

Appendix I—Noise Technical Report

Part 3



Appendix B—Alternative 1 Noise Barrier Worksheets

(continued)



	<i>Bate.</i> Jul 3, 2		-	
Project Name	Carolina Crossroads			
Highway Traff	fic Noise Abatement Measure No	oise Barrier I1		
<u>Feasibility</u>				
Number of Imp	pacted Receivers 3	Number of Ber	nefited Receivers	3
Percentage of Innoise abatemen	mpacted Receivers that would achiev t measure	ve a 5 dBA reduction from	the proposed	100
NOTE:SCDOT	Is the proposed noise abatement measure acoustically feasible? NOTE:SCDOT Policy indicates that 75% of the impacted receivers must achieve at least a 5 dBA reduction for it to be acoustically feasible.			
Would	any of the following issues limit the	ability of the abatement n	neasure to achiev	re the noise reduction goal?
	Topography	Yes	× No	
	Safety	Yes	× No	
	Drainage	☐ Yes	× No	
	Utilities	Yes	× No	
	Maintenance	☐ Yes	× No	
	Access	Yes	× No	
	Exposed Height of Wall	Yes	× No	
	If "Yes" was marked for a	any of the questions ab	ove, please exp	plain below.
Detailed Description				

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal				
Number of Benefited Receivers 3		Number of Benefited Receivers that achieve at least an 8 dBA reduction	3	
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.				
Does the proposed noise abatement mea	sure meet the noise reduct	ion design goal? X Yes No		
If "Yes" is marked, cont	inue to #2. If "No" is mark	xed, then abatement is determined NOT to be re	easonable.	
#2: Cost Effectiveness				
Estimated cost per square foot for noise abatement measure	35	Estimated construction cost for noise abatement measure	1,403,465	
Estimated cost per Benefited Receiver	467,822			
Based on the SCDOT policy of \$30,000 per Benefited Receiver, would the abatement measure be reasonable? NOTE: SCDOT Policy states that the preliminary noise analysis is based on \$35.00 per square foot and a more project-specific construction cost should be applied at a cost per square foot basis during the detailed noise abatement evaluation.				
If "Yes" is marked, continue to $\#3$. If "No" is marked, then abatement is determined NOT to be reasonable.				
#3: Viewpoints of the property ov	wners and residents of	the benefitted receivers		
Number of Benefited Receivers (same	as above)			
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement meas	ure	
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measure	e	
Number of Benefited Receivers that di respond to solicitation on noise abaten measure		Percentage of Benefited Receivers to did not respond to solicitation on n abatement measure		
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.				
Barrier wall is 2,006 feet in width by 20 fee	et in height.			
Based on the above results from the preliminary analysis, this abatement feature is feasible but not reasonable.				



Jul 12, 2018

Date:

Project Name	Carolina Crossroads				
Highway Traff	ic Noise Abatement Measure	Noise Barrier I2			
<u>Feasibility</u>					
Number of Impa	acted Receivers 36	Number of E	Benefited Receivers	36	
Percentage of Innoise abatement	npacted Receivers that would act measure	chieve a 5 dBA reduction fro	om the proposed	100	
NOTE:SCDOT	noise abatement measure acoust Policy indicates that 75% of the a 5 dBA reduction for it to be ac	impacted receivers must	× Yes	□ No	
Would	any of the following issues limit	t the ability of the abatement	t measure to achieve	the noise reduction goal?	
	Topography	Yes	× No		
	Safety	Yes	× No		
	Drainage	Yes	× No		
	Utilities	Yes	× No		
	Maintenance	Yes	× No		
	Access	Yes	× No		
	Exposed Height of W	'all Yes	× No		
	If "Yes" was marked f	or any of the questions a	above, please expl	ain below.	
Detailed Description					

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal			
Number of Benefited Receivers 36		Number of Benefited Receivers that achieve at least an 8 dBA reduction	
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.			
Does the proposed noise abatement measure If "Yes" is marked, continue		action design goal? Yes No arked, then abatement is determined NOT to be reasonable.	
#2: Cost Effectiveness			
Estimated cost per square foot for noise abatement measure		Estimated construction cost for noise abatement measure	
Estimated cost per Benefited Receiver			
NOTE: SCDOT Policy states that the preliminar	y noise analysis is bas	r, would the abatement measure be reasonable? sed on \$35.00 per square foot and a more project- sis during the detailed noise abatement evaluation. Yes No	
If "Yes" is marked, continue	to #3. If "No" is m	arked, then abatement is determined NOT to be reasonable.	
#3: Viewpoints of the property owne	ers and residents	of the benefitted receivers	
Number of Benefited Receivers (same as al	pove)		
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement measure	
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measure	
Number of Benefited Receivers that did no respond to solicitation on noise abatement measure	ot	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure	
Based on the viewpoints of the property own abatement measure be reasonable? NOTE: constructed unless greater than 50% of the b	SCDOT Policy ind	icates that the noise abatement shall be Yes No	
Barrier wall is 2,404 feet in width by 25 feet in	height.		
Based on the above results from the preliminary	y analysis, this abate	ement feature is feasible but not reasonable.	



Project Name Carc	lina Crossroads				
Highway Traffic Noi	ise Abatement Measure	Noise Barri	er I3		
<u>Feasibility</u>					
Number of Impacted	Receivers 115		Number of Ben	efited Receiv	ers 115
Percentage of Impactor noise abatement measurement	ed Receivers that would accure	chieve a 5 dBA	reduction from	the proposed	100
NOTE:SCDOT Policy	abatement measure acoustindicates that 75% of the A reduction for it to be account to the account of the accoun	impacted receiv		× Yes	□ No
Would any of	the following issues limit	the ability of the	ne abatement m	easure to achi	ieve the noise reduction g
	Topography		Yes	× No	
	Safety		Yes	× No	
	Drainage		Yes	× No	
	Utilities		Yes	× No	
	Maintenance		Yes	× No	
	Access		Yes	× No	
	Exposed Height of W	'all	Yes	× No	
]	f "Yes" was marked f	or any of the	questions abo	ove, please e	explain below.
Description					

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal	
Number of Benefited Receivers 115	Number of Benefited Receivers that achieve at least an 8 dBA reduction 81
Percentage of Benefited Receivers in the first two building ro the proposed noise abatement measure. NOTE: SCDOT Pol first two building rows must achieve at least a 8 dBA reduction	licy indicates that 80% of the benefited receivers in the 88
Does the proposed noise abatement measure meet the noise re	eduction design goal? X Yes No
If "Yes" is marked, continue to #2. If "No" is	marked, then abatement is determined NOT to be reasonable.
#2: Cost Effectiveness	
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 2,801,015
Estimated cost per Benefited Receiver 24,357	
Based on the SCDOT policy of \$30,000 per Benefited Receiv NOTE: SCDOT Policy states that the preliminary noise analysis is be specific construction cost should be applied at a cost per square foot	pased on \$35.00 per square foot and a more project-
If "Yes" is marked, continue to #3. If "No" is	marked, then abatement is determined NOT to be reasonable.
#3: Viewpoints of the property owners and resident	s of the benefitted receivers
Number of Benefited Receivers (same as above)	
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure
Based on the viewpoints of the property owners and residents abatement measure be reasonable? NOTE: SCDOT Policy ir constructed unless greater than 50% of the benefited receptors	ndicates that the noise abatement shall be Yes No
Barrier wall is 4,003 feet in width by 20 feet in height.	
Based on the above results from the preliminary analysis, this aba	atement feature is feasible and reasonable.
Barrier subject to change based on the detailed noise analysis.	



Date: Jul 3,	2018		
Project Name Carolina Crossroads			
Highway Traffic Noise Abatement Measure	oise Barrier J2		
<u>Feasibility</u>			
Number of Impacted Receivers 292	Number of Benefited	Receivers	254
Percentage of Impacted Receivers that would achie noise abatement measure	ve a 5 dBA reduction from the p	roposed	86
Is the proposed noise abatement measure acoustically feasible? NOTE:SCDOT Policy indicates that 75% of the impacted receivers must achieve at least a 5 dBA reduction for it to be acoustically feasible.			
Would any of the following issues limit the	e ability of the abatement measur	e to achieve	the noise reduction goal?
Topography	□ Yes ×	No	
Safety	Yes	No	
Drainage	Yes X	No	
Utilities	Yes	No	
Maintenance	\square Yes	No	
Access	Yes	No	
Exposed Height of Wall	Yes	No	
If "Yes" was marked for	any of the questions above,	olease expla	ain below.
Detailed Description			
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According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When

completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.

Page 1 of 2

Reasonableness



#1: Noise Reduction Design Goal	
Number of Benefited Receivers 254	Number of Benefited Receivers that achieve at least an 8 dBA reduction
Percentage of Benefited Receivers in the first two building ro the proposed noise abatement measure. NOTE: SCDOT Po- first two building rows must achieve at least a 8 dBA reducti	licy indicates that 80% of the benefited receivers in the 92
Does the proposed noise abatement measure meet the noise re	eduction design goal? X Yes No
If "Yes" is marked, continue to #2. If "No" is	marked, then abatement is determined NOT to be reasonable.
#2: Cost Effectiveness	
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 1,685,600
Estimated cost per Benefited Receiver 6,636	
Based on the SCDOT policy of \$30,000 per Benefited Receiv NOTE: SCDOT Policy states that the preliminary noise analysis is specific construction cost should be applied at a cost per square foot	pased on \$35.00 per square foot and a more project-
If "Yes" is marked, continue to #3. If "No" is	marked, then abatement is determined NOT to be reasonable.
#3: Viewpoints of the property owners and resident	s of the benefitted receivers
Number of Benefited Receivers (same as above)	
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure
Based on the viewpoints of the property owners and residents abatement measure be reasonable? NOTE: SCDOT Policy in constructed unless greater than 50% of the benefited receptor.	ndicates that the noise abatement shall be Yes No
Barrier wall is 3,210 feet in width by 15 feet in height.	
Based on the above results from the preliminary analysis, this ab	atement feature is feasible and reasonable.
Barrier subject to change based on the detailed noise analysis.	



Jul 3, 2018

Date:

	N. D. C.		
Highway Traffic Noise Abatement Measure	Noise Barrier K1		
<u>Feasibility</u>			
Number of Impacted Receivers 238	Number of Benefited Receivers 296		
Percentage of Impacted Receivers that would achieve a 5 dBA reduction from the proposed noise abatement measure			
Is the proposed noise abatement measure acoun NOTE: SCDOT Policy indicates that 75% of the achieve at least a 5 dBA reduction for it to be a	e impacted receivers must Yes No		
•	nit the ability of the abatement measure to achieve the noise reduction goal? Yes No		
Topography Safety	$\begin{array}{c cc} & Yes & \times & N_0 \\ \hline & Yes & \times & N_0 \end{array}$		
Drainage	Yes No		
Utilities	□ Yes ⊠ No		
Maintenance	□ Yes ⊠ No		
Access	Yes No		
Exposed Height of			
If "Yes" was marked	for any of the questions above, please explain below.		
tailed Description			
aned Description			

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal				
Number of Benefited Receivers 296		Number of Benefited Receivers that achieve at least an 8 dBA reduction	12.51	
the proposed noise abatement measure. NOTI	Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.			
Does the proposed noise abatement measure m	eet the noise reduc	etion design goal? X Yes No		
If "Yes" is marked, continue to	#2. If "No" is mar	ked, then abatement is determined NOT to be r	easonable.	
#2: Cost Effectiveness				
Estimated cost per square foot for noise abatement measure		Estimated construction cost for noise abatement measure	4,146,170	
Estimated cost per Benefited Receiver 14,00°	7			
Based on the SCDOT policy of \$30,000 per Benefited Receiver, would the abatement measure be reasonable? NOTE: SCDOT Policy states that the preliminary noise analysis is based on \$35.00 per square foot and a more project-specific construction cost should be applied at a cost per square foot basis during the detailed noise abatement evaluation.				
If "Yes" is marked, continue to	If "Yes" is marked, continue to $\#3$. If "No" is marked, then abatement is determined NOT to be reasonable.			
#3: Viewpoints of the property owners	and residents o	f the benefitted receivers		
Number of Benefited Receivers (same as above	e)			
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement mea	sure	
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measu	re	
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure		Percentage of Benefited Receivers did not respond to solicitation on abatement measure		
Based on the viewpoints of the property owner abatement measure be reasonable? NOTE: SC constructed unless greater than 50% of the benefit	DOT Policy indic	ates that the noise abatement shall be	Yes No	
Barrier wall is 4,742 feet in width by 25 feet in her	ght.			
Based on the above results from the preliminary at	nalysis, this abaten	nent feature is feasible and reasonable.		
Barrier subject to change based on the detailed noi	se analysis.			



Date: Jul 3, 201			
Project Name Carolina Crossroads			
Highway Traffic Noise Abatement Measure Nois	se Barrier K1		
Feasibility			
Number of Impacted Receivers 234	Number of Benefited Receivers	292	
Percentage of Impacted Receivers that would achieve noise abatement measure	a 5 dBA reduction from the proposed	100	
Is the proposed noise abatement measure acoustically feasible? NOTE:SCDOT Policy indicates that 75% of the impacted receivers must achieve at least a 5 dBA reduction for it to be acoustically feasible.			
Would any of the following issues limit the ab	pility of the abatement measure to achieve	e the noise reduction goal?	
Topography	\square Yes \bowtie No		
Safety	Yes No		
Drainage	Yes No		
Utilities	Yes No		
Maintenance	Yes No		
Access	Yes No		
Exposed Height of Wall	Yes X No		
If "Yes" was marked for any	y of the questions above, please exp	lain below.	
Detailed Description			
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Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal				
Number of Benefited Receivers 292	Number of Benefited Receivers that achieve at least an 8 dBA reduction			
Percentage of Benefited Receivers in the first two building rethe proposed noise abatement measure. NOTE: SCDOT Pofirst two building rows must achieve at least a 8 dBA reduct	licy indicates that 80% of the benefited receivers in the 83			
Does the proposed noise abatement measure meet the noise reduction design goal? Yes No				
If "Yes" is marked, continue to #2. If "No" is	marked, then abatement is determined NOT to be reasonable.			
#2: Cost Effectiveness				
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 4,146,170			
Estimated cost per Benefited Receiver 14,119				
Based on the SCDOT policy of \$30,000 per Benefited Receiv NOTE: SCDOT Policy states that the preliminary noise analysis is specific construction cost should be applied at a cost per square fool	based on \$35.00 per square foot and a more project-			
If "Yes" is marked, continue to $\#3$. If "No" is marked, then abatement is determined NOT to be reasonable.				
#3: Viewpoints of the property owners and residen	ts of the benefitted receivers			
Number of Benefited Receivers (same as above)				
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure			
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure			
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure			
Based on the viewpoints of the property owners and residents abatement measure be reasonable? NOTE: SCDOT Policy is constructed unless greater than 50% of the benefited receptor	ndicates that the noise abatement shall be Yes No			
Barrier wall is 4,742 feet in width by 25 feet in height.				
Based on the above results from the preliminary analysis, this ab	atement feature is feasible and reasonable.			
Barrier subject to change based on the detailed noise analysis.				



	Date. Jul 3	5, 2018	_	
Project Name	Carolina Crossroads			
Highway Traff	ic Noise Abatement Measure	Barrier L1/L2		
<u>Feasibility</u>				
Number of Imp	acted Receivers 5	Number of Be	enefited Receiver	s 4
Percentage of Innoise abatemen	mpacted Receivers that would ach t measure	ieve a 5 dBA reduction from	n the proposed	60
NOTE:SCDOT	noise abatement measure acoustic Policy indicates that 75% of the in a 5 dBA reduction for it to be acou	mpacted receivers must	☐ Yes	⊠ No
Would	any of the following issues limit t	he ability of the abatement	measure to achiev	we the noise reduction goal?
	Topography	Yes	× No	
	Safety	Yes	× No	
	Drainage	Yes	× No	
	Utilities	Yes	× No	
	Maintenance	Yes	× No	
	Access	Yes	× No	
	Exposed Height of Wa	II Yes	× No	
	If "Yes" was marked fo	r any of the questions al	bove, please ex	plain below.
Detailed Description				

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal		
Number of Benefited Receivers		Number of Benefited Receivers that achieve at least an 8 dBA reduction
	NOTE: SCDOT Polic	s that would achieve at least a 8 dBA reduction from by indicates that 80% of the benefited receivers in the for it to be reasonable.
Does the proposed noise abatement meas		uction design goal? Yes No arked, then abatement is determined NOT to be reasonable.
#2: Cost Effectiveness		
Estimated cost per square foot for noise abatement measure		Estimated construction cost for noise abatement measure
Estimated cost per Benefited Receiver		
NOTE: SCDOT Policy states that the prelim:	inary noise analysis is bas	r, would the abatement measure be reasonable? Seed on \$35.00 per square foot and a more projectasis during the detailed noise abatement evaluation.
If "Yes" is marked, contin	nue to #3. If "No" is m	arked, then abatement is determined NOT to be reasonable.
#3: Viewpoints of the property ow	ners and residents	of the benefitted receivers
Number of Benefited Receivers (same a	s above)	
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement measure
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measure
Number of Benefited Receivers that did respond to solicitation on noise abatement measure		Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure
Based on the viewpoints of the property abatement measure be reasonable? NOT constructed unless greater than 50% of the	E: SCDOT Policy ind	icates that the noise abatement shall be Yes No
Barrier wall is 2,054 feet in width by 25 feet	in height.	
Based on the above results from the prelimin	nary analysis, this abate	ement feature is not feasible.



Date: Jul 3, 2	2018		
Project Name Carolina Crossroads			
Highway Traffic Noise Abatement Measure	arrier Q1		
<u>Feasibility</u>			
Number of Impacted Receivers 157	Number of Benefit	ed Receivers	213
Percentage of Impacted Receivers that would achieve noise abatement measure	ve a 5 dBA reduction from the	proposed	100
Is the proposed noise abatement measure acousticall NOTE:SCDOT Policy indicates that 75% of the impachieve at least a 5 dBA reduction for it to be acoust	acted receivers must	Yes	□ No
Would any of the following issues limit the	ability of the abatement measurement	ire to achieve	the noise reduction goal?
Topography	Yes	110	
Safety	Yes		
Drainage	Yes	No	
Utilities	Yes	No	
Maintenance	☐ Yes ×	No	
Access	Yes	No	
Exposed Height of Wall	Yes	No	
If "Yes" was marked for a	any of the questions above	please exp	lain below.
Detailed Description			

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal				
Number of Benefited Receivers 213		Number of Benefited Receivers that achieve at least an 8 dBA reduction		
the proposed noise abatement measure. NOT	Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.			
Does the proposed noise abatement measure r	meet the noise reduc	tion design goal? X Yes No		
If "Yes" is marked, continue to	o#2. If "No" is mar	rked, then abatement is determined NOT to be reasonable.		
#2: Cost Effectiveness				
Estimated cost per square foot for noise abatement measure		Estimated construction cost for noise abatement measure 3,731,665		
Estimated cost per Benefited Receiver 17,52	20			
Based on the SCDOT policy of \$30,000 per B NOTE: SCDOT Policy states that the preliminary specific construction cost should be applied at a co	noise analysis is based	d on \$35.00 per square foot and a more project-		
If "Yes" is marked, continue to	If "Yes" is marked, continue to $\#3$. If "No" is marked, then abatement is determined NOT to be reasonable.			
#3: Viewpoints of the property owners	s and residents of	f the benefitted receivers		
Number of Benefited Receivers (same as abo	ve)			
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement measure		
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measure		
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure		Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure		
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.				
Barrier wall is 5,327 feet in width by 20 feet in height.				
Based on the above results from the preliminary analysis, this abatement feature is feasible and reasonable.				
Barrier subject to change based on the detailed noise analysis.				



Jul 3, 2018

Date:

Project Name	Carolina Crossroads			
Highway Traff	ic Noise Abatement Measure	Noise Barrier T1		
<u>Feasibility</u>				
Number of Impa	acted Receivers 45	Number of B	enefited Receivers	59
Percentage of Innoise abatement	mpacted Receivers that would achi	eve a 5 dBA reduction from	m the proposed	98
NOTE:SCDOT	noise abatement measure acoustica Policy indicates that 75% of the in a 5 dBA reduction for it to be acou	npacted receivers must	× Yes	□ No
Would	any of the following issues limit th	ne ability of the abatement	measure to achieve	the noise reduction goal?
	Topography	☐ Yes	× No	
	Safety	□ Yes	× No	
	Drainage	Yes	× No	
	Utilities	Yes	× No	
	Maintenance	☐ Yes	× No	
	Access	Yes	× No	
	Exposed Height of Wal	1 Yes	× No	
	If "Yes" was marked for	any of the questions a	bove, please expl	lain below.
Detailed Description				
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Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal	
Number of Benefited Receivers 59	Number of Benefited Receivers that achieve at least an 8 dBA reduction
Percentage of Benefited Receivers in the first two building ro the proposed noise abatement measure. NOTE: SCDOT Pol first two building rows must achieve at least a 8 dBA reduction	icy indicates that 80% of the benefited receivers in the
Does the proposed noise abatement measure meet the noise re	duction design goal? X Yes No
If "Yes" is marked, continue to #2. If "No" is i	marked, then abatement is determined NOT to be reasonable.
#2: Cost Effectiveness	
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 3,998,225
Estimated cost per Benefited Receiver 67,767	
Based on the SCDOT policy of \$30,000 per Benefited Receive NOTE: SCDOT Policy states that the preliminary noise analysis is be specific construction cost should be applied at a cost per square foot	ased on \$35.00 per square foot and a more project-
If "Yes" is marked, continue to #3. If "No" is i	marked, then abatement is determined NOT to be reasonable.
#3: Viewpoints of the property owners and residents Number of Benefited Receivers (same as above)	s of the benefitted receivers
(4	
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure
Based on the viewpoints of the property owners and residents abatement measure be reasonable? NOTE: SCDOT Policy in constructed unless greater than 50% of the benefited receptors	dicates that the noise abatement shall be Yes No
Barrier wall is 4,569 feet in width by 25 feet in height.	
Based on the above results from the preliminary analysis, this aba	atement feature is feasible but not reasonable.



Date: Jul 3, 2018		_	
Project Name Carolina Crossroads			
Highway Traffic Noise Abatement Measure Noise	Barrier U1		
<u>Feasibility</u>			
Number of Impacted Receivers 14	Number of l	Benefited Receiver	rs 15
Percentage of Impacted Receivers that would achieve a solution to the solution of the solution	5 dBA reduction fr	om the proposed	71
Is the proposed noise abatement measure acoustically feasible? NOTE:SCDOT Policy indicates that 75% of the impacted receivers must achieve at least a 5 dBA reduction for it to be acoustically feasible.			
Would any of the following issues limit the abili	ty of the abatemen	nt measure to achie	ve the noise reduction goal?
Topography	Yes	× No	
Safety	Yes	× No	
Drainage	Yes	× No	
Utilities	Yes	× No	
Maintenance	Yes	× No	
Access	Yes	× No	
Exposed Height of Wall	Yes	× No	
If "Yes" was marked for any o	of the questions	above, please ex	plain below.
tailed Description			

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal				
Number of Benefited Receivers		Number of Benefited Receivers that achieve at least an 8 dBA reduction		
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.				
Does the proposed noise abatement meas If "Yes" is marked, conting		duction design goal? Yes No narked, then abatement is determined NOT to be reasonable.		
#2: Cost Effectiveness				
Estimated cost per square foot for noise abatement measure		Estimated construction cost for noise abatement measure		
Estimated cost per Benefited Receiver				
NOTE: SCDOT Policy states that the prelim	nary noise analysis is ba	rr, would the abatement measure be reasonable? used on \$35.00 per square foot and a more projectassis during the detailed noise abatement evaluation.		
If "Yes" is marked, conti	nue to #3. If "No" is n	narked, then abatement is determined NOT to be reasonable.		
#3: Viewpoints of the property ow	mers and residents	of the benefitted receivers		
Number of Benefited Receivers (same a	s above)			
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement measure		
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measure		
Number of Benefited Receivers that did respond to solicitation on noise abatem measure		Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure		
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.				
Barrier wall is 2,833 feet in width by 25 feet in height.				
Based on the above results from the preliminary analysis, this abatement feature is not feasible.				



Jul 3, 2018

Date:

Project Name	Carolina Crossroads			
Highway Traff	ic Noise Abatement Measure	oise Barrier V1-V2		
<u>Feasibility</u>				
Number of Impa	acted Receivers 32	Number of Ber	nefited Receivers	46
Percentage of In noise abatement	npacted Receivers that would achie t measure	ve a 5 dBA reduction from	the proposed	100
NOTE:SCDOT	noise abatement measure acoustical Policy indicates that 75% of the impa 5 dBA reduction for it to be acous	pacted receivers must	× Yes	□ No
Would	any of the following issues limit the	e ability of the abatement n	neasure to achieve	the noise reduction goal?
	Topography	Yes	× No	
	Safety	Yes	× No	
	Drainage	Yes	× No	
	Utilities	Yes	× No	
	Maintenance	Yes	× No	
	Access	Yes	× No	
	Exposed Height of Wall	Yes	× No	
	If "Yes" was marked for	any of the questions ab	ove, please expl	ain below.
Detailed Description				

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal			
Number of Benefited Receivers 46		Number of Benefited Receivers that achieve at least an 8 dBA reduction	30
	NOTE: SCDOT Policy i	that would achieve at least a 8 dBA reduction from the indicates that 80% of the benefited receivers in the reasonable.	
Does the proposed noise abatement measurement	ure meet the noise reduct	tion design goal? Yes X No	
If "Yes" is marked, contin	ue to #2. If "No" is mari	ked, then abatement is determined NOT to be re	asonable.
#2: Cost Effectiveness			
Estimated cost per square foot for noise abatement measure		Estimated construction cost for noise abatement measure	
Estimated cost per Benefited Receiver			
NOTE: SCDOT Policy states that the prelimit	nary noise analysis is based	yould the abatement measure be reasonable? on \$35.00 per square foot and a more project-sturing the detailed noise abatement evaluation.	Yes X No
If "Yes" is marked, contin	ue to #3. If "No" is mari	ked, then abatement is determined NOT to be re	asonable.
#3: Viewpoints of the property ow	ners and residents of	the benefitted receivers	
Number of Benefited Receivers (same as	above)		
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement measurement	ure
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measure	e
Number of Benefited Receivers that did respond to solicitation on noise abateme measure		Percentage of Benefited Receivers the did not respond to solicitation on no abatement measure	
Based on the viewpoints of the property of abatement measure be reasonable? NOTI constructed unless greater than 50% of the	E: SCDOT Policy indica	ates that the noise abatement shall be	Yes No
Barrier wall is 2,916 feet in width by 25 feet	in height.		
Based on the above results from the prelimin	ary analysis, this abatem	ent feature is feasible but not reasonable.	



Jul 3, 2018

Date:

Project Name	Carolina Crossroads			
Highway Traff	ic Noise Abatement Measure	oise Barrier X2		
<u>Feasibility</u>				
Number of Impa	acted Receivers 62	Number of Ben	efited Receivers	71
Percentage of Ir noise abatement	npacted Receivers that would achieve measure	ve a 5 dBA reduction from	the proposed	100
NOTE:SCDOT I	oise abatement measure acoustically Policy indicates that 75% of the imp 5 dBA reduction for it to be acoust	acted receivers must	× Yes	□ No
Would a	any of the following issues limit the	ability of the abatement m	easure to achieve	the noise reduction goal?
	Topography	Yes	× No	
	Safety	Yes	× No	
	Drainage	Yes	× No	
	Utilities	Yes	× No	
	Maintenance	☐ Yes	× No	
	Access	Yes	× No	
	Exposed Height of Wall	Yes	× No	
	If "Yes" was marked for a	any of the questions abo	ove, please expl	lain below.
Detailed Description				

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal	
Number of Benefited Receivers 63	Number of Benefited Receivers that achieve at least an 8 dBA reduction 63
Percentage of Benefited Receivers in the first two building rothe proposed noise abatement measure. NOTE: SCDOT Pofirst two building rows must achieve at least a 8 dBA reduction	licy indicates that 80% of the benefited receivers in the
Does the proposed noise abatement measure meet the noise re	
If "Yes" is marked, continue to #2. If "No" is	marked, then abatement is determined NOT to be reasonable.
#2: Cost Effectiveness	
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 4,795,280
Estimated cost per Benefited Receiver 67,539	
Based on the SCDOT policy of \$30,000 per Benefited Receiv NOTE: SCDOT Policy states that the preliminary noise analysis is specific construction cost should be applied at a cost per square foot	pased on \$35.00 per square foot and a more project-
If "Yes" is marked, continue to #3. If "No" is	marked, then abatement is determined NOT to be reasonable.
#3: Viewpoints of the property owners and resident	s of the benefitted receivers
Number of Benefited Receivers (same as above)	
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure
Based on the viewpoints of the property owners and residents abatement measure be reasonable? NOTE: SCDOT Policy in constructed unless greater than 50% of the benefited receptor.	ndicates that the noise abatement shall be Yes No
Barrier wall is 6,851 feet in width and by 20 feet in height.	
Based on the above results from the preliminary analysis, this ab-	atement feature is feasible but not reasonable.



Jul 3, 2018

Date:

Project Name	Carolina Crossroads			
Highway Traff	ic Noise Abatement Measure Noise	Barrier Y1		
<u>Feasibility</u>				
Number of Impa	acted Receivers 12	Number of E	Benefited Receivers	22
Percentage of Ir noise abatement	npacted Receivers that would achieve a smeasure	5 dBA reduction fro	om the proposed	100
NOTE:SCDOT I	oise abatement measure acoustically fea Policy indicates that 75% of the impacted 5 dBA reduction for it to be acoustically	d receivers must	× Yes	□ No
Would:	any of the following issues limit the abili	ity of the abatement	t measure to achieve	e the noise reduction goal?
	Topography	Yes	× No	
	Safety	Yes	× No	
	Drainage	Yes	× No	
	Utilities	Yes	× No	
	Maintenance	Yes	× No	
	Access	Yes	× No	
	Exposed Height of Wall	Yes	× No	
	If "Yes" was marked for any	of the questions a	above, please exp	lain below.
Detailed Description				

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal						
Number of Benefited Receivers 22		Number of Benefited Receivers that achieve at least an 8 dBA reduction				
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.						
Does the proposed noise abatement measure If "Yes" is marked, continue		nction design goal? Yes No				
15—165—15 тапкса, сопиныс	510 #2. 1j 110 15 mi	irkea, men avaiement is acterminea 1101 to octo	eusonavie.			
#2: Cost Effectiveness						
Estimated cost per square foot for noise abatement measure		Estimated construction cost for noise abatement measure				
Estimated cost per Benefited Receiver						
NOTE: SCDOT Policy states that the prelimina	ry noise analysis is bas	would the abatement measure be reasonable? ed on \$35.00 per square foot and a more projectsis during the detailed noise abatement evaluation.	☐ Yes ☐ No			
If "Yes" is marked, continue	e to #3. If "No" is mo	arked, then abatement is determined NOT to be re	reasonable.			
#3: Viewpoints of the property owner	ers and residents	of the benefitted receivers				
Number of Benefited Receivers (same as a	bove)					
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement measurement	sure			
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measur	re			
Number of Benefited Receivers that did n respond to solicitation on noise abatement measure		Percentage of Benefited Receivers t did not respond to solicitation on r abatement measure				
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.						
Barrier wall is 3,508 feet in width by 25 feet in	ı height.					
Based on the above results from the preliminar	y analysis, this abate	ment feature is feasible but not reasonable.				



Jul 3, 2018

Date:

Project Name Carolina Crossroads			
Highway Traffic Noise Abatement Measure No	ise Barrier Z1		
<u>Feasibility</u>			
Number of Impacted Receivers 147	Number of B	enefited Receivers	158
Percentage of Impacted Receivers that would achiev noise abatement measure	e a 5 dBA reduction fro	m the proposed	100
Is the proposed noise abatement measure acoustically NOTE:SCDOT Policy indicates that 75% of the imparachieve at least a 5 dBA reduction for it to be acoustically	acted receivers must	× Yes	□ No
Would any of the following issues limit the	ability of the abatement	measure to achieve	the noise reduction goal?
Topography	Yes	× No	
Safety	Yes	× No	
Drainage	Yes	× No	
Utilities	Yes	× No	
Maintenance	Yes	× No	
Access	Yes	× No	
Exposed Height of Wall	Yes	× No	
If "Yes" was marked for a	ny of the questions a	bove, please expl	ain below.
Detailed Description			

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal					
Number of Benefited Receivers 158	Number of Benefited Receivers that achieve at least an 8 dBA reduction				
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.					
Does the proposed noise abatement measure meet the noise redu	uction design goal? Yes No				
If "Yes" is marked, continue to #2. If "No" is m	arked, then abatement is determined NOT to be reasonable.				
#2: Cost Effectiveness					
Estimated cost per square foot for noise abatement measure Estimated construction cost for noise abatement measure 2,474,395					
Estimated cost per Benefited Receiver 15,661					
Based on the SCDOT policy of \$30,000 per Benefited Receiver NOTE: SCDOT Policy states that the preliminary noise analysis is bas specific construction cost should be applied at a cost per square foot based on the square f	sed on \$35.00 per square foot and a more project-				
If "Yes" is marked, continue to #3. If "No" is m.	arked, then abatement is determined NOT to be reasonable.				
#3: Viewpoints of the property owners and residents Number of Benefited Receivers (same as above)	of the benefitted receivers				
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure				
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure				
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure					
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.					
Barrier wall is 3,535 feet in width by 20 feet in height.					
Based on the above results from the preliminary analysis, this abatement feature is feasible and reasonable.					
Barrier subject to change based on the detailed noise analysis.					



Appendix C—Alternative 5 Modified Noise Barrier Worksheets



	Date: June 28, 20	18		
Project Name	Carolina Crossroads			
Highway Traffi	c Noise Abatement Measure Noise	Barrier A		
<u>Feasibility</u>				
Number of Impa	cted Receivers 2	Number of I	Benefited Receivers	s 2
Percentage of In noise abatement	npacted Receivers that would achieve a 5 measure	5 dBA reduction fr	om the proposed	100
NOTE:SCDOT F	oise abatement measure acoustically fea Policy indicates that 75% of the impacted 5 dBA reduction for it to be acoustically	d receivers must	× Yes	□ No
Would a	any of the following issues limit the abili	ty of the abatemen	nt measure to achiev	ve the noise reduction goal?
	Topography	☐ Yes	× No	
	Safety	Yes	× No	
	Drainage	Yes	× No	
	Utilities	Yes	× No	
	Maintenance	Yes	× No	
	Access	Yes	× No	
	Exposed Height of Wall	Yes	× No	
	If "Yes" was marked for any o	of the questions	above, please ex	plain below.
Detailed Description				

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal					
Number of Benefited Receivers	Number of Benefited Receivers that achieve at least an 8 dBA reduction				
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.					
Does the proposed noise abatement measure meet the noise in					
If "Yes" is marked, continue to #2. If "No" is	s marked, then abatement is determined NOT to be reasonable.				
#2: Cost Effectiveness					
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 1,575,035				
Estimated cost per Benefited Receiver 787,518					
Based on the SCDOT policy of \$30,000 per Benefited Recei NOTE: SCDOT Policy states that the preliminary noise analysis is specific construction cost should be applied at a cost per square foo	s based on \$35.00 per square foot and a more project-				
If "Yes" is marked, continue to #3. If "No" is	s marked, then abatement is determined NOT to be reasonable.				
#3: Viewpoints of the property owners and residen	nts of the benefitted receivers				
Number of Benefited Receivers (same as above)					
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure				
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure				
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure				
Based on the viewpoints of the property owners and resident abatement measure be reasonable? NOTE: SCDOT Policy constructed unless greater than 50% of the benefited receptor.	indicates that the noise abatement shall be Yes No				
Barrier wall is 1,800 feet in width by 25 feet in height.					
Based on the above results from the preliminary analysis, this abatement feature is feasible but not reasonable.					



	Date. June	20, 2016	_		
Project Name	Carolina Crossroads				
Highway Trafi	fic Noise Abatement Measure	Noise Barrier B1			
<u>Feasibility</u>					
Number of Imp	acted Receivers	Number of B	enefited Receivers	S 1	
Percentage of Innoise abatemen	mpacted Receivers that would ach t measure	ieve a 5 dBA reduction fro	m the proposed	100	
NOTE:SCDOT	noise abatement measure acoustica Policy indicates that 75% of the in a 5 dBA reduction for it to be acou	mpacted receivers must	× Yes	□ No	
Would	any of the following issues limit to	he ability of the abatement	measure to achiev	ve the noise reduction goal?	
	Topography	Yes	× No		
	Safety	Yes	× No		
	Drainage	Yes	× No		
	Utilities	Yes	× No		
	Maintenance	Yes	× No		
	Access	Yes	× No		
	Exposed Height of Wal	ll Yes	× No		
If "Yes" was marked for any of the questions above, please explain below.					
Detailed Description					

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal						
Number of Benefited Receivers 1	Number of Benefited Receivers that achieve at least an 8 dBA reduction					
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.						
Does the proposed noise abatement measure meet the noise red If "Yes" is marked, continue to #2. If "No" is no	duction design goal? Yes No marked, then abatement is determined NOT to be reasonable.					
#2: Cost Effectiveness						
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 875,049					
Estimated cost per Benefited Receiver 875,049						
Based on the SCDOT policy of \$30,000 per Benefited Receive NOTE: SCDOT Policy states that the preliminary noise analysis is b specific construction cost should be applied at a cost per square foot	ased on \$35.00 per square foot and a more project-					
If "Yes" is marked, continue to #3. If "No" is n	marked, then abatement is determined NOT to be reasonable.					
#3: Viewpoints of the property owners and residents	s of the benefitted receivers					
Number of Benefited Receivers (same as above)						
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure					
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure					
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure					
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.						
Barrier wall is 1,000 feet in width by 25 feet in height. Based on the above results from the preliminary analysis, this abatement feature is feasible but not reasonable.						
Additionally, this calculation was used as the sample mitigation model run for other similar conditions. These results apply to similar isolated receptor conditions for receptors B2, C, E3, F, G2 and N2.						



June 28, 2018

Date:

		,	_	
Project Name Carolin	na Crossroads			
Highway Traffic Noise	Abatement Measure No	ise Barrier E2		
<u>Feasibility</u>				
Number of Impacted Re	ceivers 9	Number of Be	nefited Receivers	9
Percentage of Impacted noise abatement measure	Receivers that would achieve	e a 5 dBA reduction from	the proposed	100
NOTE:SCDOT Policy in	tement measure acoustically dicates that 75% of the impareduction for it to be acoustic	acted receivers must	× Yes	□ No
Would any of the	e following issues limit the	ability of the abatement r	neasure to achieve	e the noise reduction goal?
	Topography	Yes	× No	
	Safety	Yes	× No	
	Drainage	Yes	× No	
	Utilities	Yes	× No	
	Maintenance	Yes	× No	
	Access	Yes	× No	
	Exposed Height of Wall	Yes	× No	
If	'Yes'' was marked for a	ny of the questions ab	ove, please exp	lain below.
Detailed Description				

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal			
Number of Benefited Receivers 16		Number of Benefited Receivers that achieve at least an 8 dBA reduction	
	NOTE: SCDOT Policy	that would achieve at least a 8 dBA reduction from indicates that 80% of the benefited receivers in the or it to be reasonable.	
Does the proposed noise abatement meas	ure meet the noise reduc	tion design goal? Yes X No	_
If "Yes" is marked, contin	nue to #2. If "No" is mar	ked, then abatement is determined NOT to be reasonable.	
#2: Cost Effectiveness			
Estimated cost per square foot for noise abatement measure		Estimated construction cost for noise abatement measure	
Estimated cost per Benefited Receiver			
NOTE: SCDOT Policy states that the prelim:	inary noise analysis is based	would the abatement measure be reasonable? I on \$35.00 per square foot and a more projects during the detailed noise abatement evaluation.	0
If "Yes" is marked, contin	nue to #3. If "No" is mar	ked, then abatement is determined NOT to be reasonable.	
#3: Viewpoints of the property ow	ners and residents of	the benefitted receivers	
Number of Benefited Receivers (same a	s above)		_
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement measure	
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measure	
Number of Benefited Receivers that did respond to solicitation on noise abatemoneasure	1 401 102 001	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure	
Based on the viewpoints of the property abatement measure be reasonable? NOT constructed unless greater than 50% of the	E: SCDOT Policy indica	ates that the noise abatement shall be Yes I	No
Barrier wall is 1,820 feet in width by 25 feet	in height.		
Based on the above results from the prelimin	nary analysis, this abatem	nent feature is feasible but not reasonable.	



June 28, 2018

Date:

	la a .				
Project Name	Carolina Crossroads				
Highway Traff	ic Noise Abatement Measure	Noise Barrier G1			
<u>Feasibility</u>					
Number of Impa	acted Receivers 169	Number of Bene	efited Receivers	166	
Percentage of Innoise abatement	mpacted Receivers that would achi t measure	ieve a 5 dBA reduction from	the proposed	98	
NOTE:SCDOT	noise abatement measure acoustica Policy indicates that 75% of the in a 5 dBA reduction for it to be acousticated.	npacted receivers must	× Yes	□ No	
Would	any of the following issues limit the	he ability of the abatement me	easure to achieve	the noise reduction goal?	
	Topography	□ Yes	× No		
	Safety	Yes	× No		
	Drainage	Yes	× No		
	Utilities	Yes	× No		
	Maintenance	☐ Yes	× No		
	Access	☐ Yes	× No		
	Exposed Height of Wal	1 Yes	× No		
If "Yes" was marked for any of the questions above, please explain below.					
Detailed Description					

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal						
Number of Benefited Receivers 166	Number of Benefited Receivers that achieve at least an 8 dBA reduction					
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.						
Does the proposed noise abatement measure meet the noise re						
ij "res" is markea, continue to #2 ij - tvo - ts	marked, then abatement is determined NOT to be reasonable.					
#2: Cost Effectiveness						
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 1,945,650					
Estimated cost per Benefited Receiver 11,721						
Based on the SCDOT policy of \$30,000 per Benefited Receiv NOTE: SCDOT Policy states that the preliminary noise analysis is specific construction cost should be applied at a cost per square foot	based on \$35.00 per square foot and a more project-					
If "Yes" is marked, continue to #3. If "No" is	marked, then abatement is determined NOT to be reasonable.					
#3: Viewpoints of the property owners and resident	s of the benefitted receivers					
Number of Benefited Receivers (same as above)						
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure					
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure					
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure					
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.						
Barrier wall is 2,780 feet in width by 20 feet in height.						
Based on the above results from the preliminary analysis, this ab-	atement feature is feasible and reasonable.					
Barrier subject to change based on the detailed noise analysis.						



Noise Technical Report

Project Name Carolina Crossroads						
Highway Traffic Noise Abatement Measu	Noise Barrie	r H1				
Feasibility						
Number of Impacted Receivers 36	7	Tumber of Be	nefited	l Receivers	38	
Percentage of Impacted Receivers that woul noise abatement measure	d achieve a 5 dBA r	eduction from	n the pr	roposed	100	
Is the proposed noise abatement measure acc NOTE:SCDOT Policy indicates that 75% of achieve at least a 5 dBA reduction for it to be	the impacted receive		X	Yes		No
Would any of the following issues l	imit the ability of th	e abatement i	measur	e to achieve	the no	oise reduction go
Topography		Yes	\times	No		
Safety		Yes	\times	No		
Drainage		Yes	$[\times]$	No		
Utilities		Yes	\times	No		
Maintenance		Yes	\times	No		
Access		Yes	\times	No		
Exposed Height o	f Wall	Yes	\times	No		
If "Yes" was marke	ed for any of the o	uestions al	oove, p	olease exp	lain b	elow.
Description						

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



Noise Technical Report

#1: Noise Reduction Design Goal							
Number of Benefited Receivers 36	Number of Benefited Receivers that achieve at least an 8 dBA reduction						
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.							
Does the proposed noise abatement measure meet the noise reduction design goal? Yes No If "Yes" is marked, continue to #2. If "No" is marked, then abatement is determined NOT to be reasonable.							
#2: Cost Effectiveness							
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 2,444,575						
Estimated cost per Benefited Receiver 67,905							
Based on the SCDOT policy of \$30,000 per Benefited Receive NOTE: SCDOT Policy states that the preliminary noise analysis is be specific construction cost should be applied at a cost per square foot to	ased on \$35.00 per square foot and a more project- Yes No						
If "Yes" is marked, continue to #3. If "No" is n	marked, then abatement is determined NOT to be reasonable.						
#3: Viewpoints of the property owners and residents	s of the benefitted receivers						
Number of Benefited Receivers (same as above)							
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure						
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure						
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure						
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be Yes No constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.							
Barrier wall is 3,492 feet in width by 20 feet in height.							
Based on the above results from the preliminary analysis, this aba	tement feature is feasible but is not reasonable.						



Date: Jul 1	3, 2018	_					
Project Name Carolina Crossroads							
Highway Traffic Noise Abatement Measure Noise Barrier H2							
<u>Feasibility</u>							
Number of Impacted Receivers 2	Number of B	enefited Receivers	5 0				
Percentage of Impacted Receivers that would ach noise abatement measure	ieve a 5 dBA reduction fro	m the proposed	0				
Is the proposed noise abatement measure acoustica NOTE:SCDOT Policy indicates that 75% of the ir achieve at least a 5 dBA reduction for it to be acou	npacted receivers must	☐ Yes	⊠ No				
Would any of the following issues limit t	he ability of the abatement	measure to achiev	ve the noise reduction goal?				
Topography	Yes	× No					
Safety	Yes	× No					
Drainage	☐ Yes	× No					
Utilities	Yes	× No					
Maintenance	Yes	× No					
Access	Yes	× No					
Exposed Height of Wal	II Yes	× No					
If "Yes" was marked for any of the questions above, please explain below.							
Detailed Description							

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal							
Number of Benefited Receivers		Number of Benefited Receivers the achieve at least an 8 dBA reduction					
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.							
Does the proposed noise abatement measure meet the noise reduction design goal? Yes No If "Yes" is marked, continue to #2. If "No" is marked, then abatement is determined NOT to be reasonable.							
19 Tes is marked, contin	ue to #2. If INO 13 II	arkea, men abatemen is determined NOT to be	reasonable.				
#2: Cost Effectiveness							
Estimated cost per square foot for noise abatement measure		Estimated construction cost for noise abatement measure					
Estimated cost per Benefited Receiver							
NOTE: SCDOT Policy states that the prelimi	nary noise analysis is ba	r, would the abatement measure be reasonable? sed on \$35.00 per square foot and a more project-asis during the detailed noise abatement evaluation.	Yes No				
If "Yes" is marked, contin	nue to #3. If "No" is n	narked, then abatement is determined NOT to be	reasonable.				
#3: Viewpoints of the property ow	ners and residents	of the benefitted receivers					
Number of Benefited Receivers (same as	s above)						
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement mea					
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measurement					
Number of Benefited Receivers that did respond to solicitation on noise abateme measure		Percentage of Benefited Receivers did not respond to solicitation on abatement measure					
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.							
Barrier wall is 844 feet in width by 25 feet in	n height.						
Based on the above results from the prelimin	nary analysis, this abat	ement feature is not feasible.					



	Date: Jul 3, 20	018	_				
Project Name	Carolina Crossroads						
Highway Trafi	Highway Traffic Noise Abatement Measure Noise Barrier I1						
<u>Feasibility</u>							
Number of Imp	acted Receivers 3	Number of Bo	enefited Receivers	3			
Percentage of Innoise abatemen	mpacted Receivers that would achiev t measure	e a 5 dBA reduction from	n the proposed	100			
NOTE:SCDOT	noise abatement measure acoustically Policy indicates that 75% of the impa a 5 dBA reduction for it to be acoustic	acted receivers must	× Yes	□ No			
Would	any of the following issues limit the	ability of the abatement	measure to achieve	e the noise reduction goal?			
	Topography	Yes	× No				
	Safety	Yes	× No				
	Drainage	Yes	× No				
	Utilities	Yes	× No				
	Maintenance	Yes	× No				
	Access	Yes	× No				
	Exposed Height of Wall	Yes	× No				
If "Yes" was marked for any of the questions above, please explain below.							
Detailed Description							

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal						
Number of Benefited Receivers 3		Number of Benefited Receivers the achieve at least an 8 dBA reduction	15			
	NOTE: SCDOT Policy i	that would achieve at least a 8 dBA reduction indicates that 80% of the benefited receivers in to be reasonable.				
Does the proposed noise abatement measurement	sure meet the noise reduct	tion design goal? X Yes No)			
If "Yes" is marked, conti	nue to #2. If "No" is mari	ked, then abatement is determined NOT to be	reasonable.			
#2: Cost Effectiveness						
Estimated cost per square foot for noise abatement measure	35	Estimated construction cost for noise abatement measure	1,399,930			
Estimated cost per Benefited Receiver	466,643					
NOTE: SCDOT Policy states that the prelim	inary noise analysis is based	would the abatement measure be reasonable? on \$35.00 per square foot and a more projects during the detailed noise abatement evaluation.	☐ Yes ⊠ No			
If "Yes" is marked, conti	nue to #3. If "No" is mari	ked, then abatement is determined NOT to be	reasonable.			
#3: Viewpoints of the property ov		the benefitted receivers				
Number of Benefited Receivers (same a						
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement mea	I I			
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measurement				
Number of Benefited Receivers that die respond to solicitation on noise abatem measure		Percentage of Benefited Receivers did not respond to solicitation on abatement measure				
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.						
Barrier wall is 2,000 feet in width by 20 fee	t in height.					
Based on the above results from the prelimi	nary analysis, this abatem	ent feature is feasible but not reasonable.				



Date	Jul 3, 2018					
Project Name Carolina Crossroads						
Highway Traffic Noise Abatement Me	Noise Barrier I4					
<u>Feasibility</u>						
Number of Impacted Receivers 1,115	Number	of Benefited Receivers	115			
Percentage of Impacted Receivers that w noise abatement measure	ould achieve a 5 dBA reduction	on from the proposed	100			
Is the proposed noise abatement measure NOTE:SCDOT Policy indicates that 75% achieve at least a 5 dBA reduction for it to	of the impacted receivers mu	x Yes	□ No			
Would any of the following issue	es limit the ability of the abate	ment measure to achieve	the noise reduction goal?			
Topography	Yes	× No				
Safety	Yes	× No				
Drainage	☐ Yes	× No				
Utilities	Yes	× No				
Maintenance	Yes	× No				
Access	☐ Yes	× No				
Exposed Heigh	ht of Wall Yes	× No				
If "Yes" was ma	If "Yes" was marked for any of the questions above, please explain below.					
Detailed Description						

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal	
Number of Benefited Receivers 115	Number of Benefited Receivers that achieve at least an 8 dBA reduction
Percentage of Benefited Receivers in the first two building ro the proposed noise abatement measure. NOTE: SCDOT Pol first two building rows must achieve at least a 8 dBA reduction	icy indicates that 80% of the benefited receivers in the
Does the proposed noise abatement measure meet the noise re-	
If "Yes" is marked, continue to #2. If "No" is n	marked, then abatement is determined NOT to be reasonable.
#2: Cost Effectiveness	
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 2,939,755
Estimated cost per Benefited Receiver 25,563	
Based on the SCDOT policy of \$30,000 per Benefited Receive NOTE: SCDOT Policy states that the preliminary noise analysis is b specific construction cost should be applied at a cost per square foot	ased on \$35.00 per square foot and a more project-
If "Yes" is marked, continue to #3. If "No" is n	marked, then abatement is determined NOT to be reasonable.
#3: Viewpoints of the property owners and residents	s of the benefitted receivers
Number of Benefited Receivers (same as above)	
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure
Based on the viewpoints of the property owners and residents abatement measure be reasonable? NOTE: SCDOT Policy in constructed unless greater than 50% of the benefited receptors	dicates that the noise abatement shall be Yes No
Barrier wall is 4,200 feet in width by 20 feet in height.	
Based on the above results from the preliminary analysis, this aba	ntement feature is feasible and reasonable.
Barrier subject to change based on the detailed noise analysis.	



	Date: June 28, 20	18						
Project Name	Carolina Crossroads							
Highway Traff	Highway Traffic Noise Abatement Measure Noise Barrier J1							
<u>Feasibility</u>								
Number of Impa	acted Receivers 3	Number of l	Benefited Receivers	3				
Percentage of Innoise abatement	npacted Receivers that would achieve a standard measure	5 dBA reduction fr	om the proposed	100				
NOTE:SCDOT	noise abatement measure acoustically fea Policy indicates that 75% of the impacted a 5 dBA reduction for it to be acoustically	d receivers must	× Yes	□ No				
Would	any of the following issues limit the abili	ty of the abatemen	nt measure to achiev	ve the noise reduction goal?				
	Topography	☐ Yes	× No					
	Safety	Yes	× No					
	Drainage	Yes	× No					
	Utilities	Yes	× No					
	Maintenance	Yes	× No					
	Access	Yes	× No					
	Exposed Height of Wall	Yes	× No					
If "Yes" was marked for any of the questions above, please explain below.								
Detailed Description								

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal					
Number of Benefited Receivers 3		Number of Benefited Receivers that achieve at least an 8 dBA reduction			
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.					
Does the proposed noise abatement measure meet the noise reduction design goal? Yes No					
If "Yes" is marked, continue to $\#2$. If "No" is marked, then abatement is determined NOT to be reasonable.					
#2: Cost Effectiveness					
Estimated cost per square foot for noise abatement measure	35	Estimated construction cost for noise abatement measure 1,365,245			
Estimated cost per Benefited Receiver	455,082				
Based on the SCDOT policy of \$30,000 per Benefited Receiver, would the abatement measure be reasonable? NOTE: SCDOT Policy states that the preliminary noise analysis is based on \$35.00 per square foot and a more project- specific construction cost should be applied at a cost per square foot basis during the detailed noise abatement evaluation.					
If "Yes" is marked, continue to $\#3$. If "No" is marked, then abatement is determined NOT to be reasonable.					
#3: Viewpoints of the property owners and residents of the benefitted receivers					
Number of Benefited Receivers (same a	as above)				
Number of Benefited Receivers in support of noise abatement measure		Percentage of Benefited Receivers in support of noise abatement measure			
Number of Benefited Receivers opposed to noise abatement measure		Percentage of Benefited Receivers opposed to noise abatement measure			
Number of Benefited Receivers that di respond to solicitation on noise abaten measure	AND ALL POSTERS	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure			
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.					
Barrier wall is 2,600 feet in width by 15 feet in height.					
Based on the above results from the preliminary analysis, this abatement feature is feasible but not reasonable.					



Project Name	Carolina Crossroads		_		
Highway Traffic Noise Abatement Measure Noise Barrier J2					
<u>Feasibility</u>					
Number of Impacted Receivers 295		Number of Benefited Receivers		295	
Percentage of Impacted Receivers that would achieve a 5 dBA reduction from the proposed noise abatement measure			100		
Is the proposed noise abatement measure acoustically feasible? NOTE:SCDOT Policy indicates that 75% of the impacted receivers must achieve at least a 5 dBA reduction for it to be acoustically feasible.					
Would	any of the following issues limit the abil	lity of the abatement	measure to achieve	the noise reduction goal?	
	Topography	Yes	× No		
Safety		Yes	× No		
Drainage		Yes	× No		
Utilities		Yes	× No		
Maintenance		Yes	× No		
Access		Yes	× No		
Exposed Height of Wall		Yes	× No		
If "Yes" was marked for any of the questions above, please explain below.					
Detailed Description					
•					

Reasonableness

According to 23 CFR 772.13(d)(2)(iv) the abatement measure must collectively achieve each of these criteria to be reasonable. Therefore if any of the three mandatory reasonable factors are not achieved, then the abatement measure is determined NOT to be reasonable. When completing the form it is not necessary to detail each of the criteria if one was determined not to be reasonable.



#1: Noise Reduction Design Goal					
Number of Benefited Receivers	Number of Benefited Receivers that achieve at least an 8 dBA reduction				
Percentage of Benefited Receivers in the first two building rows that would achieve at least a 8 dBA reduction from the proposed noise abatement measure. NOTE: SCDOT Policy indicates that 80% of the benefited receivers in the first two building rows must achieve at least a 8 dBA reduction for it to be reasonable.					
Does the proposed noise abatement measure meet the noise reduction design goal? Yes No					
If "Yes" is marked, continue to #2. If "N	o" is marked, then abatement is determined NOT to be reasonable.				
#2: Cost Effectiveness					
Estimated cost per square foot for noise abatement measure	Estimated construction cost for noise abatement measure 1,785,000				
Estimated cost per Benefited Receiver 6,051					
Based on the SCDOT policy of \$30,000 per Benefited Receiver, would the abatement measure be reasonable? NOTE: SCDOT Policy states that the preliminary noise analysis is based on \$35.00 per square foot and a more project- specific construction cost should be applied at a cost per square foot basis during the detailed noise abatement evaluation.					
If "Yes" is marked, continue to $\#3$. If "No" is marked, then abatement is determined NOT to be reasonable.					
#3: Viewpoints of the property owners and residents of the benefitted receivers					
Number of Benefited Receivers (same as above)					
Number of Benefited Receivers in support of noise abatement measure	Percentage of Benefited Receivers in support of noise abatement measure				
Number of Benefited Receivers opposed to noise abatement measure	Percentage of Benefited Receivers opposed to noise abatement measure				
Number of Benefited Receivers that did not respond to solicitation on noise abatement measure	Percentage of Benefited Receivers that did not respond to solicitation on noise abatement measure				
Based on the viewpoints of the property owners and residents of the Benefited Receivers, would the abatement measure be reasonable? NOTE: SCDOT Policy indicates that the noise abatement shall be constructed unless greater than 50% of the benefited receptors are opposed to noise abatement.					
Barrier wall is 3,400 feet by width by 15 feet in height.					
Based on the above results from the preliminary analysis, this abatement feature is feasible and reasonable.					
Barrier subject to change based on the detailed noise analysis.					