

# **APPENDIX G**

## **Noise Measurements and Calculations**

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# FIELD NOISE MEASUREMENT DATA

PROJECT CSUMB CAMPUS MASTER PLAN PROJECT # 10357  
 SITE ID ST-1  
 SITE ADDRESS \_\_\_\_\_ OBSERVER(S) DAVID ORTEGA  
 START DATE 5/23/19 END DATE 5/23/19  
 START TIME 1005 END TIME 1025

**METEOROLOGICAL CONDITIONS**  
 TEMP 62 F HUMIDITY 70 % R.H. WIND CALM LIGHT MODERATE  
 WINDSPD 2 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
 SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

**ACOUSTIC MEASUREMENTS**  
 MEAS. INSTRUMENT Piccolo II TYPE 1 2 SERIAL # P0218020900  
 CALIBRATOR \_\_\_\_\_ SERIAL # \_\_\_\_\_  
 CALIBRATION CHECK PRE-MEASUREMENT 94 dBA SPL POST-MEASUREMENT \_\_\_\_\_ dBA SPL WINDSCRN Yes

**SETTINGS** A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
	<u>1005</u>	<u>1025</u>	<u>55.7</u>	<u>74.2</u>	<u>45.4</u>	<u>49.2</u>	<u>52.6</u>	<u>59.1</u>	

COMMENTS \_\_\_\_\_

**SOURCE INFO AND TRAFFIC COUNTS**  
 PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: \_\_\_\_\_  
 ROADWAY TYPE: ARTERIAL DIST. TO RDWY C/L OR EOP: 10 Feet

TRAFFIC COUNT DURATION: 20 MIN SPEED 35 mph MIN SPEED \_\_\_\_\_

COUNT 1 (OR RDWY 1)	DIRECTION		SPEED		IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2)	DIRECTION		SPEED	
	NB/EB	SB/WB	NB/EB	SB/WB			NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	<u>75</u>				<u>X</u>					
MED TRKS	<u>1</u>									
HVY TRKS	<u>1</u>									
BUSES	<u>0</u>									
MOTRCLS	<u>0</u>									

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE  
 POSTED SPEED LIMIT SIGNS SAY: 35 mph

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
 DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE  
 OTHER: \_\_\_\_\_

**DESCRIPTION / SKETCH**  
 TERRAIN HARD SOFT MIXED FLAT OTHER: \_\_\_\_\_  
 PHOTOS Tri-pod base is 6 inches higher than road (on top of curb)  
 OTHER COMMENTS / SKETCH \_\_\_\_\_

# FIELD NOISE MEASUREMENT DATA

PROJECT CSUMB CAMPUS MASTER PLAN PROJECT # 10357  
 SITE ID ST-2  
 SITE ADDRESS \_\_\_\_\_ OBSERVER(S) DAVID ORTEGA  
 START DATE 5/23/19 END DATE 5/23/19  
 START TIME 1052 END TIME 1112

**METEOROLOGICAL CONDITIONS**  
 TEMP 62 F HUMIDITY 70 % R.H. WIND CALM LIGHT MODERATE  
 WINDSPD 2 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
 SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

**ACOUSTIC MEASUREMENTS**  
 MEAS. INSTRUMENT PICCOLO II TYPE 1 2 SERIAL # P0218020906  
 CALIBRATOR \_\_\_\_\_ SERIAL # \_\_\_\_\_  
 CALIBRATION CHECK PRE-MEASUREMENT 94 dBA SPL POST-MEASUREMENT \_\_\_\_\_ dBA SPL WINDSCRN Yes

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
	<u>1052</u>	<u>1112</u>	<u>58.1</u>	<u>83.3</u>	<u>36.2</u>	<u>40</u>	<u>47.7</u>	<u>60.8</u>	

COMMENTS \_\_\_\_\_

**SOURCE INFO AND TRAFFIC COUNTS**  
 PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: \_\_\_\_\_  
 ROADWAY TYPE: COLLECTOR DIST. TO RDWY C/L OR ED: 5 Feet

TRAFFIC COUNT DURATION: 20 MIN SPEED 30 mph MIN SPEED \_\_\_\_\_  
 DIRECTION NB/EB SB/WB NB/EB SB/WB NB/EB SB/WB NB/EB SB/WB

COUNT 1 (OR RDWY 1)	DIRECTION		SPEED		IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2)	DIRECTION		SPEED	
	NB/EB	SB/WB	NB/EB	SB/WB			NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	<u>33</u>				<u>X</u>					
MED TRKS	<u>6</u>									
HVY TRKS	<u>2</u>									
BUSES	<u>1</u>									
MOTRCLS	<u>0</u>									

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE  
 POSTED SPEED LIMIT SIGNS SAY: \_\_\_\_\_

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
 DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE  
 OTHER: \_\_\_\_\_

**DESCRIPTION / SKETCH**  
 TERRAIN HARD SOFT MIXED FLAT OTHER: \_\_\_\_\_  
 PHOTOS Tri-pod base is 6 inches higher than road (on top of curb)  
 OTHER COMMENTS / SKETCH \_\_\_\_\_

# FIELD NOISE MEASUREMENT DATA

PROJECT <u>CSUMB CAMPUS MASTER PLAN</u>	PROJECT # <u>10357</u>
SITE ID <u>ST-3</u>	
SITE ADDRESS _____	OBSERVER(S) <u>DAVID ORTEGA</u>
START DATE <u>5/23/19</u>	END DATE <u>5/23/19</u>
START TIME <u>1143</u>	END TIME <u>1203</u>

**METEOROLOGICAL CONDITIONS**

TEMP 62 F HUMIDITY 70 % R.H. WIND CALM LIGHT MODERATE  
WINDSPD 2 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

**ACOUSTIC MEASUREMENTS**

MEAS. INSTRUMENT Piccolo II TYPE 1 2 SERIAL # P0218020900  
CALIBRATOR \_\_\_\_\_ SERIAL # \_\_\_\_\_  
CALIBRATION CHECK PRE-MEASUREMENT 94 dBA SPL POST-MEASUREMENT \_\_\_\_\_ dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
	<u>1143</u>	<u>1203</u>	<u>53.8</u>	<u>69.9</u>	<u>39</u>	<u>44</u>	<u>49.1</u>	<u>58.8</u>	

COMMENTS \_\_\_\_\_

**SOURCE INFO AND TRAFFIC COUNTS**

PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: \_\_\_\_\_  
ROADWAY TYPE: COLLECTOR DIST. TO RDWY C/L OR EOP: 10 Feet

TRAFFIC COUNT DURATION: 20 MIN SPEED 25 mph

COUNT 1 (OR RDWY 1)	DIRECTION		MIN	SPEED	IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2)	DIRECTION		MIN	SPEED
	NB/EB	SB/WB					NB/EB	SB/WB		
AUTOS	<u>41</u>				<u>X</u>					
MED TRKS	<u>4</u>									
HVY TRKS	<u>1</u>									
BUSES	<u>0</u>									
MOTRCLS	<u>0</u>									

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE  
POSTED SPEED LIMIT SIGNS SAY: 25 mph

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE  
OTHER: Construction vehicle beeping in distant background

**DESCRIPTION / SKETCH**

TERRAIN HARD SOFT MIXED FLAT OTHER: \_\_\_\_\_  
PHOTOS Tri-pod base is 6 inches higher than road (on top of curb)  
OTHER COMMENTS / SKETCH \_\_\_\_\_

# FIELD NOISE MEASUREMENT DATA

PROJECT <u>CSUMB CAMPUS MASTER PLAN</u>	PROJECT # <u>10357</u>
SITE ID <u>ST-4</u>	
SITE ADDRESS _____	OBSERVER(S) <u>DAVID ORTEGA</u>
START DATE <u>5/23/19</u>	END DATE <u>5/23/19</u>
START TIME <u>1224</u>	END TIME <u>1244</u>

**METEOROLOGICAL CONDITIONS**

TEMP <u>62</u> F	HUMIDITY <u>70</u> % R.H.	WIND <u>CALM</u> <u>LIGHT</u> MODERATE
WINDSPD <u>2</u> MPH	DIR. <u>N</u> NE S SE S SW W NW	VARIABLE STEADY GUSTY
SKY <u>SUNNY CLEAR</u>	<u>OVRCAST</u> PRTLY CLDY FOG	RAIN

**ACOUSTIC MEASUREMENTS**

MEAS. INSTRUMENT Piccolo II TYPE 1 2 SERIAL # P0218020900

CALIBRATOR \_\_\_\_\_ SERIAL # \_\_\_\_\_

CALIBRATION CHECK PRE-MEASUREMENT 94 dBA SPL POST-MEASUREMENT \_\_\_\_\_ dBA SPL WINDSCRN YES

**SETTINGS** A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
	<u>1224</u>	<u>1244</u>	<u>53.6</u>	<u>71.5</u>	<u>33.9</u>	<u>40.1</u>	<u>48</u>	<u>58.2</u>	

**COMMENTS**

\_\_\_\_\_

\_\_\_\_\_

**SOURCE INFO AND TRAFFIC COUNTS**

PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: \_\_\_\_\_

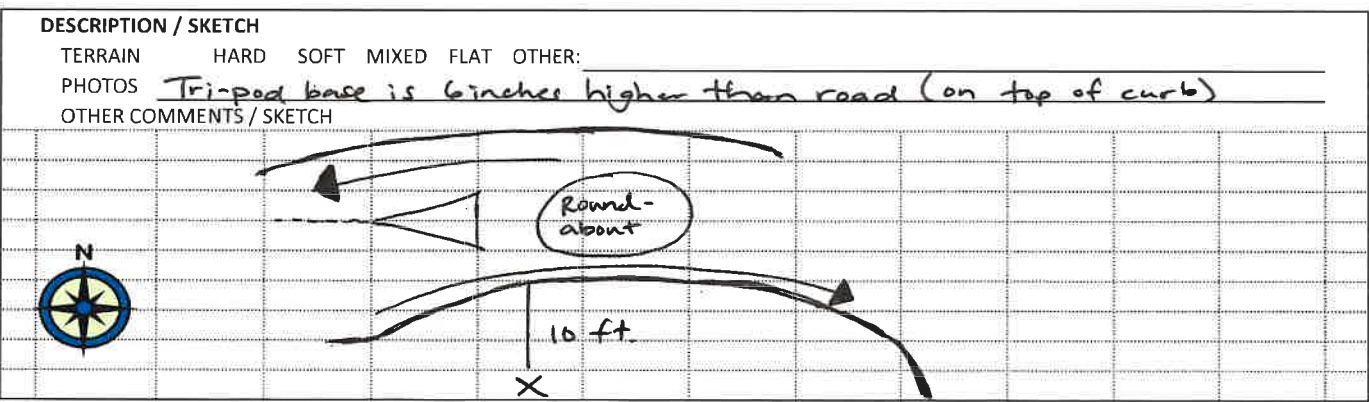
ROADWAY TYPE: COLLECTOR DIST. TO RDWY C/L OR EOP 10 Feet

TRAFFIC COUNT DURATION: 20 MIN SPEED 25 mph

COUNT 1 (OR RDWY 1)	DIRECTION		IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2)	DIRECTION	
	NB/EB	SB/WB			NB/EB	SB/WB
AUTOS	<u>63</u>		<u>X</u>			
MED TRKS	<u>1</u>					
HVY TRKS	<u>0</u>					
BUSES	<u>1</u>					
MOTRCLS	<u>0</u>					

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE  
POSTED SPEED LIMIT SIGNS SAY: 25 mph

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE  
OTHER: \_\_\_\_\_





# FIELD NOISE MEASUREMENT DATA

PROJECT CSUMB CAMPUS MASTER PLAN PROJECT # 10357  
 SITE ID ST-5  
 SITE ADDRESS \_\_\_\_\_ OBSERVER(S) DAVID ORTEGA  
 START DATE 5/23/19 END DATE 5/23/19  
 START TIME 13/2 END TIME 1332

**METEOROLOGICAL CONDITIONS**  
 TEMP 62 F HUMIDITY 70 % R.H. WIND CALM LIGHT MODERATE  
 WINDSPD 2 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
 SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

**ACOUSTIC MEASUREMENTS**  
 MEAS. INSTRUMENT Piccolo II TYPE 1 2 SERIAL # P0218020900  
 CALIBRATOR \_\_\_\_\_ SERIAL # \_\_\_\_\_  
 CALIBRATION CHECK PRE-MEASUREMENT 94 dBA SPL POST-MEASUREMENT \_\_\_\_\_ dBA SPL WINDSCRN Yes

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
	<u>1312</u>	<u>1332</u>	<u>59.2</u>	<u>75.6</u>	<u>48.5</u>	<u>52.2</u>	<u>55.9</u>	<u>62.8</u>	

COMMENTS \_\_\_\_\_

**SOURCE INFO AND TRAFFIC COUNTS**  
 PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: \_\_\_\_\_  
 ROADWAY TYPE: ARTERIAL DIST. TO RDWY C/L OR EOP 5 Feet

COUNT 1 (OR RDWY 1)	DIRECTION	TRAFFIC COUNT DURATION: <u>20</u> MIN		SPEED <u>35 mph</u>		IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2)	MIN		SPEED	
		NB/EB	SB/WB	NB/EB	SB/WB			NB/EB	SB/WB	NB/EB	SB/WB
	AUTOS	<u>97</u>				<u>X</u>					
	MED TRKS	<u>5</u>									
	HVY TRKS	<u>2</u>									
	BUSES	<u>0</u>									
	MOTRCLS	<u>0</u>									

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE  
 POSTED SPEED LIMIT SIGNS SAY: 35 mph

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
 DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE  
 OTHER: \_\_\_\_\_

**DESCRIPTION / SKETCH**  
 TERRAIN HARD SOFT MIXED FLAT OTHER: \_\_\_\_\_  
 PHOTOS Tri-pod base is 6 inches higher than road (on top of curb)  
 OTHER COMMENTS / SKETCH

# FIELD NOISE MEASUREMENT DATA

PROJECT CSUMB CAMPUS MASTER PLAN PROJECT # 10357  
 SITE ID ST-6  
 SITE ADDRESS \_\_\_\_\_ OBSERVER(S) DAVID ORTEGA  
 START DATE 5/23/19 END DATE 5/23/19  
 START TIME 1355 END TIME 1415

**METEOROLOGICAL CONDITIONS**  
 TEMP 62 F HUMIDITY 70 % R.H. WIND CALM LIGHT MODERATE  
 WINDSPD 2 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
 SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

**ACOUSTIC MEASUREMENTS**  
 MEAS. INSTRUMENT Piccolo II TYPE 1 2 SERIAL # P028020900  
 CALIBRATOR \_\_\_\_\_ SERIAL # \_\_\_\_\_  
 CALIBRATION CHECK PRE-MEASUREMENT 94 dBA SPL POST-MEASUREMENT \_\_\_\_\_ dBA SPL WINDSCRN yes

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
	<u>1355</u>	<u>1415</u>	<u>55.9</u>	<u>75.3</u>	<u>38.3</u>	<u>44.4</u>	<u>50</u>	<u>59.5</u>	

COMMENTS \_\_\_\_\_

**SOURCE INFO AND TRAFFIC COUNTS**  
 PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: \_\_\_\_\_  
 ROADWAY TYPE: COLLECTOR DIST. TO RDWY C/L OR EOP 1 Foot

TRAFFIC COUNT DURATION: <u>20</u> MIN SPEED <u>35 mph</u>		MIN SPEED		SPEED		MIN SPEED	
COUNT 1 (OR RDWY 1)	DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
	AUTOS	<u>35</u>					
	MED TRKS	<u>0</u>					
	HVY TRKS	<u>0</u>					
	BUSES	<u>0</u>					
	MOTRCLS	<u>0</u>					

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE X

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE  
 POSTED SPEED LIMIT SIGNS SAY: 35 mph

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
 DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE  
 OTHER: \_\_\_\_\_

**DESCRIPTION / SKETCH**  
 TERRAIN HARD SOFT MIXED FLAT OTHER: \_\_\_\_\_  
 PHOTOS Tri-pod base is 6 inches higher than road (on top of curb)  
 OTHER COMMENTS / SKETCH



# FIELD NOISE MEASUREMENT DATA

**DUDEK**

PROJECT <u>CSUMB CAMPUS MASTER PLAN</u>	PROJECT # <u>10357</u>
SITE ID <u>ST-7</u>	
SITE ADDRESS _____	OBSERVER(S) <u>DAVID ORTEGA</u>
START DATE <u>5/23/19</u>	END DATE <u>5/23/19</u>
START TIME <u>1430</u>	END TIME <u>1450</u>

**METEOROLOGICAL CONDITIONS**

TEMP 62 F      HUMIDITY 70 % R.H.      WIND CALM LIGHT MODERATE  
WINDSPD 2 MPH      DIR. N NE S SE S SW W NW      VARIABLE STEADY GUSTY  
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

**ACOUSTIC MEASUREMENTS**

MEAS. INSTRUMENT PICCOLO II TYPE 1 2 SERIAL # P0218020900  
CALIBRATOR \_\_\_\_\_ SERIAL # \_\_\_\_\_  
CALIBRATION CHECK PRE-MEASUREMENT 94 dBA SPL POST-MEASUREMENT \_\_\_\_\_ dBA SPL WINDSCRN Yes

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
	<u>1430</u>	<u>1450</u>	<u>63.5</u>	<u>87.7</u>	<u>38.8</u>	<u>50.3</u>	<u>56.6</u>	<u>66.1</u>	

COMMENTS \_\_\_\_\_

**SOURCE INFO AND TRAFFIC COUNTS**

PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: \_\_\_\_\_  
ROADWAY TYPE: COLLECTOR DIST. TO RDWY C/L OR EOP 3 Feet

TRAFFIC COUNT DURATION: 20 MIN SPEED 35 mph

COUNT 1 (OR RDWY 1)	DIRECTION		SPEED		IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2)	MIN		SPEED	
	NB/EB	SB/WB	NB/EB	SB/WB			NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	<u>87</u>				<u>X</u>					
MED TRKS	<u>5</u>									
HVY TRKS	<u>0</u>									
BUSES	<u>0</u>									
MOTRCLS	<u>0</u>									

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE  
POSTED SPEED LIMIT SIGNS SAY: 35 mph

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
DIST. KIDS PLAYING DIST. CONVRTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE  
OTHER: Facility across the street had a buzzing gate that would sound when vehicles entered and left the facility

**DESCRIPTION / SKETCH**

TERRAIN HARD SOFT MIXED FLAT OTHER: \_\_\_\_\_  
PHOTOS Tri-pod base is 6 inches higher than road (on top of curb)  
OTHER COMMENTS / SKETCH

# FIELD NOISE MEASUREMENT DATA

PROJECT CSUMB CAMPUS MASTER PLAN PROJECT # 10357  
 SITE ID ST-8  
 SITE ADDRESS \_\_\_\_\_ OBSERVER(S) DAVID ORTEGA  
 START DATE 5/23/19 END DATE 5/23/19  
 START TIME 1505 END TIME 1525

**METEOROLOGICAL CONDITIONS**  
 TEMP 62 F HUMIDITY 70 % R.H. WIND CALM LIGHT MODERATE  
 WINDSPD 2 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
 SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

**ACOUSTIC MEASUREMENTS**  
 MEAS. INSTRUMENT Piccolo II TYPE 1 2 SERIAL # P0218020900  
 CALIBRATOR \_\_\_\_\_ SERIAL # \_\_\_\_\_  
 CALIBRATION CHECK PRE-MEASUREMENT 94 dBA SPL POST-MEASUREMENT \_\_\_\_\_ dBA SPL WINDSCRN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
	<u>1505</u>	<u>1525</u>	<u>67.5</u>	<u>90.9</u>	<u>44.7</u>	<u>54.2</u>	<u>62.7</u>	<u>70.9</u>	

COMMENTS \_\_\_\_\_

**SOURCE INFO AND TRAFFIC COUNTS**  
 PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: \_\_\_\_\_  
 ROADWAY TYPE: COLLECTOR DIST. TO RDWY C/L OR EOP: 3 Feet

TRAFFIC COUNT DURATION: 20 MIN SPEED ~40 mph  
 MIN SPEED  
 DIRECTION NB/EB SB/WB NB/EB SB/WB NB/EB SB/WB NB/EB SB/WB

COUNT 1 (OR RDWY 1)	DIRECTION		SPEED		IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2)	MIN		SPEED	
	NB/EB	SB/WB	NB/EB	SB/WB			NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	<u>153</u>									
MED TRKS	<u>1</u>									
HVY TRKS	<u>0</u>									
BUSES	<u>1</u>									
MOTRCLS	<u>1</u>				<u>X</u>					

SPEEDS ESTIMATED BY: RADAR DRIVING THE PACE  
 POSTED SPEED LIMIT SIGNS SAY: \_\_\_\_\_

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
 DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE  
 OTHER: \_\_\_\_\_

**DESCRIPTION / SKETCH**  
 TERRAIN HARD SOFT MIXED FLAT OTHER: \_\_\_\_\_  
 PHOTOS Tri-pod base is 6 inches higher than road (on top of curb)  
 OTHER COMMENTS / SKETCH

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase, per FTA at residences = **80**  
 allowable hours over which Leq is to be averaged (example: 8 per FTA guidance) = **8**

Construction Phase	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Demolition	Concrete Saw	1	20	90		125	82.0	8	480	75
	Dozer	1	40	82		125	74.0	8	480	70
	Backhoe	2	40	78		125	70.0	8	480	69
	Front End Loader	1	40	79		125	71.0	8	480	67
Total for Demolition Phase:										<b>77.4</b>
Site Preparation	Grader	1	40	85		125	77.0	8	480	73
	Scraper	1	40	84		125	76.0	8	480	72
	Front End Loader	1	40	79		125	71.0	8	480	67
Total for Site Preparation Phase:										<b>76.2</b>
Grading	Grader	1	40	85		125	77.0	8	480	73
	Dozer	1	40	82		125	74.0	8	480	70
	Tractor	1	40	84		125	76.0	8	480	72
	Backhoe	1	40	78		125	70.0	8	480	66
	Slurry Trenching Machine	1	50	80		125	72.0	8	480	69
Total for Grading Phase:										<b>77.7</b>
Building Construction	Crane	1	16	81		262	66.6	8	480	59
	Man Lift	2	20	75	Forklifts	262	60.6	8	480	57
	Generator	1	50	72		262	57.6	8	480	55
	Tractor	1	40	84		262	69.6	6	360	64
	Welder / Torch	3	40	73		262	58.6	8	480	59
Total for Building Construction Phase:										<b>67.1</b>
Paving	Concrete Mixer Truck	1	40	79		125	71.0	8	480	67
	Paver	1	50	77		125	69.0	8	480	66
	All Other Equipment > 5 HP	1	50	85		125	77.0	8	480	74
	Roller	2	20	80		125	72.0	8	480	68
	Tractor	1	40	84		125	76.0	8	480	72
Total for Paving Phase:										<b>77.5</b>
Architectural Coating	Compressor (Air)	1	40	78		262	63.6	8	480	60
Total for Architectural Coating Phase:										<b>59.6</b>

To User: bordered cells are inputs, unbordered cells have formulae

noise level limit for construction phase, per FTA at residences = **80**  
 allowable hours over which Leq is to be averaged (example: 8 per FTA guidance) = **8**

Construction Phase	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Demolition	Concrete Saw	1	20	90		30	94.4	8	480	87
	Dozer	1	40	82		30	86.4	8	480	82
	Backhoe	2	40	78		30	82.4	8	480	81
	Front End Loader	1	40	79		30	83.4	8	480	79
Total for Demolition Phase:										<b>89.8</b>
Site Preparation	Grader	1	40	85		30	89.4	8	480	85
	Dozer	1	40	82		30	86.4	8	480	82
	Front End Loader	1	40	79		30	83.4	8	480	79
Total for Site Preparation Phase:										<b>87.9</b>
Grading	Grader	1	40	85		30	89.4	8	480	85
	Dozer	1	40	82		30	86.4	8	480	82
	Tractor	1	40	84		30	88.4	8	480	84
	Backhoe	1	40	78		30	82.4	8	480	78
	Slurry Trenching Machine	1	50	80		30	84.4	8	480	81
Total for Grading Phase:										<b>90.1</b>
Building Construction	Crane	1	16	81		136	72.3	8	480	64
	Man Lift	1	20	75	Forklifts	136	66.3	8	480	59
	Generator	1	50	72		136	63.3	8	480	60
	Tractor	1	40	84		136	75.3	8	480	71
	Welder / Torch	3	40	73		136	64.3	8	480	65
Total for Building Construction Phase:										<b>73.3</b>
Paving	Concrete Mixer Truck	1	40	79		30	83.4	8	480	79
	Paver	1	50	77		30	81.4	8	480	78
	All Other Equipment > 5 HP	1	50	85		30	89.4	8	480	86
	Roller	1	20	80		30	84.4	8	480	77
	Tractor	1	40	84		30	88.4	8	480	84
Total for Paving Phase:										<b>89.7</b>
Architectural Coating	Compressor (Air)	1	40	78		136	69.3	8	480	65
Total for Architectural Coating Phase:										<b>65.3</b>

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noise level limit for construction phase, per FTA at residences = **80**  
 allowable hours over which Leq is to be averaged (example: 8 per FTA guidance) = **8**

Construction Phase	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Demolition	Concrete Saw	1	20	90		75	86.5	8	480	79
	Dozer	1	40	82		75	78.5	8	480	74
	Backhoe	2	40	78		75	74.5	8	480	74
	Front End Loader	1	40	79		75	75.5	8	480	71
Total for Demolition Phase:										<b>81.9</b>
Site Preparation	Grader	1	40	85		75	81.5	8	480	77
	Dozer	1	40	82		75	78.5	8	480	74
	Front End Loader	1	40	79		75	75.5	8	480	71
Total for Site Preparation Phase:										<b>79.9</b>
Grading	Grader	1	40	85		75	81.5	8	480	77
	Dozer	1	40	82		75	78.5	8	480	74
	Tractor	1	40	84		75	80.5	8	480	76
	Backhoe	1	40	78		75	74.5	8	480	70
	Slurry Trenching Machine	1	50	80		75	76.5	8	480	73
Total for Grading Phase:										<b>82.1</b>
Building Construction	Crane	1	16	81		233	67.6	8	480	60
	Man Lift	1	20	75	Forklifts	233	61.6	8	480	55
	Generator	1	50	72		233	58.6	8	480	56
	Tractor	1	40	84		233	70.6	6	360	65
	Welder / Torch	3	40	73		233	59.6	8	480	60
Total for Building Construction Phase:										<b>67.9</b>
Paving	Concrete Mixer Truck	1	40	79		75	75.5	8	480	71
	Paver	1	50	77		75	73.5	8	480	70
	All Other Equipment > 5 HP	1	50	85		75	81.5	8	480	78
	Roller	1	20	80		75	76.5	8	480	69
	Tractor	1	40	84		75	80.5	8	480	76
Total for Paving Phase:										<b>81.7</b>
Architectural Coating	Compressor (Air)	1	40	78		233	64.6	8	480	61
Total for Architectural Coating Phase:										<b>60.7</b>



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noise level limit for construction phase, per FTA at residences = **80**  
 allowable hours over which Leq is to be averaged (example: 8 per FTA guidance) = **8**

Construction Phase	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Demolition	Concrete Saw	1	20	90		40	91.9	8	480	85
	Dozer	1	40	82		40	83.9	8	480	80
	Backhoe	2	40	78		40	79.9	8	480	79
	Front End Loader	1	40	79		40	80.9	8	480	77
Total for Demolition Phase:										<b>87.3</b>
Site Preparation	Grader	1	40	85		40	86.9	8	480	83
	Scraper	1	40	84		40	85.9	8	480	82
	Front End Loader	1	40	79		40	80.9	8	480	77
Total for Site Preparation Phase:										<b>86.1</b>
Grading	Grader	1	40	85		40	86.9	8	480	83
	Dozer	1	40	82		40	83.9	8	480	80
	Tractor	1	40	84		40	85.9	8	480	82
	Backhoe	1	40	78		40	79.9	8	480	76
	Slurry Trenching Machine	1	50	80		40	81.9	8	480	79
Total for Grading Phase:										<b>87.6</b>
Building Construction	Crane	1	16	81		134	72.4	8	480	64
	Man Lift	2	20	75	Forklifts	134	66.4	8	480	62
	Generator	1	50	72		134	63.4	8	480	60
	Tractor	1	40	84		134	75.4	6	360	70
	Welder / Torch	3	40	73		134	64.4	8	480	65
Total for Building Construction Phase:										<b>72.9</b>
Paving	Concrete Mixer Truck	1	40	79		40	80.9	8	480	77
	Paver	1	50	77		40	78.9	8	480	76
	All Other Equipment > 5 HP	1	50	85		40	86.9	8	480	84
	Roller	2	20	80		40	81.9	8	480	78
	Tractor	1	40	84		40	85.9	8	480	82
Total for Paving Phase:										<b>87.4</b>
Architectural Coating	Compressor (Air)	1	40	78		134	69.4	6	360	64
Total for Architectural Coating Phase:										<b>64.2</b>

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noise level limit for construction phase, per FTA at residences = **85**  
 allowable hours over which Leq is to be averaged (example: 8 per FTA guidance) = **8**

Construction Phase	Equipment	Total Equipment Qty	AUF % (from FHWA RCNM)	Reference Lmax @ 50 ft. from FHWA RCNM	Client Equipment Description, Data Source and/or Notes	Source to NSR Distance (ft.)	Distance-Adjusted Lmax	Allowable Operation Time (hours)	Allowable Operation Time (minutes)	Predicted 8-hour Leq
Demolition	Concrete Saw	1	20	90		80	85.9	8	480	79
	Dozer	1	40	82		80	77.9	8	480	74
	Backhoe	2	40	78		80	73.9	8	480	73
	Front End Loader	1	40	79		80	74.9	8	480	71
Total for Demolition Phase:										<b>81.3</b>
Site Preparation	Grader	1	40	85		80	80.9	8	480	77
	Scraper	1	40	84		80	79.9	8	480	76
	Front End Loader	1	40	79		80	74.9	8	480	71
Total for Site Preparation Phase:										<b>80.0</b>
Grading	Grader	1	40	85		80	80.9	8	480	77
	Dozer	1	40	82		80	77.9	8	480	74
	Tractor	1	40	84		80	79.9	8	480	76
	Backhoe	1	40	78		80	73.9	8	480	70
	Slurry Trenching Machine	1	50	80		80	75.9	8	480	73
Total for Grading Phase:										<b>81.5</b>
Building Construction	Crane	1	16	81		173	70.2	8	480	62
	Man Lift	2	20	75	Forklifts	173	64.2	8	480	60
	Generator	1	50	72		173	61.2	8	480	58
	Tractor	1	40	84		173	73.2	8	480	69
	Welder / Torch	3	40	73		173	62.2	8	480	63
Total for Building Construction Phase:										<b>71.4</b>
Paving	Concrete Mixer Truck	1	40	79		80	74.9	8	480	71
	Paver	1	50	77		80	72.9	8	480	70
	All Other Equipment > 5 HP	1	50	85		80	80.9	8	480	78
	Roller	2	20	80		80	75.9	8	480	72
	Tractor	1	40	84		80	79.9	8	480	76
Total for Paving Phase:										<b>81.4</b>

1/1-octave band center frequency	63	125	250	500	1000	2000	4000	8000
A-weighting adjustments	26	13	9	3	0	-1	-1	1

		specific sound power levels (dB)							
largest of values for the two fan diameter ranges, per <u>ENC</u> (Bies & Hansen 1996) -->	plug	36	38	36	34	33	28	20	12
largest of values for the two fan diameter ranges, per <u>ENC</u> (Bies & Hansen 1996) -->	tube	41	41	47	46	44	43	37	35
largest of values for the two fan diameter ranges, per <u>ENC</u> (Bies & Hansen 1996) -->	prop	56	57	56	55	55	52	48	46

AHUs (plenum-type return fan only, no condenser units [assume in-building chilled water or DX plant]):

Phase	Building Tag	GSF	m <sup>2</sup>	facility function	CFM pksf	m <sup>3</sup> /s per 1,000		fanteype = plug, tube, or prop	unweighted PWL								OA dB	Q (cfm)	Distance to Nearest Receptor (feet)	Hourly dBA Leq	
						m <sup>2</sup>	Pressure (Pa)		Q (m <sup>3</sup> /s)	63	125	250	500	1000	2000	4000					8000
<i>return air fans in building rooftop AHUs:</i>																					
	Student Housing Phase IIB	160000	14872	dormitory	100	0.51	625	8	plug	86	88	86	84	83	78	70	62	93	16000		
	Student Housing Phase III	240000	22308	dormitory	100	0.51	625	11	plug	87	89	87	85	84	79	71	63	94	24000		
	Student Recreation Center	70000	6507	sporting spectator area	1125	5.71	625	37	plug	93	95	93	91	90	85	77	69	100	79000		
	Academic V	76700	7129	classroom	250	1.27	625	9	plug	86	88	86	84	83	78	70	62	93	20000		
	Academic IV	72200	6711	classroom	250	1.27	625	9	plug	86	88	86	84	83	78	70	62	93	19000		
										A-weighted dB								OA			
										60	75	77	81	83	79	71	61	87		233	42
										61	76	78	82	84	80	72	62	88		136	48
										67	82	84	88	90	86	78	68	94		262	48
										60	75	77	81	83	79	71	61	87		134	47
										60	75	77	81	83	79	71	61	87		173	45