MIT3 East of 3 Springs Interchange

Receptor	14ft x 626ft				
324	1	<3	0		
68	1	3.5			
69	1	5.1	5.1		
74	1	5.6	5.6		a
C75	1	5.1	5.1		
75d	1	5.1	5.1		
75a	1	4.5			
75b	1	4.2			
75c	1	4.2		20.9	
70	6	6	36		
71	4	<3	0		b
72	3	7.2	21.6		
73	2	3.5		57.6	

Wall Ht	Wall Lengt	Unit Cost	Decibel Re	CBI	
12	900	45	*		a
12	900	45	57.6	$8,438	b
12	590	45	*		

*Could not achieve7 dBA minimum at 1 receptor

2011 Guidelines

MIT3 East of 3 Springs Interchange

Receptor	14ft x 626ft			
324	1	<3	0	
68	1	3.5	3.5	
69	1	5.1	5.1	
74	1	5.6	5.6	
C75	1	5.1	5.1	
75d	1	5.1	5.1	
75a	1	4.5	4.5	
75b	1	4.2	4.2	
75c	1	4.2	4.2	37.3
70	6	6	36	
71	4	<3	0	
72	3	7.2	21.6	
73	2	3.5	7	64.6

a

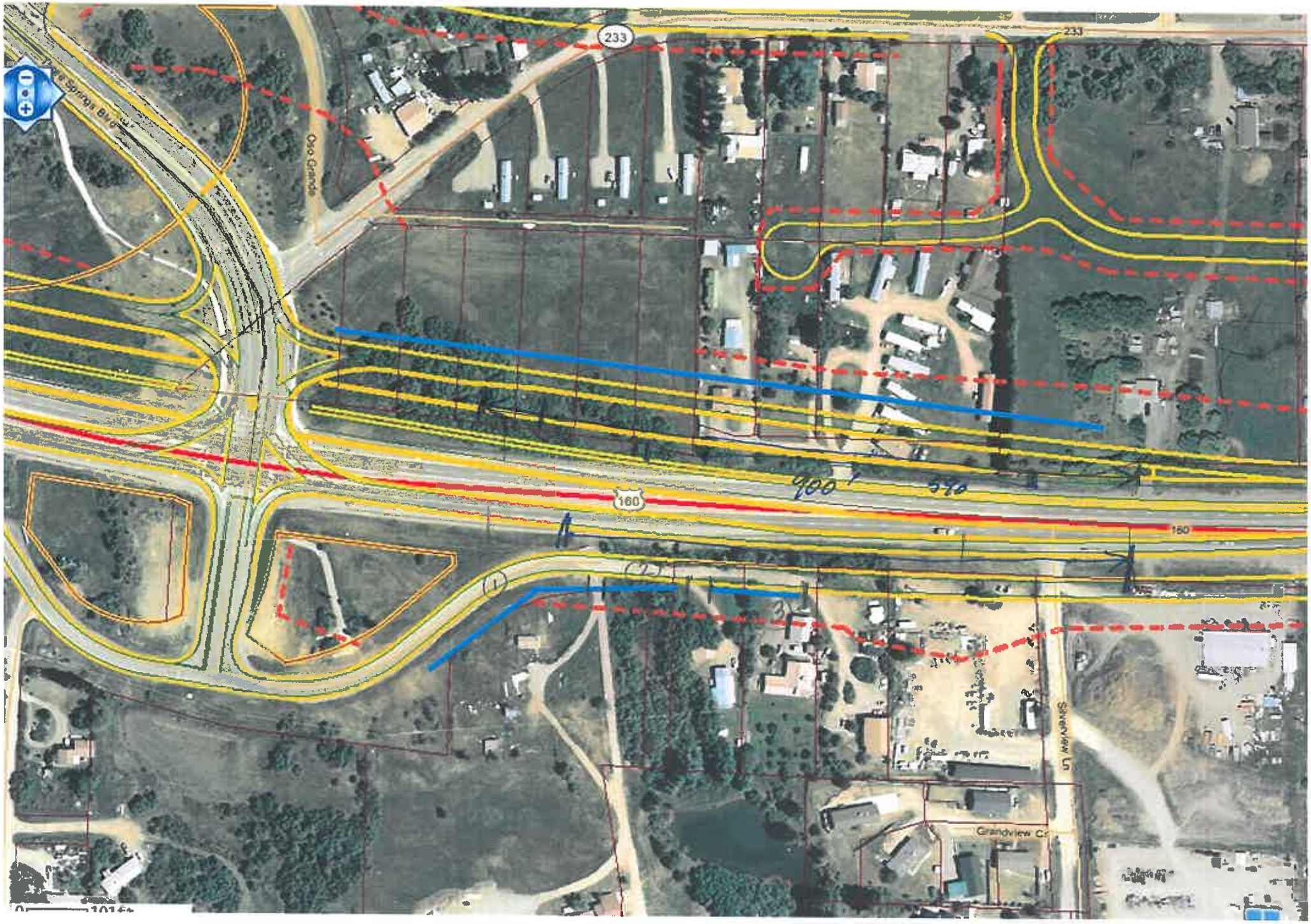
b

Wall Ht	Wall Lengt	Unit Cost	Decibel Re	CBI	
12	900	30	37.3	$8,686	a
12	900	30	64.6	$5,015	b
12	590	30	*		

*Could not achieve 5 dBA minimum at 1 receptor

2002 Guidelines

ran various locations - along Frontage rd - not feas
along ramps - not feas
along US 160 - not meet CBI


233
233
Oso Grande
160
160
400'
370
Sandview Ln
Grandview Cir

CDOT filename: SEISModG
jts 110509 2030traffic 4f reeval;220count

9 May 2011
TNM 2.5
Calculated with TNM 2.5

feasible but doesn't pass CBI
MIT a $8686
MIT b $5015

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Supplemental EIS US160/550 Grandview
RUN: MIT3a and b along US160 12ft
BARRIER DESIGN: INPUT HEIGHTS

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
65	93	1	65.2	64.8	66	-0.4	10	----	64.8	0.0	5	-5.0
70	96	6	65.9	59.9	66	-6.0	10	----	59.9	0.0	5	-5.0
71	97	4	66.3	63.7	66	-2.6	10	----	63.7	0.0	5	-5.0
72	121	3	69.2	62.0	66	-7.2	10	----	62.0	0.0	5	-5.0
73	122	2	63.1	59.6	66	-3.5	10	----	59.6	0.0	5	-5.0
74	123	1	68.7	63.1	66	-5.6	10	----	63.1	0.0	5	-5.0
C75	124	1	66.1	61.0	71	-5.1	10	----	61.0	0.0	5	-5.0
C79	125	1	65.9	64.9	71	-1.0	10	----	64.9	0.0	5	-5.0
81	126	2	69.3	69.2	66	-0.1	10	Snd Lvl	69.2	0.0	5	-5.0
82	127	1	70.4	70.4	66	0.0	10	Snd Lvl	70.4	0.0	5	-5.0
C116	141	1	64.5	64.2	71	-0.3	10	----	64.2	0.0	5	-5.0
C121	145	1	64.0	63.5	71	-0.5	10	----	63.5	0.0	5	-5.0
312	161	1	61.7	61.4	66	-0.3	10	----	61.4	0.0	5	-5.0
324	168	1	67.0	64.8	66	-2.2	10	----	64.8	0.0	5	-5.0
C326	169	1	61.1	60.1	71	-1.0	10	----	60.1	0.0	5	-5.0
312a	177	1	61.6	61.1	66	-0.5	10	----	61.1	0.0	5	-5.0
C325	178	1	62.5	60.8	71	-1.7	10	----	60.8	0.0	5	-5.0
68	179	1	71.2	67.7	66	-3.5	10	Snd Lvl	67.7	0.0	5	-5.0
69	180	1	71.1	66.0	66	-5.1	10	Snd Lvl	66.0	0.0	5	-5.0
75d	181	1	66.1	61.0	66	-5.1	10	----	61.0	0.0	5	-5.0
75a	182	1	65.0	60.5	66	-4.5	10	----	60.5	0.0	5	-5.0
75b	183	1	64.5	60.3	66	-4.2	10	----	60.3	0.0	5	-5.0
75c	184	1	64.9	60.7	66	-4.2	10	----	60.7	0.0	5	-5.0

81a	193	1	64.4	64.0	66	-0.4	10	---	64.0	0.0	5	-5.0
81b	194	1	61.9	61.5	66	-0.4	10	---	61.5	0.0	5	-5.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	37	0.0	0.0	0.0
All Impacted	5	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

CDOT filename: SEISModG
jts 110509 2030traffic 4f reeval;220coun

9 May 2011
TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Supplemental EIS US160/550 Grandview
RUN: MIT3a and b along US160 12ft

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	#Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier3	W	0.00	99.99	0.00				0.00	point12	12	2,322,680.0	1,213,531.0	6,706.00	20.00	0.00	0	0		
									point13	13	2,322,879.8	1,213,497.0	6,710.00	20.00	0.00	0	0		
									point14	14	2,323,017.8	1,213,469.6	6,719.00	20.00	0.00	0	0		
									point15	15	2,323,148.0	1,213,436.0	6,722.00	15.00	0.00	0	0		
									point16	16	2,323,280.5	1,213,397.9	6,725.00	15.00	0.00	0	0		
									point17	17	2,323,429.8	1,213,348.9	6,755.00	10.00	0.00	0	0		
									point18	18	2,323,575.0	1,213,296.2	6,755.00	10.00					
MIT3a along US160	W	0.00	99.99	0.00				0.00	point39	39	2,325,679.2	1,212,837.6	6,794.00	12.00	0.00	0	0		
									point40	40	2,326,000.5	1,212,792.9	6,796.00	12.00	0.00	0	0		
									point43	43	2,326,155.0	1,212,777.4	6,800.00	12.00	0.00	0	0		
									point41	41	2,326,391.8	1,212,756.2	6,814.00	12.00	0.00	0	0		
									point44	44	2,326,645.2	1,212,751.8	6,830.00	12.00	0.00	0	0		
									point42	42	2,326,764.2	1,212,751.1	6,837.00	12.00					
MIT3b along US160	W	0.00	99.99	0.00				0.00	point45	45	2,325,712.2	1,212,986.2	6,794.00	12.00	0.00	0	0		
									point46	46	2,326,016.5	1,212,961.2	6,795.00	12.00	0.00	0	0		
									point47	47	2,326,154.8	1,212,943.8	6,799.00	12.00	0.00	0	0		
									point48	48	2,326,400.0	1,212,920.6	6,824.00	12.00	0.00	0	0		
									point49	49	2,326,633.8	1,212,907.9	6,832.00	12.00	0.00	0	0		
									point50	50	2,326,789.2	1,212,897.5	6,841.00	12.00					

insufficient reduction
not feasible

CDOT filename: SEISModG
jts 110509 2030traffic 4f reeval;220count

9 May 2011
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Supplemental EIS US160/550 Grandview
RUN: MIT3 b along US160 12ft x 590ft
BARRIER DESIGN: INPUT HEIGHTS

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
65	93	1	65.2	65.1	66	-0.1	10	----	65.1	0.0	5	-5.0
70	96	6	65.9	62.9	66	-3.0	10	----	62.9	0.0	5	-5.0
71	97	4	66.3	66.1	66	-0.2	10	Snd Lvl	66.1	0.0	5	-5.0
72	121	3	69.2	65.4	66	-3.8	10	----	65.4	0.0	5	-5.0
73	122	2	63.1	61.2	66	-1.9	10	----	61.2	0.0	5	-5.0
74	123	1	68.7	68.7	66	0.0	10	Snd Lvl	68.7	0.0	5	-5.0
C75	124	1	66.1	66.1	71	0.0	10	----	66.1	0.0	5	-5.0
C79	125	1	65.9	65.8	71	-0.1	10	----	65.8	0.0	5	-5.0
81	126	2	69.3	69.2	66	-0.1	10	Snd Lvl	69.2	0.0	5	-5.0
82	127	1	70.4	70.4	66	0.0	10	Snd Lvl	70.4	0.0	5	-5.0
C116	141	1	64.5	64.2	71	-0.3	10	----	64.2	0.0	5	-5.0
C121	145	1	64.0	63.8	71	-0.2	10	----	63.8	0.0	5	-5.0
312	161	1	61.7	61.7	66	0.0	10	----	61.7	0.0	5	-5.0
324	168	1	67.0	66.9	66	-0.1	10	Snd Lvl	66.9	0.0	5	-5.0
C326	169	1	61.1	61.0	71	-0.1	10	----	61.0	0.0	5	-5.0
312a	177	1	61.6	61.5	66	-0.1	10	----	61.5	0.0	5	-5.0
C325	178	1	62.5	62.4	71	-0.1	10	----	62.4	0.0	5	-5.0
68	179	1	71.2	71.2	66	0.0	10	Snd Lvl	71.2	0.0	5	-5.0
69	180	1	71.1	71.1	66	0.0	10	Snd Lvl	71.1	0.0	5	-5.0
75d	181	1	66.1	66.0	66	-0.1	10	Snd Lvl	66.0	0.0	5	-5.0
75a	182	1	65.0	65.0	66	0.0	10	----	65.0	0.0	5	-5.0
75b	183	1	64.5	64.4	66	-0.1	10	----	64.4	0.0	5	-5.0
75c	184	1	64.9	64.8	66	-0.1	10	----	64.8	0.0	5	-5.0

81a	193	1	64.4	64.1	66	-0.3	10	---	64.1	0.0	5	-5.0
81b	194	1	61.9	61.6	66	-0.3	10	---	61.6	0.0	5	-5.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	37	0.0	0.0	0.0
All Impacted	12	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

CDOT filename: SEISModG
jts 110509 2030traffic 4f reeval;220coun

9 May 2011
TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Supplemental EIS US160/550 Grandview
RUN: MIT3 b along US160 12ft x 590ft

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	Top Width	Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	#Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier3	W	0.00	99.99	0.00				0.00	point12	12	2,322,680.0	1,213,531.0	6,706.00	20.00	0.00	0	0		
									point13	13	2,322,879.8	1,213,497.0	6,710.00	20.00	0.00	0	0		
									point14	14	2,323,017.8	1,213,469.6	6,719.00	20.00	0.00	0	0		
									point15	15	2,323,148.0	1,213,436.0	6,722.00	15.00	0.00	0	0		
									point16	16	2,323,280.5	1,213,397.9	6,725.00	15.00	0.00	0	0		
									point17	17	2,323,429.8	1,213,348.9	6,755.00	10.00	0.00	0	0		
									point18	18	2,323,575.0	1,213,296.2	6,755.00	10.00					
MIT3b along US160	W	0.00	99.99	0.00				0.00	point47	47	2,326,154.8	1,212,943.8	6,799.00	12.00	0.00	0	0		
									point48	48	2,326,400.0	1,212,920.6	6,824.00	12.00	0.00	0	0		
									point49	49	2,326,633.8	1,212,907.9	6,832.00	12.00	0.00	0	0		
									point50	50	2,326,744.5	1,212,899.9	6,841.00	12.00					

RESULTS: SOUND LEVELS

Supplemental EIS US160/550 Grandview

CDOT filename: SEISModG
jts 110509 2030traffic 4f reeval;220count

9 May 2011
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: Supplemental EIS US160/550 Grandview
RUN: MIT3a frontage, b ramp 16ft
BARRIER DESIGN: INPUT HEIGHTS

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Barr @ 20 Ft too not sufficient reduction Not feasible

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
65	93	1	65.2	65.1	66	-0.1	10	----	65.1	0.0	5	-5.0
70	96	6	65.9	63.3	66	-2.6	10	----	63.3	0.0	5	-5.0
71	97	4	66.3	63.6	66	-2.7	10	----	63.6	0.0	5	-5.0
72	121	3	69.2	66.1	66	-3.1	10	Snd Lvl	66.1	0.0	5	-5.0
73	122	2	63.1	62.5	66	-0.6	10	----	62.5	0.0	5	-5.0
74	123	1	68.7	68.2	66	-0.5	10	Snd Lvl	68.2	0.0	5	-5.0
C75	124	1	66.1	65.6	71	-0.5	10	----	65.6	0.0	5	-5.0
C79	125	1	65.9	65.8	71	-0.1	10	----	65.8	0.0	5	-5.0
81	126	2	69.3	69.2	66	-0.1	10	Snd Lvl	69.2	0.0	5	-5.0
82	127	1	70.4	70.4	66	0.0	10	Snd Lvl	70.4	0.0	5	-5.0
C116	141	1	64.5	64.4	71	-0.1	10	----	64.4	0.0	5	-5.0
C121	145	1	64.0	63.5	71	-0.5	10	----	63.5	0.0	5	-5.0
312	161	1	61.7	61.7	66	0.0	10	----	61.7	0.0	5	-5.0
324	168	1	67.0	65.2	66	-1.8	10	----	65.2	0.0	5	-5.0
C326	169	1	61.1	60.7	71	-0.4	10	----	60.7	0.0	5	-5.0
312a	177	1	61.6	61.4	66	-0.2	10	----	61.4	0.0	5	-5.0
C325	178	1	62.5	61.7	71	-0.8	10	----	61.7	0.0	5	-5.0
68	179	1	71.2	71.1	66	-0.1	10	Snd Lvl	71.1	0.0	5	-5.0
69	180	1	71.1	71.0	66	-0.1	10	Snd Lvl	71.0	0.0	5	-5.0
75d	181	1	66.1	65.2	66	-0.9	10	----	65.2	0.0	5	-5.0
75a	182	1	65.0	64.2	66	-0.8	10	----	64.2	0.0	5	-5.0
75b	183	1	64.5	63.8	66	-0.7	10	----	63.8	0.0	5	-5.0
75c	184	1	64.9	64.4	66	-0.5	10	----	64.4	0.0	5	-5.0

81a	193	1	64.4	64.4	66	0.0	10	---	64.4	0.0	5	-5.0
81b	194	1	61.9	62.0	66	0.1	10	---	62.0	0.0	5	--5.0

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	37	0.0	0.0	0.0
All Impacted	9	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

CDOT filename: SEISModG
jts 110509 2030traffic 4f reeval;220coun

9 May 2011
TNM 2.5

INPUT: BARRIERS
PROJECT/CONTRACT: Supplemental EIS US160/550 Grandview
RUN: MIT3a frontage, b ramp 16ft

Barrier Name	Type	Height Min	Height Max	If Wall $ per Unit Area	If Berm $ per Unit Vol.	If Berm Top Width	If Berm Run:Rise	Add'tnl $ per Unit Length	Points Name	No.	Coordinates (bottom) X	Y	Z	Height at Point	Segment Seg Ht Increment	Perturbs #Up	Perturbs #Dn	On Struct?	Important Reflections?
		ft	ft	$/sq ft	$/cu yd	ft	ft:ft	$/ft			ft	ft	ft	ft	ft				
Barrier3	W	0.00	99.99	0.00				0.00	point12	12	2,322,680.0	1,213,531.0	6,706.00	20.00	0.00	0	0		
									point13	13	2,322,879.8	1,213,497.0	6,710.00	20.00	0.00	0	0		
									point14	14	2,323,017.8	1,213,469.6	6,719.00	20.00	0.00	0	0		
									point15	15	2,323,148.0	1,213,436.0	6,722.00	15.00	0.00	0	0		
									point16	16	2,323,280.5	1,213,397.9	6,725.00	15.00	0.00	0	0		
									point17	17	2,323,429.8	1,213,348.9	6,755.00	10.00	0.00	0	0		
									point18	18	2,323,575.0	1,213,296.2	6,755.00	10.00					
MIT3a wall1 along service road	W	0.00	99.99	0.00				0.00	point23	23	2,325,651.8	1,212,608.9	6,796.00	20.00	0.00	0	0		
									point24	24	2,325,747.2	1,212,683.6	6,793.00	20.00	0.00	0	0		
									point25	25	2,325,859.5	1,212,692.0	6,790.00	20.00					
MIT3a Wall-2 along service rd	W	0.00	99.99	0.00				0.00	point31	31	2,325,892.5	1,212,690.0	6,790.00	20.00	0.00	0	0		
									point26	26	2,325,934.2	1,212,689.9	6,789.00	20.00	0.00	0	0		
									point27	27	2,326,004.8	1,212,687.8	6,788.00	20.00					
MIT3a wall 3 along service rd	W	0.00	99.99	0.00				0.00	point32	32	2,326,036.0	1,212,685.8	6,790.00	20.00	0.00	0	0		
									point28	28	2,326,094.2	1,212,681.5	6,791.00	20.00	0.00	0	0		
									point29	29	2,326,152.5	1,212,679.5	6,792.00	20.00	0.00	0	0		
									point30	30	2,326,200.0	1,212,677.4	6,793.00	20.00					
MIT3b along ramp	W	0.00	99.99	0.00				0.00	point33	33	2,325,450.0	1,213,103.5	6,770.00	20.00	0.00	0	0		
									point34	34	2,325,576.8	1,213,082.8	6,774.00	20.00	0.00	0	0		
									point35	35	2,325,766.0	1,213,055.6	6,779.00	20.00	0.00	0	0		
									point36	36	2,326,061.0	1,213,009.9	6,787.00	20.00	0.00	0	0		
									point37	37	2,326,354.0	1,212,972.5	6,797.00	20.00	0.00	0	0		
									point38	38	2,326,661.5	1,212,941.4	6,808.00	20.00					

MIT4

	Receptor	12ft			
MIT4a	83	1	8.1	8.1	
	84	1	8.1	8.1	
	86	1	7.7	7.7	23.9
MIT4b2-4	85	1	<3	0	
	87	1	7.3	7.3	
	88	1	4.9		
	92	2	<3	0	7.3

	Wall Ht	Wall Lengt	Unit Cost	Decibel Re	CBI
MIT4a	12	1110	45	23.9	$25,079
MIT4b2-4	12	475	45	7.3	$35,137
MIT4b1	12	585	45	*	

*Could not achieve 7 dBA minimum at 1 receptor

2011 Guidelines