968225.4405		
		5:00 PM	0.0	0.0	0	1		
	6:00 PM	0.0	0.0	0	1			
	Evening	7:00 PM	0.0	5.0	0.5	3.16227766		
		8:00 PM	0.0	5.0	0.5	3.16227766		
		9:00 PM	0.0	5.0	0.5	3.16227766		
	Night	10:00 PM	0.0	10.0	1	10		
11:00 PM		0.0	10.0	1	10			
				Sum	421177087.1			
				Sum/8	52647135.88			
				Log10(Sum/8)	7.72137475			
				10*Log10(Sum/8)	77.2137475			
				8 Hour Average	77			

Receiving residential land use										
	Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor [2]	Ground Effect[3]	Shielding (dBA)[4]	Calculated (dBA)		Energy	
							Lmax	Leq		
Equipment Description	Lmax	Quantity								
Grader	85	1	40	90	1	0	79.9	73.4	21689147.19	
Excavator	85	1	40	90	1	0	79.9	73.4	21689147.19	
Dozer	85	1	40	90	1	0	79.9	73.4	21689147.19	
Front End Loader	80	1	40	90	1	0	74.9	68.4	6858710.562	
Backhoe	80	1	40	90	1	0	74.9	68.4	6858710.562	
									Leq	79

Receiving residential land use										
	Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor [2]	Ground Effect[3]	Shielding (dBA)[4]	Calculated (dBA)		Energy	
							Lmax	Leq		
Equipment Description	Lmax	Quantity								
Grader	85	1		40	140	1	0	76.1	67.6	5762167.748
Excavator	85	1		40	140	1	0	76.1	67.6	5762167.748
Dozer	85	1		40	140	1	0	76.1	67.6	5762167.748
Front End Loader	80	1		40	140	1	0	71.1	62.6	1822157.434
Backhoe	80	1		40	140	1	0	71.1	62.6	1822157.434
									Leq	73

Receiving residential land use										
	Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor [2]	Ground Effect[3]	Shielding (dBA)[4]	Calculated (dBA)		Energy	
							Lmax	Leq		
Equipment Description	Lmax	Quantity	Usage factor[1]	Distance to Receptor [2]	Ground Effect[3]	Shielding (dBA)[4]	Lmax	Leq	Energy	
Grader	85	1	40	190	1	0	73.4	63.6	2305203.135	
Excavator	85	1	40	190	1	0	73.4	63.6	2305203.135	
Dozer	85	1	40	190	1	0	73.4	63.6	2305203.135	
Front End Loader	80	1	40	190	1	0	68.4	58.6	728969.2375	
Backhoe	80	1	40	190	1	0	68.4	58.6	728969.2375	
								Leq	69	

Receiving residential land use										
	Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor [2]	Ground Effect[3]	Shielding (dBA)[4]	Calculated (dBA)		Energy	
							Lmax	Leq		
Equipment Description	Lmax	Quantity								
Grader	85	1	40	240	1	0	71.4	60.6	1143763.621	
Excavator	85	1	40	240	1	0	71.4	60.6	1143763.621	
Dozer	85	1	40	240	1	0	71.4	60.6	1143763.621	
Front End Loader	80	1	40	240	1	0	66.4	55.6	361689.8148	
Backhoe	80	1	40	240	1	0	66.4	55.6	361689.8148	

Receiving residential land use										
	Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor [2]	Ground Effect[3]	Shielding (dBA)[4]	Calculated (dBA)		Energy	
	Lmax						Lmax	Leq		
Equipment Description	Lmax	Quantity	Usage factor[1]	Distance to Receptor [2]	Ground Effect[3]	Shielding (dBA)[4]	Lmax	Leq	Energy	
Grader	85	1	40	290	1	0	69.7	58.1	648299.9836	
Excavator	85	1	40	290	1	0	69.7	58.1	648299.9836	
Dozer	85	1	40	290	1	0	69.7	58.1	648299.9836	
Front End Loader	80	1	40	290	1	0	64.7	53.1	205010.4555	
Backhoe	80	1	40	290	1	0	64.7	53.1	205010.4555	

		Leq	64
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Receiving residential land use										
	Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor [2]	Ground Effect[3]	Shielding (dBA)[4]	Calculated (dBA)		Energy	
							Lmax	Leq		
Equipment Description	Lmax									
Grader	85	1	40	340	1	0	68.3	56.0	402284.4571	
Excavator	85	1	40	340	1	0	68.3	56.0	402284.4571	
Dozer	85	1	40	340	1	0	68.3	56.0	402284.4571	
Front End Loader	80	1	40	340	1	0	63.3	51.0	127213.5152	
Backhoe	80	1	40	340	1	0	63.3	51.0	127213.5152	

		Leq	62
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Receiving residential land use										
	Reference (dBA) 50 ft	Quantity	Usage factor[1]	Distance to Receptor [2]	Ground Effect[3]	Shielding (dBA)[4]	Calculated (dBA)		Energy	
							Lmax	Leq		
Equipment Description	Lmax									
Grader	85	1	40	390	1	0	67.2	54.3	266548.4634	
Excavator	85	1	40	390	1	0	67.2	54.3	266548.4634	
Dozer	85	1	40	390	1	0	67.2	54.3	266548.4634	
Front End Loader	80	1	40	390	1	0	62.2	49.3	84290.02512	
Backhoe	80	1	40	390	1	0	62.2	49.3	84290.02512	

			Leq	60
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TABLE Project Trips-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 10/08/2025

ROADWAY SEGMENT: N. Nicky Avenue - Santiago Canyon Road to Project Entrance

NOTES: Orange Residential Project - Project Trips

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 280 SPEED (MPH): 25 GRADE: .5

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
	---	-----	-----
AUTOS			
	75.51	12.57	9.34
M-TRUCKS			
	1.56	0.09	0.19
H-TRUCKS			
	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 45.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL			
70 CNEL	65 CNEL	60 CNEL	55 CNEL
-----	-----	-----	-----
0.0	0.0	0.0	0.0

Residential-Grade Mechanical Equipment

Receiving residential land use	Noise Level Calculation Prior to Implementation of Noise Attenuation Requirements								
	Reference (dBA) 3 ft	Quantity	Usage factor[1]	Distance to Receptor (feet)	Ground Effect[2]	Shielding (dBA)[3]	Calculated (dBA)		Energy
	Lmax						Leq		
Equipment Description	Lmax	Quantity	Usage factor[1]	Distance to Receptor (feet)	Ground Effect[2]	Shielding (dBA)[3]	Lmax	Leq	Energy
Residential grade mechanical ventilation equipment	70	1	80	50	1	0	45.6	32.4	1728
Residential grade mechanical ventilation equipment	70	1	80	75	1	0	42.0	27.1	512
Residential grade mechanical ventilation equipment	70	1	80	100	1	0	39.5	23.3	216
Residential grade mechanical ventilation equipment	70	1	80	125	1	0	37.6	20.4	110.592
Notes:								Leq	34

Notes:

[1] Percentage of time activity occurs each hour

[2] Soft ground terrain between project site and receptor.

[3] Shielding due to structural/soundwall shielding

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