Appendix A Receptor Locations and Evaluated Noise Barrier Locations

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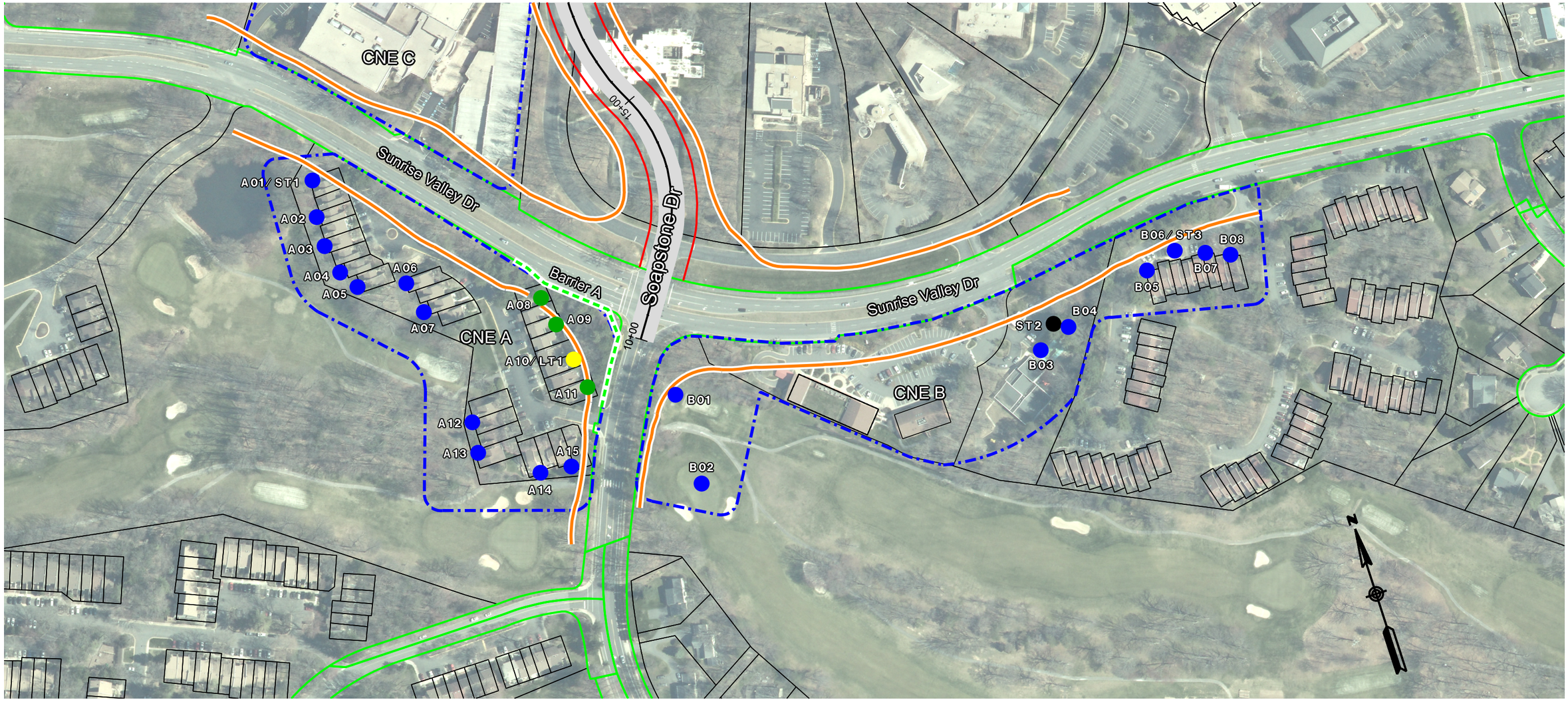
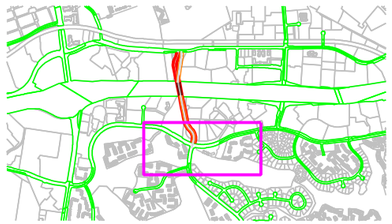


SOAPSTONE CONNECTOR,
Fairfax County
Project Number: 2G40-078

FCDOT
Serving Fairfax County
Since 1977



0 200 400 FEET

- Noise Measurement Site
- Impacted and Benefited
- Impacted and Not Benefited
- Not Impacted and Benefited
- Not Impacted and Not Benefited
- Evaluated Barrier-Feasible and Not Reasonable
- Evaluated Barrier-Feasible and Reasonable
- 66 dBA $L_{eq(h)}$ Noise Contour
- Common Noise Environment (CNE) Areas
- Proposed Roadway Pavement
- Proposed Bridge
- Parcels
- Existing Right-of-Way
- Propsed Right-of-Way

Figure 1
Build Alternative Noise Prediction Locations/Category and Potential Noise Barriers
Alternatives 1 & 2

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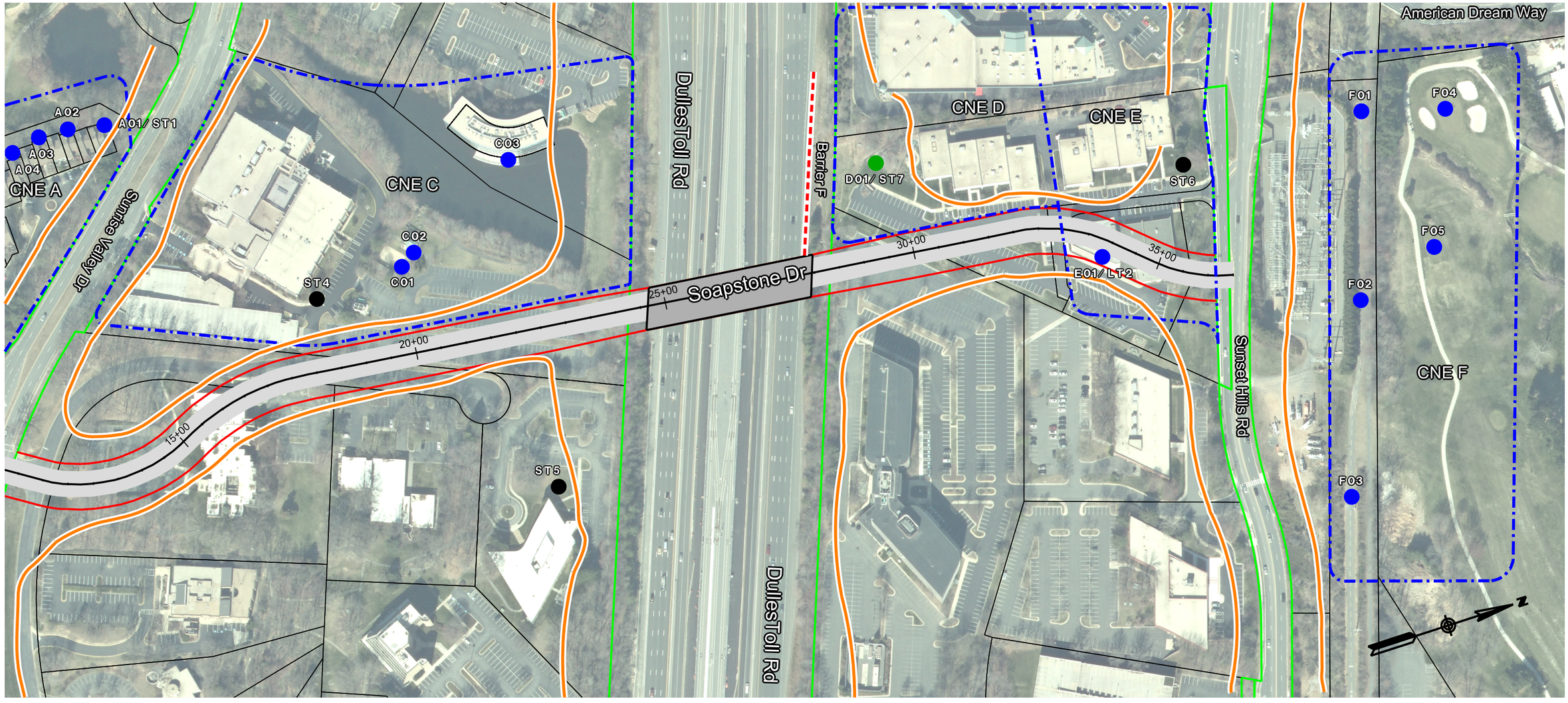
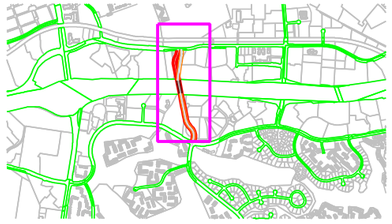


SOAPSTONE CONNECTOR,
Fairfax County
Project Number: 2G40-078

FCDOT
Serving Fairfax County
Since 1977



0 200 400 FEET

- Noise Measurement Site
- Impacted and Benefited
- Impacted and Not Benefited
- Not Impacted and Benefited
- Not Impacted and Not Benefited
- Evaluated Barrier-Feasible and Not Reasonable
- Evaluated Barrier-Feasible and Reasonable
- 66 dBA $L_{eq(h)}$ Noise Contour
- Common Noise Environment (CNE) Areas
- Proposed Roadway Pavement
- Proposed Bridge
- Parcels
- Existing Right-of-Way
- Propsed Right-of-Way

Figure 2
Build Alternative Noise Prediction Locations/Category and Potential Noise Barriers
Alternative 1

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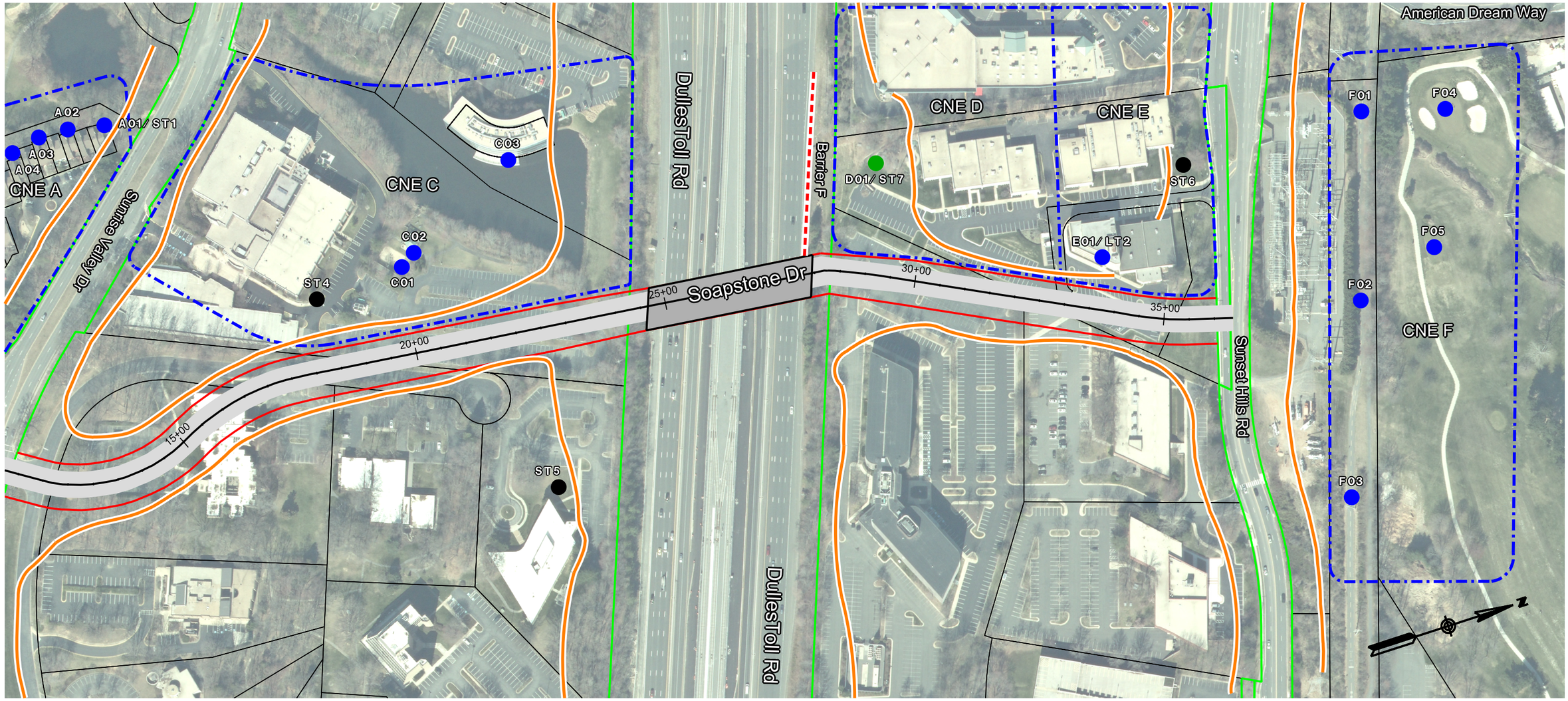
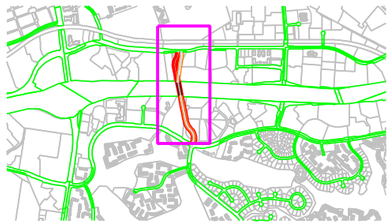


SOAPSTONE CONNECTOR,
Fairfax County
Project Number: 2G40-078

FCDOT
Serving Fairfax County Since 1977



0 200 400 FEET

- Noise Measurement Site
- Impacted and Benefited
- Impacted and Not Benefited
- Not Impacted and Benefited
- Not Impacted and Not Benefited
- Evaluated Barrier-Feasible and Not Reasonable
- Evaluated Barrier-Feasible and Reasonable
- 66 dBA $L_{eq(h)}$ Noise Contour
- Common Noise Environment (CNE) Areas
- Proposed Roadway Pavement
- Proposed Bridge
- Parcels
- Existing Right-of-Way
- Propsed Right-of-Way

Figure 3
Build Alternative Noise Prediction Locations/Category and Potential Noise Barriers
Alternative 2

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Appendix B Noise Measurement Data, Site Photographs, and Equipment Calibration Records

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FIELD SURVEY FORM

PROJECT: Soapstone Connector

ENGINEER: Greg Berg

DATE: 11/16/15

MEASUREMENT ADDRESS: 11604 Hunters Green Ct

CITY: Reston, VA

☐ Single-Family ☒ Multi-Family ☐ School ☐ Recreational ☐ Commercial

SITE NO.: LT1

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820 ☐ B&K-2238
☐ LD-824 ☒ LD-812 ☐ B&K-2250
☐ LD-2900 ☐ _____

SERIAL #: 0639

MICROPHONE:
☒ NON-POLAR ☐ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
☒ WIND SCREEN

SERIAL #: 3378

PRE AMP:
☐ LD-900 ☐ ZC-0030
☒ LD-828 ☐ ZC-0032
☐ LD-902 ☐ _____

SERIAL #: 2330

CALIBRATOR:
☒ LD CA250 ☐ LD CA200
☐ B&K 4231 ☐ _____
S/N 2127

Freq, Hz.
☒ 250
☐ 1000
☐ 84
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before 114.0, 114.0, 6.6, 8:41
After 114.0, 113.8, —, 16:54

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☒ L_N PERCENTILE VALUES

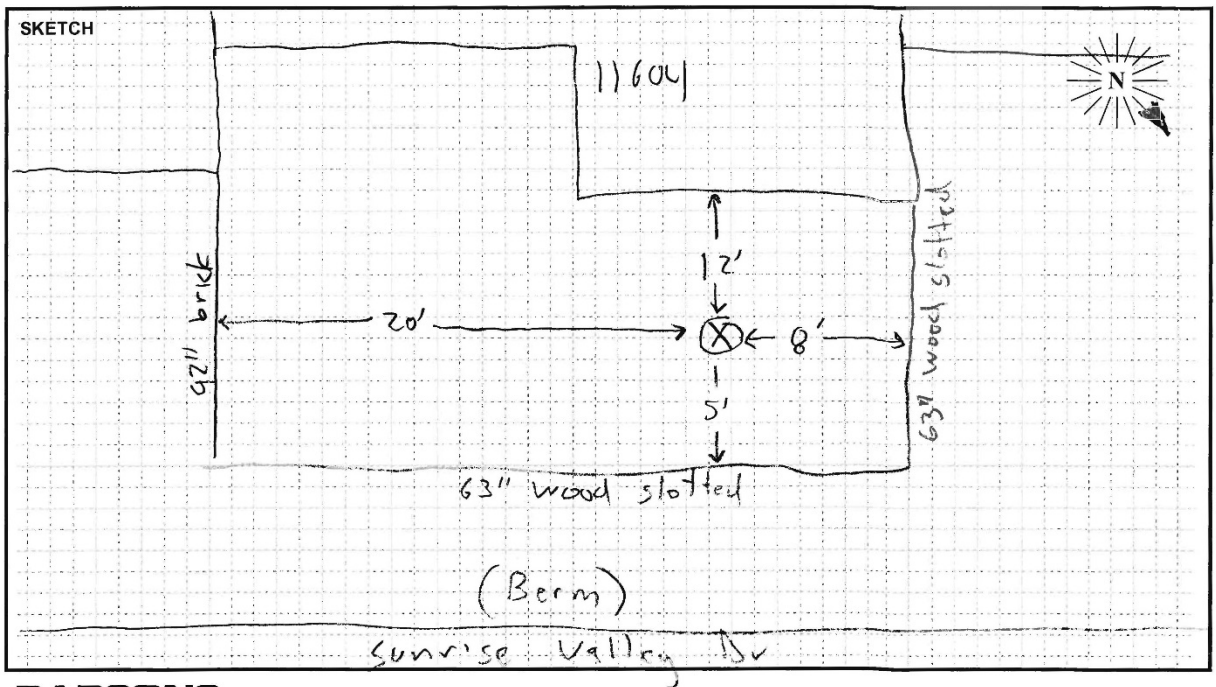
NOTES:
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: _____ °F R.H.: _____ %
WIND SPEED: _____ MPH
TOWARD (DIR): _____
SKIES: _____
CAMERA _____
PHOTO NOs. _____

NOTES:
☐ Video ☐ Radar

MEAS. TYPE:
☒ Long Term ☐ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
11/16	8:49											
11/17		16:53										

SKETCH

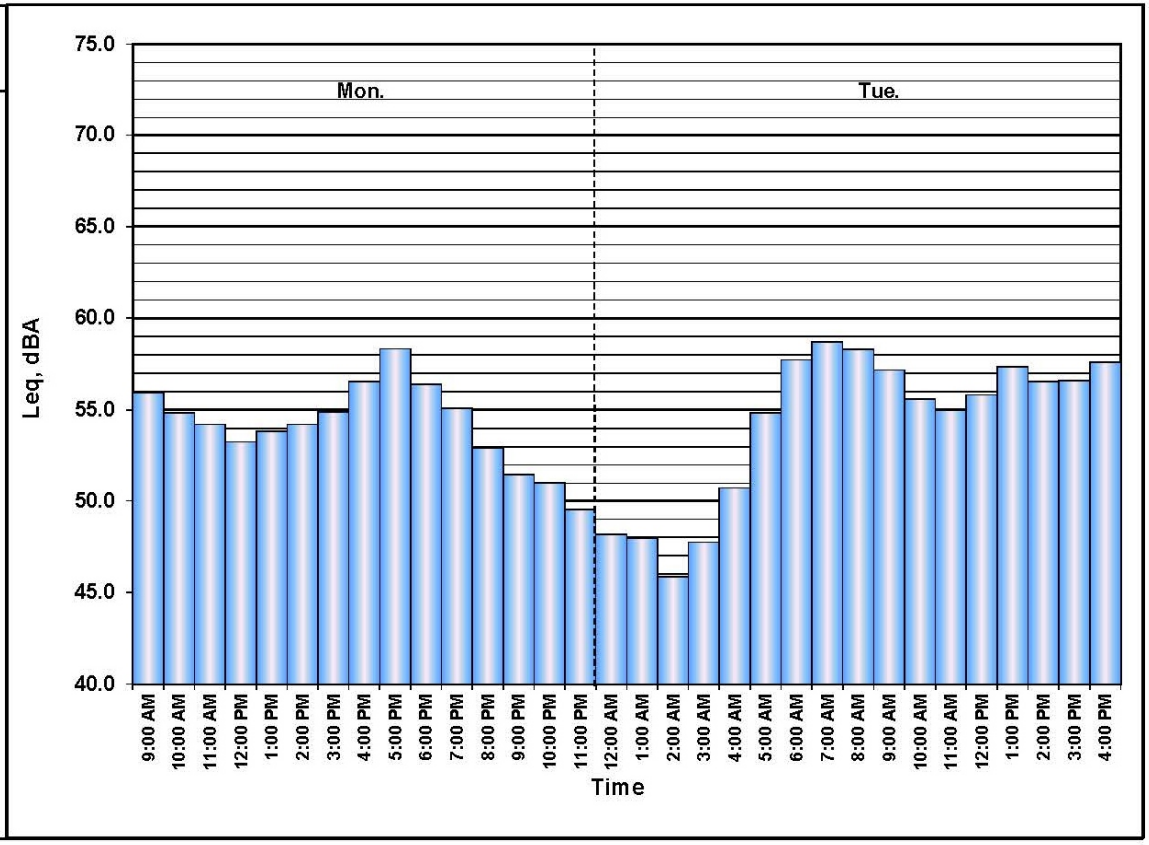


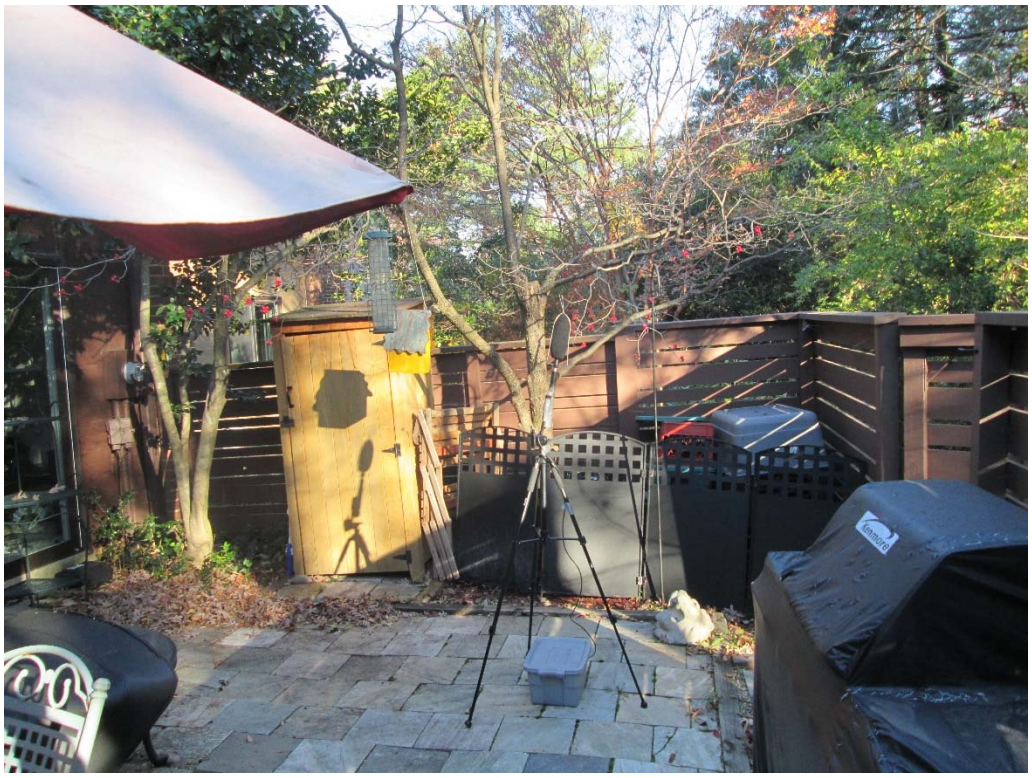
PARSONS

Site LT1 Hourly Noise Levels, Leq(h)

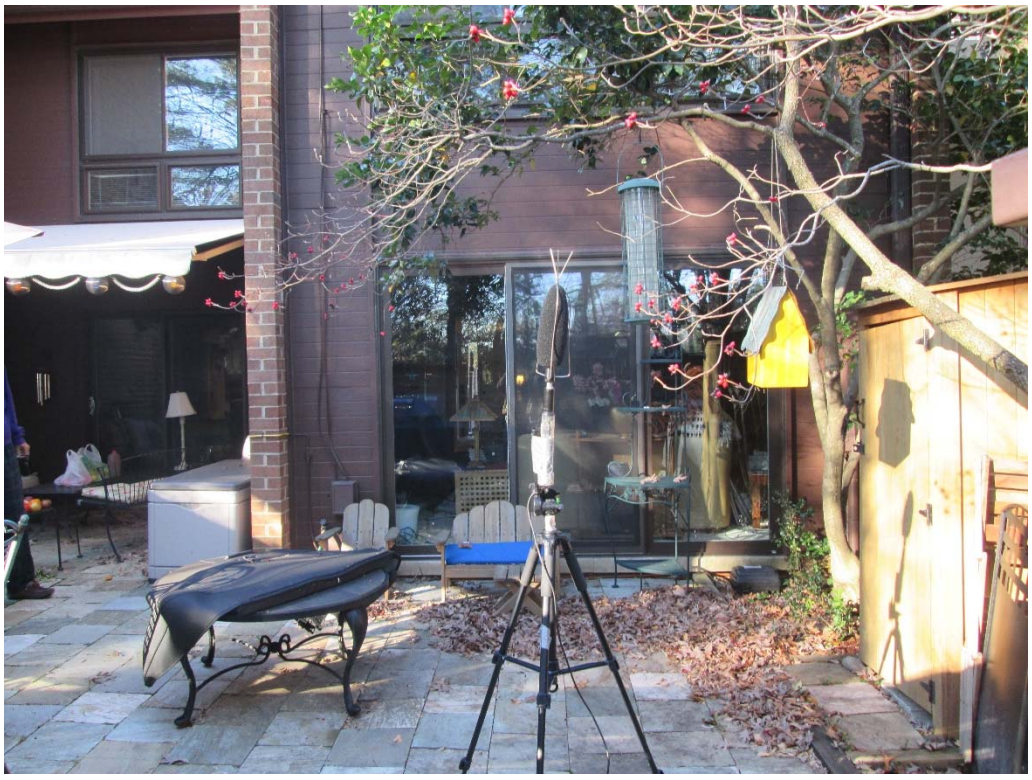
Location: 11604 Hunters Green Court
Position: Patio
Sources: Sunrise Valley Drive
Date: 11/16/15 to 11/17/15 **Notes:** See attached Noise Measurement Form.

TIME	11/16 - 11/17 Leq(h) dBA	11/17 Leq(h) dBA
09:00 - 10:00 AM	56	57
10:00 - 11:00 AM	55	56
11:00 - 12:00 PM	54	55
12:00 - 01:00 PM	53	56
01:00 - 02:00 PM	54	57
02:00 - 03:00 PM	54	57
03:00 - 04:00 PM	55	57
04:00 - 05:00 PM	57	58
05:00 - 06:00 PM	58	--
06:00 - 07:00 PM	56	--
07:00 - 08:00 PM	55	--
08:00 - 09:00 PM	53	--
09:00 - 10:00 PM	51	--
10:00 - 11:00 PM	51	--
11:00 - 12:00 AM	50	--
12:00 - 01:00 AM	48	--
01:00 - 02:00 AM	48	--
02:00 - 03:00 AM	46	--
03:00 - 04:00 AM	48	--
04:00 - 05:00 AM	51	--
05:00 - 06:00 AM	55	--
06:00 - 07:00 AM	58	--
07:00 - 08:00 AM	59	--
08:00 - 09:00 AM	58	--





(Facing North)



(Facing South)

LONG-TERM MEASUREMENT SITE LT1

FIELD SURVEY FORM

PROJECT: **Soapstone Connector**

ENGINEER: Greg Berg

DATE: 11/16/15

MEASUREMENT ADDRESS: 11501 Sunset Hills

CITY: Reston, VA

☐ Single-Family ☐ Multi-Family ☐ School ☐ Recreational ☒ Commercial

SITE NO.: CT2

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820 ☐ B&K-2238
☐ LD-824 ☒ LD-812 ☐ B&K-2250
☐ LD-2900 ☐ _____

SERIAL #: 0659

MICROPHONE:
☒ NON-POLAR ☐ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
☒ WIND SCREEN

SERIAL #: 2916

PRE AMP:
☐ LD-900 ☐ ZC-0030
☒ LD-828 ☐ ZC-0032
☐ LD-902 ☐ _____

SERIAL #: 1891

CALIBRATOR:
☒ LD CA250 ☐ LD CA200
☐ B&K 4231 ☐ _____
S/N 2127

Freq, Hz.
☒ 250
☐ 1000
☐ 84
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before 114.0, 114.0, 7.5, 10:04
After 114.0, 113.8, —, 16:32

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☒ L_N PERCENTILE VALUES

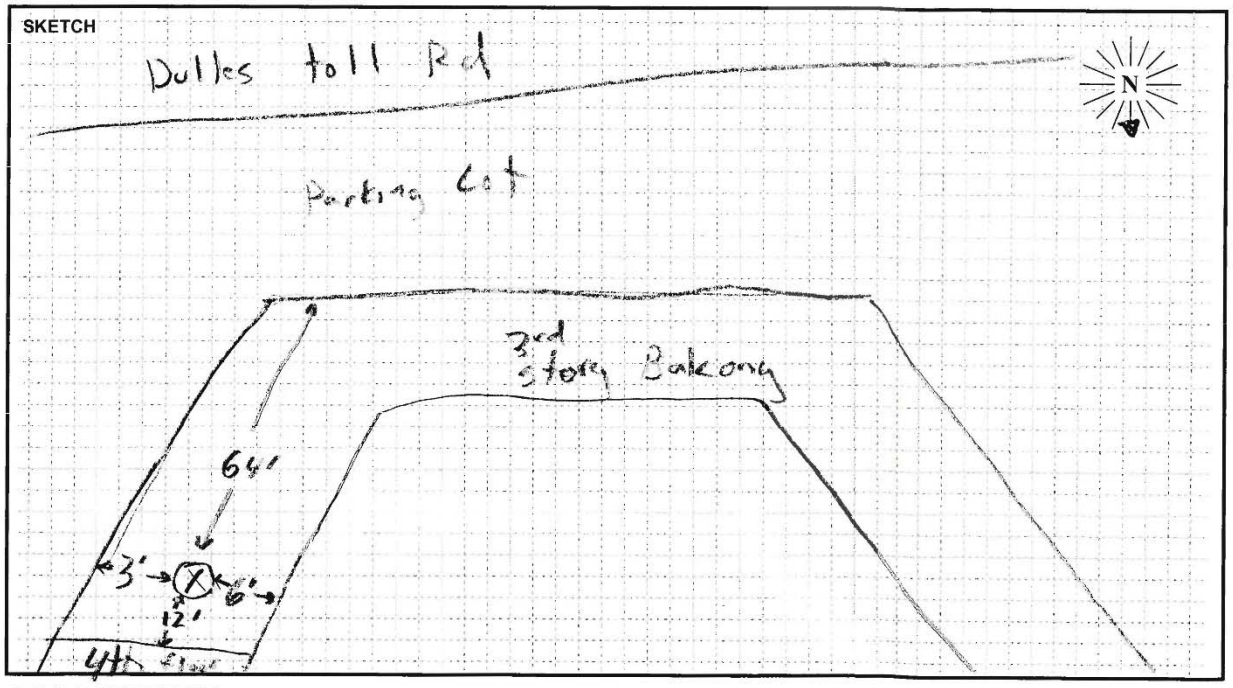
NOTES:
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: _____ °F R.H.: _____ %
WIND SPEED: _____ MPH
TOWARD (DIR): _____
SKIES: _____
CAMERA _____
PHOTO NOs. _____

NOTES:
☐ Video ☐ Radar

MEAS. TYPE:
☒ Long Term ☐ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
11/16	10:12											
11/17		16:31										

SKETCH



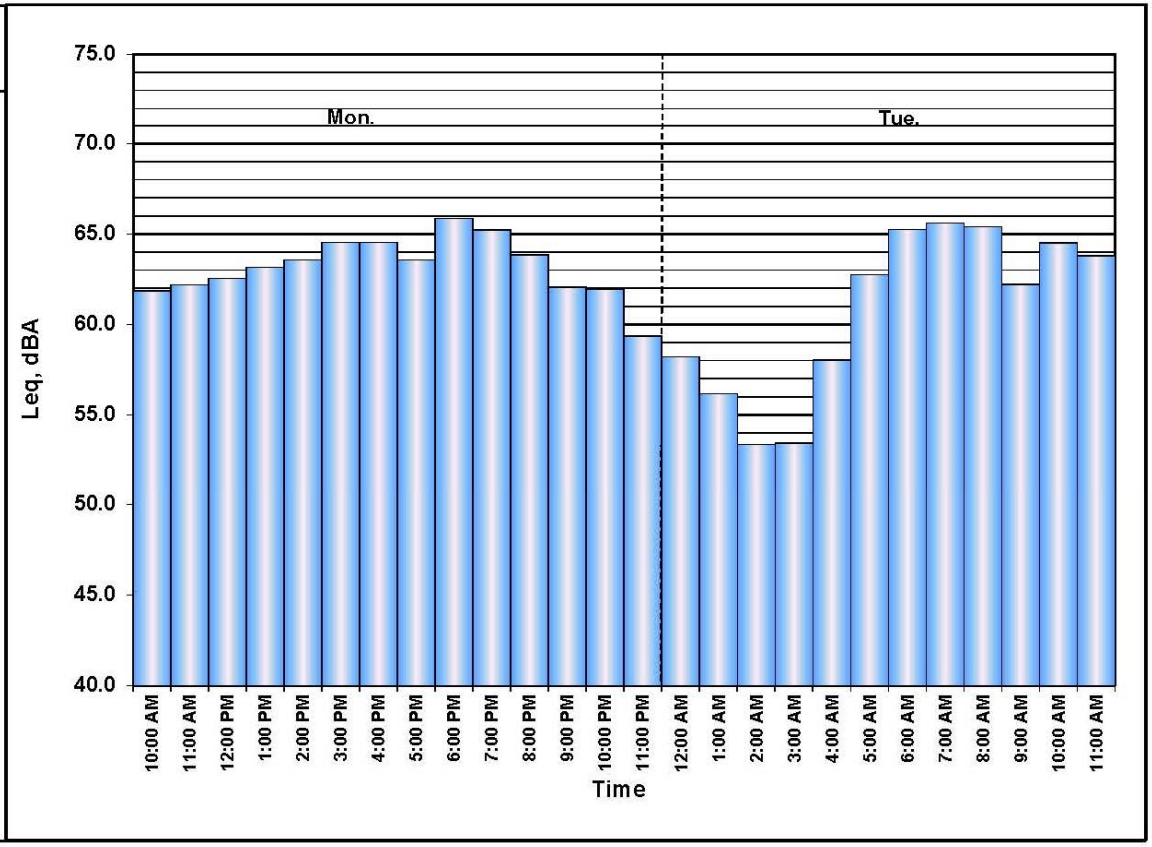
PARSONS

Site LT2 Hourly Noise Levels, Leq(h)

Location: 11501 Sunset Hills Road
Position: Deck
Sources: Dulles Toll Road/Sunset Hills Road
Date: 11/16/15 to 11/17/15

Notes: See attached Noise Measurement Form.

TIME	11/16-11/17 Leq(h) dBA	11/17 Leq(h) dBA
10:00 - 11:00 AM	62	65
11:00 - 12:00 PM	62	64
12:00 - 01:00 PM	63	--
01:00 - 02:00 PM	63	--
02:00 - 03:00 PM	64	--
03:00 - 04:00 PM	65	--
04:00 - 05:00 PM	65	--
05:00 - 06:00 PM	64	--
06:00 - 07:00 PM	66	--
07:00 - 08:00 PM	65	--
08:00 - 09:00 PM	64	--
09:00 - 10:00 PM	62	--
10:00 - 11:00 PM	62	--
11:00 - 12:00 AM	59	--
12:00 - 01:00 AM	58	--
01:00 - 02:00 AM	56	--
02:00 - 03:00 AM	53	--
03:00 - 04:00 AM	53	--
04:00 - 05:00 AM	58	--
05:00 - 06:00 AM	63	--
06:00 - 07:00 AM	65	--
07:00 - 08:00 AM	66	--
08:00 - 09:00 AM	65	--
09:00 - 10:00 AM	62	--



(Facing Southwest)

(Facing North)

LONG-TERM MEASUREMENT SITE LT2

FIELD SURVEY FORM

PROJECT: Soapstone Connector

ENGINEER: G. Berg / Kelly Hyland

DATE: 11/18/15

MEASUREMENT ADDRESS: 11639 Hunters Green Ct

CITY: Reston, VA

☐ Single-Family ☒ Multi-Family ☐ School ☑ Recreational ☐ Commercial

SITE NO.: ST1

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820 ☐ B&K-2238
☐ LD-824 ☒ LD-812 ☐ B&K-2250
☐ LD-2900 ☐ _____
SERIAL #: 0638

MICROPHONE:
☒ NON-POLAR ☐ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
☒ WIND SCREEN
SERIAL #: 3378

PRE AMP:
☐ LD-900 ☐ ZC-0030
☒ LD-828 ☐ ZC-0032
☐ LD-902 ☐ _____
SERIAL #: 1938

CALIBRATOR:
☒ LD CA250 ☐ LD CA200
☐ B&K 4231 ☐ _____
S/N 2127

Freq, Hz.
☒ 250
☐ 1000
☐ 84
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before 114.0 , 114.0 , 7.8 , 15:47
After 114.0 , 114.0 , — , 17:10

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☒ L_N PERCENTILE VALUES

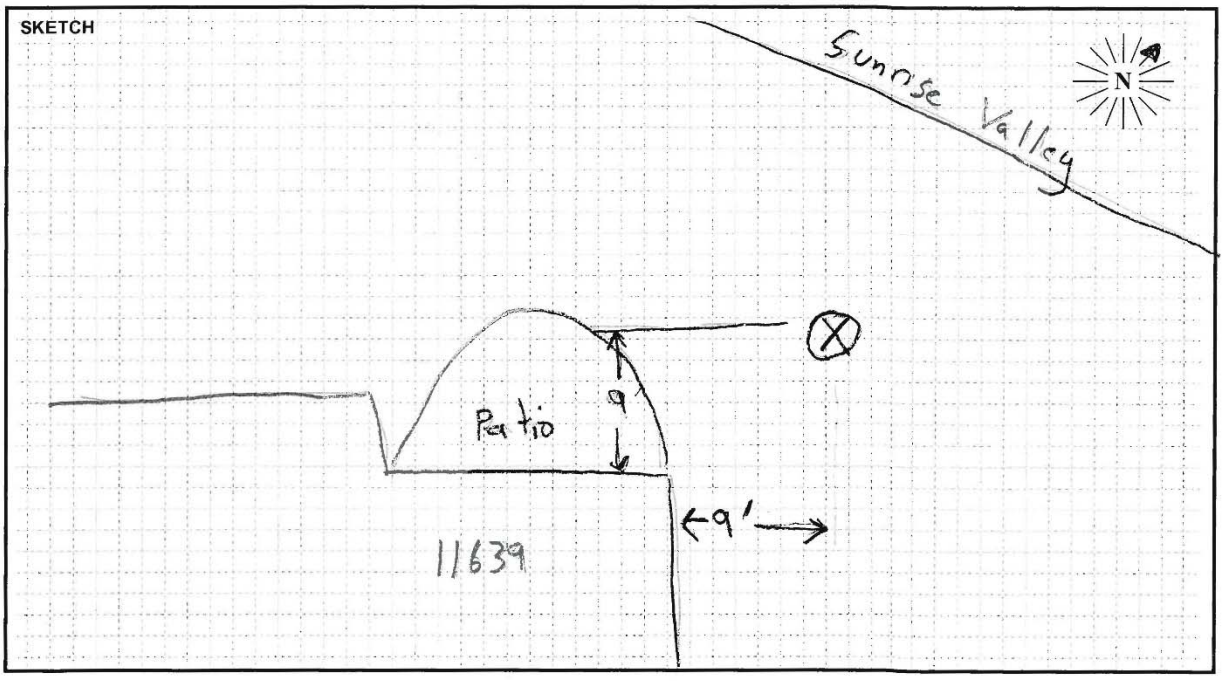
NOTES:
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: _____ °F R.H.: _____ %
WIND SPEED: _____ MPH
TOWARD (DIR): _____
SKIES: _____
CAMERA _____
PHOTO NOs. _____

NOTES:
☒ Video ☐ Radar

MEAS. TYPE:
☐ Long Term ☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
11/18	16:40	17:00	50.2	—	54.5	58.0	59.5	60.6	—	69.7	58.4	

SKETCH



PARSONS

(Facing Southeast)

(Facing North)

SHORT-TERM MEASUREMENT SITE ST1

FIELD SURVEY FORM

PROJECT: Soapstone Connector | ENGINEER: Greg Berg | DATE: 11/18/15

MEASUREMENT ADDRESS: 11501 Sunrise Valley | CITY: Reston, VA | ☐ Single-Family ☐ Multi-Family ☒ School ☐ Recreational ☐ Commercial | SITE NO.: ST2

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820 ☐ B&K-2238
☐ LD-824 ☒ LD-812 ☐ B&K-2250
☐ LD-2900 ☐ _____
SERIAL #: 0639

MICROPHONE:
☒ NON-POLAR ☐ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
☒ WIND SCREEN
SERIAL #: 3155

PRE AMP:
☐ LD-900 ☐ ZC-0030
☒ LD-828 ☐ ZC-0032
☐ LD-902 ☐ _____
SERIAL #: 2330

CALIBRATOR:
☒ LD CA250 ☐ LD CA200
☐ B&K 4231 ☐ _____
S/N 2127
Freq, Hz.
☒ 250
☐ 1000
☐ 84
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before 114.0, 114.0, 7.0, 16:12
After 114.0, 114.0, —, 17:03

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☒ L_N PERCENTILE VALUES

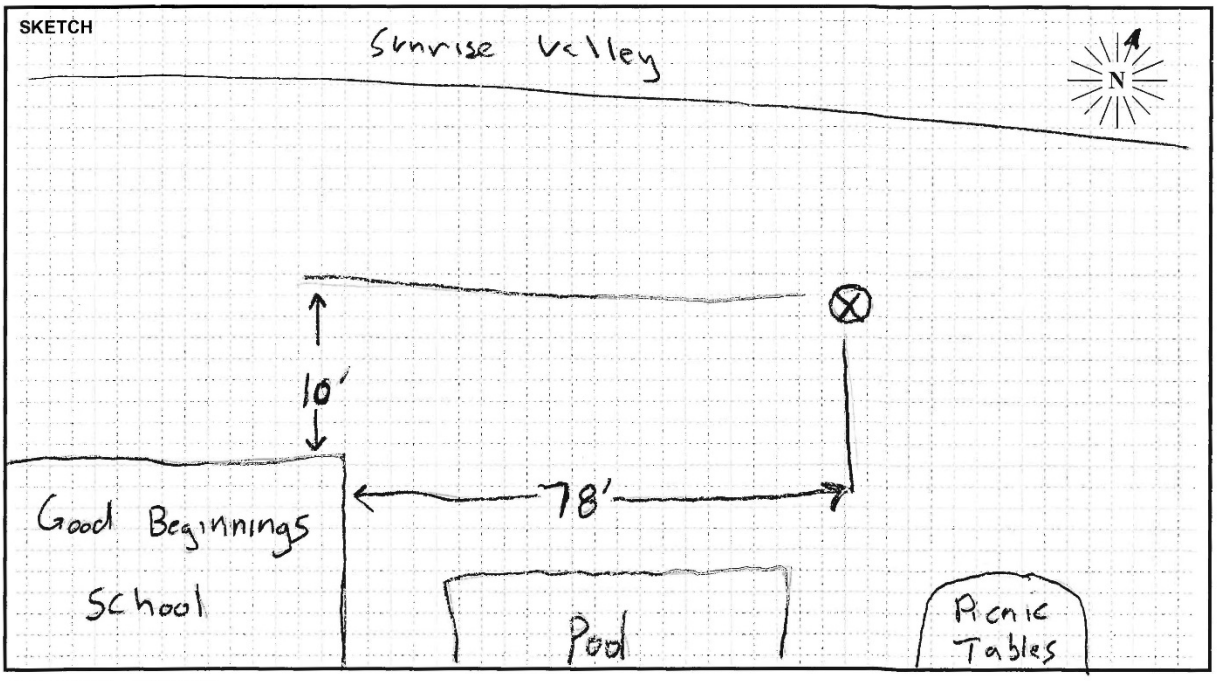
NOTES:
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: 63 °F R.H.: 74 %
WIND SPEED: 1 MPH
TOWARD (DIR): _____
SKIES: Cloudy
CAMERA _____
PHOTO NOs. _____

NOTES: ☐ Video ☒ Radar

MEAS. TYPE: ☐ Long Term ☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
11/18	16:40	17:00	50.9	—	55.3	58.2	60.0	61.8	—	71.3	59.6	

SKETCH



PARSONS

(Facing North)

(Facing South)

SHORT-TERM MEASUREMENT SITE ST2

FIELD SURVEY FORM

PROJECT: **Soapstone Connector**

ENGINEER: Greg Berg

DATE: 11/20/15

MEASUREMENT ADDRESS: 2011 Approach Ln

CITY: Reston, VA

☐ Single-Family ☐ Recreational
☒ Multi-Family ☐ Commercial
☐ School

SITE NO.: ST3

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820 ☐ B&K-2238
☐ LD-824 ☒ LD-812 ☐ B&K-2250
☐ LD-2900 ☐ _____
SERIAL #: 0639

MICROPHONE:
☒ NON-POLAR ☐ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
☒ WIND SCREEN
SERIAL #: 3155

PRE AMP:
☐ LD-900 ☐ ZC-0030
☒ LD-828 ☐ ZC-0032
☐ LD-902 ☐ _____
SERIAL #: 2230

CALIBRATOR:
☒ LD CA250 ☐ LD CA200
☐ B&K 4231 ☐ _____
S/N 2127
Freq, Hz.
☒ 250
☐ 1000
☐ 84
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before 114.0, 114.0, 6.8, 6:48
After 114.0, 114.0, –, 8:02

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☒ L_N PERCENTILE VALUES

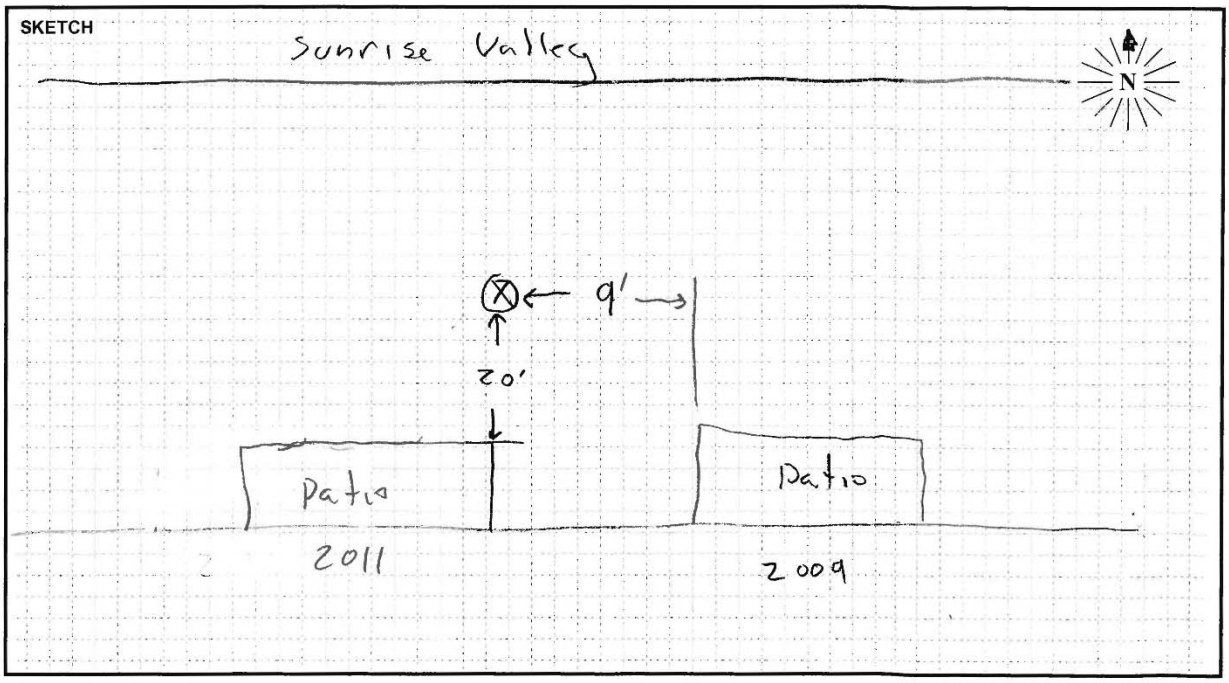
NOTES:
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: 46 °F R.H.: 40 %
WIND SPEED: 1 MPH
TOWARD (DIR): _____
SKIES: Clear
CAMERA _____
PHOTO NOs. _____

NOTES: ☒ Video ☒ Radar

MEAS. TYPE: ☐ Long Term ☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
11/20	7:00	7:20	55.5	–	57.1	59.0	59.9	60.9	–	65.6	59.3	

SKETCH



PARSONS

(Facing North)

(Facing South)

SHORT-TERM MEASUREMENT SITE ST3

FIELD SURVEY FORM

PROJECT: **Soapstone Connector**

ENGINEER: Greg Bero

DATE: 11/18/15

MEASUREMENT ADDRESS: 11600 Sunrise Valley Dr.

CITY: Reston, VA

☐ Single-Family ☐ Multi-Family ☐ School ☐ Recreational ☒ Commercial

SITE NO.: ST4

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820 ☐ B&K-2238
☐ LD-824 ☒ LD-812 ☐ B&K-2250
☐ LD-2900 ☐ _____

SERIAL #: 0639

MICROPHONE:
☒ NON-POLAR ☐ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
☒ WIND SCREEN

SERIAL #: 3378

PRE AMP:
☐ LD-900 ☐ ZC-0030
☒ LD-828 ☐ ZC-0032
☐ LD-902 ☐ _____

SERIAL #: 2330

CALIBRATOR:
☒ LD CA250 ☐ LD CA200
☐ B&K 4231 ☐ _____
S/N 2127

Freq, Hz.
☒ 250
☐ 1000
☐ 84
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before 114.0, 114.0, 6.7, 6:48
After 114.0, 114.0, –, 8:49

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☒ L_N PERCENTILE VALUES

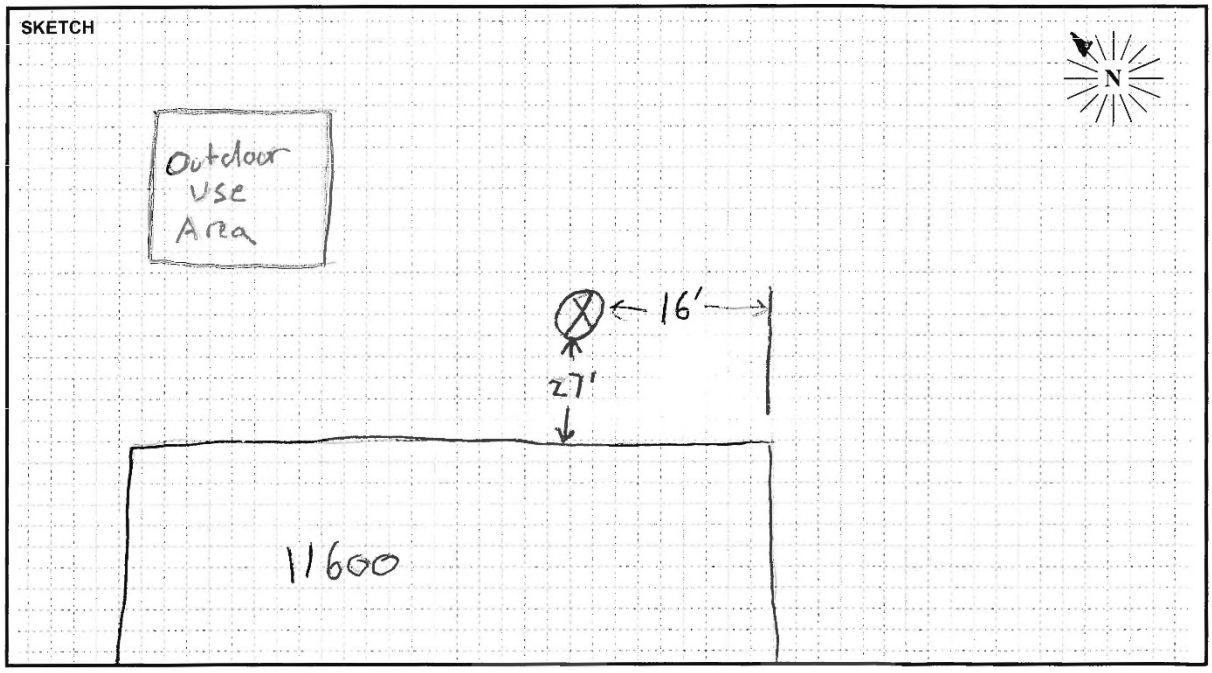
NOTES:
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: 49 °F R.H.: 77 %
WIND SPEED: 1 MPH
TOWARD (DIR): _____
SKIES: Cloudy
CAMERA _____
PHOTO NOs. _____

NOTES: ☐ Video ☐ Radar

MEAS. TYPE: ☐ Long Term ☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
11/18	7:00	7:20	56.2	–	57.1	57.9	58.7	59.7	–	70.6	58.7	

SKETCH



PARSONS

(Facing South)

(Facing North)

SHORT-TERM MEASUREMENT SITE ST4

FIELD SURVEY FORM

PROJECT: **Soapstone Connector**

ENGINEER: Greg Bero

DATE: 11/18/15

MEASUREMENT ADDRESS: 1900 Association Dr

CITY: Reston, VA

☐ Single-Family ☐ Multi-Family ☐ School ☐ Recreational ☒ Commercial

SITE NO.: ST5

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820 ☐ B&K-2238
☐ LD-824 ☒ LD-812 ☐ B&K-2250
☐ LD-2900 ☐ _____

SERIAL #: 0639

MICROPHONE:
☒ NON-POLAR ☐ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
☒ WIND SCREEN

SERIAL #: 3378

PRE AMP:
☐ LD-900 ☐ ZC-0030
☒ LD-828 ☐ ZC-0032
☐ LD-902 ☐ _____

SERIAL #: 2330

CALIBRATOR:
☒ LD CA250 ☐ LD CA200
☐ B&K 4231 ☐ _____
S/N 2127

Freq, Hz.
☒ 250
☐ 1000
☐ 84
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before 114.0 , 114.0 , 6.7 , 6:48
After 114.0, 114.0 , – , 8:49

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☒ L_N PERCENTILE VALUES

NOTES:

SYSTEM PWR: ☒ BAT ☐ AC

(observations at start of measurement)

TEMP: 50 °F R.H.: 78 %

WIND SPEED: 1 MPH

TOWARD (DIR): _____

SKIES: Cloudy

CAMERA _____

PHOTO NOs. _____

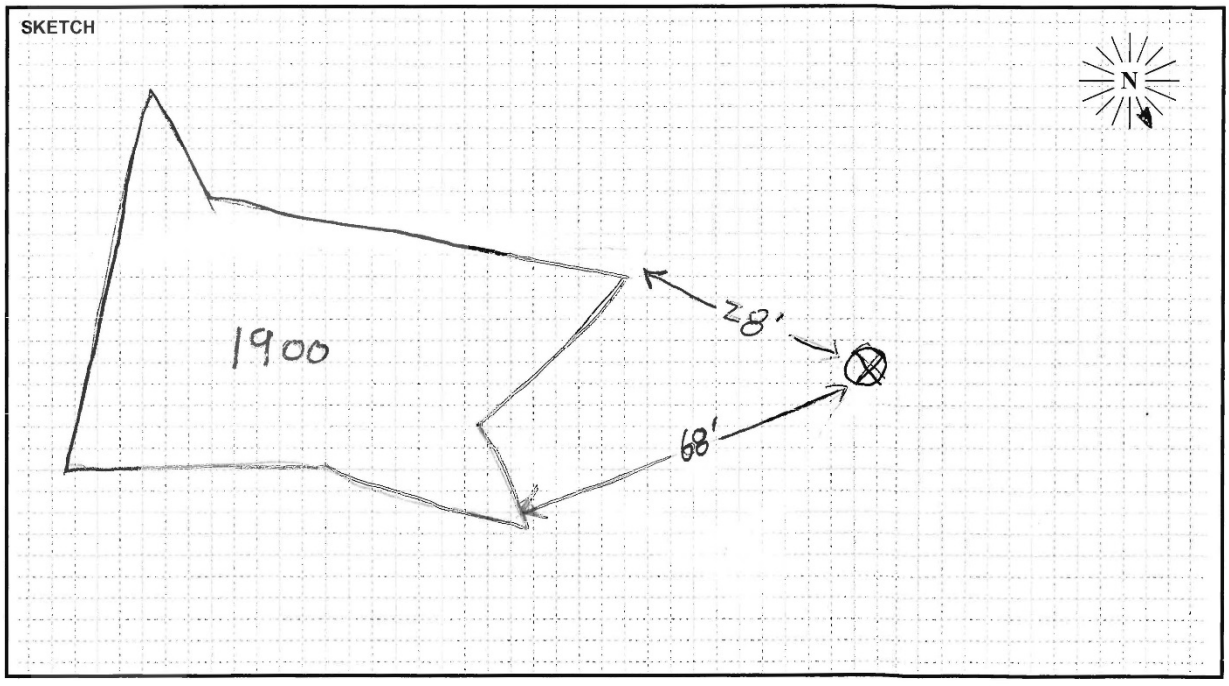
NOTES:

☐ Video ☐ Radar

MEAS. TYPE:
☐ Long Term ☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
11/18	7:40	8:00	60.6	–	61.5	62.8	63.5	63.9	–	68.4	62.9	

SKETCH



PARSONS

(Facing North)

(Facing Southeast)

SHORT-TERM MEASUREMENT SITE ST5

FIELD SURVEY FORM

PROJECT: Soapstone Connector		ENGINEER: Greg Berg	DATE: 11/18/15
MEASUREMENT ADDRESS: 11519 Sunset Hills	CITY: Reston, VA	☐ Single-Family ☐ Multi-Family ☐ School ☐ Recreational ☒ Commercial	SITE NO.: ST6

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820 ☐ B&K-2238
☐ LD-824 ☒ LD-812 ☐ B&K-2250
☐ LD-2900 ☐ _____
SERIAL #: 0639

MICROPHONE:
☒ NON-POLAR ☐ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
☒ WIND SCREEN
SERIAL #: 3378

PRE AMP:
☐ LD-900 ☐ ZC-0030
☒ LD-828 ☐ ZC-0032
☐ LD-902 ☐ _____
SERIAL #: Z330

CALIBRATOR:
☐ LD CA250 ☐ LD CA200
☐ B&K 4231 ☐ _____
S/N Z127
Freq, Hz.
☐ 250
☐ 1000
☐ 84
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before 114.0, 114.0, 6.7, 6:48
After 114.0, 114.0, —, 8:49

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☒ L_N PERCENTILE VALUES

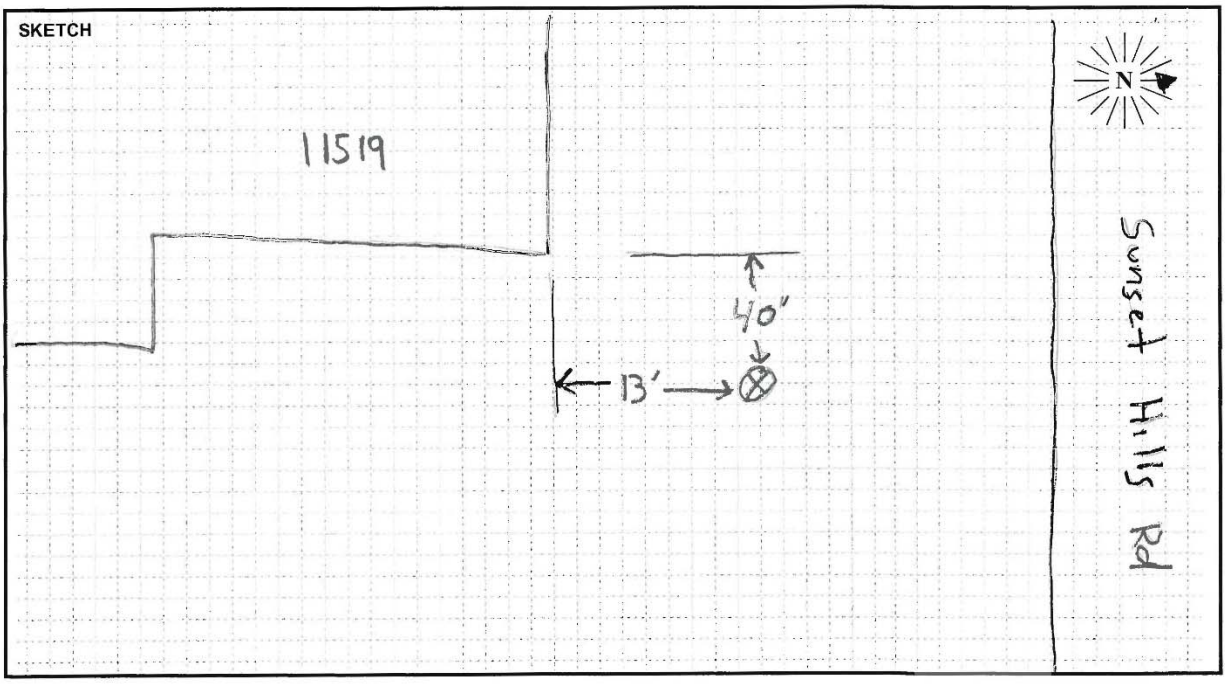
NOTES:
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: 51 °F R.H.: 77 %
WIND SPEED: 1 MPH
TOWARD (DIR): _____
SKIES: Cloudy
CAMERA _____
PHOTO NOs. _____

NOTES: ☒ Video ☒ Radar

MEAS. TYPE: ☐ Long Term ☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
11/18	8:20	8:40	53.6	—	56.5	62.9	65.5	67.2	—	83.7	64.7	

SKETCH



PARSONS

(Facing North)

(Facing Southwest)

SHORT-TERM MEASUREMENT SITE ST6

FIELD SURVEY FORM

PROJECT: **Soapstone Connector**

ENGINEER: Greg Berg

DATE: 11/20/13

MEASUREMENT ADDRESS: 11505 Sunset Hills

CITY: Reston, VA

☐ Single-Family ☐ Recreational
☐ Multi-Family ☐ Commercial
☒ School

SITE NO.: ST7

SOUND LEVEL METER:
☐ LD-870 ☐ LD-820 ☐ B&K-2238
☐ LD-824 ☒ LD-812 ☐ B&K-2250
☐ LD-2900 ☐ _____
SERIAL #: 0639

MICROPHONE:
☒ NON-POLAR ☐ POLARIZED
☒ 1/2-INCH ☐ FREEFIELD
☐ 1-INCH ☐ RANDOM
☒ WIND SCREEN
SERIAL #: 3155

PRE AMP:
☐ LD-900 ☐ ZC-0030
☒ LD-828 ☐ ZC-0032
☐ LD-902 ☐ _____
SERIAL #: 2230

CALIBRATOR:
☒ LD CA250 ☐ LD CA200
☐ B&K 4231 ☐ _____
S/N 2127
Freq, Hz.
☒ 250
☐ 1000
☐ 84
☐ _____

CALIBRATION RECORD:
Input, dB / Reading, dB / Offset, dB / Time
Before 114.0, 114.0, 6.8, 6.48
After 114.0, 114.0, —, 8:02

METER SETTINGS:
☒ A-WTD ☐ LINEAR ☒ SLOW ☐ 1/1 OCT ☒ INTERVALS 20 - MINUTE
☐ C-WTD ☐ IMPULSE ☐ FAST ☐ 1/3 OCT ☒ L_N PERCENTILE VALUES

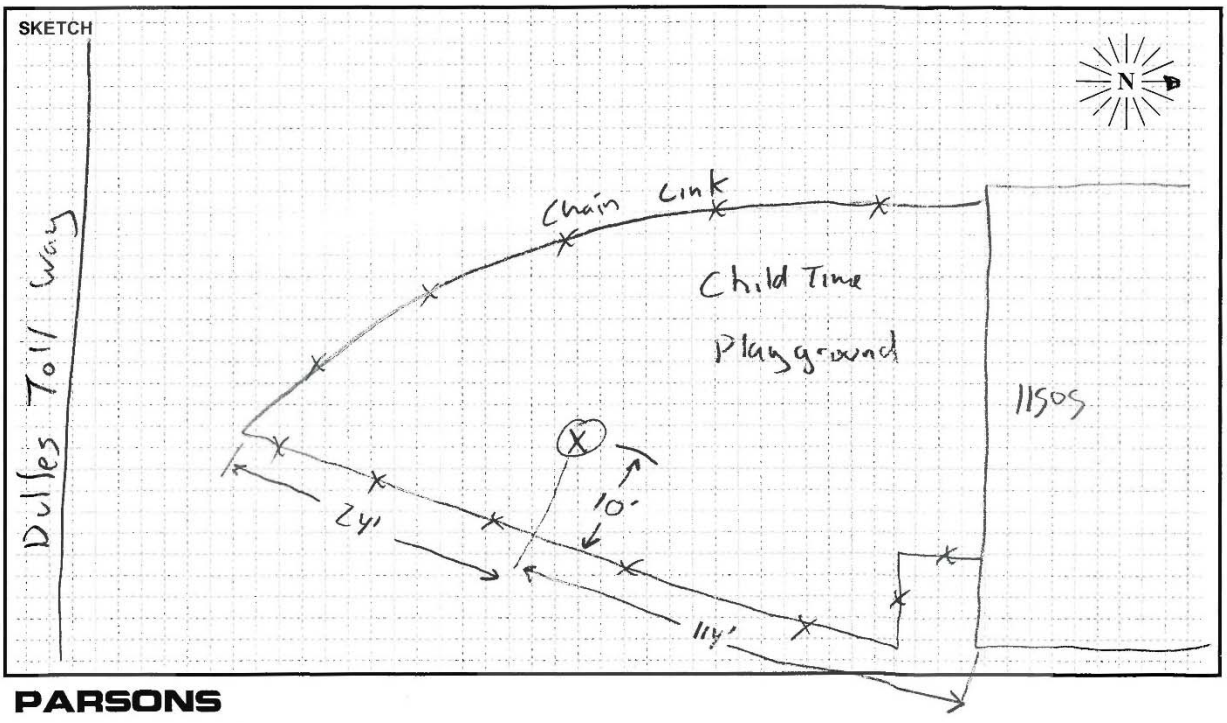
NOTES:
SYSTEM PWR: ☒ BAT ☐ AC
(observations at start of measurement)
TEMP: 50 °F R.H.: 48 %
WIND SPEED: 1 MPH
TOWARD (DIR): _____
SKIES: Clear
CAMERA _____
PHOTO NOs. _____

NOTES:
☐ Video
☐ Radar

MEAS. TYPE:
☐ Long Term
☒ Short Term

DATE	START TIME	STOP TIME	L_{MIN}	L_{99}	L_{90}	L_{50}	L_{25}	L_{10}	L_{01}	L_{MAX}	L_{EQ}	NOTES:
11/20	7:40	8:00	60.0	—	65.6	68.7	69.9	70.9	—	75.7	69.0	

SKETCH



PARSONS

(Facing South)

(Facing North)

SHORT-TERM MEASUREMENT SITE ST7

CERTIFICATE OF CALIBRATION
21898-4
FOR LARSON DAVIS
PRECISION INTEGRATING AND LOGGING
SOUND LEVEL METER

Model **812** Serial No. **0638**
ID No. **N/A**

With Microphone Model **2560** Serial No. **3159**
With Preamplifier Model **PRM828** Serial No. **1891**

Customer: **Parsons**
Pasadena, CA 91124 P.O. No. **Verbal/J. Ogden**

was tested and met Larson Davis specifications at the points tested and as outlined in ANSI S1.4-1983 Type 1; IEC 651-1979 Type 1

on **13 OCT 2015** **BY HAROLD LYNCH**
Service Manager

As received condition: Within Specification.
Re-calibration due on: **13 OCT 2016**

Certified References*

Mfg.	Type	Serial No.	Cal Date	Due Date
B&K	1049	1288946	04 NOV 2014	04 NOV 2015
B&K	2636	1601487	18 MAY 2015	18 MAY 2016
B&K	4226	1774068	17 MAR 2015	17 MAR 2016
B&K	4231	2094472	23 FEB 2015	23 FEB 2016
HP	34401A	US36071531	10 JUN 2015	10 JUN 2016
HP	3458A	2823A17713	30 JUL 2015	30 JUL 2016

Performed in Compliance with ANSI, NCSL Z-540-1, 1994
and ISO 17025, ISO 9001:2008 Certification NQA No. 11252
*References are traceable to NIST (National Institute of Standards and Technology).

Note: For calibration data see enclosed pages.
The data represent both "as found" and "as left" condition.

Reference Test Procedure: **ACCT Procedure 812-820 Version 3.5.1.**

Temperature	Relative Humidity	Barometric Pressure
23°C	**36** %	**991.04** hPa

Signed: Harold Lynch

ODIN METROLOGY, INC.
CALIBRATION OF SOUND & VIBRATION INSTRUMENTATION
3533 OLD CONEJO ROAD, SUITE 125 THOUSAND OAKS CA 91320
PHONE: (805) 375-0830 FAX: (805) 375-0405

CERTIFICATE OF CALIBRATION
21898-7
FOR LARSON DAVIS
PRECISION INTEGRATING AND LOGGING
SOUND LEVEL METER

Model **812** Serial No. **0639**
ID No. **N/A**

With Microphone Model **2560** Serial No. **3155**

With Preamplifier Model **PRM828** Serial No. **1891**

Customer: **Parsons**
Pasadena, CA 91124

P.O. No. **Verbal/J. Ogden**

was tested and met Larson Davis specifications at the points tested and as outlined in ANSI S1.4-1983 Type 1; IEC 651-1979 Type 1

on **14 OCT 2015** **BY HAROLD LYNCH**
Service Manager

As received condition: Within Specification.
Re-calibration due on: **14 OCT 2016**

Certified References*

Mfg.	Type	Serial No.	Cal Date	Due Date
B&K	1049	1288946	04 NOV 2014	04 NOV 2015
B&K	2636	1601487	18 MAY 2015	18 MAY 2016
B&K	4226	1774068	17 MAR 2015	17 MAR 2016
B&K	4231	2094472	23 FEB 2015	23 FEB 2016
HP	34401A	US36071531	10 JUN 2015	10 JUN 2016
HP	3458A	2823A17713	30 JUL 2015	30 JUL 2016

Performed in Compliance with ANSI, NCSL Z-540-1, 1994
and ISO 17025, ISO 9001:2008 Certification NQA No. 11252
*References are traceable to NIST (National Institute of Standards and Technology).

Note: For calibration data see enclosed pages.
The data represent both "as found" and "as left" condition.

Reference Test Procedure: **ACCT Procedure 812-820 Version 3.5.1.**

Temperature	Relative Humidity	Barometric Pressure
23°C	**39** %	**989.54** hPa

Signed: Harold Lynch

ODIN METROLOGY, INC.
CALIBRATION OF SOUND & VIBRATION INSTRUMENTATION
3533 OLD CONEJO ROAD, SUITE 125 THOUSAND OAKS CA 91320
PHONE: (805) 375-0830 FAX: (805) 375-0405

CERTIFICATE OF CALIBRATION
21898-1
FOR LARSON DAVIS
PRECISION INTEGRATING AND LOGGING
SOUND LEVEL METER

Model **812** Serial No. **0659**
ID No. **N/A**

With Microphone Model **2560** Serial No. **3378**
With Preamplifier Model **PRM828** Serial No. **1901**

Customer: **Parsons**
Pasadena, CA 91124 P.O. No. **Verbal/J. Ogden**

was tested and met Larson Davis specifications at the points tested and as outlined in ANSI S1.4-1983 Type 1; IEC 651-1979 Type 1

on **13 OCT 2015** **BY HAROLD LYNCH**
Service Manager

As received condition: Within Specification.
Re-calibration due on: **13 OCT 2016**

Certified References*

Mfg.	Type	Serial No.	Cal Date	Due Date
B&K	1049	1288946	04 NOV 2014	04 NOV 2015
B&K	2636	1601487	18 MAY 2015	18 MAY 2016
B&K	4226	1774068	17 MAR 2015	17 MAR 2016
B&K	4231	2094472	23 FEB 2015	23 FEB 2016
HP	34401A	US36071531	10 JUN 2015	10 JUN 2016
HP	3458A	2823A17713	30 JUL 2015	30 JUL 2016

Performed in Compliance with ANSI, NCSL Z-540-1, 1994
and ISO 17025, ISO 9001:2008 Certification NQA No. 11252
*References are traceable to NIST (National Institute of Standards and Technology).

Note: For calibration data see enclosed pages.
The data represent both "as found" and "as left" condition.

Reference Test Procedure: **ACCT Procedure 812-820 Version 3.5.1.**

Temperature	Relative Humidity	Barometric Pressure
23°C	**36** %	**991.04** hPa

Signed: Harold Lynch

ODIN METROLOGY, INC.
CALIBRATION OF SOUND & VIBRATION INSTRUMENTATION
3533 OLD CONEJO ROAD, SUITE 125 THOUSAND OAKS CA 91320
PHONE: (805) 375-0830 FAX: (805) 375-0405

Odin Metrology, Inc.
Calibration of Sound & Vibration Instruments

Certificate Number: **21653-5**

Certificate of Calibration for Larson Davis 1/2" Random Incidence Microphone

This calibration is performed by comparison with measurement reference standard microphone:

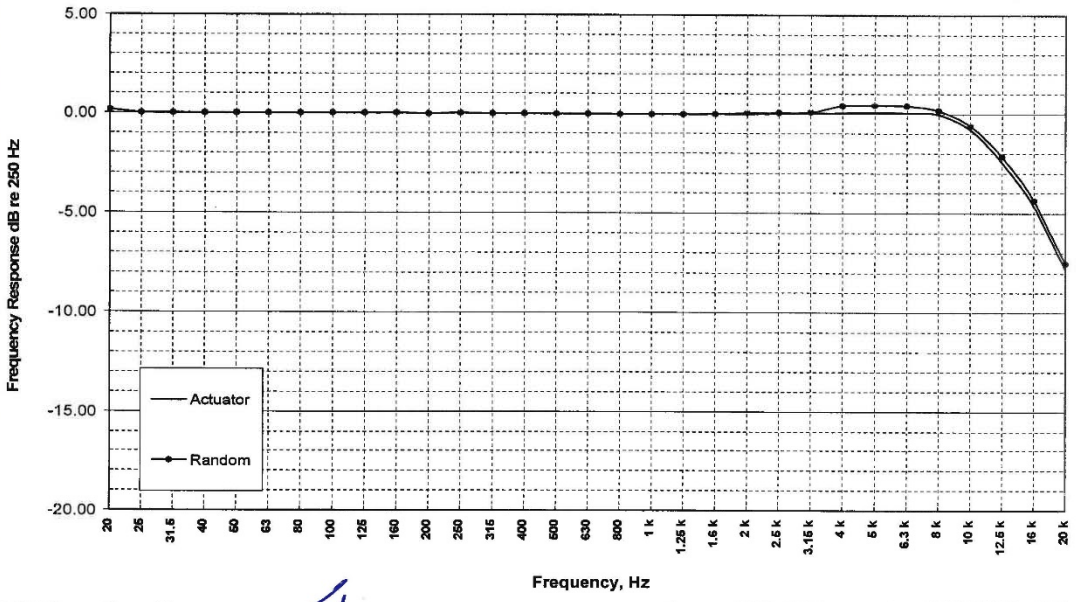
REFERENCE STANDARDS	
Type No.	4134/UA0825
Serial No.	1866523
Calibrated by	DANAK
Cal Date	23 OCT 2014
Due Date	23 OCT 2016

a) Estimated uncertainty of comparison: ± **0.05** dB
b) Estimated uncertainty of reference microphone: ± **0.04** dB
c) Total uncertainty: $\sqrt{a^2+b^2}$ = ± **0.064** dB
d) Expanded uncertainty (coverage factor k = 2 for 95% confidence level): = ± **0.13** dB

Type no.	**2560**
Serial no.	**2916**
With preamplifier type no.	**N/A**
Preamplifier Serial no.	**N/A**
Submitted by	**Parsons Pasadena, CA 91124**
Purchase order no.	**Verbal/Jason Ogden**
Asset no.	**N/A**

PERFORMANCE DATA		
Open circuit sensitivity at 1,013 hPa, 23°C, 50% RH, 251.2 Hz	**-26.96**	dB re 1 V/Pa
	44.86	mV/Pa
Open circuit correction factor K_0	**1.0**	dB
System sensitivity (with preamplifier) at 251.2 Hz	**N/A**	dB re 1 V/Pa
	N/A	mV/Pa
Correction factor K	**N/A**	dB

Microphone Frequency Response Type 2560
S/N 2916 : Measured 18 Jun 2015



Calibration performed by

Torben Ehlert, Quality Assurance Manager

CONDITION OF TEST		
Ambient Pressure	**987.17**	hPa
Temperature	**23**	°C
Relative Humidity	**43**	%
Polarization Voltage	**200**	V
Frequency	**251.2**	Hz
Date of Calibration	**18 JUN 2015**	
Re-calibration due on	**18 JUN 2016**	

ODIN METROLOGY, INC.
3533 OLD CONEJO ROAD, SUITE 125
THOUSAND OAKS, CA 91320
PHONE: (805) 375-0830; FAX: (805) 375-0405

The calibration data is both "as found" and "as final." At the time of calibration this microphone was found to be **within** the manufacturer's specifications.

This calibration is traceable to NIST Test Number: **TN-638/282477, 2012.**
Calibration Procedure: **OM-P-1008-Microphone Rev. 1.2 20130618.**

Odin Metrology, Inc.
Calibration of Sound & Vibration Instruments

Certificate Number: **21898-8**

Certificate of Calibration for Larson Davis 1/2" Random Incidence Microphone

This calibration is performed by comparison with measurement reference standard microphone:

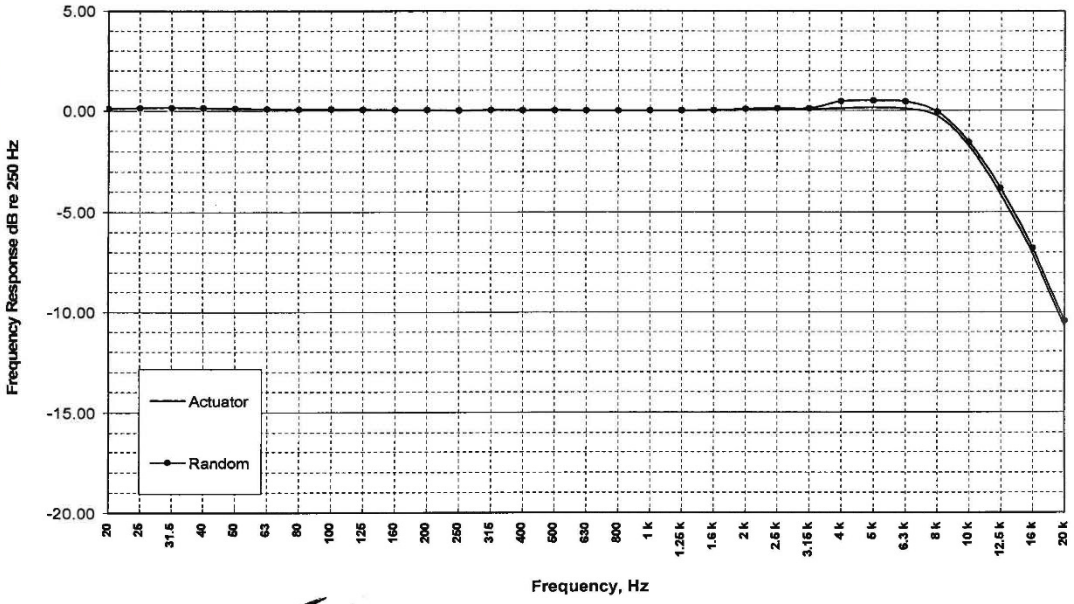
Reference Standards	
Type No.	4134/UA0825
Serial No.	1866523
Calibrated by	DANAK
Cal Date	23 OCT 2014
Due Date	23 OCT 2016

a) Estimated uncertainty of comparison: ± **0.05** dB
b) Estimated uncertainty of reference microphone: ± **0.04** dB
c) Total uncertainty: $\sqrt{a^2+b^2}$ = ± **0.064** dB
d) Expanded uncertainty (coverage factor k = 2 for 95% confidence level): = ± **0.13** dB

Type no.	**2560**
Serial no.	**3155**
With preamplifier type no.	**N/A**
Preamplifier Serial no.	**N/A**
Submitted by	**Parsons Pasadena, CA 91124**
Purchase order no.	**Verbal/Jason Ogden**
Asset no.	**N/A**

Performance Data		
Open circuit sensitivity at 1,013 hPa, 23°C, 50% RH, 251.2 Hz	**-26.29**	dB re 1 V/Pa
	48.48	mV/Pa
Open circuit correction factor K_o	**0.3**	dB
System sensitivity (with preamplifier) at 251.2 Hz	**N/A**	dB re 1 V/Pa
	N/A	mV/Pa
Correction factor K	**N/A**	dB

Microphone Frequency Response Type 2560
S/N 3155 : Measured 14 Oct 2015



Calibration performed by

Torben Ehlert, Quality Assurance Manager

Condition of Test		
Ambient Pressure	**989.54**	hPa
Temperature	**23**	°C
Relative Humidity	**39**	%
Polarization Voltage	**200**	V
Frequency	**251.2**	Hz
Date of Calibration	**14 OCT 2015**	
Re-calibration due on	**14 OCT 2016**	

ODIN METROLOGY, INC.
3533 OLD CONEJO ROAD, SUITE 125
THOUSAND OAKS, CA 91320
PHONE: (805) 375-0830; FAX: (805) 375-0405

The calibration data is both "as found" and "as final." At the time of calibration this microphone was found to be **within** the manufacturer's specifications.

This calibration is traceable to NIST Test Number: **TN-638/282477, 2012.**
Calibration Procedure: **OM-P-1008-Microphone Rev. 1.2 20130618.**

Odin Metrology, Inc.
Calibration of Sound & Vibration Instruments

Certificate Number: **21898-3**

Certificate of Calibration for
Larson Davis 1/2" Random Incidence Microphone

This calibration is performed by comparison with measurement reference standard microphone:

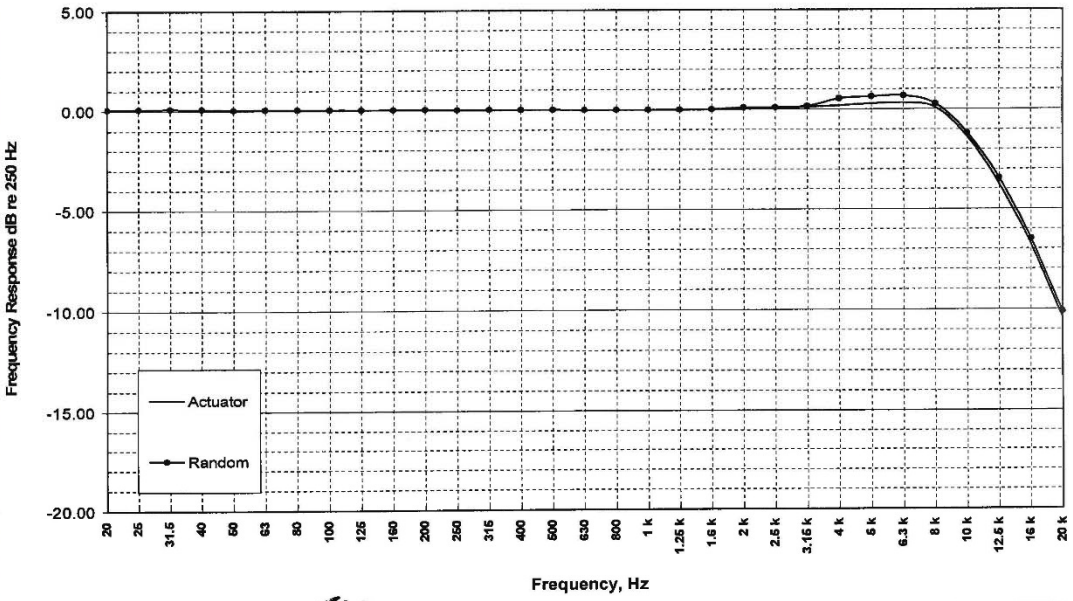
Reference Standards	
Type No.	4134/UA0825
Serial No.	1866523
Calibrated by	DANAK
Cal Date	23 OCT 2014
Due Date	23 OCT 2016

a) Estimated uncertainty of comparison: ± **0.05** dB
b) Estimated uncertainty of reference microphone: ± **0.04** dB
c) Total uncertainty: $\sqrt{a^2+b^2}$ = ± **0.064** dB
d) Expanded uncertainty (coverage factor k = 2 for 95% confidence level): = ± **0.13** dB

Type no.	**2560**
Serial no.	**3378**
With preamplifier type no.	**N/A**
Preamplifier Serial no.	**N/A**
Submitted by	**Parsons** **Pasadena, CA 91124**
Purchase order no.	**Verbal/Jason Ogden**
Asset no.	**N/A**

Performance Data		
Open circuit sensitivity at 1,013 hPa, 23°C, 50% RH, 251.2 Hz	**-26.24**	dB re 1 V/Pa
	48.77	mV/Pa
Open circuit correction factor K_0	**0.2**	dB
System sensitivity (with preamplifier) at 251.2 Hz	**N/A**	dB re 1 V/Pa
	N/A	mV/Pa
Correction factor K	**N/A**	dB

Microphone Frequency Response Type 2560
S/N 3378 : Measured 14 Oct 2015



Calibration performed by

Torben Ehlert, Quality Assurance Manager

Condition of Test		
Ambient Pressure	**989.54**	hPa
Temperature	**23**	°C
Relative Humidity	**39**	%
Polarization Voltage	**200**	V
Frequency	**251.2**	Hz
Date of Calibration	**14 OCT 2015**	
Re-calibration due on	**14 OCT 2016**	

Odin Metrology, Inc.
3533 Old Conejo Road, Suite 125
Thousand Oaks, CA 91320
Phone: (805) 375-0830; Fax: (805) 375-0405

The calibration data is both "as found" and "as final." At the time of calibration this microphone was found to be **within** the manufacturer's specifications.

This calibration is traceable to NIST Test Number: **TN-638/282477, 2012.**
Calibration Procedure: **OM-P-1008-Microphone Rev. 1.2 20130618.**

CERTIFICATE OF CALIBRATION
20928-2
FOR LARSON DAVIS
1/2" MICROPHONE PREAMPLIFIER

Model **PRM828**

Serial No. **1891**
ID No. **N/A**

Customer: **Parsons**
Pasadena, CA 91124

P.O. No. **Verbal**

was tested and met factory specifications at the points tested according to the Referenced Test Procedure

on **30 JUL 2014**

BY HAROLD LYNCH
Service Manager

As received condition: Within Specification.
Re-calibration due on: **30 JUL 2015**

Certified References*

Mfg.	Type	Serial No.	Cal Date	Due Date
B&K	4155	1424163	27 MAR 2014	27 MAR 2015
B&K	1049	1288946	04 NOV 2013	04 NOV 2014
B&K	2636	1601487	19 MAY 2014	19 MAY 2015
B&K	4226	1774068	17 MAR 2014	17 MAR 2015
B&K	4231	2094472	26 FEB 2014	26 FEB 2015
HP	34401A	US36071531	11 JUN 2014	11 JUN 2015
HP	3458A	2823A17713	16 JUL 2014	16 JUL 2015

Performed in Compliance with ANSI, NCSL Z-540-1, 1994
and ISO 17025, ISO 9001:2008 Certification NQA No. 11252
*References are traceable to NIST (National Institute of Standards and Technology).

Note: For calibration data see enclosed pages.
The data represent both "as found" and "as left."

Reference Test Procedure: **ACCT Procedure PRM828 Version 0.0.1.**

Temperature	Relative Humidity	Barometric Pressure
23°C	**45** %	**988.11** hPa

Signed Harold Lynch

ODIN METROLOGY, INC.
CALIBRATION OF SOUND AND VIBRATION INSTRUMENTATION
3533 OLD CONEJO ROAD, SUITE 125 THOUSAND OAKS CA 91320
PHONE: (805) 375-0830 FAX: (805) 375-0405

CERTIFICATE OF CALIBRATION
21299-7
FOR LARSON DAVIS
1/2" MICROPHONE PREAMPLIFIER

Model **PRM828** Serial No. **1938**
ID No. **N/A**

Customer: **Parsons**
Pasadena, CA 91124 P.O. No. **Verbal**

was tested and met factory specifications at the points tested according to the Referenced Test Procedure

on **20 JAN 2015** **BY HAROLD LYNCH**
Service Manager

As received condition: Within Specification.
Re-calibration due on: **20 JAN 2016**

Certified References*

Mfg.	Type	Serial No.	Cal Date	Due Date
B&K	4155	1424163	27 MAR 2014	27 MAR 2015
B&K	1049	1314996	12 JUN 2014	12 JUN 2015
B&K	2636	1423390	05 JAN 2015	05 JAN 2016
B&K	4226	2141942	02 DEC 2014	02 DEC 2015
B&K	4231	1770857	17 SEP 2014	17 SEP 2015
HP	34401A	MY45023668	08 FEB 2014	08 FEB 2015
HP	3458A	2823A07179	09 JUL 2014	09 JUL 2015

Performed in Compliance with ANSI, NCSL Z-540-1, 1994
and ISO 17025, ISO 9001:2008 Certification NQA No. 11252
*References are traceable to NIST (National Institute of Standards and Technology).

Note: For calibration data see enclosed pages.
The data represent both "as found" and "as left."

Reference Test Procedure: **ACCT Procedure PRM828 Version 0.0.1.**

Temperature	Relative Humidity	Barometric Pressure
23°C	**36** %	**989.91** hPa

Signed

ODIN METROLOGY, INC.
CALIBRATION OF SOUND AND VIBRATION INSTRUMENTATION
3533 OLD CONEJO ROAD, SUITE 125 THOUSAND OAKS CA 91320
PHONE: (805) 375-0830 FAX: (805) 375-0405

CERTIFICATE OF CALIBRATION
21299-8
FOR LARSON DAVIS
1/2" MICROPHONE PREAMPLIFIER

Model **PRM828** Serial No. **2330**
ID No. **N/A**

Customer: **Parsons**
Pasadena, CA 91124 P.O. No. **Verbal**

was tested and met factory specifications at the points tested according to the Referenced Test Procedure

on **20 JAN 2015** **BY HAROLD LYNCH**
Service Manager

As received condition: Within Specification.
Re-calibration due on: **20 JAN 2016**

Certified References*

Mfg.	Type	Serial No.	Cal Date	Due Date
B&K	4155	1424163	27 MAR 2014	27 MAR 2015
B&K	1049	1314996	12 JUN 2014	12 JUN 2015
B&K	2636	1423390	05 JAN 2015	05 JAN 2016
B&K	4226	2141942	02 DEC 2014	02 DEC 2015
B&K	4231	1770857	17 SEP 2014	17 SEP 2015
HP	34401A	MY45023668	08 FEB 2014	08 FEB 2015
HP	3458A	2823A07179	09 JUL 2014	09 JUL 2015

Performed in Compliance with ANSI, NCSL Z-540-1, 1994
and ISO 17025, ISO 9001:2008 Certification NQA No. 11252
*References are traceable to NIST (National Institute of Standards and Technology).

Note: For calibration data see enclosed pages.
The data represent both "as found" and "as left."

Reference Test Procedure: **ACCT Procedure PRM828 Version 0.0.1.**

Temperature	Relative Humidity	Barometric Pressure
23°C	**36 %**	**989.91** hPa

Signed Harold Lynch

ODIN METROLOGY, INC.
CALIBRATION OF SOUND AND VIBRATION INSTRUMENTATION
3533 OLD CONEJO ROAD, SUITE 125 THOUSAND OAKS CA 91320
PHONE: (805) 375-0830 FAX: (805) 375-0405

Odin Metrology, Inc.
Calibration of Sound & Vibration Instruments

Certificate Number: **21299-10**

Certificate of Calibration for Larson Davis Calibrator

This calibration is performed by comparison with measurement reference standard pistonphone:

Type No.	4220	4228
Serial No.	1048473	1504084
Calibrated by	TE	TE
Cal Date	05 NOV 2014	05 NOV 2015
Due Date	05 NOV 2015	05 NOV 2015

a) Estimated uncertainty of comparison: ± **0.05** dB
b) Estimated uncertainty of calibration service for standard pistonphone: ± **0.06** dB
c) Total uncertainty: $\sqrt{a^2 + b^2}$ = ± **0.08** dB
d) Expanded uncertainty (coverage factor k = 2 for 95% confidence level): = ± **0.16** dB

This acoustic calibrator has been calibrated using standards with values traceable to the National Institute of Standards and Technology. This calibration is traceable to NIST Test Number **TN-638/282477, 2012**.

CONDITION OF TEST		
Ambient Pressure	**989.91**	hPa
Temperature	**23**	°C
Relative Humidity	**36**	%
Date of Calibration	**20 JAN 2015**	
Re-calibration due on	**20 JAN 2016**	

The calibration of this acoustic calibrator was performed using a test system conforming to the requirements of ANSI/NCSLZ540-1, 1994, ISO 17025, and ISO 9001-2008, Certification NQA No. 11252.

Calibration performed by Harold Lynch

Harold Lynch, Service Manager

ODIN METROLOGY, INC.
3533 OLD CONEJO ROAD, SUITE 125
THOUSAND OAKS, CA 91320
PHONE: (805) 375-0830; FAX: (805) 375-0405

Calibrator type **CA250**
Serial no. **2127**
Submitted by **Parsons**
Pasadena, CA 91124
Purchase order no. **Verbal**
Asset no. **N/A**

This calibrator has been found to perform **within** the specifications listed below at the normalized conditions stated.

SPL produced in coupler terminated by a loading volume of a ½" microphone	114 ± 0.2 dB
Frequency	250 Hz ± 1%
Distortion	< 3%
At 1,013 hPa, 20°C, and 65% relative humidity	

PERFORMANCE AS RECEIVED		
Frequency	**251.2**	Hz
SPL	**114.01**	dB
Distortion	**0.7**	%
Battery Voltage	**9.0**	V

Was adjustment performed? **No**
Were batteries replaced? **Yes**

FINAL PERFORMANCE		
Frequency	**251.2**	Hz
SPL	**114.01**	dB
Distortion	**0.7**	%

Note: This calibrator was **within** manufacturer's specifications as received.

Appendix C Model Validation, Existing, and Future Traffic Data

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Table C-1. Noise Model Validation Traffic Counts

Description of Traffic Lane	Number of Lanes	Total Peak Hour Traffic Volumes	Travel Speeds, mph	Volumes by Vehicle Type		
				Cars	Medium Trucks	Heavy Trucks
Hourly Traffic Counts for Measurements ST1 dated 11/18/2015 from 16:40 to 17:00						
Sunrise Valley Drive - Eastbound	2	522	34	507	15	0
Sunrise Valley Drive - Westbound	2	1,179	31	1,134	45	0
Hourly Traffic Counts for Measurement ST2 dated 11/18/2015 from 16:40 to 17:00						
Sunrise Valley Drive - Eastbound	2	609	34	588	21	0
Sunrise Valley Drive - Westbound	2	1,593	31	1,548	45	0
Hourly Traffic Counts for Measurement ST3 dated 11/20/2015 from 7:00 to 7:20						
Sunrise Valley Drive - Eastbound	2	792	30	768	21	3
Sunrise Valley Drive - Westbound	2	480	29	429	48	3
Hourly Traffic Counts for Measurement ST6 dated 11/18/2015 from 8:20 to 8:40						
Sunset Hills Road - Eastbound	2	1,395	32	1,350	42	3
Sunset Hills Road - Westbound	2	972	31	957	15	0

Table C-2. Existing (2015) Modeled Traffic Volumes

Description of Traffic Lane	Number of Lanes	Total Peak Hour Traffic Volumes	Travel Speeds, mph	Volumes by Vehicle Type		
				Cars	Medium Trucks	Heavy Trucks
Soapstone Drive - South of Sunrise Valley Drive						
Northbound	1	473	40	459	11	3
Southbound	1	272	40	251	20	1
Sunrise Valley Drive - West of Soapstone Drive						
Eastbound	2	965	40	936	23	6
Westbound	2	553	40	511	40	2
Sunrise Valley Drive - East of Soapstone Drive						
Eastbound	2	1,098	40	1,066	26	6
Westbound	2	630	40	582	46	2
Dulles Toll Road						
Eastbound Inside Lanes	2	1,747	62	1,686	61	0
Eastbound Outside Lanes	2	1,747	62	1,624	61	62
Westbound Inside Lanes	2	1,473	62	1,415	58	0
Westbound Outside Lanes	2	1,473	62	1,333	59	81
Dulles Access Road						
Eastbound	2	517	62	515	1	1
Westbound	2	503	62	501	1	1
Sunset Hills Road						
Eastbound	2	850	42	754	79	17
Westbound	2	858	42	824	28	6

Table C-3. Build (2046) Modeled Traffic Volumes

Description of Traffic Lane	Number of Lanes	Total Peak Hour Traffic Volumes	Travel Speeds, mph	Volumes by Vehicle Type		
				Cars	Medium Trucks	Heavy Trucks
Soapstone Drive - South of Sunrise Valley Drive						
Northbound	1	686	40	666	16	4
Southbound	1	394	40	364	29	1
Soapstone Drive - Sunrise Valley Drive to Sunset Hills Road						
Northbound	1	637	40	590	37	10
Southbound	1	585	40	553	27	5
Sunrise Valley Drive - West of Soapstone Drive						
Eastbound	2	1,210	40	1,174	29	7
Westbound	2	694	40	641	51	2
Sunrise Valley Drive - East of Soapstone Drive						
Eastbound	2	1,349	40	1,309	32	8
Westbound	2	775	40	715	57	3
Dulles Toll Road						
Eastbound Inside Lanes	2	2,435	56	2,350	85	0
Eastbound Outside Lanes	2	2,436	56	2,265	85	86
Westbound Inside Lanes	2	1,980	56	1,902	78	0
Westbound Outside Lanes	2	1,980	56	1,792	79	109
Dulles Access Road						
Eastbound	2	1,100	56	1,098	1	1
Westbound	2	1,032	56	1,030	1	1
Sunset Hills Road - West of Soapstone Drive						
Eastbound	2	1,256	40	1,114	117	25
Westbound	2	1,269	40	1,218	42	9
Sunset Hills Road - East of Soapstone Drive						
Eastbound	2	917	40	813	86	18
Westbound	2	925	40	888	30	7

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Appendix D Worst Noise Hour Determination Data

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Table D-1. Worst Noise Hour Determination Data - Existing (2015) Noise Levels

		Existing		
		EB	WB	200 ft
		Leq	Leq	Combined
Zone 1	6:00	58.7	54.6	60.1
	7:00	61.6	58.0	63.2
	8:00	62.1	60.1	64.2
Sunset Hills - West of Soapstone	9:00	61.1	60.1	63.6
	10:00	59.5	59.1	62.3
	11:00	59.9	60.6	63.3
	12:00	60.9	60.9	63.9
	13:00	60.5	59.8	63.2
	14:00	59.8	59.5	62.7
	15:00	60.1	60.3	63.2
	16:00	60.2	61.2	63.8
	17:00	61.2	61.2	64.2
	18:00			
	19:00	58.1	59.1	61.6
	20:00	56.4	56.9	59.7

		Existing		
		EB	WB	200 ft
		Leq	Leq	Combined
Zone 2	6:00	58.7	54.6	60.1
	7:00	61.6	58.0	63.2
	8:00	62.1	60.1	64.2
Sunset Hills - East of Soapstone	9:00	61.1	60.1	63.6
	10:00	59.5	59.1	62.3
	11:00	59.9	60.6	63.3
	12:00	60.9	60.9	63.9
	13:00	60.5	59.8	63.2
	14:00	59.8	59.5	62.7
	15:00	60.1	60.3	63.2
	16:00	60.2	61.2	63.8
	17:00	61.2	61.2	64.2
	18:00			
	19:00	58.1	59.1	61.6
	20:00	56.4	56.9	59.7

		Existing		
		WB		200 ft
		Leq		Combined
Zone 3	6:00	64.8		64.8
	7:00	66.0		66.0
	8:00	66.1		66.1
Dulles Toll Rd - Westbound	9:00	66.1		66.1
	10:00	66.0		66.0
	11:00	65.8		65.8
	12:00	66.2		66.2
	13:00	66.6		66.6
	14:00	67.0		67.0
	15:00	66.6		66.6
	16:00	66.0		66.0
	17:00	65.7		65.7
	18:00	66.0		66.0
	19:00	66.1		66.1
	20:00	65.3		65.3

		Existing		
		WB		200 ft
		Leq		Combined
Zone 4	6:00	54.4		54.4
	7:00	56.3		56.3
	8:00	57.7		57.7
Dulles Access Rd - Westbound	9:00	57.2		57.2
	10:00	55.8		55.9
	11:00	55.0		55.0
	12:00	55.1		55.1
	13:00	55.4		55.4
	14:00	56.1		56.1
	15:00	57.4		57.4
	16:00	58.3		58.3
	17:00	58.2		58.2
	18:00	57.4		57.4
	19:00	56.1		56.1
	20:00	54.3		54.3

Table D-1. Worst Noise Hour Determination Data - Existing (2015) Noise Levels (Cont'd)

		Existing		
		EB		200 ft
		Leq		Combined
Zone 5	6:00	56.7		56.7
	7:00	58.2		58.2
	8:00	57.4		57.4
Dulles Access Rd - Eastbound	9:00	57.3		57.3
	10:00	56.3		56.3
	11:00	55.6		55.6
	12:00	55.6		55.6
	13:00	55.3		55.3
	14:00	55.8		55.8
	15:00	56.4		56.4
	16:00	56.9		56.9
	17:00	57.3		57.3
	18:00	56.3		56.3
	19:00	54.9		54.9
	20:00	53.1		53.1

		Existing		
		EB		200 ft
		Leq		Combined
Zone 6	6:00	66.5		66.5
	7:00	66.2		66.2
	8:00	66.2		66.2
Dulles Toll Rd - Eastbound	9:00	66.5		66.5
	10:00	66.3		66.3
	11:00	66.3		66.3
	12:00	66.0		66.0
	13:00	65.8		65.8
	14:00	65.8		65.8
	15:00	65.9		65.9
	16:00	65.6		65.6
	17:00	65.6		65.6
	18:00	65.1		65.1
	19:00	64.6		64.6
	20:00	63.8		63.8

		Existing		
		EB	WB	200 ft
		Leq	Leq	Combined
Zone 7	6:00	57.8	55.9	60.0
	7:00	60.7	58.1	62.6
	8:00	61.4	59.0	63.4
Sunrise Valley West of Soapstone	9:00	60.4	58.6	62.6
	10:00	57.7	57.3	60.5
	11:00	57.4	57.9	60.7
	12:00	58.0	58.8	61.4
	13:00	58.0	58.4	61.2
	14:00	57.8	58.5	61.1
	15:00	57.8	59.9	62.0
	16:00	58.7	61.0	63.0
	17:00			
	18:00	57.7	61.0	62.7
	19:00	56.1	58.8	60.6
	20:00	54.1	57.2	58.9

		Existing		
		EB	WB	200 ft
		Leq	Leq	Combined
Zone 8	6:00	58.4	56.5	60.5
	7:00	61.2	58.7	63.2
	8:00			
Sunrise Valley - East of Soapstone	9:00	61.0	59.1	63.2
	10:00	58.2	57.9	61.1
	11:00	58.0	58.4	61.2
	12:00	58.5	59.4	62.0
	13:00	58.6	59.0	61.8
	14:00	58.3	59.0	61.7
	15:00	58.3	60.5	62.5
	16:00	59.3	61.6	63.6
	17:00			
	18:00	58.3	61.6	63.3
	19:00	56.6	59.3	61.2
	20:00	54.7	57.7	59.5

Table D-1. Worst Noise Hour Determination Data - Existing (2015) Noise Levels (Cont'd)

		Existing		
		NB	SB	200 ft
		Leq	Leq	Combined
Zone 9	6:00	54.7	52.8	56.9
	7:00	57.6	55.0	59.5
	8:00			
Soapstone Dr - South of Sunrise Valley	9:00	57.4	55.5	59.5
	10:00	54.6	54.2	57.4
	11:00	54.3	54.8	57.6
	12:00	54.9	55.7	58.3
	13:00	54.9	55.3	58.1
	14:00	54.7	55.4	58.0
	15:00	54.7	56.8	58.9
	16:00	55.6	57.9	59.9
	17:00			
	18:00	54.7	57.9	59.6
	19:00	53.0	55.7	57.5
	20:00	51.0	54.1	55.8

Table D-2. Worst Noise Hour Determination Data - Future (2046) Noise Levels

		Future		
		EB	WB	200 ft
		Leq	Leq	Combined
Zone 1	6:00	60.4	56.3	61.8
	7:00			
	8:00			
Sunset Hills - West of Soapstone	9:00	62.7	61.8	65.3
	10:00	61.2	60.8	64.0
	11:00			
	12:00			
	13:00	62.2	61.5	64.9
	14:00	61.5	61.2	64.4
	15:00			
	16:00			
	17:00			
	18:00			
	19:00	59.8	60.8	63.3
	20:00	58.1	58.6	61.4

		Future		
		EB	WB	200 ft
		Leq	Leq	Combined
Zone 2	6:00	59.0	54.9	60.5
	7:00	61.9	58.3	63.5
	8:00	62.4	60.5	64.5
Sunset Hills - East of Soapstone	9:00	61.4	60.4	63.9
	10:00	59.8	59.5	62.7
	11:00	60.2	61.0	63.6
	12:00	61.3	61.2	64.3
	13:00	60.9	60.1	63.5
	14:00	60.2	59.8	63.0
	15:00	60.4	60.6	63.5
	16:00	60.6	61.5	64.1
	17:00	61.5	61.6	64.6
	18:00	60.1	61.7	64.0
	19:00	58.4	59.4	61.9
	20:00	56.7	57.3	60.0

		Future		
		WB		200 ft
		Leq		Combined
Zone 3	6:00	66.1		66.1
	7:00	67.3		67.3
	8:00	67.4		67.4
Dulles Toll Rd - Westbound	9:00	67.4		67.4
	10:00	67.2		67.2
	11:00	67.1		67.1
	12:00	67.5		67.5
	13:00	67.9		67.9
	14:00	68.3		68.3
	15:00	67.9		67.9
	16:00	67.3		67.3
	17:00	67.0		67.0
	18:00	67.3		67.3
	19:00	67.4		67.4
	20:00	66.6		66.6

		Future		
		WB		200 ft
		Leq		Combined
Zone 4	6:00	57.6		57.6
	7:00	59.4		59.4
	8:00	60.8		60.8
Dulles Access Rd - Westbound	9:00	60.3		60.3
	10:00	59.0		59.0
	11:00	58.1		58.2
	12:00	58.2		58.2
	13:00	58.5		58.5
	14:00	59.3		59.3
	15:00	60.5		60.5
	16:00	61.5		61.5
	17:00	61.3		61.3
	18:00	60.5		60.6
	19:00	59.3		59.3
	20:00	57.4		57.4

Table D-2. Worst Noise Hour Determination Data - Future (2046) Noise Levels (Cont'd)

		Future		
		EB		200 ft
		Leq		Combined
Zone 5	6:00	59.9		59.9
	7:00	61.5		61.5
	8:00	60.7		60.7
Dulles Access Rd - Eastbound	9:00	60.6		60.6
	10:00	59.6		59.6
	11:00	58.9		58.9
	12:00	58.9		58.9
	13:00	58.6		58.6
	14:00	59.1		59.1
	15:00	59.7		59.7
	16:00	60.2		60.2
	17:00	60.6		60.6
	18:00	59.6		59.6
	19:00	58.2		58.2
	20:00	56.4		56.4

		Future		
		EB		200 ft
		Leq		Combined
Zone 6	6:00	67.9		67.9
	7:00	67.7		67.7
	8:00	67.7		67.7
Dulles Toll Rd - Eastbound	9:00	68.0		68.0
	10:00	67.7		67.7
	11:00	67.7		67.7
	12:00	67.5		67.5
	13:00	67.2		67.2
	14:00	67.3		67.3
	15:00	67.3		67.3
	16:00	67.1		67.1
	17:00	67.1		67.1
	18:00	66.6		66.6
	19:00	66.0		66.0
	20:00	65.2		65.2

		Future		
		EB	WB	200 ft
		Leq	Leq	Combined
Zone 7	6:00	58.8	56.9	61.0
	7:00	61.7	59.1	63.6
	8:00			
Sunrise Valley West of Soapstone	9:00	61.4	59.5	63.6
	10:00	58.6	58.3	61.5
	11:00	58.4	58.9	61.6
	12:00	59.0	59.8	62.4
	13:00	59.0	59.4	62.2
	14:00	58.7	59.5	62.1
	15:00	58.8	60.9	63.0
	16:00	59.7	62.0	64.0
	17:00			
	18:00			
	19:00	57.1	59.8	61.6
	20:00	55.1	58.1	59.9

		Future		
		EB	WB	200 ft
		Leq	Leq	Combined
Zone 8	6:00	59.3	57.4	61.4
	7:00	62.1	59.6	64.1
	8:00			
Sunrise Valley - East of Soapstone	9:00	61.9	60.0	64.1
	10:00	59.1	58.7	61.9
	11:00	58.9	59.3	62.1
	12:00	59.4	60.2	62.9
	13:00	59.5	59.8	62.7
	14:00	59.2	59.9	62.6
	15:00	59.2	61.3	63.4
	16:00			
	17:00			
	18:00			
	19:00	57.5	60.2	62.1
	20:00	55.6	58.6	60.4

Table D-2. Worst Noise Hour Determination Data - Future (2046) Noise Levels (Cont'd)

		Future		
		NB	SB	200 ft
		Leq	Leq	Combined
Zone 9	6:00	56.3	54.4	58.5
	7:00			
	8:00			
Soapstone Dr - South of Sunrise Valley	9:00			
	10:00	56.2	55.8	59.0
	11:00	55.9	56.4	59.2
	12:00	56.5	57.3	59.9
	13:00	56.5	56.9	59.7
	14:00	56.3	57.0	59.7
	15:00	56.3	58.4	60.5
	16:00			
	17:00			
	18:00			
	19:00	54.6	57.3	59.2
	20:00	52.7	55.7	57.4

		Future		
		NB	SB	200 ft
		Leq	Leq	Combined
Zone 10	6:00	57.1	55.6	59.4
	7:00			
	8:00			
Soapstone Dr - Sunset Hills to Sunrise Valley	9:00			
	10:00	57.7	57.2	60.5
	11:00	58.0	57.4	60.7
	12:00			
	13:00	57.8	58.4	61.1
	14:00	58.0	58.1	61.0
	15:00			
	16:00			
	17:00			
	18:00			
	19:00	56.9	57.9	60.4
	20:00	54.9	56.6	58.8

Table D-3. Worst Noise Hour Determination Data - Existing (2015) Noise Levels - Dulles Toll Roads / Access Roads Combined

		Existing			Existing			Existing			Existing			Existing Combined
Zone 3	6:00	64.8	Zone 4	6:00	54.4	Zone 5	6:00	56.7	Zone 6	6:00	66.5	Zones 3-6	6:00	69.2
	7:00	66.0		7:00	56.3		7:00	58.2		7:00	66.2		7:00	69.7
	8:00	66.1		8:00	57.7		8:00	57.4		8:00	66.2		8:00	69.7
Dulles Toll Rd - Westbound	9:00	66.1	Dulles Access Rd - Westbound	9:00	57.2	Dulles Access Rd - Eastbound	9:00	57.3	Dulles Toll Rd - Eastbound	9:00	66.5	Full Dulles Facility	9:00	69.8
	10:00	66.0		10:00	55.9		10:00	56.3		10:00	66.3		10:00	69.6
	11:00	65.8		11:00	55.0		11:00	55.6		11:00	66.3		11:00	69.4
	12:00	66.2		12:00	55.1		12:00	55.6		12:00	66.0		12:00	69.5
	13:00	66.6		13:00	55.4		13:00	55.3		13:00	65.8		13:00	69.6
	14:00	67.0		14:00	56.1		14:00	55.8		14:00	65.8		14:00	69.8
	15:00	66.6		15:00	57.4		15:00	56.4		15:00	65.9		15:00	69.8
	16:00	66.0		16:00	58.3		16:00	56.9		16:00	65.6		16:00	69.4
	17:00	65.7		17:00	58.2		17:00	57.3		17:00	65.6		17:00	69.3
	18:00	66.0		18:00	57.4		18:00	56.3		18:00	65.1		18:00	69.1
	19:00	66.1		19:00	56.1		19:00	54.9		19:00	64.6		19:00	68.8
	20:00	65.3		20:00	54.3		20:00	53.1		20:00	63.8		20:00	67.9

Table D-3. Worst Noise Hour Determination Data - Future (2046) Noise Levels - Dulles Toll Roads / Access Roads Combined

		Future			Future			Future			Future			Future Combined
Zone 3	6:00	66.1	Zone 4	6:00	57.6	Zone 5	6:00	59.9	Zone 6	6:00	67.9	Zones 3-6	6:00	70.7
	7:00	67.3		7:00	59.4		7:00	61.5		7:00	67.7		7:00	71.3
	8:00	67.4		8:00	60.8		8:00	60.7		8:00	67.7		8:00	71.4
Dulles Toll Rd - Westbound	9:00	67.4	Dulles Access Rd - Westbound	9:00	60.3	Dulles Access Rd - Eastbound	9:00	60.6	Dulles Toll Rd - Eastbound	9:00	68.0	Full Dulles Facility	9:00	71.4
	10:00	67.2		10:00	59.0		10:00	59.6		10:00	67.7		10:00	71.1
	11:00	67.1		11:00	58.2		11:00	58.9		11:00	67.7		11:00	71.0
	12:00	67.5		12:00	58.2		12:00	58.9		12:00	67.5		12:00	71.0
	13:00	67.9		13:00	58.5		13:00	58.6		13:00	67.2		13:00	71.1
	14:00	68.3		14:00	59.3		14:00	59.1		14:00	67.3		14:00	71.4
	15:00	67.9		15:00	60.5		15:00	59.7		15:00	67.3		15:00	71.3
	16:00	67.3		16:00	61.5		16:00	60.2		16:00	67.1		16:00	71.1
	17:00	67.0		17:00	61.3		17:00	60.6		17:00	67.1		17:00	71.0
	18:00	67.3		18:00	60.6		18:00	59.6		18:00	66.6		18:00	70.8
	19:00	67.4		19:00	59.3		19:00	58.2		19:00	66.0		19:00	70.4
	20:00	66.6		20:00	57.4		20:00	56.4		20:00	65.2		20:00	69.5

Appendix E Proposed Barrier Top of Wall Elevations

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Table E-1. Proposed Top of Barrier Elevations

Easting, ft	Northing, ft	Bottom of Barrier Elevation, ft	Top of Barrier Elevation[1], ft	Barrier Height, ft
Barrier A Eastbound Sunrise Valley Drive and Southbound Soapstone Drive				
11810552.0	7029689.5	427.5	439.5	12
11810572.0	7029666.0	428.0	440.0	12
11810584.0	7029644.0	428.0	440.0	12
11810594.0	7029626.5	428.5	440.5	12
11810651.0	7029575.5	428.0	440.0	12
11810696.0	7029535.5	428.0	440.0	12
11810698.0	7029478.0	430.0	442.0	12
11810698.0	7029478.0	430.0	440.0	10
11810667.0	7029433.0	432.0	442.0	10
11810620.0	7029357.0	432.0	442.0	10
Approximate Length: 414 ft				
Approximate Surface Area: 4,684 ft^2				
Barrier D Westbound Dulles Toll Road				
11810928.0	7031198.5	384.0	396.0	12
11810870.0	7031222.0	385.0	397.0	12
11810812.0	7031245.5	386.0	398.0	12
11810753.0	7031269.0	387.0	399.0	12
11810695.0	7031292.5	388.0	400.0	12
11810642.0	7031314.0	389.5	401.5	12
11810589.0	7031336.0	391.0	403.0	12
Approximate Length: 366 ft				
Approximate Surface Area: 4,392 ft^2				

Notes:

1 - Top of barrier elevations shall take precedence over specified barrier heights for desig and construction purposes.

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Appendix F Warranted, Feasible, and Reasonable Worksheets

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Warranted, Feasible, and Reasonable Worksheet

Note: the answers provided in the worksheet may differ between preliminary and final design. This worksheet is available in a protected digital format upon request.

Date:	03/02/2017
Project No. and UPC:	Fairfax County Project No.: 2G40-078
County:	Fairfax
Facility:	Soapstone Connector
Barrier System ID:	Barrier A
Noise Abatement Category(s)	Category B
Community Name and/or CNE#	CNE A

Design phase: ☑ Preliminary Design ☐ Final Design

Warranted

1. Community Documentation (if applicable)
   a. Date community was permitted. (Per 23CFR 772 this is the date the building permit was issued). NA
   b. Date of approval for the Categorical Exclusion (CE), Record of Decision (ROD), or Finding of No Significant Impact (FONSI): NA
   c. Does the date in 1.a precede the date in 1.b? If yes, proceed to Warranted Item 2. If no, consideration of noise abatement is not warranted. Proceed to "Decision" block and answer "no" to warranted question. As the reason for this decision, state that "Community was permitted after the date of approval of CE, ROD, or FONSI, as appropriate." ☐ Yes ☐ No

2. Criteria requiring consideration of noise abatement
   a. Project causes design year noise levels to approach or exceed the Noise Abatement Criteria? ☑ Yes ☐ No
   b. Project causes a substantial noise increase of 10 dBA or more? ☐ Yes ☑ No

Feasibility

1. Impacted receptor units
   a. Number of impacted receptor units: 6
   b. Number of impacted receptor units receiving 5 dBA or more insertion loss (IL): 6
   c. Percentage of impacted receptor units receiving 5 dB(A) or more IL 100%
   d. Is the percentage 50 or greater? ☑ Yes ☐ No

2 Will placement of the noise barrier cause engineering or safety conflicts, e.g. drainage or site distance issues? ☐ Yes ☑ No

3 Will placement of the noise barrier restrict access to vehicular or pedestrian travel? ☐ Yes ☑ No

4 Will placement of the noise barrier conflict with existing utility locations? ☐ Yes ☑ No

Reasonableness

1. Cost-Benefit Factors
   a. Surface Area (Total square foot) of the proposed noise barrier. (ft²) — 4,684 ft²
   b. Impacted noise sensitive receptor(s) receiving 5 dB(A) IL or more. — 6
   c. Non-impacted noise sensitive receptor(s) receiving 5 dB(A) IL or more. — 2
   d. Total number of benefited receptors. — 8
   e. Surface Area per benefited receptor unit. (ft²/BR) — 586 ft²/BR
   f. Is (1e) less than or equal to the maximum square feet per benefited receptor (MaxSF/BR) value of 1600? — Yes
   g. Does the barrier provide an IL of at least 7 dB(A) for at least one impacted receptor in the design year? — Yes

2. Community Desires Related to the Barrier
   a. Do at least 50 percent of the benefited receptor unit owner(s) and renters desire the noise barrier? If yes, continue to "decision" block. If no, the barrier can be considered not to be reasonable. Proceed to "decision" block and answer "no" to reasonableness question. As the reason for this decision, state that "The majority of the impacted receptor unit owners do not desire the barrier." ☐ Yes ☐ No

3. Additional Noise Barrier Details
   a. Length of the proposed noise barrier — 414 ft
   b Height range of the proposed noise barrier — 10 - 12 ft
   c. Average height of the proposed noise barrier — 11 ft
   d Cost per square foot. ($/ft²) — $42 / ft²
   e. Total Barrier Cost ($) — $196,728
   f. Additional comments (if applicable)
   g. Barrier material — ☐ Absorptive ☐ Reflective

Decision

Is the Noise Barrier(s) WARRANTED?	☑ Yes	☐ No
Is the Noise Barrier(s) FEASIBLE?	☑ Yes	☐ No
Is the Noise Barrier(s) REASONABLE?	☐ Yes	☐ No

Additional Reasons for Decision: Barrier is reasonable based on cost effectiveness and achieving the design goal; however, viewpoints of the benefited receptors is not known at this time.

Warranted, Feasible, and Reasonable Worksheet

Note: the answers provided in the worksheet may differ between preliminary and final design. This worksheet is available in a protected digital format upon request.

Date:	03/02/2017
Project No. and UPC:	Fairfax County Project No.: 2G40-078
County:	Fairfax
Facility:	Soapstone Connector
Barrier System ID:	Barrier D
Noise Abatement Category(s)	Category C
Community Name and/or CNE#	CNE D

Design phase: ☑ Preliminary Design ☐ Final Design

Warranted

1. Community Documentation (if applicable)
   a. Date community was permitted. (Per 23CFR 772 this is the date the building permit was issued). NA
   b. Date of approval for the Categorical Exclusion (CE), Record of Decision (ROD), or Finding of No Significant Impact (FONSI): NA
   c. Does the date in 1.a precede the date in 1.b? If yes, proceed to Warranted Item 2. If no, consideration of noise abatement is not warranted. Proceed to "Decision" block and answer "no" to warranted question. As the reason for this decision, state that "Community was permitted after the date of approval of CE, ROD, or FONSI, as appropriate." ☐ Yes ☐ No

2. Criteria requiring consideration of noise abatement
   a. Project causes design year noise levels to approach or exceed the Noise Abatement Criteria? ☑ Yes ☐ No
   b. Project causes a substantial noise increase of 10 dBA or more? ☐ Yes ☑ No

Feasibility

1. Impacted receptor units
   a. Number of impacted receptor units: 1
   b. Number of impacted receptor units receiving 5 dBA or more insertion loss (IL): 1
   c. Percentage of impacted receptor units receiving 5 dB(A) or more IL 100%
   d. Is the percentage 50 or greater? ☑ Yes ☐ No

2 Will placement of the noise barrier cause engineering or safety conflicts, e.g. drainage or site distance issues? ☐ Yes ☑ No

3 Will placement of the noise barrier restrict access to vehicular or pedestrian travel? ☐ Yes ☑ No

4 Will placement of the noise barrier conflict with existing utility locations? ☐ Yes ☑ No

Reasonableness

1. Cost-Benefit Factors
   a. Surface Area (Total square foot) of the proposed noise barrier. (ft²) — 4,392 ft²
   b. Impacted noise sensitive receptor(s) receiving 5 dB(A) IL or more. — 1
   c. Non-impacted noise sensitive receptor(s) receiving 5 dB(A) IL or more. — 0
   d. Total number of benefited receptors. — 1
   e. Surface Area per benefited receptor unit. (ft²/BR) — 4,392 ft²/BR
   f. Is (1e) less than or equal to the maximum square feet per benefited receptor (MaxSF/BR) value of 1600? — No
   g. Does the barrier provide an IL of at least 7 dB(A) for at least one impacted receptor in the design year? — Yes

2. Community Desires Related to the Barrier
   a. Do at least 50 percent of the benefited receptor unit owner(s) and renters desire the noise barrier? If yes, continue to "decision" block. If no, the barrier can be considered not to be reasonable. Proceed to "decision" block and answer "no" to reasonableness question. As the reason for this decision, state that "The majority of the impacted receptor unit owners do not desire the barrier." ☐ Yes ☐ No

3. Additional Noise Barrier Details
   a. Length of the proposed noise barrier — 366 ft
   b Height range of the proposed noise barrier — 12 ft
   c. Average height of the proposed noise barrier — 12 ft
   d Cost per square foot. ($/ft²) — $42 / ft²
   e. Total Barrier Cost ($) — $184,464
   f. Additional comments (if applicable)
   g. Barrier material — ☐ Absorptive ☐ Reflective

Decision

Is the Noise Barrier(s) WARRANTED?	☑ Yes	☐ No
Is the Noise Barrier(s) FEASIBLE?	☑ Yes	☐ No
Is the Noise Barrier(s) REASONABLE?	☐ Yes	■ No

Additional Reasons for Decision: Barrier is not reasonable based on cost effectiveness.