





Build - SC6 to Longs Pond		Sheet 1 of 1	2 Sep 2015
Barrier View-Wall South Brook		ICA Engineering	
Run name: Wall South Brook		Project/Contract No. I-20 Widening	
Scale: <DNA - due to perspective>		TNM Version 2.5, Feb 2004	
		Analysis By: Will Kerr/Wayne Hall	
Roadway:	—————>	Ground Zone:	polygon
Receiver:	□	Tree Zone:	dashed polygon
Barrier:	┤—————>	Contour Zone:	polygon
Building Row:	—— ———	Parallel Barrier:	=====
Terrain Line:	—————	Skew Section:	—— ———>

**RESULTS: SOUND LEVELS**
**I-20 Widening**

ICA Engineering							2 September 2015						
Will Kerr/Wayne Hall							TNM 2.5						
							Calculated with TNM 2.5						
RESULTS: SOUND LEVELS													
PROJECT/CONTRACT:			I-20 Widening										
RUN:			Build - SC6 to Longs Pond										
BARRIER DESIGN:			INPUT HEIGHTS					Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.					
ATMOSPHERICS:			68 deg F, 50% RH										
Receiver													
Name		No.	#DUs	Existing	No Barrier			With Barrier					
			LAeq1h	LAeq1h		Increase over	existing	Type Impact	Calculated LAeq1h	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n			Calculated	Calculated	Goal	Calculated minus Goal
							Sub'l Inc						
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB	
Receiver1	1	1	73.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver2	2	1	61.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver3	3	1	62.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver4	4	1	67.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver5	5	1	62.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver7	7	1	70.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver8	8	1	63.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver9	9	1	63.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver10	10	1	65.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver11	11	1	61.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver12	12	1	64.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver13	13	1	63.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver14	14	1	71.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver15	15	1	65.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver16	16	1	67.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver17	17	1	65.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver18	18	1	63.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver19	19	1	71.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver20	20	1	64.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0	
Receiver21	21	1	63.0	62.4	66	-0.6	15	----	56.0	6.4	8	-1.6	
Receiver22	22	1	63.0	63.6	66	0.6	15	----	56.4	7.2	8	-0.8	
Receiver23	23	1	63.0	64.3	66	1.3	15	----	56.7	7.6	8	-0.4	
Receiver24	24	1	63.0	65.2	66	2.2	15	----	57.0	8.2	8	0.2	
Receiver25	25	1	64.0	66.0	66	2.0	15	Snd Lvl	57.4	8.6	8	0.6	

**RESULTS: SOUND LEVELS**
**I-20 Widening**

Receiver26	26	1	64.0	66.3	66	2.3	15	Snd Lvl	57.5	8.8	8	0.8
Receiver27	27	1	64.0	66.4	66	2.4	15	Snd Lvl	57.9	8.5	8	0.5
Receiver28	28	1	64.0	66.7	66	2.7	15	Snd Lvl	58.3	8.4	8	0.4
Receiver29	29	1	65.0	67.2	66	2.2	15	Snd Lvl	58.5	8.7	8	0.7
Receiver30	30	1	67.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver31	31	1	67.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver32	32	1	67.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver33	33	1	66.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver34	34	1	69.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver35	35	1	66.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver36	36	1	67.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver37	37	1	64.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver39	39	1	73.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver40	40	1	71.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver41	41	1	70.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver42	42	1	75.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver43	43	1	68.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver44	44	1	74.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver45	45	1	70.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver46	46	1	64.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver47	47	1	74.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver48	48	1	66.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver49	49	1	74.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver50	50	1	66.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver52	52	1	65.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver53	53	1	69.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver54	54	1	71.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver56	56	1	74.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver58	58	1	73.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver60	60	1	73.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver61	61	1	71.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver62	62	1	69.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver63	63	1	70.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver65	65	1	68.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver67	67	1	67.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver68	68	1	65.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver70	70	1	67.0	0.0	66	0.0	15	inactive	0.0	0.0	8	0.0
Receiver221	221	1	69.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver222	222	1	68.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver223	223	1	68.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver224	224	1	67.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0

**RESULTS: SOUND LEVELS**
**I-20 Widening**

Receiver225	225	1	66.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver226	226	1	66.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver227	227	1	66.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver228	228	1	65.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver229	229	1	64.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver230	230	1	64.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver231	231	1	62.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver232	232	1	68.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver233	233	1	65.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver234	234	1	63.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver235	235	1	66.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver236	236	1	65.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver237	237	1	65.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver238	238	1	65.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver239	239	1	63.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver240	240	1	63.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver241	241	1	62.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver242	242	1	62.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver243	243	1	62.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver244	244	1	61.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver245	245	1	61.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver246	246	1	60.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver247	247	1	59.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver248	248	1	59.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver249	249	1	59.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver250	250	1	61.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver251	251	1	62.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver252	252	1	64.0	0.0	66	0.0	10	inactive	0.0	0.0	8	0.0
Receiver286	254	1	60.0	69.3	66	9.3	10	Snd Lvl	59.8	9.5	8	1.5
Receiver287	255	1	67.0	69.7	66	2.7	10	Snd Lvl	60.2	9.5	8	1.5
Receiver288	256	1	68.0	70.9	66	2.9	10	Snd Lvl	61.0	9.9	8	1.9
Receiver289	257	1	69.0	71.6	66	2.6	10	Snd Lvl	61.6	10.0	8	2.0
Receiver290	258	1	70.0	72.2	66	2.2	10	Snd Lvl	62.3	9.9	8	1.9
Receiver291	259	1	70.0	72.1	66	2.1	10	Snd Lvl	62.2	9.9	8	1.9
Receiver292	260	1	67.0	69.7	66	2.7	10	Snd Lvl	60.9	8.8	8	0.8
Receiver293	261	1	66.0	68.2	66	2.2	10	Snd Lvl	60.2	8.0	8	0.0
<b>Dwelling Units</b>			<b># DUs Noise Reduction</b>									
			<b>Min</b>	<b>Avg</b>	<b>Max</b>							
			<b>dB</b>	<b>dB</b>	<b>dB</b>							
All Selected		101	0.0	1.5	10.0							
All Impacted		13	8.0	9.1	10.0							

RESULTS: SOUND LEVELS

I-20 Widening

All that meet NR Goal		13	8.2	9.1	10.0						
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## INPUT: BARRIERS

## I-20 Widening

ICA Engineering				2 September 2015															
Will Kerr/Wayne Hall				TNM 2.5															
INPUT: BARRIERS																			
PROJECT/CONTRACT:				I-20 Widening															
RUN:				Build - SC6 to Longs Pond															
Barrier								Points											
Name	Type	Height		If Wall	If Berm			Add'tnl	Name	No.	Coordinates (bottom)			Height	Segment				
		Min	Max	\$ per	\$ per	Top	Run:Rise	\$ per			X	Y	Z	at	Seg Ht	Perturbs	On	Important	
				Unit	Unit	Width		Unit						Point	Incre-	#Up	#Dn	Struct?	Reflec-
				Area	Vol.			Length							ment				tions?
		ft	ft	\$/sq ft	\$/cu yd	ft	ft:ft	\$/ft			ft	ft	ft	ft	ft				
Barrier1	W	0.00	99.99	0.00				0.00	point1	1	1,912,156.5	761,094.9	435.00	25.00	2.00	0	7		
									point2	2	1,912,201.1	761,200.7	435.00	25.00	2.00	0	7		
									point3	3	1,912,250.4	761,287.6	435.00	25.00	2.00	0	7		
									point4	4	1,912,304.5	761,386.2	435.00	25.00	2.00	0	7		
									point5	5	1,912,353.8	761,470.9	435.00	25.00	2.00	0	7		
									point6	6	1,912,400.8	761,555.4	431.00	25.00	2.00	0	7		
									point7	7	1,912,443.1	761,632.9	431.00	25.00	2.00	0	7		
									point8	8	1,912,485.4	761,705.8	431.00	25.00	2.00	0	7		
									point9	9	1,912,537.0	761,792.7	430.00	25.00	2.00	0	7		
									point10	10	1,912,579.4	761,874.9	430.00	25.00	2.00	0	7		
									point11	11	1,912,608.0	761,926.2	430.00	25.00	2.00	0	7		
									point12	12	1,912,662.0	762,013.1	430.00	25.00	2.00	0	7		
									point13	13	1,912,706.6	762,078.9	430.00	25.00	2.00	0	7		
									point14	14	1,912,746.6	762,135.2	431.00	25.00	2.00	0	7		
									point15	15	1,912,784.2	762,182.2	432.00	25.00	2.00	0	7		
									point16	16	1,912,843.0	762,241.0	433.00	25.00	2.00	0	7		
									point17	17	1,912,908.8	762,297.4	434.00	25.00	2.00	0	7		
									point18	18	1,912,953.0	762,329.1	435.00	25.00	2.00	0	7		
									point25	25	1,913,029.5	762,383.8	438.10	25.00	2.00	0	7		
									point19	19	1,913,106.1	762,438.3	438.40	25.00	2.00	0	7		
									point20	20	1,913,186.0	762,494.7	438.40	25.00	2.00	0	7		
									point21	21	1,913,270.5	762,553.4	438.40	25.00	2.00	0	7		
									point22	22	1,913,352.8	762,609.8	438.10	25.00	2.00	0	7		
									point23	23	1,913,432.6	762,661.5	437.50	25.00	2.00	0	7		
									point24	24	1,913,519.5	762,724.9	436.80	25.00					

**RESULTS: BARRIER DESCRIPTIONS**
**I-20 Widening**

ICA Engineeriing				2 September 2015						
Will Kerr/Wayne Hall				TNM 2.5						
RESULTS: BARRIER DESCRIPTIONS										
PROJECT/CONTRACT:	I-20 Widening									
RUN:	Build - SC6 to Longs Pond									
BARRIER DESIGN:	INPUT HEIGHTS									
Barriers										
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	\$
Barrier1	W	25.00	25.00	25.00	2173	54329				0
									Total Cost:	0

**RESULTS: BARRIER-SEGMENT DESCRIPTIONS**
**I-20 Widening**

ICA Engineering												
Will Kerr/Wayne Hall												

2 September 2015

TNM 2.5

**RESULTS: BARRIER-SEGMENT DESCRIPTIONS**
**PROJECT/CONTRACT:**

I-20 Widening

**RUN:**

Build - SC6 to Longs Pond

**BARRIER DESIGN:**

INPUT HEIGHTS

Barriers		Segments											
Name	Type	Name	No.	Heights	Average	Second Point	Length	If Wall	Area	On Struc?	Important Reflections?	If Berm Volume	Cost
				First Point									
				ft	ft	ft	ft	sq ft				cu yd	\$
Barrier1	W	point1	1	25.00	25.00	25.00	115	2870					0
		point2	2	25.00	25.00	25.00	100	2498					0
		point3	3	25.00	25.00	25.00	113	2813					0
		point4	4	25.00	25.00	25.00	98	2448					0
		point5	5	25.00	25.00	25.00	97	2419					0
		point6	6	25.00	25.00	25.00	88	2208					0
		point7	7	25.00	25.00	25.00	84	2105					0
		point8	8	25.00	25.00	25.00	101	2528					0
		point9	9	25.00	25.00	25.00	93	2313					0
		point10	10	25.00	25.00	25.00	59	1468					0
		point11	11	25.00	25.00	25.00	102	2557					0
		point12	12	25.00	25.00	25.00	80	1988					0
		point13	13	25.00	25.00	25.00	69	1728					0
		point14	14	25.00	25.00	25.00	60	1505					0
		point15	15	25.00	25.00	25.00	83	2077					0
		point16	16	25.00	25.00	25.00	87	2165					0
		point17	17	25.00	25.00	25.00	54	1362					0
		point18	18	25.00	25.00	25.00	94	2350					0
		point25	25	25.00	25.00	25.00	94	2352					0
		point19	19	25.00	25.00	25.00	98	2444					0
		point20	20	25.00	25.00	25.00	103	2573					0
		point21	21	25.00	25.00	25.00	100	2493					0
		point22	22	25.00	25.00	25.00	95	2378					0
		point23	23	25.00	25.00	25.00	108	2689					0